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Item No. 3
Committee of the Whole
December 5, 2017

TO: Mayor Savage and Members of Halifax Regional Council

SUBMITTED BY: Original Signed
Jacques Dubé, Chief Administrative Officer

DATE: November 20, 2017

SUBJECT: Integrated Mobility Plan

ORIGIN

At the October 20, 2015 meeting of Halifax Regional Council, a motion was passed to:

Direct staff to develop a strategic plan specifically aimed at increasing the modal split of sustainable forms of transportation as per the Regional Plan which integrates both land use and transportation planning and includes comparative costing analysis of road and right of way infrastructure upgrades and widening as compared to other forms of transportation and report back to Regional Council by April 30, 2016 (dependent on appropriate project scoping and funding source as identified through Audit & Finance).

LEGISLATIVE AUTHORITY

The Halifax Regional Municipality Charter Subsection 79(1) states (in part) that:

The Council may expend money required by the Municipality for:

- (o) public transportation services;
- (k) recreational programs;
- ah) playgrounds, trails, including trails developed, operated or maintained pursuant to an agreement made under clause 73(c), bicycle paths, swimming pools, ice arenas and other recreational facilities;
- (ai) public grounds, squares, halls, museums,
- (aa) streets, culverts, retaining walls, sidewalks, curbs and gutters

Further, Subsection 229 (1) states (in part) that

A municipal planning strategy may include statements of policy with respect to any or all of the following:

- (g) studies to be carried out prior to undertaking specified developments or developments in specified areas;
- (i) the provision of municipal services and facilities;

RECOMMENDATIONS

It is recommended that Halifax Regional Council:

1. Authorize the direction contained in the Integrated Mobility Strategy as a framework for amending the existing Regional Plan and developing new planning documents as may be necessary to implement the Integrated Mobility Plan direction; and
2. Direct staff to prepare the long-term capital outlook, funding options and priorities, as directed by Regional Council on October 3rd, 2017, to include the Integrated Mobility Plan, and return to Halifax Regional Council for discussion of the capital outlook and its implications.

BACKGROUND

The Strategic plan referenced in the Origin section of this report became known as the Integrated Mobility Plan (IMP).

The Regional Plan that was adopted in 2006 set targets for the location of new dwelling units as well as for mode share. 25% of all new dwelling units were targeted for the Regional Centre, 50% for serviced development outside of the Regional Centre, and 25% for development beyond the service boundary. In 2006, when the Regional Plan was adopted, 75% of all trips to work were made in a private vehicle; and it was predicted that this would decrease to 70% by 2031.

The Regional Plan that was adopted in 2006 relied upon “functional plans” to help implement the Plan. Six broad functional plans - transit, road network, parking, transportation demand management, active transportation, and goods movement – were created that related to transportation. These became known as “priority plans” and were a key tool for departments to implement the Regional Plan.

Despite meeting the dwelling unit growth target of 25% in the Regional Centre in recent years, the number of trips to work made in private vehicles has increased, up to 77% by 2011 (2016 data will be available soon).

DISCUSSION

The Mobility Challenge Ahead for the Halifax Regional Municipality

In 2006, it was staff's position that with a 5% relative decrease in vehicle use, new road construction could be kept to a minimum and congestion would not increase beyond 2006 levels. However, development patterns have been slow to change, and vehicle use has increased in the last 11 years. An integrated and coordinated approach will be required to achieve the mobility targets set out in the Regional Plan. This means fully integrating mobility considerations with form, density, location of development, and sometimes managing congestion to the benefit of other modes of travel.

Following 22 public meetings (16 public workshops and 6 public open houses), many smaller pop-up consultations and over 2,000 responses online, the IMP has laid out a series of strategic mobility initiatives that are necessary to achieve the mobility targets by the year 2031.

From the workshops and open houses the project staff team heard that many people are willing to use their private vehicles less than they do today, if the Municipality provides the public with realistic, viable alternatives.

The strategies and recommendations in the IMP are intended to allow residents and employees to achieve the mobility targets in the Regional Plan by 2031, but strategic decisions around the use of the public right of way will be needed.

Integrating Mobility and Land Use

Transportation is inter-related with almost every other aspect of regional planning, and affects the lifestyle of every resident in HRM. Transportation is often called a “derived demand” because the demand for it arises from other activities that people wish to pursue. Whether an activity creates a transportation need, in turn, depends on where that activity is, in relation to the people who want to participate.

This gives rise to the concept of access, which refers to how easily people can reach the goods, services, employment, and events that are of interest to them. Whereas transportation focuses on providing mobility, the need for this mobility can be reduced when Municipalities recognize that access is the underlying issue. There are many ways to ensure access, of which transportation is only one. Other means include placing interdependent land uses close to each other, providing for high-speed internet, or encouraging home occupations.

So, transportation and land use must be considered in the light of each other and with a view to lifestyle aspirations, economic growth, and social policy. Traditionally, land use has been considered chiefly as a generator of transportation demand, especially vehicle travel. This has typically led to recommendations for road improvements. Transportation infrastructure, especially roads and highways, itself exerts an important influence on the location of future development and land use.

Ironically, an upward trend of traffic can result because new roads induce new traffic by attracting residents and businesses to outlying areas and enticing transit users to switch to vehicles. It has become clear that no city or region can build its way out of vehicle congestion, unless road improvements are accompanied by pricing signals (such as tolls) or strict land use controls to avoid encouraging disbursed car-dependent land use patterns.

Integrating Modes, Policies, and Agencies

In view of these and other impacts of vehicle-oriented transportation policy, the IMP aims to provide people with convenient, enjoyable, environmentally sustainable, and socially responsible links to people, goods and opportunities. This requires further integration at three levels:

- **Transportation options:** Many trips involve two or more modes of transportation. Seamless and barrier-free connections between and amongst modes, convenient transfer facilities, and coordinated timing to minimize delays and make trips more enjoyable.
- **Land Use plans, policies, and initiatives:** Investment in integrated mobility should be used as a tool to help shape the region and its communities. The aim is to strengthen strategic Growth Centres, respect established neighbourhoods, and complement the open-space system.
- **Municipal departments and orders of government:** Different agencies have different priorities, and must be encouraged to work together so that the decisions of each reinforce the overall aim of reducing vehicle dependency.

Building on the Regional Plan

The IMP will direct investment in active transportation, transit, and the roadway network to improve links between people and their communities. The Plan stems from, builds on, and connects policies in the Regional Plan to:

- Provide integrated and connected ways for people to travel, emphasizing active transportation, public and community-based transit, carpooling, and other viable alternatives to driving alone;
- Ensure that travel within the Halifax region is safe, affordable, comfortable, and environmentally friendly;

- Anticipate future mobility needs and provide service and infrastructure to meet this demand, while making sustainable transportation the easy choice; and
- Create complete streets that are safe and attractive for people of all ages and abilities, and use all travel options.

Five Deliverables

The resulting IMP includes five key deliverables:

- **Strategies to shift more trips to active transportation and transit** to achieve the 2031 modal choice targets of the Regional Plan: Data suggests that the region has become more car-dependent since 2006, and this trend needs to be reversed. Substantive and meaningful shifts in mobility demands will require new thinking.
- **A clear process for making decisions and setting priorities:** Accommodating the needs of travellers, businesses and residents involves trade-offs. For example, viable higher-order transit requires a commitment to focus residential density, shops and services within a short walk of each terminal, while bus-only lanes or other transit priority measures often require the removal of on-street parking or a reduction in car capacity.
- **A staged plan to develop affordable mobility:** The Plan identifies a vision, sets objectives, and recommends policies and actions to achieve the vision. Some of these require only minimal spending, while others are relatively expensive but offer benefits reaching beyond mobility to include efficient land use and socioeconomic benefits.
- **Early actions followed by longer-term recommendations:** The Plan embraces a fourteen-year horizon (to 2031), but identifies specific strategic actions that can be taken today. These will help “set the stage” for future decisions by signaling new directions and providing early benefits for trips made using sustainable transportation modes.
- **Baseline performance measures to monitor success over time:** The project has identified a need for more systematic data collection and compilation. To address this, the Plan recommends collaboration with universities and other agencies for measuring and analyzing trip patterns.

Core Concepts – The Four Pillars

The IMP provides an opportunity to shape connected, healthy, and vibrant communities and offer greater transportation choice. This, in turn, will offer improved access to daily destinations, help lower emissions, reduce the need for individual car ownership, support vibrant and liveable neighbourhoods, and improve wellness by facilitating healthy lifestyles. The IMP sets out four core concepts, or “pillars”, for Integrated Mobility:

- **Connected:** A connected transportation system links people and communities with each other and with important goods, services, and employment opportunities. Many people face complex commutes to juggle activities like work, school, errands, childcare, shopping, and social life. “Transit Oriented Development” (TOD) will encourage shops and services closer to home, work and transit terminals, while enhancing the quality of life that attracts investment to the region. “Complete Streets” in strategic locations will give priority to pedestrians, bicyclists, and public transit, and be designed for all ages and abilities.

- **Healthy:** A healthy regional transportation system supports comfortable, convenient, and safe opportunities for active living and offers transportation options for all ages and abilities, including people with physical, visual, auditory, or mental disabilities. Physical activity can improve mental and physical health and help prevent disease. The way communities are designed affects whether people can choose active forms of transportation and build physical activity into their daily lives. The way transportation infrastructure is designed can help reduce collisions and injuries.
- **Sustainable:** A sustainable transportation system protects air, land, and water resources, respects the needs of all people, and uses financial resources wisely. Financial stewardship must also consider the effects that transportation investment has on land use, and how the resulting land use in turn affects municipal spending. Sustainable transportation is also socially responsible, and considers the needs of all community members, including children, seniors, low income residents, and people with mobility challenges. Moreover, sustainable transportation must be environmentally responsible. Promoting walking, bicycling, and transit and planning for Complete Streets which welcome all ages and abilities can lower emissions, reduce the demand for sprawling development, and help protect environmentally sensitive areas.
- **Affordable:** An affordable transportation system offers value for money both to the user and the taxpayers by recognizing the economic costs and benefits which may otherwise be overlooked. Walking, bicycling, taking transit, and car sharing are affordable options. Loan and insurance payments, fuel, and vehicle maintenance add up to a significant cost. Also, public investment must provide value for taxpayers by providing attractive alternatives to driving, while helping shape future development to encourage walking, bicycling, and transit use.

Vision and Principles

Based on the above four pillars, the IMP embodies an overall vision:

Halifax residents will have a choice of affordable, healthy, sustainable, and connected travel options for moving people and goods through integrated transportation and land use planning.

Several guiding principles were also developed from best practices compiled from other regions, and which reflect much of what was heard during the three rounds of public consultation (What we heard documents for the three rounds of public engagement can be found at: <https://www.halifax.ca/about-halifax/regional-community-planning/transportation-planning>):

- **Complete Communities** - Cluster communities around public transit, employment, shops, and services: Convenient walking distance reduces the need for vehicle ownership, parking facilities, and roadway capacity. Higher densities must be coupled with pedestrian supportive design, open space, and a sensitive transition to established neighbourhoods. Clustered development can also facilitate local goods delivery by offering a central point for convenient pick-ups and drop-offs as online shopping continues to grow.
- **Move people** and goods, instead of focusing solely on vehicles: Vehicles will always be important, but their end purpose is to move people or goods. Focusing on the number of people using a transportation corridor recognizes that there are more efficient, affordable, and environmentally responsible mobility options than private cars. This points to the importance of "Complete Streets" designed for all ages and abilities and accommodating all users including pedestrians, bicyclists, and public transit as well as vehicles. For goods movement, focusing on the type and volume of goods rather than simply on trucks, encourages options ranging from bicycle couriers to rail and marine freight.
- **Manage congestion** instead of attempting to eliminate it: Widening a roadway encourages more people to drive on it, unless unpopular tolls are charged. Ferries, commuter trains, bus rapid

transit, and a connected active transportation network may shift the overall congestion level somewhat lower, but they will not eliminate it. Rather, these forms of “higher order” transit offers a means to avoid congestion. Roadway congestion then helps encourage people to switch to the improved transit, enhancing its viability even as it acts as a “safety valve” to prevent road congestion from becoming intolerable for those who must drive.

- **Integrate solutions:** There is no one solution to solve mobility problems, but taken together, several different solutions can reinforce each other so that the sum is greater than the parts. Conversely, some apparently obvious solutions could undermine others - for example, an expanded roadway could erode the potential ridership of a transit service. Recommendations for integrated mobility must be evaluated and implemented as a coherent suite, rather than chosen in isolation. This points to the importance of sharing these principles with other transportation agencies in Halifax, such as the Province, Halifax Harbour Bridges, and the Port of Halifax.

Applying the Pillars and Principles

A key deliverable of the IMP is to establish a clear process for making decisions and setting priorities. To do so, an evaluation scorecard was developed to evaluate mobility projects. The IMP’s four pillars and guiding principles were used to develop seven criteria:

- **Connected:** Will the proposed project address the mobility needs of all community members? (i.e. age, ability, income) Will it improve connections between locations or modes of travel?
- **Healthy:** Will it support active living? Will it improve the safety of all users, especially people using active transportation?
- **Sustainable:** Will it help reduce the environmental footprint of travel? Does it consider future requirements? (i.e. population growth, economic changes, changing needs, and preferences)
- **Affordable:** Will it make it cheaper for people to live without a personal vehicle? Will public spending be cost effective and responsible?
- **Mode Choice:** How many different modes of transportation will be improved? Will it integrate or connect different modes with one another? Will active transportation users and transit be prioritized over personal vehicles? Will it create alternative routes and travel choices?
- **Experience:** Will it make the service attractive and convenient for people to use? (eg. service frequency, ease of payment, connections to other networks, clear communication, reduced stress for users) Will it create a comfortable environment or experience? (eg. landscaping, street trees, benches, lighting, bicycle parking, crosswalks, street furnishings, accessibility, perceived safety, amenities)
- **Land Use:** Will the project support the design of complete communities?

Each potential mobility project and policy was evaluated on each of the above criteria, using a simple scoring system accompanied by brief notes to explain the score and provide some transparency in the rating process. The resulting score was then used to provide a ranking for each project. This ranking has been considered along with any potential synergies with other projects, in generating Action Items for the recommendations of this report.

The ranking system or evaluation scorecard will also help guide staff and Regional Council in future decisions on whether, and when, to implement any other projects that might be proposed in the years to come.

Detailed recommendations are provided in the IMP document. Highlights include:

- **A network of Transit Priority Corridors** (see IMP document, Figure 20, page 103) to enable transit vehicles to bypass congestion using methods ranging from traffic signal priority to dedicated bus lanes.
- **Design and implementation of dedicated bus lanes along Bayers Road, Young Street, and Robie Street** to provide Bus Rapid Transit between Mainland North and Peninsula campuses and hospitals. This method of providing bus service will be the first of many improved bus corridors in Halifax.
- **Continued discussions with potential partners with a view to implementing a commuter rail service** between Cobequid Road, Bedford, and Halifax as a catalyst for higher-density suburban Transit Oriented Development and downtown employment. There are also long-term recommendations to consider a potential in-street downtown rail extension.
- A commitment to **review land use regulations to encourage compact, pedestrian-supportive, mixed use “Complete Communities”** clustered around existing and potential transit terminals, including potential commuter rail stations in the Bedford-Halifax corridor (see IMP document, Figure 20, page 103).
- A mandate to **change municipal design guidelines (the “Red Book”) to enable Complete Streets** with increased priority for pedestrians, bicyclists, and public transit, with designs which are sensitive to the needs of all ages and abilities.
- A timeframe to complete **major sidewalk connections by 2020**, on portions of Herring Cove Road and Dutch Village Road.
- A commitment to **complete priority Active Transportation Greenway connections, and an interconnected All Ages and Abilities (“AAA”) Regional Centre Bicycle Network by 2022**.
- **Increased use of Transportation Demand Management** and information technology to reduce the need to travel.
- **Potential partnerships to improve suburban and rural mobility**, including new carshare locations and approaches for accommodating pedestrians on rural highways in village centres.
- **Educational materials for the public and developers explaining the relationship between design, density, transit, and affordability, with interim design guidelines for use by developers and investors**. New directions in the IMP must be clearly explained. Inspirational and educational materials can influence decision making long before regulatory changes are adopted.
- A commitment to **adopt a curbside priorities approach** for the Municipality in order to help guide decisions related to curbside space within the right of way.
- Evaluation of any planned, new additions, or major improvements to the regional road network under a lens that includes **using the evaluation scorecard** that takes into consideration the four pillars: connected, healthy, affordable, & sustainable.

Accessibility Considerations

The idea that the mobility system must be accessible and inclusive to all is a core concept of the IMP. Several of the recommended actions will need to be forwarded to the Accessibility Advisory Committee for review and input, including the complete streets guidelines, Municipal Accessibility Plan, Strategic Road Safety Plan, and amendments to Municipal Design guidelines. If the IMP is adopted, a work plan will be developed for the Accessibility Advisory Committee for endorsement by the Executive Standing Committee.

Regional Plan Table 4.1

The 2014 Regional Plan assumes that improvements to walking, bicycling, and transit, combined with a more clustered approach to development, will not eliminate a growing demand for road capacity. With that in mind, the 2014 Regional Plan includes a list and map (Regional Plan Table 4.1 and Regional Plan Map 6) of future road widening and extension projects. The Regional Plan cautions that no projects shown on that table or map may be approved for construction until a Road Network Functional Plan is prepared that has included a public consultation process providing rationale for the projects as they relate to one another, considers growth targets outlined in the Regional Plan, considers sustainable transportation initiatives, and provides capital and operating costs for road construction.

Since that time, Council's directive to undertake the IMP has enabled staff to analyze these road proposals not only in relation to each other and sustainable alternatives, but also in relation to their likely impact on development patterns and any resulting additional traffic.

The total capital cost of all those potential road improvements has recently been estimated to be in the order of \$750 million (2016 dollars). As most of the projects involve upgrades to the Provincial highway system, the cost would be paid by the Province, but the balance would fall on municipal taxpayers. Ongoing operations and maintenance costs would also accrue to both levels of government and be incurred every year.

Compared with other jurisdictions, there is a higher level of detail provided about road expansion than is typically found in a regional plan. In any case, the more recent, multi-modal analysis in the IMP using the criteria described above could supersede Table 4.1. Projects included in Table 4.1 should be evaluated using the evaluation scorecard described above. In general, this means that a project will only proceed if it helps to reduce vehicle use, either on its own or in conjunction with other plans or strategies.

Toward Implementation

A key ingredient of this Plan has been the development of an internal staff team to work on all aspects of the study, overseen by the external Project Manager, Rod McPhail, President of McPhail Transportation Planning Services Ltd. By taking this approach, the Municipality retains the corporate knowledge that was applied to the work, and the staff team members can lead the implementation of the IMP. Members of the staff team will also be involved with upcoming revisions to the Municipal Design Guidelines (the "Red Book").

Municipal staff must champion the pillars and principles of the IMP, using every opportunity to explain the relationship between design, density, transit, and affordability, and can also provide voluntary design guidelines for use by developers and investors. Public education can be implemented quickly, and can begin to influence decision making long before regulatory changes take effect.

The inter-disciplinary expertise of the staff team has also helped ensure consideration of other ongoing or recently completed initiatives such as the Centre Plan, Regional Parking Strategy, the Halifax Transit *Moving Forward Together Plan*, and the Strategic Road Safety Plan. In addition, the team includes a representative of Nova Scotia Public Health in recognition of the inter-relationship between mobility choices, physical activity, and personal well-being.

Discussions have also been held as needed, with other agencies with an interest in transportation or Transit Oriented Development, including the Nova Scotia Department of Transportation and Infrastructure Renewal, Energy Nova Scotia, Waterfront Development Corporation, Via Rail Canada, Halifax Port Authority, and Halifax Harbour Bridges. The cooperation of these entities will be very important to the success of the IMP.

Measuring Success

The IMP includes a protocol for performance monitoring and reporting. The data will be obtained primarily from external data sources, including the Dalhousie University Transport Collaboratory, known as DaITRAC, and will be supplemented by HRM data collected on an annual basis.

The Halifax Household Travel Activity survey, which will be carried out in the fall of 2017, will provide valuable insights into trip generation rates, car ownership, and non-commuting trips. Together with the anticipated 2016 Journey-to-Work Census data, this will provide an excellent baseline to re-calibrate the Municipality's transportation model and track progress as the IMP is implemented.

FINANCIAL IMPLICATIONS

This report approves the strategy for the Integrated Mobility Plan, but does not approve specific capital projects. Any specific project approvals would be achieved through future Council decisions on the Long-Term Capital Outlook and annual capital budgets. Section 5.2 of the Integrated Mobility Plan (Attachment A) outlines the types of projects and actions that are currently envisioned to meet modal share targets.

On October 3, 2017, Regional Council directed staff to "bring forward a framework for a ten-year capital outlook aligned with Regional Council Priorities, along with an initial ten-year capital outlook" that includes funding and options for strategic projects. The staff report noted that:

The initial working estimates suggest that there are insufficient funds over the longer term to both maintain the existing asset base (State of Good Repair), to expand services (Growth, Service Improvement) and fund every Potential Strategic Project. Rough initial estimates are that over the next ten years the Capital Plan will require \$1.5 billion in funding from Debt, Capital from Operating and Gas Tax. Current estimates suggest only \$1 billion is available leaving a significant shortfall for one-third of that plan.

While a significant portion of the Integrated Mobility Plan may already be in the longer-term capital outlook, that outlook has substantial funding issues. It is unlikely to be delivered as such without some combination of additional funding (private sector, cost-sharing, property tax increases), re-prioritization of projects, and the addition of staff resources to deliver capital projects. It is also important to note that many new or upgraded capital assets require additional operating funds. In some cases, the long-term costs of new operating assets can exceed the initial capital costs. The Integrated Mobility Plan acknowledges that operating cost pressures (increases) are expected for five to ten years after the plan is adopted, with cost avoidance achieved over the longer term, if the outcomes anticipated by the plan are met. Considering the scope and magnitude of the Integrated Mobility Plan, its implementation requires an in-depth review of its funding needs to fully incorporate it into HRM's Long-Term Capital Outlook and Council's Fiscal Framework.

The implementation of the plan will involve enhanced computer modelling, transportation demand management, public communication and awareness programs, and conceptual planning. It is expected that this work will cost about \$150,000 per year and will be included in the 2018-19 proposed budget.

RISK CONSIDERATION

Specific Project Risks

Staff will provide an outline of specific risks for each project as it is considered for implementation by Council following adoption of the IMP.

Risks Associated with the IMP as a Whole

Risk assessment in this report is focused on the IMP as a whole. There are risks associated both with adopting, and with rejecting the IMP.

It is very important that the Plan be considered in its entirety, as its many components are intended to be mutually supportive so that the sum is greater than the parts. Any piecemeal adoption of some of the recommendations without the others could incur additional risks associated with disjointed policies and projects which may undermine each other.

If the IMP is Adopted

RISK WITH I.M.P.	LIKELIHOOD	IMPACT	RISK LEVEL	MITIGATION
Provincial road expansion undermines IMP priorities	Almost certain	Moderate	Very High	Apply restrictive zoning at interchanges and at end of route to minimize sprawl; Request AT and transit lanes in the same corridor.
Other agencies relocate public facilities outside complete communities	Almost certain	Major	Very High	Develop strategic planning framework with other agencies and Province of Nova Scotia in particular
Federal or provincial funding is declined for IMP projects	Possible	Moderate	Moderate	Explore Land Value Uplift Recapture, Tax Increment Financing and private sponsorship/partnership options.
Operating costs for new initiatives reduce funds for operating existing programs in the short term	Low	Moderate	Moderate	Provide separate operating accounts for new services and facilities; add operating cost contingencies when budgeting for new projects, until experience is gained.
New initiatives are delayed due to limited staff resources	Possible	Major	High	Increase the staff operating budget to reflect additional project loads, and allow for contingencies. Investigate innovative ways of capital project delivery, funded from the capital budget.
Capital costs exceed budget	Possible	Moderate	High	Provide more contingencies for unfamiliar projects, and incorporate price checking strategies

COMMUNITY ENGAGEMENT

Three rounds of Public Meetings in September 2016, November 2016, and April 2017 were held at 14 different venues. These included 16 public workshops and six public open houses. An effort was made to locate these in several different suburban communities around the metro area, as well as within the Regional Centre. Several meetings were located close to arterial roads near the edge of the metro area, to give rural commuters an opportunity to participate on their way home from work. Attendees included people with physical or visual disabilities, who provided insight into the logistical challenges which they

often face. Staff also reviewed information obtained from a recent town hall meeting hosted by the Accessibility Advisory Committee.

In addition, staff provided several “Pop Up” Events at meetings hosted by local groups, as an opportunity to hear the concerns of some residents who might otherwise have been under represented. Examples include North Dartmouth and the rural community of Sheet Harbour. Meetings were also arranged with interest groups, including the Ecology Action Centre’s Sustainable Transportation Action Team, CarShare Atlantic, Building Owners & Managers Association (BOMA) Nova Scotia’s Green Interconnected Rapid Transit for Greater Halifax (GIRT), and the local Business Improvement Districts (BIDs), including the Downtown Halifax Business Association.

In-person events were supplemented by three questionnaires which were available online. These generated over 2,000 responses. In addition, staff received written and oral comments. What we heard documents for the three rounds of public engagement can be found at: <https://www.halifax.ca/about-halifax/regional-community-planning/transportation-planning>. These documents detail the comments that were received, and provides a synopsis of the key messages.

ENVIRONMENTAL IMPLICATIONS

Taken together, the policies and actions recommended in the IMP will help break a circle of vehicle dependency, roadway expansion, land consumption, fossil fuel usage and atmospheric emissions, including greenhouse gas emissions. Sustainability is one of four Pillars underlying the IMP, as explained in the Discussion section of this report.

ALTERNATIVES

Regional Council could direct amendments to the IMP. If this option is selected, a supplementary report may be required depending on the extent of the amendments.

Regional Council could refuse to adopt the IMP. This is not recommended as could result in the Municipality failing to achieve the 2014 Council approved Regional Plan targets.

ATTACHMENTS

Attachment A: Integrated Mobility Plan

A copy of this report can be obtained online at halifax.ca or by contacting the Office of the Municipal Clerk at 902.490.4210.

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DECEMBER 2017

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LAWRENCE

Living well

1 INTRODUCTION

1.1 Improving Mobility Choice

1.1.1 THE EVOLUTION OF MOBILITY IN THE REGION

The ways people move from place to place and throughout the Halifax region have evolved — and will continue to evolve. For centuries, the travel patterns of the region's original inhabitants, the Mi'kmaq, were tied to the seasons and available resources. Early European settlement followed shorelines and watercourses and roads were built to follow these routes. The advent of railways drew people to opportunities in the city. Over time, streetcar lines radiated outwards from the city centre creating rail suburbs, allowing people to live away from the noise and fumes of industry.

More recently, the private vehicle has allowed people to commute long distances from newer suburbs and surrounding rural areas. In response, neighbourhood design evolved to prioritize personal vehicle use – housing was segregated from commercial uses and traffic was funnelled onto arterial roads. Shops and services moved from downtown cores to suburban malls with abundant parking and then further out to large-format supercentres. This segregation meant all trips required a vehicle and not just the trip to work, as was the case with suburbs which had developed around former rail services.

Today, however, there is momentum building for travel options that are sustainable, enjoyable and healthy. Enabling more people to walk, cycle, take transit and use other sustainable modes requires rethinking the design of our transportation system and the design of our communities.

A broader transformation of mobility in the region is evident in the increasing number of people choosing to live in the Regional Centre. The dense network of streets and close distance between destinations, including work and home for many people, make it easy and enjoyable to choose walking, bicycling and transit.

The policies and actions of the IMP reflect the shift in how people want to live and travel today, building on recent work and existing initiatives to rethink and transform our mobility network. The movement of people, rather than vehicles, is at the heart of this plan.



1.1.2 A TARGET FOR IMPROVED MOBILITY

In 2014, the *Regional Plan* set the target that by 2031, at least 30% of trips will be made by walking, bicycling or transit, while no more than 70% will be made by private vehicle.

Unfortunately, mobility in the Halifax region is heading in the opposite direction of this target as vehicle use continues to climb. Between 2006 and 2011, non-auto mode share decreased and, based on the growth of highway-oriented settlement patterns, it is anticipated that this trend has continued.

If the region continues on this path, a very tangible impact will be pressure to develop more and more automobile-oriented infrastructure. The 2014 *Regional Plan* includes a list of future road network projects that would cost an estimated \$750 million to construct.

The IMP explores and recommends more cost-effective mobility options to meet the needs of residents across the region.

2031 REGIONAL PLAN TARGETS

at least **30%**
of trips made by
TRANSIT & ACTIVE TRANSPORTATION



at most **70%**
of trips made by
PRIVATE VEHICLE



RECENT MOBILITY TRENDS

Trips made by
ACTIVE TRANSPORTATION/TRANSIT

25% in 2006  **23%** in 2011

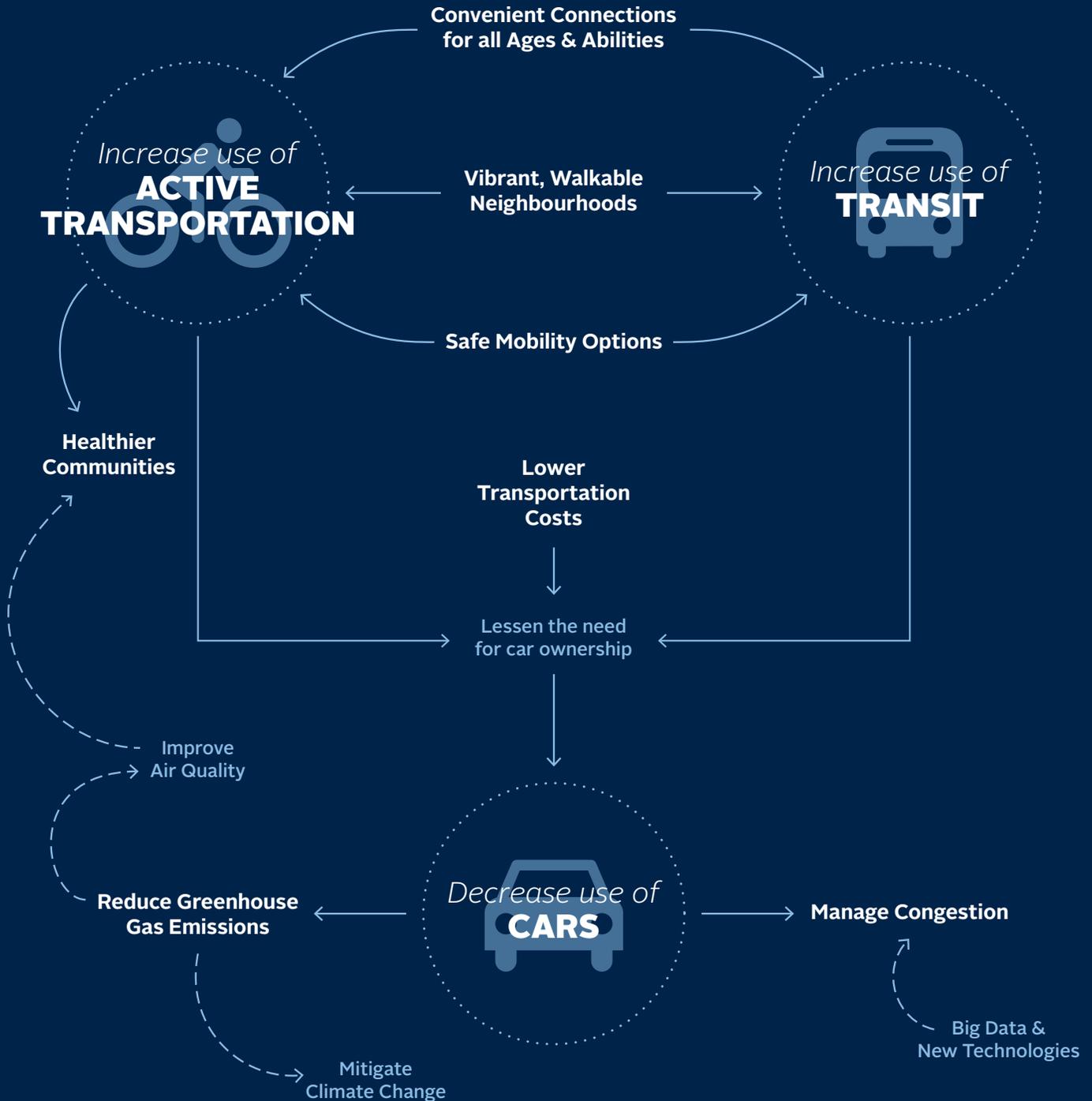
Trips made by
PRIVATE VEHICLE

75% in 2006  **77%** in 2011

SOURCE: STATISTICS CANADA

WHY IS THE IMP IMPORTANT?

Increased active transportation and transit use lead to multiple benefits and the decreased use of cars, as illustrated in the diagram below:



1.1.3 BENEFITS OF IMPROVED MOBILITY CHOICE

The policies and actions of the IMP are intended to move the Halifax region along a more sustainable path and improve quality of life for people of all ages and abilities. To meet the mobility target of the *Regional Plan*, we must provide people with convenient, enjoyable, environmentally sustainable and socially responsible links to people and places.

Managing Congestion

The number of vehicles on the region's roads has increased alongside population growth, making the need to shift from a vehicle-centred culture to other modes of travel increasingly apparent. Local and international experience has shown that building a way out of congestion is self-defeating, because major road expansion encourages more dispersed development, which, in turn, requires more driving. To the frustration of motorists, congestion returns within a few years and the costly cycle repeats itself to the detriment of all taxpayers. Maximizing the efficiency of the existing transportation network through strategic projects while making active transportation and transit more convenient is key.

Improving Air Quality and Greenhouse Gas Emissions

Prioritizing walking, bicycling and transit will reduce air pollution and improve health outcomes resulting in fewer people suffering from cardiovascular and respiratory diseases. In Nova Scotia, transportation accounts for 27% of greenhouse gas (GHG) emissions and is the second largest source of emissions in the province, following electricity generation¹. Accounting for the projected growth distribution targets outlined in the *Regional Plan*, transportation emissions in the Halifax region are projected to increase by 6% over 2011 levels by 2031 unless strategic action is taken.

To improve air quality and lower GHG emissions, the IMP recommends the Halifax region strive towards the growth distribution targets outlined in the *Centre Plan* (these targets are described in Figure 6). By implementing the IMP, the number of vehicles on the road is still projected to increase by 7%. However, the average length of vehicle trips will decrease and trips made by walking, bicycling and transit will increase considerably. The resulting GHG emissions will then be 2% lower than 2011 levels by 2031.

¹ Statistics Canada

Studies have estimated that the risk of premature death from all causes can be **REDUCED BY:**

28%



among people who **BICYCLE** 3 hours per week

22%



among people who **WALK** 29 mins. per day, 7 days per week

SOURCE: GREATER TORONTO AREA MEDICAL OFFICERS OF HEALTH

HALF of Regional Centre residents **WALK, BICYCLE** or use **TRANSIT** to get to work.

SOURCE: 2011 CENSUS

MUNICIPAL GREENHOUSE GAS TARGETS

Reduce emissions by



by 2020

SOURCE: HALIFAX CORPORATE PLAN TO REDUCE GREENHOUSE GAS EMISSIONS 2012-2020

Providing Convenient Connections to Daily Destinations for People of All Ages and Abilities

Access to activities, such as shopping for healthy food, travelling to work or appointments and socializing, is an important component of wellness. Mobility options should provide people of all ages and abilities with the independence to pursue these activities, including those with physical, visual, auditory and mental disabilities. An integrated mobility network, coupled with land-use plans that support the development of compact, complete communities, will allow people to choose how they move. In particular, the IMP recognizes that viable options to walk, ride a bicycle or take transit to reach daily destinations are needed by those who are too young or unable to drive. Improving mobility options will ultimately make the region more equitable.

Creating More Vibrant, Liveable and Walkable Neighbourhoods

People are what make neighbourhoods vibrant and lively. Accordingly, a key direction of the IMP is to design Complete Streets and to recognize that some streets can be destinations as well as transportation links. The IMP also encourages human-scaled neighbourhoods and centres, designed to be interesting and enjoyable to walk or bicycle through. This includes integrating the mobility network with parks and green space to allow people to connect with nature as they travel to destinations. All of this depends on linking land use planning with transportation planning and is why the IMP includes direction for both.

Creating Healthier Communities

Physical activity helps people maintain a healthy weight, reduces the risk of several diseases and improves mental health. Unfortunately, people within almost all age groups in the Halifax region do not get enough physical activity. The IMP aims to reverse this trend and help people live active lifestyles by improving opportunities for walking and bicycling as a part of their daily travel and by ensuring that community design makes healthy choices easy and appealing.

In addition, walking, bicycling and transit are inherently more social than driving alone and can lead to reduced social isolation. Providing suitable options for a range of ages and abilities will improve health equity and general community wellbeing.

CONNECTIVITY, QUALITY & SCENERY
have a positive impact on people's decision to use active transportation



Studies show that walking down a tree-lined street increases **HAPPINESS**

The 2015 Physical Activity Survey found that:



2/3 respondents would like to **WALK** more often



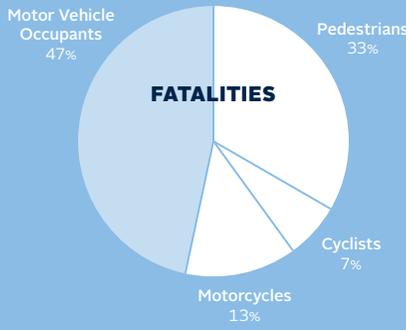
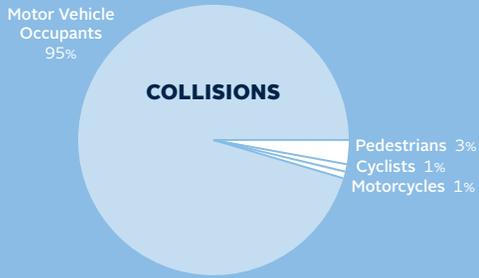
2/5 respondents would like to **BICYCLE** more often

82% of adults
&
92% of youth

in Canada are not getting the recommended levels of daily physical activity

SOURCE: CANADIAN HEALTH MEASURES SURVEY (2017)

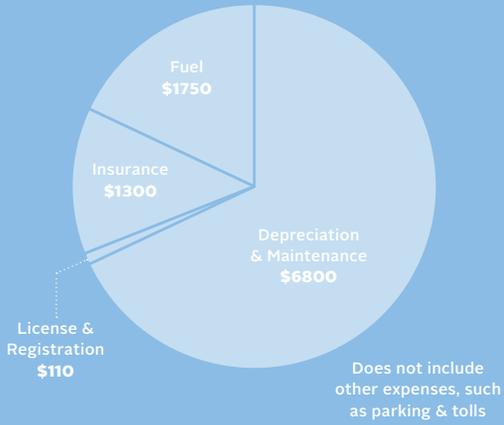
Though the vast majority of people involved in motor vehicle collisions are vehicle occupants, pedestrians and people on bicycles are disproportionately represented in **COLLISION-RELATED FATALITIES**



DATA SOURCE: HALIFAX REGIONAL POLICE (2015)

COST OF ANNUAL TRANSIT PASS: \$936
from Halifax Transit

TYPICAL ANNUAL COST OF DRIVING: \$9960
based on 20,000km driven/year in a mid-size sedan



SOURCE: CAA DRIVING COSTS CALCULATOR

Providing Safer Mobility

People should feel safe and comfortable on our streets, no matter which transportation option they choose. As it stands, people are significantly more likely to be injured while walking or bicycling than driving. While statistics show that collisions are more likely to involve motor vehicles than any other form of transportation, fatalities disproportionately include pedestrians and bicyclists. Designing the mobility network from the perspective of pedestrians and bicyclists can reduce the number of collisions and the severity of injuries on the road. The IMP aims to create a safer network for all users, especially those who are most vulnerable.

Lowering Transportation Costs

Walking, bicycling and transit are less expensive mobility options than driving. By prioritizing these modes and making them a more viable option for many people, the IMP will enable some households to reduce the number of vehicles they own, or even to become vehicle-free. The savings related to fuel, parking, maintenance and insurance are significant.

The IMP also recognizes the link between transportation costs and housing costs. Unfortunately, opportunities for walking, bicycling and transit are generally less available in areas where housing costs tend to be lower, such as in the suburbs and rural areas. The IMP addresses this problem in two ways. First, the plan aims to improve mobility options in suburban and rural areas and, second, it encourages the provision of affordable places to live where there are good mobility connections, such as the Regional Centre.

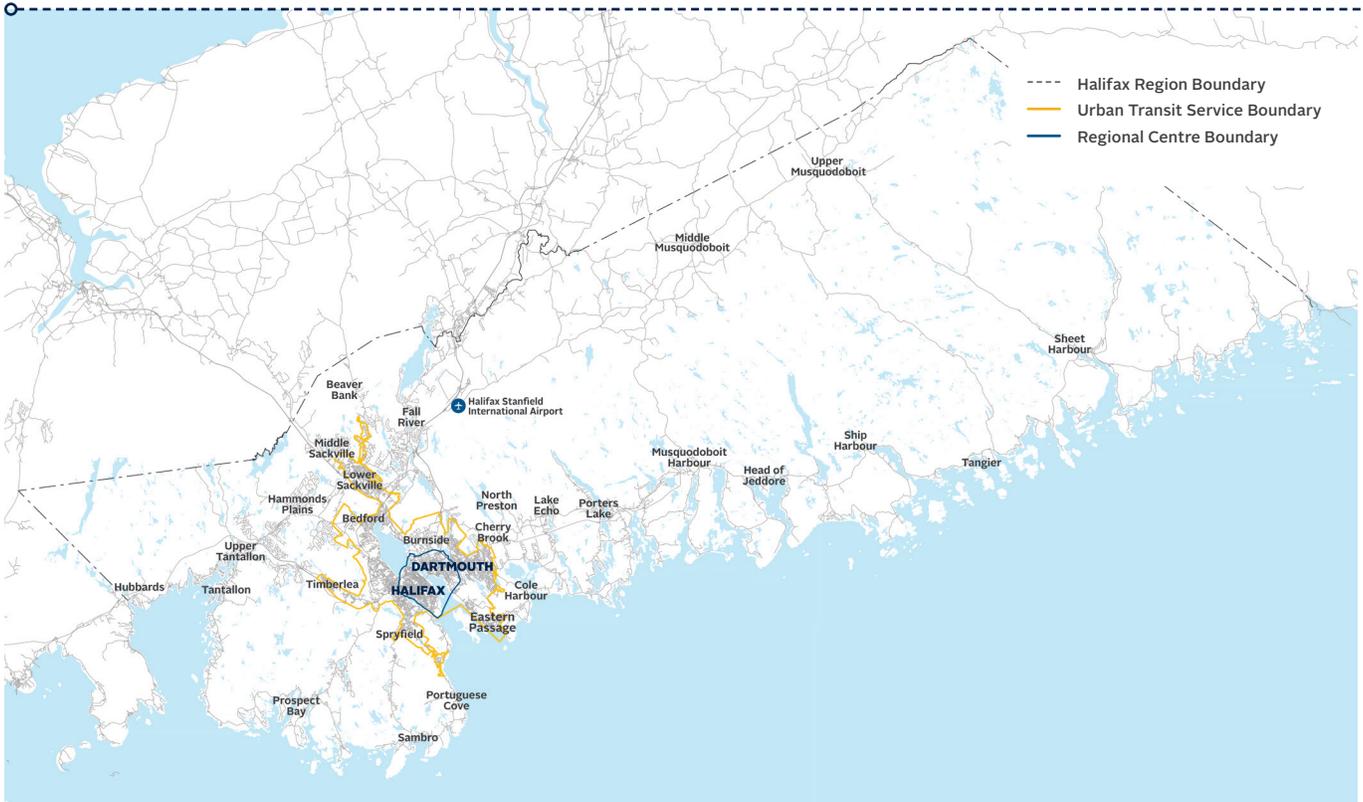


Figure 1: The Halifax Region



Figure 2: Regional Centre & Urban Transit Service Boundary

1.2 Mobility Across the Region

1.2.1 THE HALIFAX REGION

The Halifax region includes the urban core and suburbs of the largest city in Atlantic Canada, as well as a widely dispersed rural commutershed, productive farmland, forested wilderness and remote villages. The Halifax Regional Municipality was created in 1996 through the amalgamation of Halifax, Dartmouth, Bedford and the Municipality of Halifax County. This amalgamation resulted in a unique and diverse region that encompasses urban (The Regional Centre), suburban and rural areas, almost 5,500-square kilometres in size.

The ocean shoreline stretches from Hubbards to Ecum Secum and the coastal setting shapes much of the region's settlement patterns and transportation network. Within the metro area, there are major transportation hubs for passengers and goods, including the Halifax Stanfield Airport, Via Rail/Maritime Bus terminal, passenger ferry and bus terminals, container ports and bulk cargo facilities.

Over 425,900 people call the municipality home. By 2031, the region is expected to welcome between 60,000 and 73,000 new residents. Most population growth is expected to occur within the Regional Centre (urban areas) and the urban service boundary (suburban areas).

In 2016, over 235,000 employees worked in the municipality, equal to half the jobs in Nova Scotia¹. The number of jobs is expected to increase by 42,000 over the next 15 years, with most employment growth focused in the

Regional Centre, as well as near the airport and within the region's business parks.

Commuting

The Halifax region is the largest employment centre in Atlantic Canada. More than 200,000 of the Halifax region residents commute to work daily and only 2% commute to employment outside the region. Over 18,000 people also commute from outside the region to the Halifax region. The influx of vehicles on the road at peak commuting times can cause congestion, particularly entering and leaving the Halifax peninsula. Like most North American cities, many jobs, shops and services have moved from the downtown to outlying business parks, which are challenging and expensive to service by transit.

The Road Network

The Halifax region is nearly the same size as Prince Edward Island and includes a 4,200-km long road network that is expensive to maintain. The province owns and maintains all 100-series highways within the region as well as roads in the former Halifax County constructed prior to the 1996 amalgamation. The province is responsible for the bulk of roads in rural areas, including 90% of roads outside the urban service boundary. The municipality owns all local roads constructed after 1996 and currently owns 41% of roads in the region. To create a seamless transportation system, coordination across jurisdictions is required.

Pedestrian Infrastructure

Prior to the 1996 amalgamation, the four former municipalities used different approaches for where and how to provide sidewalks. While many areas have sidewalks,

¹ Statistics Canada

some important areas do not, including transit routes, major roads and commercial areas. For instance, the Bedford Highway and St. Margarets Bay Road, once considered rural, were never upgraded to include pedestrian or bicycling infrastructure as the areas around them urbanized.

Many business parks were developed without sidewalks, as they were initially built for vehicle-oriented industrial uses. However, many parks now include large retail and office uses, which generate demand for transit and pedestrian connections, particularly between bus stops and workplaces. Dispersed development and high costs can make adding infrastructure challenging.

The Transit System

Until recently, the transit network had not significantly changed since the early 1990s, despite changes to adjacent land uses and travel patterns. The incremental nature of network development has created challenges in building a cohesive system. Some routes are complex and do not integrate well with other routes, deterring potential transit users.

Despite some challenges, significant progress has been made over the years. Notable enhancements include rural express buses, new local and express routes, Metrolink express service, airport service, new terminals, new ferries and improved ferry service, refurbished ferry terminals, a

fully accessible transit fleet with bicycle racks, Transit Priority Measures, automatic stop announcements, air conditioned buses, accessible bus stops and curb-to-curb Access-a-Bus service. Halifax Transit is currently in the process of implementing its recently adopted *Moving Forward Together Plan*, which includes a phased network redesign.

Goods Movement

Halifax Harbour's natural advantages, including its strategic geographic location and its standing as the world's second largest ice-free natural harbour, have made it a key player in global goods movement. The harbour hosts several terminals and facilities that accommodate the movement of goods both locally and inter-regionally via water, road, rail and air. Goods movement plays a vital economic role in Halifax.

There are notable challenges that result from goods movement in the region. Trucks accessing the port of Halifax must travel through downtown Halifax in both directions, adding heavy and noisy vehicles to the streets and worsening traffic congestion in an area that is rapidly densifying and becoming an increasingly attractive place to live and work. As the urban core continues to grow, the heavy truck traffic along downtown streets may become less accepted. Together with the Port Master Plan, the IMP provides an opportunity to rethink the movement of goods through the Regional Centre and throughout the region.

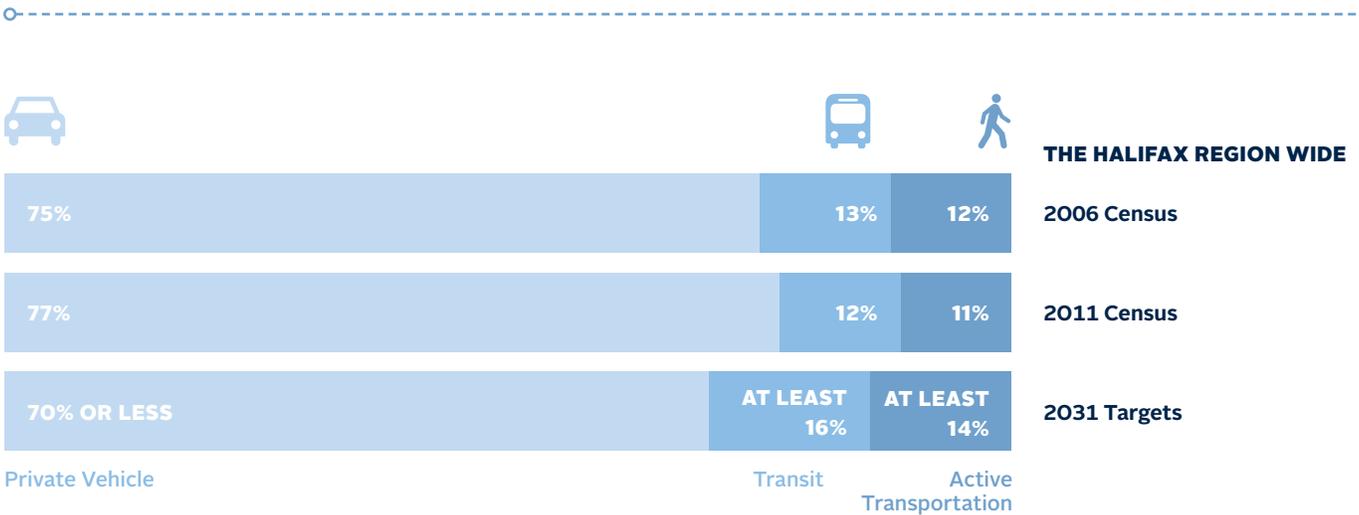


Figure 3: The Halifax Region-wide Journey to Work Mode Share

1.2.2 REGIONAL CENTRE

Mobility within the Regional Centre

The Regional Centre is the region's urban core and includes downtown Halifax and downtown Dartmouth, which lie across the Halifax Harbour from each other and are linked by bridges and ferries. Greater numbers of residents are choosing to live in the Regional Centre because it offers more opportunities to live within walking or bicycling distance to work, shops and transit.

The Regional Centre is the most popular destination for commuters in the municipality, accounting for 37% of all commuting trips. Almost 60% of commuters leave for work between 7:00 and 9:00 a.m., which can cause road congestion.

Port-related activity also generates heavy truck traffic on the Halifax peninsula and the A. Murray MacKay Bridge. Managing congestion and improving the active transportation and transit network are key goals of the IMP for the Regional Centre.

Planning for Improved Mobility within the Regional Centre

The Regional Centre offers the highest potential for walking, bicycling and transit use due to its relatively contiguous and dense mix of housing, shops, schools, employment and services. Closing gaps in the active transportation network, including completing the All Ages & Abilities bicycle network, will make it easier and more enjoyable for people to move actively between destinations. Reducing the impacts of truck traffic in the downtown will complement these efforts.

Another key initiative includes implementing additional Transit Priority Measures to improve the reliability and speed of buses in downtown traffic. Directing more growth to the Regional Centre and ensuring that it includes affordable places to benefit from these improved mobility options.

1.2.3 SUBURBAN AREAS

Mobility within Suburban Areas

For many years, growth in the region has occurred in suburban areas and new greenfield communities, where housing is less expensive and the lifestyle is attractive. Unfortunately, commute times from the suburbs are generally longer and fewer options for transit and active transportation are available. Some formerly rural areas do not yet include pedestrian or bicycling infrastructure. The circuitous streets of suburban neighbourhoods and the expansive parking lots of suburban shopping centres are difficult for pedestrians and bicyclists to navigate and result in long trip times for transit users. Many children also depend on their parents to drive them to school and extracurricular activities and it is common for families to own multiple vehicles.

Planning for Improved Mobility within Suburban Areas

In suburban areas, a key goal is to provide safe and enjoyable active transportation connections to important destinations such as transit stops and terminals, employment districts, shopping, schools, service centres and other community amenities. These links will be provided with a combination of sidewalks, multi-use pathways (i.e. trails or greenways), bicycle lanes and local



street bikeways. Neighbourhoods should be designed with walking, bicycling and transit in mind to provide mobility for people of all ages and abilities.

For residents commuting to the downtown, transit service and Park & Ride locations will be enhanced to provide an attractive alternative to driving. Clustering employment with shops, services and housing in strategically located compact, walkable suburban communities will make it feasible to provide commuters with higher-quality transit service.

1.2.4 RURAL AREAS

Mobility within Rural Areas

The region includes many small communities nestled along the coast, serviced by meandering roads and pathways. Providing transit to these communities is challenging and often not feasible, given relatively modest ridership and long distances. Notable exceptions are rural commuter-oriented growth centres that are served by express commuter buses and Park & Ride lots.

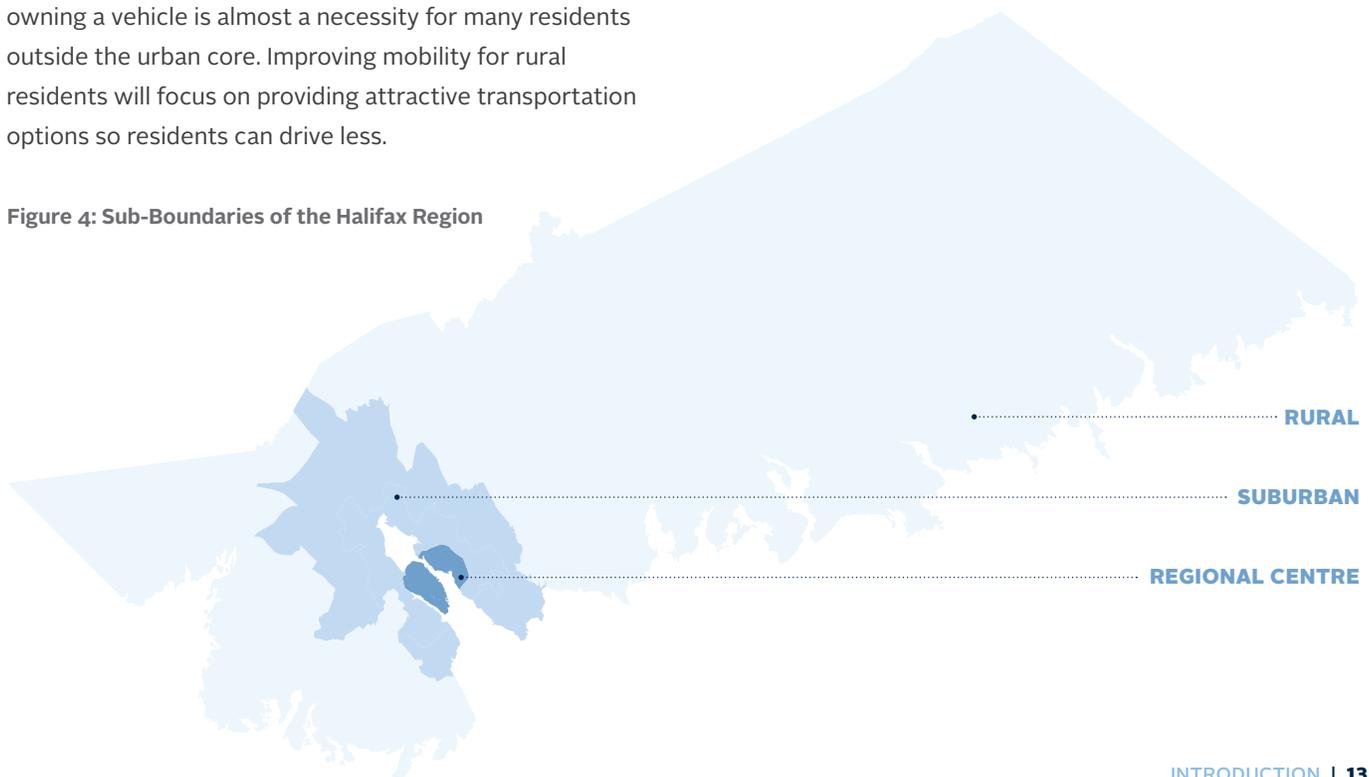
While rural areas may include pleasant recreational trails, opportunities for active transportation to daily destinations are generally limited. In the absence of attractive options, owning a vehicle is almost a necessity for many residents outside the urban core. Improving mobility for rural residents will focus on providing attractive transportation options so residents can drive less.

Planning for Improved Mobility within Rural Areas

Although scheduled transit is not appropriate for most rural communities, clustering development can conserve natural land and improve opportunities for walking and bicycling. Clustered village centres allow businesses to share parking, especially where roads are attractively designed to make walking an enjoyable option. Clustered village centres also offer more opportunity for car and ride-sharing and are easier to serve by dial-a-ride vans.

Overall, the goal is to make strategic active transportation connections, particularly in smaller centres where links can be made to transit, employment districts, shopping, schools, service centres and other community amenities. Most connections will be provided with multi-use pathways and, in some cases, paved shoulders may be added to roads to provide additional space for walking and bicycling. Community-based transit services can be enhanced by expanding the municipality's Rural Transit Funding Program, which, together with provincial dial-a-ride funding, provides resources to not-for-profit community organizations that provide transit service outside the Urban Transit Service Boundary.

Figure 4: Sub-Boundaries of the Halifax Region



1.3 Considerations for Mobility Planning

The Halifax region is not static – it faces evolving trends, challenges and opportunities, which impact the movement of people and goods, today and in the future. Some of these conditions are apparent in municipalities across the country, while others are unique to this region. Understanding and anticipating how growth and change can affect the municipality has provided the context for the recommendations in this plan.

Aging Population

The population of the region is ageing and transportation options and community design must shift to allow all community members to maintain mobility and independence, regardless of age or ability. By 2031, the number of people over the age of 65 will be more than double the number in 2001. Many residents currently live in older suburbs and are approaching retirement. Some retirees will choose to stay in their homes while others will downsize and move to the Regional Centre. Both groups will require better access to transit.

Changing Preferences

While growth in the suburbs will continue, demand is shifting inward towards the Regional Centre. Much of this shift is linked to younger residents who are increasingly forsaking private vehicle ownership and living in urban neighbourhoods. As a result, use of car-sharing, transit and active transportation options is increasing. Considering that a quarter of the municipality's residents are between the ages of 21 and 34, mobility planning must consider and respond to these changing preferences and work to improve the walking, bicycling and transit experience.

Newcomers

The Halifax region is becoming more diverse and is welcoming newcomers from across the province, country and globe. For instance, international immigrants are expected to make up 25% to 35% of the municipality's population growth. Expanding and improving the region's range of mobility options will provide all regional residents with greater choice and more suitable ways to travel between destinations. Integrated planning will link attractive mobility options with the places where newcomers are choosing to live.

Climate Change

Climate change is a major issue for the Halifax region because of its coastal location. A significant amount of transportation infrastructure, including roads and interchanges, is located in areas that are vulnerable to the impacts of extreme weather, sea-level rise, storm surges and accelerated erosion. The impacts of climate change are already becoming locally visible. Travel disruptions due to storms are more frequent and increasing freeze-thaw cycles damage pavement. Repairs and protective measures are costly. The municipality must work towards a more resilient transportation system.

New Technologies

Technology continues to advance and its role in our lives is ever-changing. While the IMP cannot predict the future, it considers recent and imminent technological advances and strives to incorporate them to optimize the way transportation services are delivered. Transportation investments are often expensive and long-term; in response, transportation planning must be forward thinking, adaptable and strategic.

Information Technology

Rapid growth in information technology has changed the way people live, work and travel. People can now shop and work from home and use smartphones to check transit schedules, monitor traffic conditions, get directions and hail, track and pay for rides. Motor vehicles will be increasingly treated as a service instead of a possession, creating a need for more pick-up and drop-off points and fewer long-term parking stalls. Integrated mobility planning must consider the new and emerging ways people plan and make trips.

Big Data

The way governments collect and use data is changing, as more people eliminate landlines and big data is used to track travel patterns. In some municipalities, traffic signals can now monitor and adapt to changing traffic conditions, with up-to-the-minute data communicated to drivers via digital signs and smartphone applications. This technology will enable municipalities to optimize their transportation networks and respond to changing conditions faster and with more accuracy.

Vehicle Technology

Vehicle technology is advancing. Collision avoidance systems, adaptive cruise control and cameras are common. As vehicle technology continues to develop, it could improve traffic flow and increase road capacity, reducing the need to expand roads. Driverless vehicles are in various stages of development and could reach the market in the near term. While there is always a lag before innovations become widely adopted, the municipality needs to ensure the transportation system considers the implications of increasingly sophisticated vehicles and technology.

BIG DATA refers to datasets that are so large they must be analyzed with computers. This analysis can reveal trends and patterns and be used to predict travel behaviour and optimize the transportation system. Big data may be gathered by technology such as smartphones, cameras and wireless sensors.



Approx. **20%** of the Nova Scotia population is currently age **65+**.

Projections suggest that the population age **65+** will exceed **30% BY 2038.**

SOURCE: POPULATION PROJECTIONS FOR PROVINCES AND TERRITORIES (2013 TO 2038), STATISTICS CANADA (2015)

1.4 Related Plans & Policies

The IMP considers, builds on and connects several existing plans and initiatives at both the provincial and municipal level. Carrying out the policies and actions of the IMP will enable the municipality to work towards realizing the many objectives and directions housed in the plans listed below, as they work together to direct mobility and land-use planning throughout the region.



A **statutory plan** is a legal document primarily intended to support zoning and land use controls. It may also include statements about transportation, and enable lands to be designated for future transportation facilities. Zoning and land use controls must be compatible with the statutory plan.

A **priorities plan** is non-statutory, meaning that its implementation is not legally required. Priorities plans include policy directions that provide strategic guidance and can influence and shape future statutory plans.

Figure 5: Related Plans & Policies

MUNICIPAL PLANS

Regional Plan | 2014

The *Regional Plan* directs where, when and how growth and development should take place across the region until 2031. Through policies and actions, the IMP will help realize the following four objectives from the *Regional Plan's* Transportation and Mobility Chapter.

- » Implement a sustainable transportation strategy by providing a choice of integrated and connected travel modes emphasizing public and community-based transit, active transportation, carpooling and other viable alternatives to the single-occupant vehicle.
- » Promote land settlement patterns and urban design approaches that support fiscally and environmentally sustainable transportation modes.
- » Forecast the Halifax region's need for mobility and provide service and infrastructure to meet this demand while influencing choices towards transportation sustainability.
- » Design Complete Streets for all ages, abilities and modes of travel.

PRIORITIES PLANS:

Moving Forward Together Plan | 2016

This plan directs improvements to transit service to better meet the needs of residents today and into the future. It prioritizes service to areas with high ridership or high ridership potential and reduces inefficient, low ridership services. It describes a future network that is easier to understand and navigate for current and potential transit users.

Making Connections Active Transportation Priorities Plan | 2014

This plan includes policies and strategies to encourage walking and bicycling and create safe and comfortable connections from where people live to where they work, shop, study, access services and catch transit.

Transportation Demand Management Functional Plan | 2010

This plan aims to lower the number of trips taken driving alone and during peak travel times, to reduce the negative impacts associated with vehicle use. It does so by focusing on increasing the use of sustainable transportation modes, such as ride-sharing and transit, rather than expanding road capacity.

Regional Goods Movement Scoping Study | 2017

This study explores how goods could be moved into, out of and within the region more effectively. It identifies issues, constraints, opportunities and threats related to moving goods by air, sea, rail and road (even if potential solutions are outside the mandate of the municipality) to inform an economically sound goods movement network with minimal social and environmental impacts.

Regional Parking Strategy Functional Plan | 2008

This 25-year plan guides the design, supply and management of parking in the municipality. It contains strategies and recommendations guiding land-use policy, bylaws and standards, design techniques, funding, improving efficiency and technology changes. In 2013, the Parking Strategy Roadmap focused on three critical areas of delivery from the Parking Strategy: governance, technology and quantification of supply and demand.

OTHER MUNICIPAL PLANS:

Centre Plan (DRAFT) | 2017

The *Centre Plan* (draft) will guide the development, use and form of the Halifax Peninsula and Dartmouth within the Circumferential Highway. This Plan provides direction for sustainable and locally appropriate strategic growth by functioning as a development blueprint for the additional homes, businesses and amenities required to accommodate 40% of the region's residential unit growth. In addition to strategic growth, the *Centre Plan* emphasizes the importance of complete communities, human scale design and putting pedestrians first. Like the IMP the *Centre Plan* will direct growth to areas that support diverse transportation options, integrate land use and transportation decisions and promote a connected grid of streets, sidewalks and bicycle routes.

Halifax Green Network Plan (HGPN) (DRAFT) | 2018

The HGPN (draft) will provide comprehensive direction for planning and managing open spaces to balance conservation, recreation, transportation, growth and development in the region. It applies an understanding of the landscape – its assets and vulnerabilities – to ensure that consideration of environmental values, healthy living and sustainable economic opportunities underpin land use and open-space decisions.

PROVINCIAL PLANS

Choose How You Move: Sustainable Transportation Strategy | 2013

This Strategy envisages collaboration between governments, businesses and communities to develop a transportation system that creates a healthier, more vibrant, connected and equitable province.

Key objectives of this strategy include:

- » Drive less distance.
- » Move more efficiently and use cleaner energy.
- » Provide access to employment and essential services.
- » Engage with our communities to create locally designed, regionally integrated solutions.



1.5 Creating the IMP

The IMP recognizes that substantive and meaningful shifts in mobility require new thinking and bold moves.

The 2006 Regional Plan and Functional Plans

The origins of the IMP can be traced to the 2006 *Regional Plan*, which called for five separate, yet connected, functional transportation plans for the road network, active transportation, transit, Transportation Demand Management and parking. Work associated with those plans contributed to a deeper understanding of the transportation system. Building on that foundation, the municipality has also undertaken studies on fast ferry service, freight movement and commuter rail. The IMP brings these functional plans together and better connects them with land use and community design.

Challenges, Opportunities and Trends

The IMP considers and responds to multiple challenges, opportunities and trends to ensure the plan remains relevant and adaptable. Like many North American cities, an out-migration of jobs and retail from downtown to outlying business parks has resulted in more private vehicles straining the road network. Evolving environmental conditions signal the need for a sustainable approach.

The community has also called for transportation improvements, ranging from fully connected bikeways to more reliable transit. Community groups and individuals have initiated smaller, innovative projects, including rural dial-a-ride services and small-boat ferry services.

Regional Council Direction

Faced with regional transportation challenges, growing community interest in creative, cost-effective ways to reduce vehicle-dependency and a revised *Regional Plan*, Halifax Regional Council identified the need to re-examine transportation policies and priorities. The process to develop the IMP was initiated in 2016 to support the vision and objectives of the 2014 *Regional Plan* that link land use and transportation planning.

Public Engagement

Listening to and learning from people and organizations in the community was key in developing the IMP. Engagement was designed to capture views on the existing mobility system and develop a common vision for a future integrated mobility system. Hundreds of people contributed their insights through online surveys, letters and emails and by participating in workshops and pop-up engagement events. These contributions are summarized in three “What We Heard” reports that are available on the project website at halifax.ca/integratedmobility.

PHASE 1 | SEP-NOV 2016

-  **8 Public Workshops**
-  **1 Online Survey**
-  **5 Pop-up Sessions**

PHASE 2 | NOV-DEC 2016

-  **8 Public Workshops**
-  **1 Online Survey**

PHASE 3 | APR 2017

-  **6 Open Houses**
-  **1 Online Survey**

The IMP is intended to be a living document. Regular review, fresh perspectives and improved data will allow the IMP to respond to changes in preferences, technology innovations and the evolution of the Halifax region.

Transportation Modeling

By 2031, the Halifax region will be home to almost 480,000 people and 280,000 jobs. Future growth will be influenced by trends in population, the strength of the economy, employment opportunities, public infrastructure and planning. The IMP considered two growth scenarios and their effects on regional mobility – the scenario outlined in the *Regional Plan* and the scenario included in the *Centre Plan*. Each scenario assumes the same population and household growth, but they differ in how growth is distributed between the Regional Centre, suburban areas and rural areas. The *Centre Plan* allocates more growth to compact, walkable neighbourhoods than the *Regional Plan*.

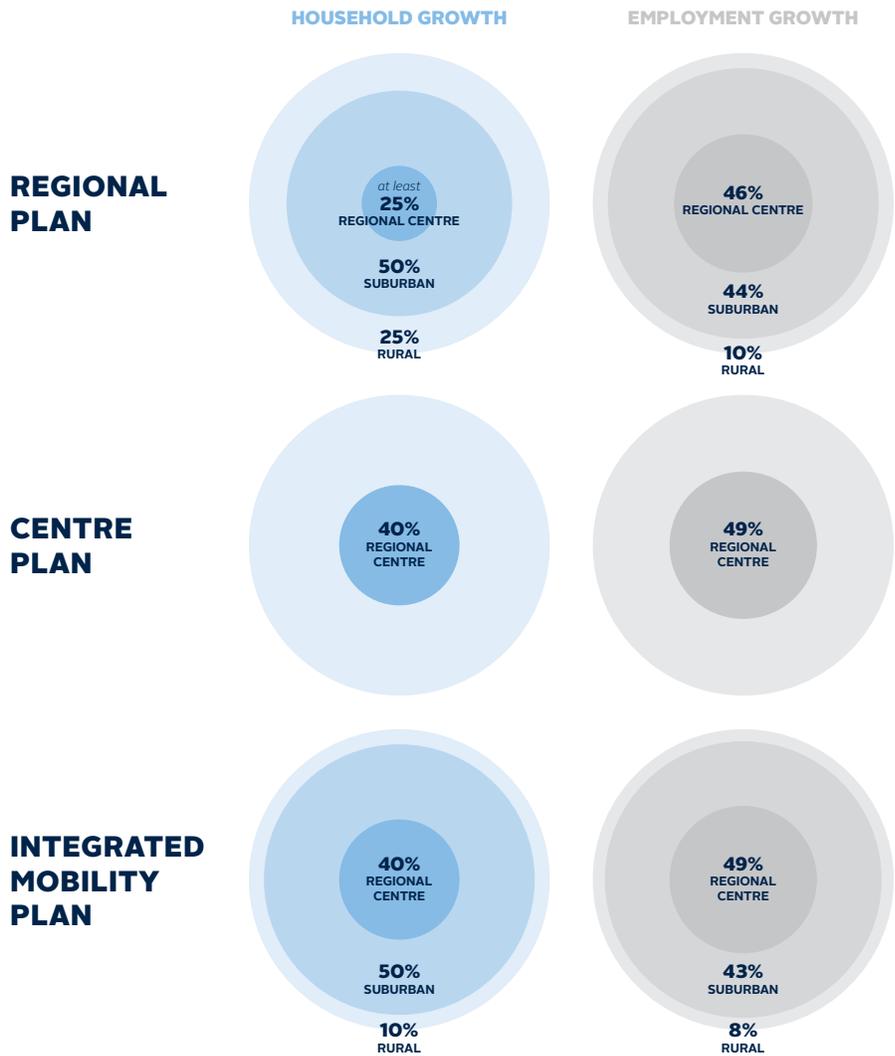


Figure 6: *Regional Plan & Centre Plan Growth Models* ¹

¹ From 2011-2031, the scenarios assume the population will grow by 73,000 people and households will increase by 39,160. The scenarios assume that total employment growth in the region will increase by 42,000 jobs. This projection is based on household growth, recent commercial building permit activity and the location preferences of each employment sector. The IMP has assumed that the Centre Plan 40% settlement target in the Regional Centre will be achieved and that remaining growth will be allocated to the suburban (50%) and rural areas (10%).

1.6 Using the IMP

The IMP will be used in multiple ways by multiple groups to improve mobility in the Halifax region.

Facilitating Discussions about Regional Mobility

The language and visuals of the IMP provide a framework to foster ongoing discussions about mobility in the region. It is a common reference point for discussions among and between municipal staff, Councilors, organizations, developers and community members. These conversations are a key part of ensuring that the IMP supports greater mobility across the region, for people of all backgrounds and abilities. The plan can also be a tool for education and to promote new ways of thinking about mobility.

Guiding Decision Making

The IMP provides policies and tools to enable the municipality, transportation authorities, developers, organizations and community members to build an integrated mobility system that promotes sustainable growth across the region. The pillars, principles and vision of the IMP were translated into its policies, actions and evaluation framework to consistently direct the decisions and priorities of Council and municipal staff. The IMP also informs how other orders of government, developers and organizations can support efforts to improve mobility in the Halifax region.

Creating an Action Plan

The IMP includes targeted actions to shift more trips in the region to active transportation and transit and ensure that all community members have healthy, safe, convenient and affordable ways to move. These actions will translate the IMP into concrete changes that improve mobility for people across the region. Actions target the phasing and

implementation of infrastructure projects and community design initiatives, as well as the development of future studies, policies and plans.

Monitoring Progress

The policies and actions of the IMP are intended to shift mobility in the Halifax region. To ensure that changes are on the right trajectory, key indicators of change will be measured and reported back regularly to the community. Establishing baseline mobility information will provide a benchmark to measure success toward achieving the objectives of the IMP. This process will allow the municipality to respond to evolving conditions, adjust the strategies of the plan if needed and add new ideas.

The IMP is structured into the following key sections:

SECTION 2: FOUNDATIONAL STRATEGIES provide objectives, policies and actions for integrated planning, land use, Complete Streets and Transportation Demand Management.

SECTION 3: MODE-SPECIFIC STRATEGIES provide objectives, policies and actions for active transportation, transit, goods movement, the road network and parking.

SECTION 4: MONITORING AND EVALUATION describes how projects will be evaluated and how the progress of the IMP will be monitored by municipal staff and Council.

SECTION 5: IMPLEMENTATION includes an Action Plan to translate the IMP into practice and describes how the plan will be implemented.

1.7 Vision & Guiding Principles

1.7.1 VISION

The IMP will inform municipal mobility and land-use planning and decision-making until 2031. Its reach extends beyond defining and guiding a transportation system, to recognize the many ways that land use and mobility shape communities and the lives of people in the Halifax region. The vision captures this role and defines a future that will be achieved through integrated, forward-thinking efforts. The IMP Vision is presented on the next page.



THE INTEGRATED MOBILITY PLAN VISION:

Residents will have a choice of connected, healthy, affordable, sustainable travel options for moving both people and goods, through integrated transportation and land-use planning.



1.7.2 PRINCIPLES

The IMP vision is supported by four principles. They function as a check to ensure that the policies and actions within the IMP, taken as a whole, are both comprehensive and consistent and work towards achieving the vision. Each principle addresses a different facet of mobility planning – community form, movement, prioritization and planning.

COMPLETE COMMUNITIES

Ensure complete communities provide integrated mobility choices.

Complete communities support a variety of lifestyles, enabling people of all ages, abilities and backgrounds to live, work, shop, learn and play in close proximity to one another, with multiple mobility options. Concentrating employment, shops, services, amenities and residential density allows people to walk, bicycle and take transit more easily to more destinations. When higher density communities incorporate pedestrian-oriented design, create inviting public spaces and sensitively transition to the surrounding established neighbourhoods, walking and bicycling become more comfortable and enjoyable.

Where complete communities are oriented around transit routes or terminals, they become transit oriented development. Fewer people need to own vehicles because they are within easy access of high-quality transit. When more people use transit, the municipality can spend less on parking facilities and road expansions and public health and sustainability are improved. Thoughtfully clustering development in strategic locations will support efficient use of infrastructure, reduce land consumption and foster vibrant, community-oriented neighbourhoods.



MOVE PEOPLE

Focus on moving people and goods instead of vehicles.

While vehicles will remain important, their purpose is to move people and goods. By focusing on the number of people using a transportation corridor, rather than the number of vehicles, transportation planners can better recognize more efficient, affordable and environmentally responsible mobility options, such as walking, bicycling, using scooters and wheelchairs and taking transit. Focusing on individual experiences across modes requires a Complete Streets approach, where streets and networks are designed for walking, bicycling, taking transit and driving.

Additionally, planning for goods movement should focus on the type and volume of goods, rather than the number of trucks, to encourage multi-modal options and creative solutions to improve goods movement throughout the region. Potential goods movement solutions can range from bicycle couriers to rail and marine freight.

This lens also allows all modes of travel to be compared with each other and most notably with private vehicles. This helps the municipality set priorities and allocate budgets.





MANAGE CONGESTION

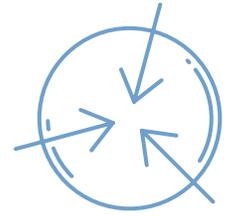
Manage congestion instead of attempting to eliminate it.

In the past, transportation planning primarily focused on expanding road capacity in response to congestion – this has led to an increased reliance on personal vehicles. Expanding road capacity typically relieves congestion for a short period, but this new capacity attracts more vehicle traffic, which then leads to calls for further road expansions.¹ With each expansion, construction and maintenance costs escalate.

Managing congestion, instead of eliminating it, is a better alternative. It incorporates multiple tactics to improve congestion by encouraging people to choose other travel options or to travel at different times of day. Attractive alternatives to peak-hour private vehicle travel are needed, such as flexible work options (e.g. different start times, telecommuting etc.), Transit Priority Measures (e.g. signal priority, bus lanes etc.) and pedestrian and bicycling networks.

The impact of goods movement on congestion can also be managed by designating goods routes, regulating loading hours and encouraging alternatives to trucking. Expanding road capacity will still play a role in congestion management, most notably when it increases the proportion of trips made by alternatives to private vehicles or where improved capacity can move goods efficiently and sustainably.

¹ See Litman, Todd, *Generated Traffic and Induced Travel – Implications for Transport Planning* (Victoria Transport Policy Institute, 8 July 2004)



INTEGRATE SOLUTIONS

Integrate solutions to provide more options for sustainable, enjoyable and healthy mobility for residents across the region.

There is no single solution to solve mobility problems. Taken together, several solutions can reinforce each other – for example, a complete community built around a transit terminal (a transit oriented development) with connections to walking and bicycling trails improves the viability of all three modes. Conversely, some solutions can undermine the effectiveness of others – for example, expanding road capacity for private vehicles can erode transit ridership by encouraging more people to drive.

The overall transportation network and all the individual mode-specific networks that comprise it must be considered together with their impacts on each other. For this reason, the IMP proposes solutions for integrated mobility that must be evaluated and implemented as a suite, rather than one-off improvements chosen for short-term benefit.

1.8 An Integrated Approach

1.8.1 THE INTENT OF THE IMP

Increasing the number of trips made by active transportation and transit from 20% to 30% requires an integrated approach to mobility planning that considers both the regional perspective and an individual's experience. To improve the regional mobility system, the IMP must consider not only streets, sidewalks and pathways, but, more broadly, the region's communities and the people in them.

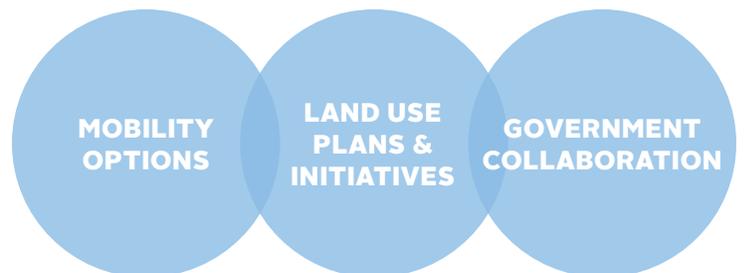
The IMP embodies this approach by providing direction to create convenient, enjoyable and environmentally and socially responsible connections between people, goods and opportunities throughout the region.

This requires integrating:

- » **Mobility options:** Many trips involve two or more modes (driving, bicycling, taking transit and walking, among others). Seamless and barrier-free connections and convenient transfers are needed to minimize delays and improve the travel experience.
- » **Land use plans, policies and initiatives:** Mobility systems shape communities. An integrated mobility approach that considers land use will strengthen the region's growth centres, neighbourhoods and open spaces.
- » **Municipal departments and other orders of government:** The actions across municipal departments and orders of government influence how people and goods move throughout the region. Working together is the best way to create a coordinated and integrated mobility system.



THE IMP CONNECTS:



INTEGRATED PERSPECTIVES

The IMP approaches mobility planning from the perspective of both regional functionality and individual experience. Everyone's journey is unique and it is important to recognize how these differences affect our daily decisions about how we move and where we live, work or study.

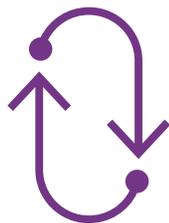
The IMP contains strategic direction to facilitate integrated planning, improve accessibility, guide land-use decisions and inform Complete Street design to improve the links between people and their communities. Together, these directions will help make it easier for people to choose sustainable transportation options over private vehicles.

The IMP also directs investment in and provides guidance for active transportation, transit, Transportation Demand Management, goods movement, the road network and parking. The IMP is a powerful tool for shaping communities, as it recognizes that forming all development decisions around the personal vehicle is costly, harms public health and consumes large amounts of land. The IMP approach improves mobility choice, connects communities through a sustainable and affordable system and supports healthy lifestyles.



1.8.2 THE PILLARS OF INTEGRATED MOBILITY

As set forth in the IMP vision, the IMP represents an opportunity to create connected, healthy, affordable and sustainable travel options for residents throughout the Halifax region. An integrated approach requires that all four pillars work in parallel with one another.



CONNECTED

Connects people, places, goods and services

A **CONNECTED** mobility system links people and communities with important goods, services and opportunities. An integrated network supports straightforward, flexible, barrier-free and pleasant journeys between destinations and across the Regional Centre, suburban and rural areas of the region.

Many people face complex trips that often involve juggling multiple activities such as work, school, errands, childcare, shopping and social activities. Some trips may require a private vehicle, while others could involve a quick transit trip or a leisurely walk. Improving active transportation and transit connections between destinations provides people with options; when people have more choices, they may decide to walk, bicycle or take transit more often.

Physical infrastructure (e.g. sidewalks, bicycle lanes) improves connectivity. Coordinating transit schedules or providing online trip-planning tools can also improve connectivity. Connections are also about places. For example, active transportation and transit are more convenient in compact communities with housing clustered around shops, services and jobs. Integrated mobility planning needs to consider and facilitate connections for people of all ages and abilities, whether they own a private vehicle or not.



HEALTHY

Safe, comfortable and convenient for all ages and abilities

A **HEALTHY** transportation system supports comfortable, convenient and safe opportunities for active living. Access to a variety of travel options enables residents of all ages and abilities to participate in community life, including those with physical, visual, auditory or mental impairments.

The design of the region's communities and mobility systems can enable more people to choose active forms of transportation. This can allow people to incorporate physical activity into their daily lives, increase opportunities for public interaction and reduce social isolation. People are more likely to choose active transportation when it is convenient and enjoyable.

People should feel safe and comfortable when walking, bicycling, taking transit or driving. This means providing amenities and facilities such as well-lit areas to sit and rest, properly maintained trails with clear signs, barrier-free pathways and transportation infrastructure designed to reduce collisions and the severity of injuries.



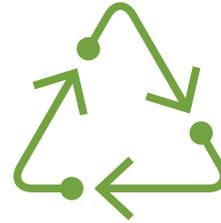
AFFORDABLE

Investment is strategic and travel is affordable

An **AFFORDABLE** transportation system offers value for money for citizens of the Halifax region, both in terms of household transportation costs and municipal investment.

For households, vehicle loan payments, insurance, fuel and vehicle maintenance create significant vehicle ownership costs. As alternatives to the personal vehicle become more accessible, comfortable and convenient, residents may choose to reduce the number of vehicles they own or the amount they drive and, as a result, lower their household transportation expenses. Improved mobility options also provide greater freedom and choice for residents who cannot afford or choose not to own a personal vehicle.

In terms of municipal investment, transportation networks—whether for private vehicles, transit, freight or active transportation—are expensive to build, operate and maintain. Spending must demonstrate value while keeping capital and operating costs down. The municipality must also consider the influence of transportation investment on future settlement patterns and development. An integrated mobility system needs to allocate funding to the locations, services and people that require it most and prioritize investments that lead to compact, mixed-use communities that facilitate walking, bicycling and taking transit.



SUSTAINABLE

Environmentally, socially and economically responsible

A **SUSTAINABLE** transportation system protects air, land and water resources, meets the needs of all people and uses financial resources wisely.

Sustainable mobility is environmentally responsible. Our current transportation system produces waste, greenhouse gases and air pollution. Roads and parking also consume more land than sustainable transportation infrastructure, which can result in habitat fragmentation and stormwater drainage issues. Enabling more residents to walk, bicycle and take transit can lower emissions, reduce the demand for dispersed development and protect sensitive environments.

Sustainable mobility is socially responsible. Every resident in the region needs to move, yet the existing transportation system makes mobility easier for some and more difficult for others. It is important to consider the needs of all community members, including children, seniors, low-income residents, those who prefer not to drive and people with mobility challenges.

Sustainable mobility is financially responsible. It considers how transportation investment affects land use and how, in turn, land use affects municipal investment. Transportation investments should catalyze cost-effective development by improving service levels in high-growth areas, while managing congestion and the need for road investments.

1.8.3 INTEGRATING THE PILLARS AND PRINCIPLES

Through integrated, forward-thinking efforts, the IMP recognizes the many ways that mobility shapes communities and the lives of people in the Halifax Region. The following chart illustrates how the pillars and guiding principles work together to inform thoughtful, thorough and holistic mobility and land-use planning.





2 FOUNDATIONAL POLICIES

The foundational policies in this section set the stage for the overarching themes of the Integrated Mobility Plan (IMP) and create a foundation for the mode-specific policies.

FOUNDATIONAL POLICIES

- » Integrated Planning
- » Land Use & Transportation
- » Complete Streets
- » Transportation Demand Management

When taken together, carrying out the actions and consistently applying the policies will transform the way people move in the Halifax region and help shape our communities for a sustainable future.



The people portrayed on the following pages are entirely fictional – however, some of these stories are based on the insights shared through the project's engagement process. It is essential to think about the needs of all people, situations and experiences to create integrated mobility options that work for everyone.

2.1 Integrated Planning

2.1.1 OBJECTIVE

Provide direction to guide key overarching aspects of the transportation system including accessibility, safety, partnerships, project evaluation and data collection.

2.1.2 KEY CONSIDERATIONS

ACCESSIBILITY

Providing a level of accessibility to all users, despite physical /cognitive disabilities or limitations, is an important consideration for mobility in the region. Many residents are affected by accessibility concerns and with an ageing population, the amount of people with mobility limitations will increase. Accessibility is a key factor in applying the “connected” and “healthy” pillars of the IMP.

Accessibility in the Halifax Region

Creating an accessible urban environment helps create barrier-free and safe journeys for everyone. The municipality can improve accessibility through multiple measures, such as:

- » **Pedestrian Clear Zones** that allow people to travel free of temporary or permanent barriers on sidewalks (this is a part of regular municipal practice).

- » **Tactile Walking Surface Indicators** provide wayfinding cues on sidewalks for people with visual impairments (these are currently being piloted).
- » **Curb Ramps** provide barrier-free street crossings that help to orient people with visual impairments (this is a part of regular municipal practice).
- » **Accessible Pedestrian Signals** provide audible cues for people with visual impairments. They are installed regularly as part of the Halifax region's annual traffic signal upgrade program, as well as in locations where their need is identified.
- » **New Construction Mitigation Guidelines** require pedestrian management, including considerations for people with visual and mobility impairments, to provide safe and clear passage around construction sites.
- » **Repairing and Maintaining sidewalks** in a timely manner to keep them serviceable during inclement weather and in response to regular wear and tear. This is a part of regular municipal practice.

Provincial Legislation

Recognizing the importance of accessibility in creating an equitable environment for all Nova Scotians, the provincial government has strengthened accessibility requirements. The Act Representing Accessibility in Nova Scotia (Bill 59) was given Royal Assent on April 28, 2017. The goal of this Act is to improve accessibility by preventing and removing barriers faced by people with disabilities.

A provincial standard will be created and the municipality will be required to develop an accessibility plan. This Act impacts the built environment, transit, transportation infrastructure and the delivery of goods and services.

SAFETY

Safety is always at the forefront of mobility planning. Injuries and fatalities resulting from transportation are avoidable, yet continue to occur. Transportation safety is influenced by many factors, including physical characteristics (e.g. road design and infrastructure) and human factors (e.g. how people perceive and react to circumstances).

The Vision Zero concept and campaign was first developed in the late 1990s in Sweden. It was developed to eliminate fatalities and serious injury resulting from transportation collisions. (This campaign was based on four pillars: ethics, responsibility, a philosophy of safety and creating mechanisms for change.)

Vision Zero (sometimes referred to as a Towards Zero approach) is becoming a global movement that has been adopted by many jurisdictions, in Canada and internationally. The objective of a Vision Zero strategy is to use an evidence-based and multi-disciplinary approach to make transportation systems safer for all users. Using the five Es of road safety — Engineering, Education, Enforcement, Evaluation and Engagement — the strategy will help work towards a Vision Zero goal.



Figure 7: Towards Zero Road Safety

Locally, the municipality is currently developing its Strategic Road Safety Plan (HSRSP), which will provide direction for road safety projects and programs in the municipality. The HSRSP will define the targets, policies and actions to guide the municipality and its road safety partners in creating safer roads. The municipality endeavours to take on a “Towards Zero” approach that aims to significantly reduce the number of road fatalities and injuries of all road users (pedestrians, bicyclists, transit riders and motorists). The recommended safety measures will also provide guidance to better inform the public, improve road safety knowledge and improve the quality of life.

At the national level in Canada, notable transportation safety campaigns include the following:

- » **Canada's Road Safety Strategy 2025:** Based on a long-term vision to make Canada's roads the safest in the world, it incorporates elements of the “Toward Zero” approach to strive to eliminate serious injury and fatal collisions in Canada by encouraging all orders of government and other non-governmental stakeholders to collaborate and unite efforts.
- » **Operation Lifesaver Canada:** A nationally-led effort to improve rail safety through the reduction of collisions between trains and motorists/pedestrians. It promotes rail safety related education, engineering and enforcement through engagement with the rail industry, government, police, schools and various other stakeholders.

PARTNERSHIPS

Partnerships play a key role in municipal affairs, providing opportunities to collaborate on projects and initiatives by sharing common goals and resources. The municipality has multiple partners, including other orders of government, industry, non-governmental organizations and volunteer groups.

The implementation of the major initiatives outlined in the IMP will require continued cooperation with and support from the provincial government, the federal government and other institutions. A notable example is commuter rail, which will also require collaboration with Canadian National (CN) Rail. Partnerships are also valuable for other initiatives and can improve the success of pilot projects, educational initiatives and data gathering, among others, to help the municipality work towards its mode-share targets.

Examples of partnerships include:

» **Other Orders of Government:** The municipality often partners with the provincial and federal governments to implement projects. Federal infrastructure funding programs are available that help to fund municipal projects. The province has an extensive network of transportation infrastructure within the region, notably the 100-series highway network. Partnering with the province on road projects, transit infrastructure and the siting of strategic facilities, such as schools, can provide opportunities for cost-share improvements with mutually beneficial outcomes.

» **Owners / Administrators of Infrastructure:**

Collaboration with other infrastructure owners is essential in delivering transportation projects and mobility initiatives. Examples include:

- » Halifax Harbour Bridges (HHB).
- » Halifax Port Authority.
- » CN Rail/ Via Rail.
- » Utility Providers (e.g. Halifax Water, Nova Scotia Power, Heritage Gas and telecommunications companies).
- » Halifax International Airport Authority (HIAA).

» **Institutional Sector:** Halifax has a large institutional sector that includes several hospitals, universities, colleges and schools. These institutions are major employers and serve many students and patients and as a result they represent a significant portion of the traveling public. Partnerships with institutions, both within and outside the municipality, play an important role in safely and efficiently accommodating regional mobility needs. They can be ideal partners in programs focusing on sustainable transportation given their wide reach. They can also form mutually beneficial relationships with the municipality for the purposes of activities such as research and monitoring, as is the case with Dalhousie University's Transportation Research Collaboratory (DalTrac).

» **Non-Governmental Organizations (NGOs):** There are several NGOs that have an interest in regional transportation. Examples include the Greater Halifax Partnership and the Ecology Action Centre.

» **Community and Advocacy Groups:** There are many passionate community members that volunteer for advocacy groups that play a role in shaping transportation in the region. These groups are valuable assets that can help spread awareness and develop and maintain infrastructure and programs. Groups, such as the Halifax Regional Trails Association (HRTA) are fundamental to the success of the regional trails program. Advocacy groups such as the Halifax Cycling Coalition, Walk & Roll Halifax and "It's More than Buses" raise awareness of active transportation and transit initiatives within the region.

Establishing partnerships and ongoing collaboration will enable the municipality to continue to expand educational programs, promote mobility, monitor the success of initiatives and more.

TRANSPORTATION DATA

Data is fundamental to transportation planning, monitoring and evaluation. The ability to make evidence-based decisions is directly influenced by the quality and quantity of available data. The following categories are important in informing these evidence-based decisions:

Socioeconomic Data

Socioeconomic data describes a wide range of population characteristics. From a transportation planning perspective, socio-economic data can help planners understand where people live and work and associate that information with other factors such as household size, income and mode choice.

The municipality relies on data collected by Statistics Canada as part of the Census and the National Household Survey for socio-economic information. Many municipalities supplement Statistics Canada data with locally administered household travel surveys, which provide more detailed transportation data related to citizens' travel habits. In partnership with Dalhousie University's DalTrac program, the municipality is coordinating a "Household Travel Survey" that will significantly improve transportation modeling.

Traffic Data

Data that quantifies traffic demand in specific locations enables the municipality to better understand trends over time. This data is then used to determine where and how infrastructure expansion or reduction may be appropriate.

Traffic data is regularly collected by the municipality's Traffic Management section at specific intersections and streets throughout the region. Halifax Harbour Bridges also conducts 24-hour counts for all crossings on the two bridges, which provides an excellent understanding of cross-harbour traffic trends; however, the bridge counts are the lone source of permanent traffic data in the region. In the past, the municipality has collected vehicle occupancy counts at several key locations throughout the region; however, they are difficult to obtain on a regular basis as they are resource intensive.

Meaningful transportation monitoring requires more comprehensive data. The region would benefit from the installation of traffic counters that can collect more detailed information over longer periods of time. This technology is available; however, there may be a high cost to purchase, install and operate these systems.

Transit Data

Halifax Transit collects a vast amount of data related to its service. Running times and ridership counts for bus and ferry routes are tracked on an ongoing basis to enable monitoring of service performance and use. Transit data represent one of the richest sources of data describing the movement of people in the municipality.



MEET MARIA: *I've been partially sighted for my entire life. I rely on clear, straight paths of travel, consistent road markings and safe crossings to get around independently. I have learned to avoid some areas entirely, because the obstructions on the sidewalk are just too difficult to navigate otherwise.*

HOW WILL MARIA BENEFIT FROM THE IMP? SEE **POLICY 2.3.5-B**

Big Data

Jurisdictions around the world are increasingly using “big data” to assist transportation planning. In this context, “big data” refers to massive datasets that reflect human behaviour, used to observe travel trends. Tracking electronic devices such as cell phones can collect large amounts of travel information describing people’s whereabouts over the course of a day. This type of dataset, which can be extremely valuable for transportation planning, is difficult to collect locally and could never be collected to the extent that big data can collect it.

An important component of IMP implementation will be monitoring its progress. A more robust approach to data collection is required to facilitate this monitoring. In addition to the use of big data, there is an opportunity to coordinate and use transportation information that is already collected by many municipal business units and other organizations to inform a robust monitoring approach.

MODE SHARE TARGETS

As introduced in **Section 1.1.2 A Target for Improved Mobility**, mode share is one of the most important indicators for transportation planning and has been used to evaluate progress and set targets in the Halifax region since amalgamation. The region’s mode-share percentages are based on “home-based work” trips, which represent commuting trips from home to place of employment. Statistics Canada tracks mode-share percentages in its “Journey to Work” dataset, which is normally released as part of the National Census every five years.¹ Mode share is a key indicator for the IMP and will be measured both for the region as a whole and for sub-regions within.



¹ For 2011 this data was not included in the Census but instead drew from the voluntary National Household Survey, raising issues of comparability. Future Census counts will include this data.

Developing Mode Share Targets

The observed, targeted and projected mode share scenarios for the Halifax region are illustrated on the following page and based on the mode share boundaries shown on the map below. Each chart illustrates the following scenarios:

2006 & 2011 Census: Actual mode share percentages as reported in the 2006 editions of the Statistics Canada National Household Survey.

2031 Targets (2014 Regional Plan): Mode share targets that were included in the 2014 Regional Plan. These are the official planning targets to achieve by 2031.

2031 Projected: (Business as usual): The projected mode share generated by the municipality's regional transportation model based on settlement patterns in the 2014 Regional Plan (not including Centre Plan) without any expansion to road infrastructure or transit service. The 2031 projections have been summarized at the Halifax region Region-wide level.

2031 Projected (IMP Improvements): The projected mode share generated by the municipality's regional transportation model based on settlement patterns adjusted to reflect the additional density recommended by the Centre Plan for the Regional Centre, as well as all the improvements included in the Moving Forward Together Plan and the IMP. The 2031 projections have been summarized at the Halifax region-wide level.



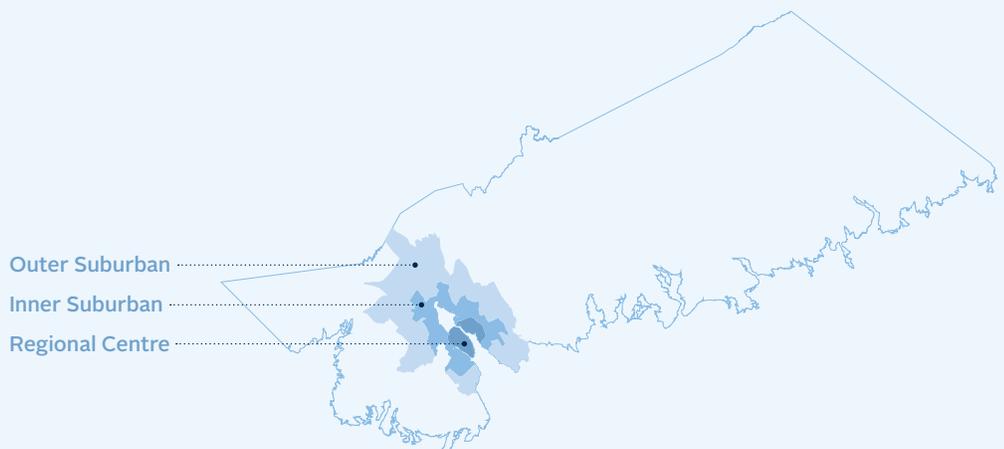
Figure 8: Mode Share – Current, Targets and Projected

HALIFAX REGION-WIDE

Census data from 2006 and 2011 indicate that the Halifax region is not heading in the right direction in terms of mode share targets. Non-private auto mode share fell and remains well short of planning targets.

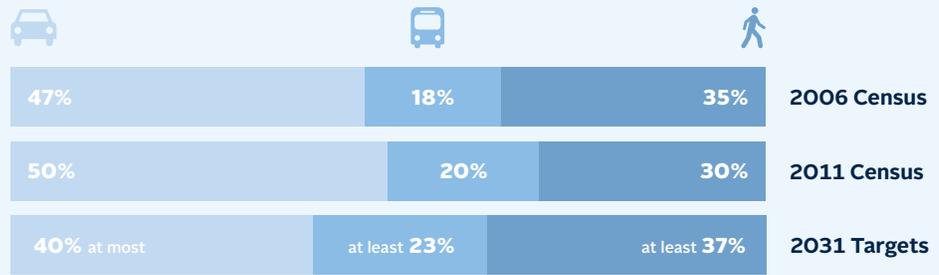
Updated projections under the 'Business as Usual' scenario indicate that this trend will continue and the region will not meet its mode share targets. This was one of the primary reasons that the IMP was undertaken.

Incorporating the recommendations of the IMP, including increased development in the Regional Centre, projections indicate that overall mode share targets in the region are achievable. This is in large part due to the projected increase in growth within the Regional Centre, as well as increased transit use expected in the Inner and Outer Suburban areas if the IMP is implemented.



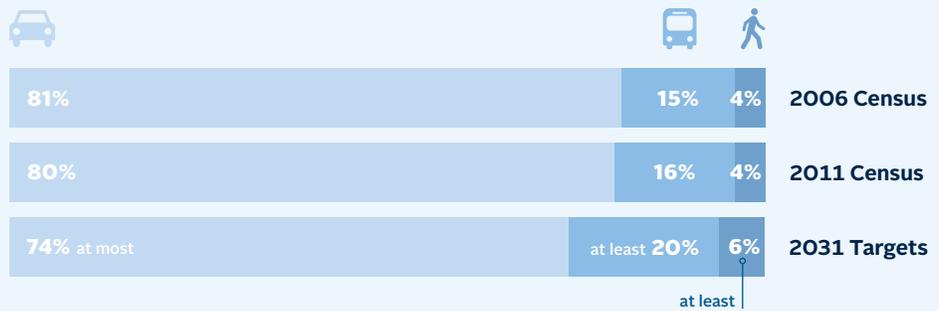
REGIONAL CENTRE

The 2031 non-auto mode share targets for the Regional Centre are aggressive and it is anticipated based on projections that they may not be achieved within the life of the plan. However, since non-auto mode share in the Regional Centre is already very high, it is expected that even if current levels remain, the increased amount of people living in the Regional Centre will contribute significantly to the ability to meet region-wide targets.



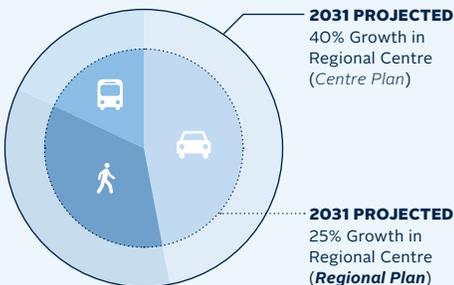
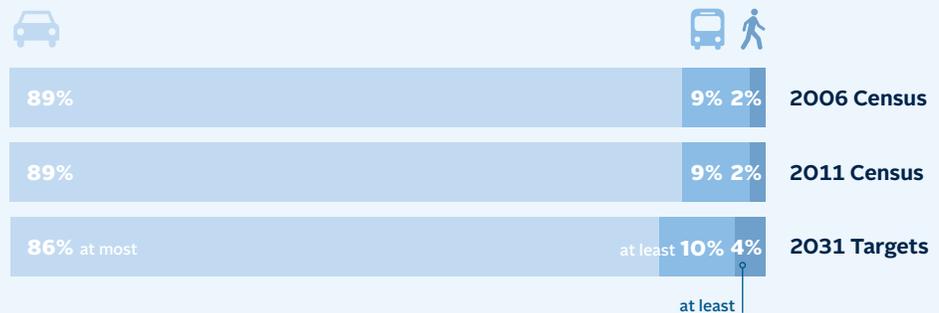
INNER SUBURBAN

Projections indicate that the 2031 non-auto mode share targets for the Inner Suburban area may not be feasible within the life of the plan; however, IMP improvements are expected to significantly improve mode share for transit in this area, bringing non-auto mode share within close reach of targets.



OUTER SUBURBAN

Projections indicate that transit mode share targets can be achieved for the Outer Urban boundary with IMP improvements. Active transportation mode share projections fall well short of targets, indicating that these targets may need to be revisited.



The percentage of people who walk, bicycle, or take transit to work in the Regional Centre is high today and is projected to increase into the future. Shorter distances between home and work make trips more suitable for walking and cycling and increased transit coverage and frequency make transit a more attractive option. For these reasons, it is clear that increased development in the Regional Centre is the most effective way to increase the number of non-auto trips in the Halifax region.

Modeling projections indicate that mode share percentages are not expected to change significantly in the Regional Centre with implementation of the recommendations of the IMP. However, increased settlement in the Regional Centre (as targeted in the Centre Plan) will increase the amount of people to which the percentages apply. Put in simpler terms – though the slices of each pie remain the same proportion, since the size of the Regional Centre’s pie increases – the size of each slice of the pie also gets bigger. These increases in non-auto trips are critical to the Halifax region’s overall ability to meet region-wide targets (the total size of the transit and active transportation “slices” in all three areas).

PROJECT EVALUATION

The IMP establishes a clear process for making decisions and setting priorities through an evaluation scorecard. Transportation planners can use this scorecard to evaluate the benefits of mobility projects and how they align with the IMP. A consistent, transparent and thorough evaluation process will allow the municipality to advance projects that support the vision for integrated mobility.

The scorecard includes the four pillars of integrated mobility: connected, healthy, sustainable and affordable. The scorecard then adds three other important factors that projects can impact: mode choice, experience and land use. Projects are scored from 0 to 3 for each factor, based on how well the project supports that factor (see **Figure 9**). Projects that score low on any of the factors could be revisited and improved, or projects can be designed from the outset to score favourably. Similarly, transportation studies should ensure they address each factor.

Using multiple factors to evaluate projects ensures that mobility planning considers both the functionality of the regional transportation system as well as individual experience. Project evaluation is one tool to help prioritize projects and allocate funding, keeping in mind that other factors, such as the timing of complementary projects, will also affect project priority.



PROJECT	PILLARS				OTHER IMPACTS			TOTAL SCORE
	Connected	Healthy	Sustainable	Affordable	Mode Choice	Experience	Land Use	
Project Name	3	3	3	3	3	3	3	21

Figure 9: Evaluation Scorecard Example

Project Evaluation Considerations

PILLARS

CONNECTED

- » Will the project address the mobility needs of all community members? (e.g. age, ability, income)
- » Will the project improve connections between locations or modes of local and regional travel?

SUSTAINABLE

- » Will the project help reduce the environmental footprint of travel?
- » Does the project consider future requirements (e.g. population growth, economic changes, changing needs and preferences)?

HEALTHY

- » Will the project support active living?
- » Will the project improve the safety of all users, especially people using active transportation?

AFFORDABLE

- » Will the project make it cheaper for people to live without a personal vehicle?
- » Will spending be cost effective and responsible?

OTHER IMPACTS

MODE CHOICE: Streets as a Link

- » How many different modes of transportation will be improved?
- » Will it integrate or connect different modes with one another?
- » Will active transportation users and transit be prioritized over personal vehicles?
- » Will it create alternative routes and travel choices?

LAND USE

- » Will the project support the design of complete communities?
- » Will the project support the goals of the Centre Plan and Regional Plan to increase development focus in the Regional Centre?

EXPERIENCE: Streets as a Place

- » Will the proposed facility or service be attractive and convenient for people to use (e.g. service frequency, comfort, ease of payment, connections to other networks, clear communication, reduced stress for users)?
- » Will the proposed facility or service create a comfortable environment or experience (e.g. landscaping, street trees, benches, lighting, bicycle parking, crosswalks, street furnishings, accessibility, perceived safety, amenities)?

2.1.3 POLICIES & ACTIONS

- a) Design streets to accommodate people of all ages and abilities, including those with physical, visual, auditory and cognitive disabilities.**

Action 1: *Revise the municipal street classification system and standards to support all travel modes, street functions and land uses; ensure the Municipal Service Guidelines (the Red Book) reflect these revisions.*

Action 2: *Review the Municipal Design Guidelines (the Red Book) annually to incorporate best practices for all transportation design elements.*

- b) Provide a level of accessibility to all users, regardless of physical disabilities or limitations, for mobility in the Halifax region.**

Action 3: *Prepare and implement a Municipal Accessibility Plan for mobility in the region with respect to the built environment, transit, transportation infrastructure and the delivery of goods and services.*

- c) Reduce the likelihood of serious injuries and fatalities on streets and other transportation facilities, taking a “Towards Zero” (zero injuries and fatalities) approach.**

Action 4: *Implement multidisciplinary safety strategies including the Strategic Road Safety Plan, to maximize the safety and security of all people on the street, with an emphasis on the most vulnerable users.*

Action 5: *Collaborate with Operation Lifesaver Canada, a partnership initiative of the Railway Association of Canada and Transport Canada, to raise awareness of motorists, pedestrians and bicyclists about railway hazards.¹*

Action 6: *Use pilot projects, such as Rectangular Rapid Flashing Beacons (RRFBs), leading pedestrian intervals and pedestrian countdown signals to trial, monitor and enhance pedestrian safety.*

¹ See <https://www.operationlifesaver.ca/>

d) Make it easier and safer to walk throughout the Halifax Region.

Action 7: Identify and implement new sidewalks, multi-use pathways and enhanced crossing treatments to connect networks and better manage interactions between pedestrians and motor vehicles.¹

e) Expand transportation data collection and monitoring programs.

Action 8: Develop a Transportation Monitoring and Evaluation Strategy to expand and integrate transportation and land use data collection in partnership with other agencies, including Statistics Canada, Halifax Port Authority, provincial agencies and the Dalhousie Transportation Collaboratory (DalTRAC) and gather a minimum of one year of baseline data.

Action 9: Establish a program for long term/permanent traffic data collection. Consider the potential to collect data related to vehicle type, speed, and occupancy.

f) Revise the Halifax region's sub-regional 2031 mode share targets and geographic data collection areas to better align with the settlement patterns in the Centre Plan

Action 10: Formally establish boundaries for reporting sub-regional mode share in the Halifax region based on the boundaries included in the 2014 Regional Plan. The perimeter of the Outer Urban area should align with the Urban Service Boundary. Statistics Canada data should be requested based on the consistent boundaries, regardless of changes to census tract locations.

Action 11: Revise mode share targets for each sub-region to better align with more realistic values, while retaining the current 2031 region-wide targets.

g) Adopt the project evaluation scorecard that provides a clear process for making decisions, setting priorities and evaluating the benefits of mobility projects and how they align with the IMP.

Action 12: Use the project evaluation scorecard to advance projects that support the vision for integrated mobility.

h) Define and establish partnerships to maximize the benefits of mobility initiatives.

Action 13: Establish partnerships and ongoing collaboration to enable the municipality to continue to collaborate on projects, expand educational programs, promote sustainable and healthy mobility, monitor the success of initiatives and more.

¹ See Halifax Regional Municipality, *Making Connections: 2014-19 Halifax Active Transportation Priorities Plan* (approved by Regional Council September 9, 2014) for an overall vision for walking and cycling facilities. https://www.halifax.ca/sites/default/files/documents/transportation/transportation-projects/AT_Plan_Final_July222014_000.pdf



LAND USE & TRANSPORTATION

WHAT ARE COMPLETE COMMUNITIES?

COMPLETE COMMUNITIES provide a place for residents to live, work, shop, learn and play without depending on a private vehicle.

WHAT IS TRANSIT ORIENTED DEVELOPMENT?

TRANSIT ORIENTED DEVELOPMENT (TOD) is an approach to development that focuses a Complete Community around a transit terminal or along a transit corridor.

TYPICAL TOD CHARACTERISTICS:

- A mix of uses
- Pedestrian connectivity
- Reduced parking
- Moderate to high density
- Transportation choices
- Pedestrian supportive design

IN THE HALIFAX REGION...

50%
REGIONAL CENTRE
RESIDENTS



19%
SUBURBAN
RESIDENTS



6%
RURAL
RESIDENTS

...USE ACTIVE TRANSPORTATION OR TRANSIT TO GET TO WORK

IN TRANSIT ORIENTED NEIGHBOURHOODS, RESIDENTS...



own 10-30%
FEWER VEHICLES

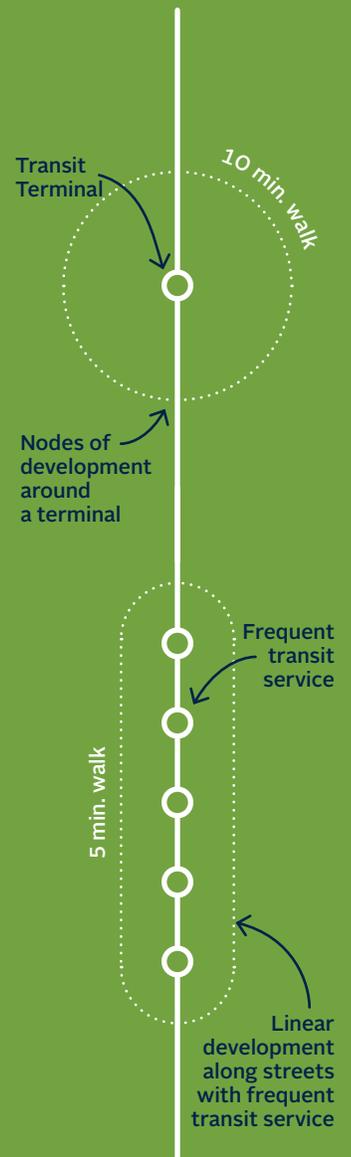


drive 10-30%
FEWER KILOMETRES



use **SUSTAINABLE**
MODES 2-10 X more

TRANSPORTATION & LAND-USE PATTERNS



2.2 Land Use & Transportation

2.2.1 OBJECTIVE

To integrate the planning of the transportation network with community design to better facilitate active transportation and transit use through compact, mixed-use development.

2.2.2 INTRODUCTION

The design of communities and their land uses influence people's travel patterns. Active transportation (walking and biking) and transit become convenient and enjoyable options in compact, mixed-use communities with places to live, work and shop. In less compact communities, the distances between destinations can make it difficult for people to access and use these amenities regularly without private vehicles. Additionally, expanding the road network enables dispersed development, which is costly to provide with municipal services.¹

The relationship between community design and mobility is seen in the Halifax region, where nearly 50% of residents in the compact Regional Centre use active transportation or transit to get to work, compared to only 19% of people in suburbs and 6% of people in rural areas.

Investments in the transportation network and urban planning tools can shape and strengthen the communities in the Halifax region and facilitate mobility choice. Integrating forward-thinking policies and actions for both land use and transportation will facilitate high-quality complete communities that support vibrancy, healthy and active lifestyles, economic vitality and sustainability.

¹ See *Regional Planning - Halifax Regional Municipality, Settlement Pattern and Form with Service Cost Analysis (Healthy Growth for The Halifax region, April 2005)*.



1996

REGIONAL PLAN

The Halifax region inherited 18 Municipal Planning Strategies upon amalgamation. While they reflected local consultation and responded to community needs, they lacked regional coordination and allowed widely dispersed development that was environmentally and fiscally unsustainable.

2006

REGIONAL PLAN 2006

Halifax Regional Council adopted its first *Regional Plan*, which sought to focus growth in the Regional Centre and nearly 50 District, Local and Commuter Growth Centres, to be linked by new or improved transit. Growth restrictions were placed on some rural areas where roads had reached capacity.

2014

REGIONAL PLAN 2014

Council updated the *Regional Plan* to respond to new development pressures, municipal priorities and issues raised through public consultation. It accommodates growth in strategic centres and applies a Transit Service Boundary to focus bus service within areas served by piped sewer and water. Most rural centres will not receive transit service, but are instead offered provincial and municipal program grants to enable them to organize their own alternative transportation services.

2017

CENTRE PLAN

The *Centre Plan* will create a new Secondary Municipal Planning Strategy (SMPS) for the Halifax Peninsula and central Dartmouth, with implementation tools to guide land use and development within the Regional Centre (urban core). The aim is to direct well-designed, higher-density development to locations where it can best be accommodated, focusing on downtowns, centres, corridors and future growth nodes.

2.2.3 BACKGROUND

PLANNING CONTEXT

Land-use policy is a core component of the municipality's regional planning. The land-use direction at a regional level evolved between 1996 and 2014. Multiple community plans that allowed widely dispersed development were supplemented by an over-arching *Regional Plan* that aims to focus growth in strategic centres. Most recently, the *Centre Plan* has further emphasized the benefits of maximizing growth within the Regional Centre, which is the urban core (Halifax Peninsula and Dartmouth inside the Circumferential Highway).

PLANNING TARGETS

Where will growth be encouraged?

This IMP recognizes the strategic advantages of encouraging population and employment growth within the Regional Centre. The IMP aligns with the growth targets outlined in the *Centre Plan* (see **Figure 6 in Section 1.5 Creating the IMP**) and seeks to accommodate up to 40% of new housing units within the Regional Centre.

Demand for new suburban development remains strong and is shifting to increased residential and commercial densities. Simultaneously, employment growth is also expected to continue in these suburban areas. This provides an opportunity to facilitate "satellite" growth centres linked to the Regional Centre through high-quality transit services.

How will people be encouraged to travel?

The *Regional Plan* emphasizes the importance of reducing dependency on private vehicles and additional road spending to improve the sustainability of the transportation system. Specifically, it targets an increase of transit use from 12% to at least 16% and active transportation use from 11% to at least 14%. These targets are aggressive and the region's ability to achieve them is closely associated with settlement patterns and community design. This association is one of the key driving factors of the *Centre Plan*. Growth must be focused in the Regional Centre to further increase the use of transit and active transportation to meet the *Regional Plan* targets.

2.2.4 KEY CONSIDERATIONS

The Regional Centre has the greatest potential for sustainable mobility.

Directing a significant amount of the region's growth to the Regional Centre holds the most promise for enabling the development of compact communities with concentrated amenities, shops, services, housing and employment. This removes the need for people to travel long distances. Connected sidewalks and slower traffic speeds make it easier and safer to use active transportation and transit, while reducing the relative attractiveness of private vehicles to commute to work.

Suburban Growth Centres can become complete communities linked by transit.

Clustering development through complete communities built around transit hubs that, in turn, provide efficient and comfortable connections to other growth centres and the Regional Centre will enable residents to drive less. Rather than continuing with segregated land uses in widely dispersed communities, density will be integrated with supportive uses and focused around transit terminals and along strategic corridors to create satellite growth centres. These nodes and corridors will be encouraged to develop with amenities, shops and services and to include design features that facilitate walking and bicycling.

Rural Areas require specialized solutions.

The cost of transit rises and trip times increase as destinations become dispersed and distant from major centres. The population density and transit demand in rural areas is generally too low to justify urban-style transit service. Nevertheless, some rural commuter-oriented growth centres are served by well-used express commuter buses and park-and-ride lots.

Even though scheduled transit is not appropriate for most rural communities, clustering rural development can conserve natural areas and facilitate walking and bicycling. Clustered village centres may generate pedestrian traffic, which may justify sidewalk development and allow businesses to share parking, especially where streetscape

design makes walking an attractive option. In addition, clustered village centres offer more opportunities for both car and ride-sharing.

In addition to clustering rural development wherever possible, there is potential to improve rural transportation options through greater use of apps that coordinate ride-sharing. Rural centres are also easier to serve with community-based rural transit such as dial-a-rides.

Growth Centres must be aligned with transit.

Transit Oriented Development (TOD) is an approach that integrates land-use planning and transit, encouraging the development of compact, complete communities with a transit hub or corridor. TODs are highly walkable and bicycle-friendly. They have a higher density of residential and commercial land uses that allow people to work, shop and play close to where they live. Aligning growth centres with key transit hubs and corridors also helps avoid the intrusion of high-density development into established low-density neighbourhoods while allowing the higher residential densities in the TOD area to increase transit ridership and support other transportation modes.

Figure 10 shows the metro area Growth Centres identified in the 2014 *Regional Plan* (across the region, there are nearly 40 growth centres, reduced from the 50 identified in the 2006 *Regional Plan*). During the next *Regional Plan* review, these growth centres must be further rationalized and more closely aligned with existing and proposed transit terminals, while recognizing the ongoing importance of existing centres, especially in the rural areas. This will focus municipal and development resources on what can be achieved within anticipated growth rates, facilitate meaningful change in community form and lead to substantive change in travel choices.

Aligning growth centres with transit creates an efficient transit network with strong connections between complete communities where people are offered a variety of travel choices.

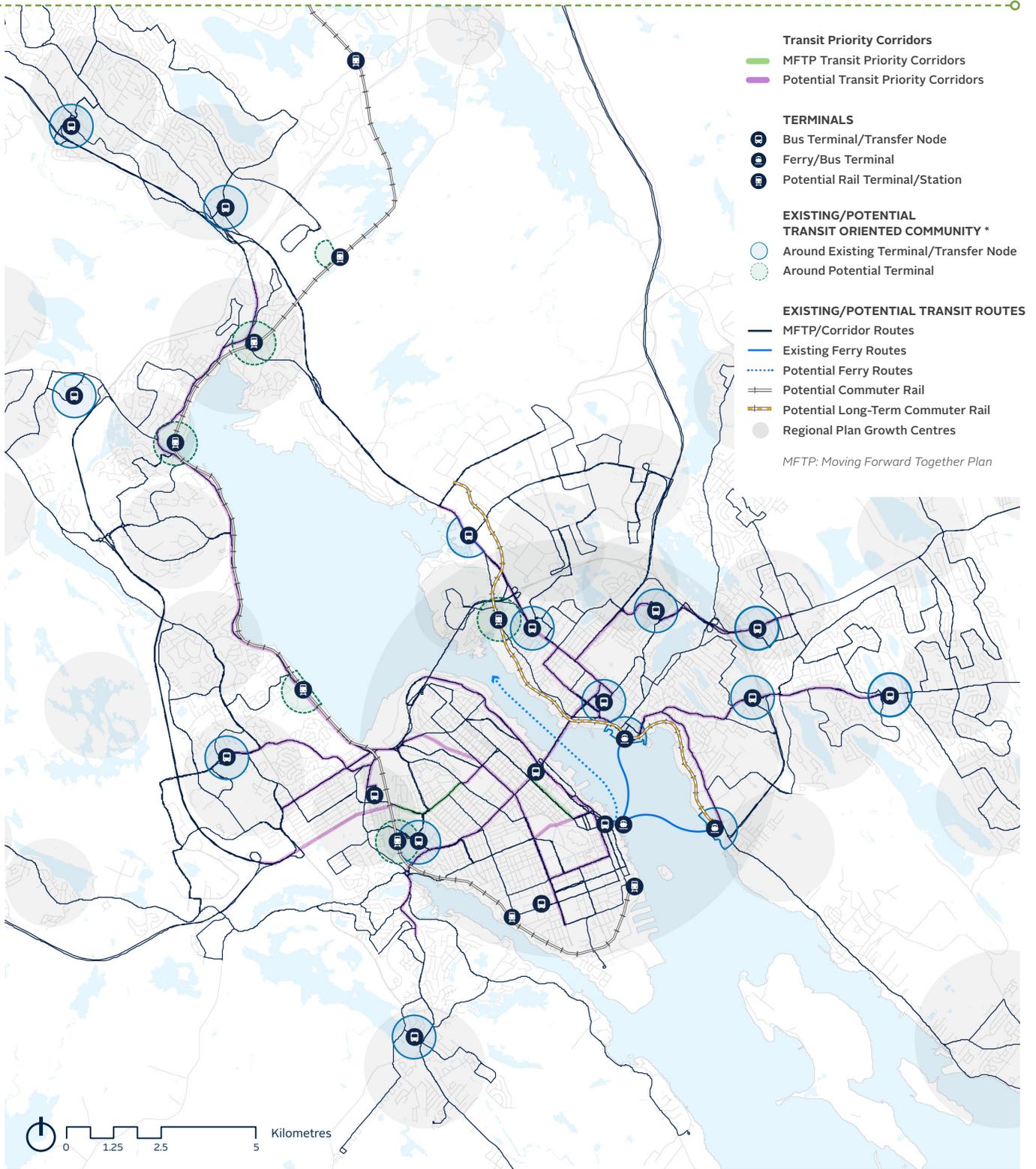


Figure 10: Potential Transit Oriented Communities

The circles show locations where there are opportunities for compact, mixed use, complete communities within a ten-minute walking distance of proposed or existing transit terminals (or rail terminals/stations). Potential Transit Priority Corridors are streets where transit should be enabled to bypass traffic congestion through a variety of methods (see Section 3.2 Transit). Zoning and transit planning should work together with the Regional Plan Growth Centres to develop transit oriented communities.

* The entire Halifax Peninsula and the urban portion of Dartmouth are effectively Transit Oriented Communities already. The Centre Plan provides more specific guidance on where density and mixed-use development should focus within these areas.



MEET CLAIRE: *I recently moved out of the regional centre—the housing costs in the suburbs are just more manageable for me. The downside is that I now spend hours in traffic everyday because there is no transit near my newly built neighbourhood. I would love to be able to walk to the store and my kids' school, but it is just too far.*

HOW WILL CLAIRE BENEFIT FROM THE IMP? SEE **POLICY 2.2.5-C**

Transit service must help shape land-use patterns.

Different types of transit service suit and enable different land-use patterns. These relationships must be considered as transit services are expanded and improved throughout the Halifax region.

- » Bus service can support and benefit from clusters of employment and housing at key transfer points and stops.
- » Higher order transit links are best suited to connecting high density, mixed-use centres (e.g. Halifax Transit's ferry service between downtown Halifax and downtown Dartmouth).

Transit and land use policy must work together to support affordable housing.

When considering housing costs, it is easy to forget to include the costs of commuting. By avoiding the need to own a second vehicle, Transit Oriented Development (TOD) can reduce household transportation costs. On the other hand, because of its limited supply and attractiveness, TOD tends to drive up rents, potentially extinguishing the cost savings and sometimes pricing existing renters out of the market as their neighbourhood gentrifies. Yet ensuring that lower and moderate income residents have a place in TOD development is important for transit ridership, as more affluent households tend to be more vehicle-dependent even when living close to a terminal.

A concept known as “eTOD” (Equitable Transit Oriented Development) addresses this through innovative zoning, financing and land transactions.

In Halifax, municipal park-and-ride lots could be redeveloped as new TOD neighbourhoods. Partnerships could be developed with the province to provide subsidized housing units integrated with market-driven housing to avoid needless segregation.

Employment & Public Facilities must be strategically located.

The presence of jobs along transit corridors and near transit hubs help work towards achieving the *Regional Plan* mode-share targets (and is key to the Regional Centre's high non-auto mode share). In contrast, employment growth in single-use business parks risks emptying traditional and new compact, mixed-use centres of jobs, daytime vitality and transit riders. Employment growth should be directed to existing and proposed mixed use, transit oriented communities in both urban and suburban areas.



By locating public facilities in areas with good transit, bicycling and pedestrian access, the municipality and other orders of government can improve employee and public access. At present, there is no formal policy to ensure that facilities are located according to these criteria. However, by adopting a policy and working with other orders of government to do the same, the municipality can set an example by making location decisions to support the region's transit network and mobility goals.

Industrial lands should minimize urban truck traffic.

Industrial lands should be located and configured to facilitate access while limiting their impact on residents and public infrastructure. Direct links to freeways, railways and ports help divert trucks away from local roads and channel freight traffic to infrastructure that can accommodate it.

Demand has been growing for retail and office development in industrial areas (e.g. Bayers Lake Business Park). Pressures to add regional medical facilities and residential development in industrial areas have also increased. These location decisions are largely driven by relatively cheap land, liberal zoning and ease of freeway access for private vehicles. Unfortunately, transit service is typically ineffective in these areas and they tend not to be conducive to walking and bicycling. As a result, they are highly dependent on private vehicles for mobility.

Around Halifax Harbour, waterfront lands that are ideal for marine industries and docks are increasingly in demand for residential and recreational development. The region has also lost much of its rail-freight network and industrial lots located along railway tracks are rare. Given the increasing scarcity of strategically located industrial lands, it is important to protect existing working harbour frontage for industrial purposes and to facilitate the use of rail where it still exists. Not only does this help reduce truck traffic on local roads, minimize congestion and lessen road damage from heavy trucks, it also helps direct non-industrial employment and regional public facilities to mixed-use centres supported by good transit.



MEET JUN: *It takes me five minutes to get to the bus terminal in my wheelchair to catch the express bus downtown for work. I love living in a transit oriented community, because it provides me with options for how to get around. My everyday needs are all accessible within a short distance.*

HOW WILL JUN BENEFIT FROM THE IMP? SEE **POLICY 2.2.5-D**

2.2.5 POLICIES & ACTIONS

a) Continue to aim to achieve the growth targets outlined in the **Centre Plan**, recognizing their influence on the municipality's ability to meet the objectives of the IMP.

b) Designate areas for high residential and employment density only where there is an existing or proposed high level of transit service to support the development of walkable, affordable transit oriented communities.

Action 14: Refine the boundaries of the potential transit oriented communities identified in **Figure 10** and develop policies and design guidelines to enable walkable, mixed use, complete communities in these key locations.

Action 15: When planning and implementing transit oriented development and Park & Ride lots, pursue opportunities to reduce housing costs through such measures as reduced parking requirements, optional parking for each residential unit, bonus zoning, partnerships, land banking and innovative technologies.

Action 16: When reviewing the Regional Plan and Secondary Municipal Planning Strategies, rationalize the location and size of Regional Centre, suburban and rural growth centres in relation to the transit oriented communities shown on **Figure 10**, while recognizing and supporting the economic importance of other service centres throughout the region.

Action 17: When reviewing the Regional Plan and Secondary Municipal Planning Strategies or considering Plan Amendments, designate and zone for transit oriented communities (see **Figure 10**) around proposed Transit Priority Corridors, existing and planned bus terminals, ferry terminals and potential Bus Rapid Transit and commuter rail stops, wherever there is potential for redevelopment.

Action 18: Any replacement for Mumford Terminal should be sited in a location that is supportive of transit oriented development, with consideration for integration with potential commuter rail.

Action 19: Apply infrastructure charges to development applications to assist with the capital costs of implementing Transit Priority Measures and commuter rail.

c) Encourage all future development to take the form of **Complete Communities with opportunities to work, study, shop, play and obtain personal services within an attractive walking distance of where people live.**

Action 20: Publish transit oriented development design guidelines to promote and explain complete community design principles to residents and developers.

Action 21: Amend municipal planning strategies and land use by-laws as necessary to implement the reduced parking requirements recommended in the Halifax Regional Parking Strategy.

Action 22: Amend municipal planning strategies, the Subdivision By-Law and land use by-laws as necessary to require developers to:

- » Plan and implement pedestrian, bicyclist and transit facilities, including roads needed for transit through-routes, in early phases.
- » Provide a grid pedestrian and bicycling network where the topography and other environmental conditions allow.
- » Connect street and pathway networks with those of existing communities and neighbourhoods.
- » Ensure direct bicycling and pedestrian access to schools, recreation centres, libraries, retail and transit.
- » Locate public facilities, shops and offices in walkable areas.

Action 23: Encourage developers to provide incentives to enable bus service that would otherwise not be justifiable until future subdivision phases are built and occupied.

Action 24: When acquiring land for Park & Ride facilities, consider their suitability as land banks for future transit oriented development, including an affordable housing component.

- d) Work with the province, hospitals, school boards and other institutions to ensure that new public facilities are located within existing or planned transit oriented development and within a 5-min. walk (500 m) to frequent, accessible transit service.**

Action 25: Meet regularly with agencies responsible for siting, refurbishing and/or designing public facilities, government buildings, hospitals and educational amenities to ensure those agencies are familiar with the objectives of this plan.

- e) Require pedestrian-oriented site design and human-scaled massing at street level for all new multi-unit housing, commercial and office buildings.**

Action 26: Amend the municipal planning strategies and land use by-laws as needed to include requirements for pedestrian-oriented and human-scale design.

- f) Protect industrial lands for industrial uses and direct other commercial uses to mixed-use areas.**

Action 27: Consider focusing commercial land use inside designated mixed-use growth centres and minimize these uses in other areas.

Action 28: Ensure that consideration is given to retaining industrial zoning wherever direct rail or marine frontage is available, to facilitate goods movement by rail or water.

Action 29: Refine the designations and zoning for industrial parks to minimize residential and commercial encroachment of land suitable for industry.

Action 30: Re-evaluate the recommendations of relevant land-use studies in light of the upcoming Port Master Plan and an upcoming major rehabilitation / replacement project for the Mackay Bridge.



COMPLETE STREETS



WHAT ARE COMPLETE STREETS?

COMPLETE STREETS are planned, designed and maintained to make travel safe, convenient and comfortable for people of all ages and abilities and using all transportation modes.

COMPLETE STREETS HIERARCHY



WHAT MAKES A COMPLETE STREET?



2.3 Complete Streets

2.3.1 OBJECTIVE

Meet the needs of all ages, abilities and travel modes in the design and maintenance of streets.

2.3.2 INTRODUCTION

Complete Streets is a holistic, flexible and context-sensitive approach to street design and maintenance. It aims to improve the comfort and safety of all users of transportation modes, including pedestrians, bicyclists and transit users. The Complete Streets approach also recognizes that, in addition to moving people and goods, streets can be destinations and important public spaces.

The Complete Streets approach implements multiple design features in different contexts to accommodate various combinations of transportation modes and uses. Features for pedestrians may include traffic-calming measures, street trees and reduced crossing distances. Features for bicyclists may include protected bicycle lanes and connected bicycle routes. While accommodating active transportation (walking and bicycling) is often the focus of Complete Streets, the approach should also consider transit. The context and intended role of a street are critical factors in establishing a Complete Street design. A Complete Streets approach can apply to a wide variety of streets and is adaptable to the urban, suburban and rural contexts.

The Complete Streets concept is a fundamental component of the IMP. Complete Streets reflect a multi-disciplinary and multi-modal approach to mobility that aims to embed the IMP pillars into street design.

2.3.3 BACKGROUND

Street Classification Hierarchy

The municipal street classification hierarchy is currently based on how streets function from a private vehicle perspective, which, in turn, influences regional land use and transportation planning and policy (including design standards and development guidelines). This street classification hierarchy recognizes different street types and their role in accommodating motor vehicle traffic. Local and collector streets are intended for short trips and lead to arterial roads and expressways, which facilitate long-distance travel.

The street classification hierarchy influences jurisdictional priorities related to network operation, maintenance and planning. It also influences the use of and access to land.

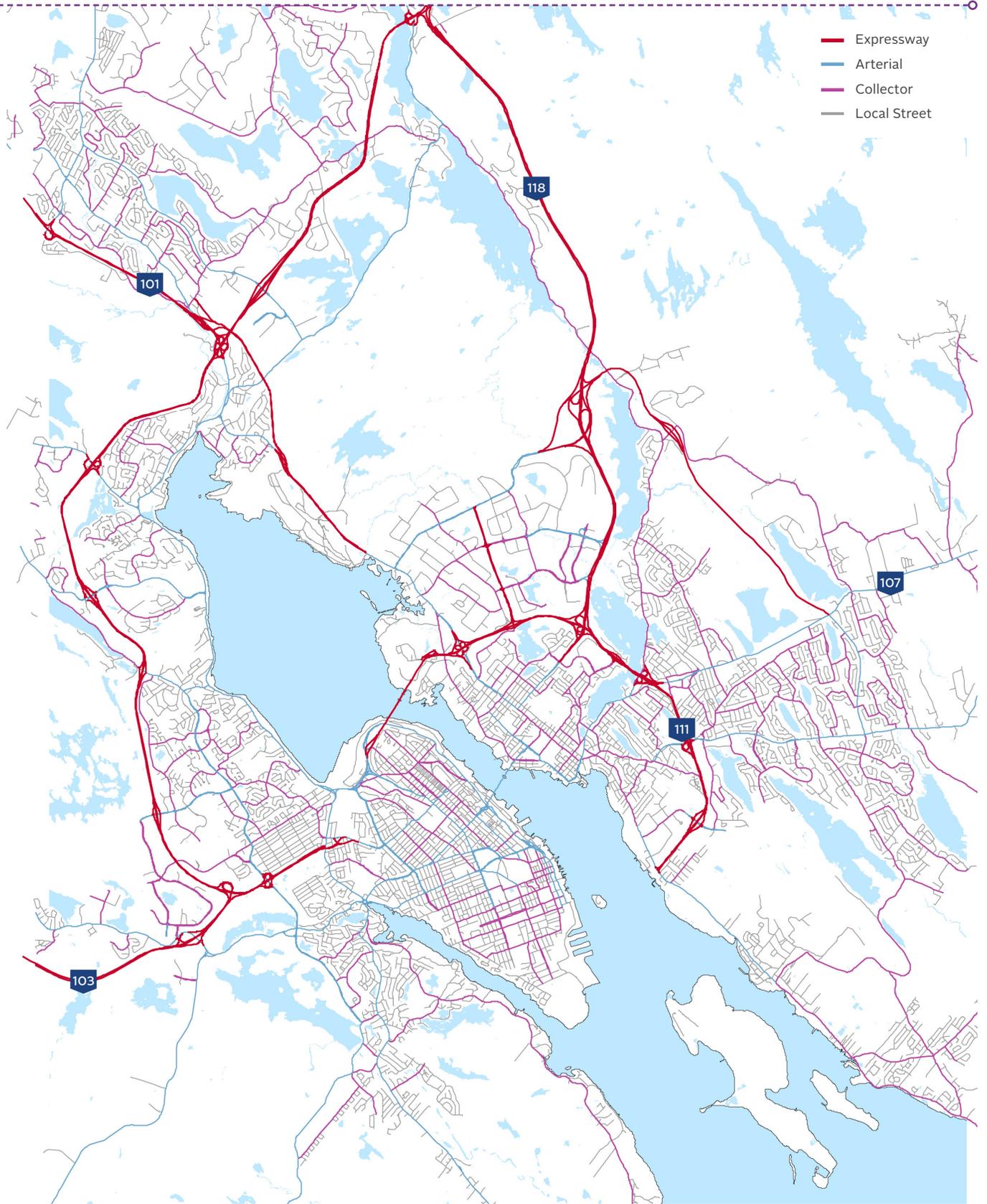


Figure 11: Street Hierarchy Classification Map

Note: Not officially adopted by Council

Community & Street Character

The Halifax region covers a very large geographic area and includes a diverse range of urban, suburban and rural communities. In these communities, there is considerable variation in road characteristics to support the different land uses and densities. Similarly, land use affects street classification. For example, in largely residential areas, local and collector streets support lower traffic volumes and prevent heavy vehicle use.

Evolving Street Types

Street design is constantly adapting. A street's design and features may no longer support its current function. Some streets were designed and constructed many years ago during an era with very different mobility needs. Regional growth, geographic expansion and the rise of the private vehicle have increased pressure on some streets, resulting in high traffic volumes and speeds that are inappropriate for the street in terms of its design, function or purpose.

Conversely, streets originally designed as major thoroughfares to accommodate high traffic volumes may no longer require that capacity. These streets offer opportunities for repurposing to accommodate uses such as dedicated transit lanes, active transportation facilities, additional green space and on-street parking.

Municipal Design Standards

The amalgamation of the Halifax region in 1996 resulted in the consolidation of multiple infrastructure design standards into one set of region-wide design guidelines. The municipality's *Municipal Design Guidelines* provide design guidance for municipal streets. Much of the content is based on the Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads — a national guideline commonly adopted by municipal and provincial

jurisdictions across Canada. Though periodic updates are made to the *Municipal Design Guidelines*, many of the current street design standards are outdated.

2.3.4 KEY CONSIDERATIONS

BEST PRACTICES IN STREET DESIGN

Street design standards — particularly for urban streets— are rapidly evolving as interest in alternatives to private vehicles increases. Design elements that enhance the comfort and safety of people who walk, bicycle or take transit are now being included in design guidelines and implementation.

The North American Association of City Transportation Officials (NACTO) is an organization at the forefront of Complete Streets design guidance. Though NACTO design guidance has been around for several years, local application in the Halifax region has been constrained due to inconsistency with the local guidelines. In 2017, to expand the municipality's Complete Streets Toolbox, the Halifax region became a member city of NACTO.

LINKS & PLACES

In addition to facilitating movement ("links"), streets can be destinations where people shop, stroll and socialize ("places"). A street can also function as both a "link" and a "place" simultaneously, to various degrees. The degree to which a street is a "link" is based on the volume of people using it for movement by any given mode. The degree to which a street serves as a "place" is also based on the number of people using that street for everyday activities.



MEET CHANTAL: *I love biking along Halifax's beautiful, peaceful multi-use paths on my way to class. But once it's dark out, I need to take a much longer route home for safety. Streets that are well-lit with lots of people around just make me feel more comfortable at night.*

HOW WILL CHANTAL BENEFIT FROM THE IMP? SEE **POLICY 2.3.5-D**

How to Identify Streets that are “Links”

Streets that are links can be identified by their people moving capacity. These streets typically have higher volumes of traffic, on-street parking restrictions during peak hours, greater transit ridership, higher volumes of trucks and are emergency routes. Streets may be important links for some or all modes of transportation -- for example, an arterial street may be an important vehicle link, while a local residential street may serve as a critical link in the bicycle network.

Link streets act as connections between communities. While Complete Streets design is a holistic approach that promotes the pedestrian realm, it is still important to continue managing the people moving capacity of the road network. Historically, link streets have been designed to accommodate a higher capacity of vehicles (e.g. Windmill Road, through Burnside). The Complete Streets approach will promote multi-modal people moving capacity and strategically prioritize transit and active transportation links.

How to Identify Streets that are “Places”

“Places” can include features intended to provide pleasure, improve the street’s attractiveness and/or define the character of an area; these can include decorative sidewalk pavers, light poles, ornamental plants and public art. They also typically have a high density of pedestrian-oriented retail uses, restaurants, benches, bicycle racks and more. Trees are an essential component of every street and are particularly important in “places” to improve aesthetics, provide a sense of enclosure and regulate the micro-climate. These features combined often contribute to a “main street” character that defines these places.

Streets can be important “places” that acknowledge and enhance the significance of communities throughout the region. In urban areas, “places” attract visitors and contribute to local businesses and the regional economy. In suburban and rural areas, although predominately accessed by private vehicles, “places” can be clusters of activity where people who arrive by private vehicle, park once and access multiple destinations on foot.

Placemaking

Placemaking refers to the intentional process of creating memorable public spaces. This concept can be incorporated into a Complete Streets approach. The municipality has placemaking and community art programs that bring together community members to create art to activate shared public spaces and build community. These programs include intersection painting, bench building and community gardening.

ECOLOGICAL HEALTH

Street trees and plantings contribute to the ecological health of the region and benefit users of the street, environment and wildlife. Recognizing the importance of these elements to ecological health, the municipality has developed strategies to promote street tree protection, upkeep and planting. The Urban Forestry Master Plan includes tree canopy targets and identifies appropriate planting species based on their location within the municipality. The forthcoming *Halifax Green Network Plan* also includes guidance to protect and enhance the tree canopy, implement low-impact development technologies,

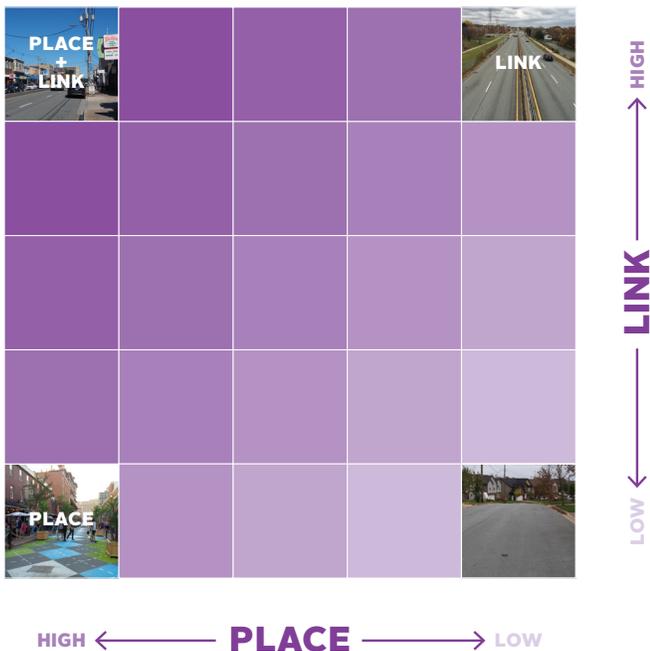


Figure 12: Link & Place Spectrum



MEET JOSIAH: *I have lived in this neighbourhood for over 50 years and go on a walk to get my groceries every morning. Taking the time to chat with neighbours and local shop owners I meet along the way is my favourite part of being retired.*

HOW WILL JOSIAH BENEFIT FROM THE IMP? SEE **POLICY 2.3.5-C**

incorporate wildlife crossings and promote native plant species.

Complete Streets projects should incorporate elements that enhance the ecological health of a street whenever possible. Enabling trees and vegetation to thrive in a dense urban environment can be challenging due to a lack of space and other physical constraints, which can result in significant cost implications. However, the contribution and value of greenery to the urban environment requires that these elements be explicitly considered when making investment decisions.

It is important not only that new features be considered in Complete Streets designs, but also that efforts are made to preserve existing assets and avoid any net impacts. This can be achieved through commitments to replace any trees that are impacted by a project.

OPEN-SPACE FUNCTIONS

In addition to parkland, street right-of-ways provide a significant amount of public open space. In urban areas, where many residents do not have backyards or large yards, streets can serve valuable open-space functions for movement, recreation and ecology. The *Halifax Green Network Plan* is currently being developed to help manage the region's green network and shape community growth. The role of streets within the green network is critical because of their role as "places" themselves and "links" between open spaces.

STREET MAINTENANCE

Complete Streets design must also consider durability and maintenance. Many complete street features, such as curb extensions, landscaping, vegetation and street furniture, can require special maintenance. In the Halifax region, maintenance during the winter is an important consideration as certain features may make snow and ice removal more onerous or may require new maintenance equipment. The potential durability of some street features may also be compromised by winter conditions.

Though the implications of local conditions and street maintenance requirements are important, they should not deter implementing a Complete Streets approach. Identifying and accounting for increased maintenance requirements during the project planning stage will improve the chances of project success.



Maintenance of Links

Special elements used to enhance links, such as protected bicycle lanes and bus shelters, require a high standard of maintenance to function as intended. The potential for added maintenance must be considered during the design of a link.

There is also the possibility that links could benefit from reduced maintenance after a Complete Streets design. There are some roads in the region that were overbuilt and do not have the volume of vehicles originally expected. Through the Complete Streets approach, it is possible that the number of lanes on a road could be reduced or narrowed, while accommodating an acceptable level of traffic congestion. A road with less asphalt area can reduce costs significantly over time by having less capital (e.g. asphalt renewal) and operating costs (e.g. snow removal).

Maintenance of Places

If special elements like benches, waste bins, unit pavers, etc. are added to streets that are "places", there must be a plan (and budget) in place to maintain them. In the Halifax Region, there are additional staff assigned to look after eight "enhanced maintenance areas" (corresponding to each of the region's Business Improvement Districts or BIDs); however, streets that are "places" exist outside these areas too and enhanced maintenance plans may need to be considered if new elements are added. As with "link" streets, designing a street as a "place" could potentially lower maintenance (e.g. replacing concrete with sod greatly lowers the replacement costs and mitigates stormwater runoff).

COMPLETE STREETS: RECENT LOCAL EXAMPLES

Principles of Complete Streets have already been successfully applied to several recent projects in the region.



North Park Street:

The introduction of roundabouts improved the safety and comfort of all users by slowing traffic while enabling a continuous flow. Features include wider sidewalks, multi-use pathways, bicycle lanes, a tree boulevard and extra green space along the Halifax Common.



Windsor Street:

Bicycle lanes were added to better accommodate bicycling – a simple yet effective way to add functionality to an existing urban street.



Devonshire Avenue:

The former four lane street was reduced to two lanes, with the additional street space designed to accommodate a bicycle lane and on-street parking. Curb extensions reduce pedestrian crossing distances and better delineate the on-street parking.



Fall River Road:

Sidewalks and paved shoulders were added to the existing rural cross-section, connecting schools and businesses in the community centre.



Hammonds Plains Road:

The paved shoulders are an example of a road retrofit in a rural context, creating more space for walking and bicycling where none existed before.

Complete Streets Guiding Principles



Streets support their intended functions & complement adjacent LAND USES:

Complete Streets are sensitive to the character, scale and needs of surrounding neighbourhoods and contribute to the long-term vision for communities. Appropriate street design balances the needs of all users and is linked to urban design, land use and a street's function. Investment in the transportation network will be prioritized to provide a better variety of travel options for residents.

Streets consider ALL AGES & ABILITIES:

Streets need to be safe, comfortable and enjoyable for all users including people of all ages, using a variety of transportation modes, with varying abilities, in all seasons.

Streets are MULTI-FUNCTIONAL & multi-modal:

Streets not only connect destinations, but can be important open spaces, social spaces, community hubs, gateways and destinations in their own right. Intersections are a critical part of the system and should be designed to meet the needs of all users. Depending on a street's role in a particular situation, space may be reallocated to meet the needs of different users.

CONNECTED NETWORKS are critical:

Keeping the larger transportation system in mind is critical for each mode. While it may not be practical to accommodate every need on every street, it is critical that good networks are available for all modes, especially when linking major destinations, such as employment districts, shopping, schools, service centres and other community amenities.

Streets require COLLABORATION:

Creating a great street requires cooperation, engagement and partnerships across municipal departments, as well as with other orders of government, communities, businesses and other organizations.

Streets contribute to the SUSTAINABILITY of the region:

Streets support environmental sustainability by accommodating active transportation and transit and improving local ecology through street trees and stormwater management. They also support social and cultural sustainability by creating great public spaces and enhancing the economy by supporting business, commuters and goods movement.

Developing a Complete Streets Approach

PROCESS

The municipality will adopt a Complete Streets approach to create an integrated and collaborative process for the planning and design of new and reconstructed streets. The proposed Complete Streets approach includes the following six steps and can be adapted and refined as Complete Streets projects are implemented.

1

Identify Context

Identify the context and street type by determining how the street functions as a “link”, related to moving people and as a “place”, where people shop, play and socialize.

Identify Mode Priorities

How does the street function as a “place” (e.g. review whether there is a sidewalk cafe, Business Improvement District, Municipal Planning Strategy vision, Community Vision or a Streetscaping Plan). How does the street operate as a “link” (e.g. does it provide an important network function as defined in the Active Transportation Plan, Transit Priority Corridor or Truck Route).

Identify Street Type

Review existing conditions of the street and develop a vision for the street to determine street classification:

- » Relationship of buildings close to the street: Are the buildings close to the street (street oriented) or set back from the street behind large car parks (non-street oriented)?
- » Land use context: Are the uses residential, public spaces, institutional, industrial, commercial or mixed-use?
- » How is the zoning likely to affect the existing uses?
- » What uses does the Municipal Planning Strategy envisage?
- » Functional street classification: Is the street an arterial, collector or local street?

Data Collection

Collect baseline information about the street, including vehicle volumes and speeds, transit and truck traffic, walking and bicycling levels, street dimensions, adjacent land uses, permitted uses and zoning regulations such as setbacks and architectural requirements.

2

Alignment with Guiding Principles

Support the Complete Streets Guiding Principles when developing the project goals and scope. (see page 63).

Create a project charter that defines project goals and scope and supports municipal planning strategies, community visions and functional plan priorities. Determine the desired Multi-Modal Level of Service, mode priorities and level of “placemaking” based on the street context. Consult with municipal staff, stakeholders and the public, as appropriate, to establish opportunities for other projects/objectives to be incorporated into the design.

3

Preliminary Design

Develop a preliminary design that supports the project vision, goals and scope and aligns with the Complete Streets Guiding Principles.

Assemble a cross-section with street design elements from the *Municipal Design Guidelines* and other design guides (e.g. NACTO, TAC, etc.) to achieve the intended Multi-Modal Level of Service and support the project objectives.

Refine design options and consider trade-offs by exploring and considering budget and space limitations and opportunities to fill in gaps in existing systems.

Evaluate the design based on the project vision, goals and scope.

Repeat the previous steps if there are significant trade-offs or changes.

4

Final Check

Confirm Recommended Design

Confirm and finalize the recommended design with staff, stakeholders and the public, as appropriate.

5

Results

Performance Measurement & Documentation

Establish a baseline by measuring quantitative and qualitative attributes of the completed project to provide a basis to evaluate the success of Complete Streets projects. This will also provide valuable information towards improving future projects.

- » Document the analysis and evaluation.
- » Provide the reasoning for trade-offs and measures to mitigate.
- » Compare pre-construction and post-construction data to determine if project objectives were achieved.
- » Engage public for feedback.
- » Analyze results and evaluate lessons learned.



RELATIONSHIP OF BUILDING TO STREET

Street Oriented
Non-street Oriented



LAND-USE CONTEXT

Residential
Public Spaces & Institutions
Industrial
Commercial/Mixed Use



FUNCTIONAL STREET CLASSIFICATION

Arterial
Collector
Local

COMPLETE STREETS TOOLS

Many municipal departments and municipal partners (e.g. developers, the provincial government and the public) will help implement Complete Streets. Effective and consistent collaboration requires shared tools, a commitment to ongoing education and methods and tools to evaluate Complete Streets projects.



Tool Kit

Develop a shared tool kit (for municipal staff, developers and the public) that outlines how to implement Complete Streets. The tool kit will detail the Complete Streets approach and include checklists and guiding questions for staff to use when developing Complete Streets projects. The tool kit will also include an approach to implement a Multi-Modal Level of Service for new street designs and retrofits. (See **Section 3.4 Road Network** for further detail).



Education

Develop and implement a Complete Streets education program to ensure that the Complete Streets approach is understood and embedded in relevant municipal departments and among relevant stakeholders and partners.



Evaluation

Create a Complete Streets monitoring and evaluation program to evaluate the Complete Streets process and impacts (including speeds, severity of injuries, Multi-Modal Level of Service, etc.).



Implementation Plan

Determine the Complete Streets projects to be implemented two years from now and use these projects to test and refine the Complete Streets tools and resources, staff education needs and evaluation methods.

IMPLEMENTATION STRATEGIES

Integrating Complete Streets Projects: “Following the Pavers”

Complete Streets features can be considered any time a road is scheduled to be disturbed, because the most cost effective time to implement design changes is during already scheduled improvements and/or maintenance. This most commonly occurs when streets and sidewalks are recapitalized under various “state of good repair” programs undertaken through municipal capital and operating budgets. Other opportunities to “integrate” street improvements with planned projects can be considered when utilities or private developers must reinstate parts of the street after conducting underground work related to their projects. If possible, these opportunities should be taken to implement a “desired future condition”. In some cases, this “desired future condition” is clear because there are approved standards or plans in place. In other cases it may be less clear and require further planning.

In all cases the following “Complete Streets” elements and strategies should be considered during all projects to further the objectives of the IMP and encourage a shift towards sustainable modes of transportation:

- » **Right Sizing:** If existing roads have more lanes (or wider lanes) than necessary, the excess right-of-way space can be reallocated for other uses that may better complement the street such as active transportation facilities (e.g. bicycle lanes, widened sidewalks) or open-space objectives (e.g. treed boulevard or median).
- » **Curb Extensions:** Consider reducing the pedestrian crossing distance at all marked and signalized crosswalks when on-street parking is present. Curb extensions should be generous enough to accomplish open space goals provide pedestrian benefits.

- » **Greening:** Tree planting should be considered where there is a sufficiently wide boulevard between the curb and sidewalk. If the space between the sidewalk and curb has been hardened and the immediate reason why is not clear, consideration should be given to replacing the concrete or asphalt in the boulevard with grass and trees or using innovative techniques such as soil trenches or soil cells to allow for the healthy growth of trees in hard surface areas.

In some cases, the cost of new Complete Streets features may be negligible (if it can be easily integrated into planned works). In other cases, the addition of the Complete Street features may be cost prohibitive (e.g. if a project initially aimed only to add a skim coat of asphalt, adding a curb extension might significantly increase the project budget). As a general rule, if a Complete Streets features adds 15% or less to the proposed budget, it should be incorporated into the project. If it adds more than 15%, a separate Complete Streets design and budget should be developed.

Where there are approved streetscaping plans in place, the standards associated with these plans should be incorporated into the *Municipal Design Guidelines* (Red Book). All state of good repair projects, as well as utility and development projects, must re-instate sidewalks according to the approved guidelines and not the pre-existing condition.

Prioritizing Complete Streets Projects: “Getting Ahead of the Pavers”

To more fully advance a Complete Streets approach, the municipality will need to complement a “follow the pavers” approach with an “ahead of the pavers” approach by developing approved street plans for key corridors based on a thorough assessment of the street and its role as both a “link” and a “place”. These plans should then be implemented over time as stand-alone projects, which may or may not coincide with state-of-good repair projects. State-of-good repair projects may need to be delayed or scaled back if it is known that the municipality is creating a street plan.

Key streets would be identified as incomplete if they are:

- » Missing pedestrian or bicycle infrastructure (as per the Active Transportation Plan and the identification of key pedestrian routes).
- » Identified as Transit Priority Corridors in the IMP but do not have Transit Priority Measures.
- » Streets that function as “places” but do not have their “place” function reflected in the street cross section. This category includes streets that might not function as “places” today, but are planned to serve this function in the future (e.g. Young Street in north-end Halifax is currently vehicle-oriented, but the draft *Centre Plan* identifies this corridor for mixed use, higher density, street-oriented development).
- » Streets that are strategic corridors for movement, but have no long-range plan in place (refer to Road Network section).

Sometimes a street might be deemed incomplete due to one of the criteria identified above and some streets could be considered incomplete due to several. The more “incomplete” a street is, the higher the priority to develop and implement a street plan.

2.3.5 POLICIES & ACTIONS

a) Integrate the Complete Streets approach (see page 64) into street planning and design processes, including neighbourhood planning and streetscape improvement projects.

Action 31: *Adopt the Complete Streets approach to inform the design and maintenance of streets.*

Action 32: *Identify key multi-modal corridors, apply the Complete Streets approach and engage the public to develop a vision for each corridor.*

Action 33: *Prepare preliminary design plans to guide future development and improvements for streets within each corridor.*

Action 34: *Allocate additional funds when budgeting for state-of-good-repair projects, to incorporate Complete Street features.*

Action 35: *Define a program to undertake life cycle costing analysis as a decision making tool to "right size" streets that are determined to be built with more (or wider) lanes than necessary.*

Action 36: *Review all street rehabilitation projects annually for the possibility of incorporating Complete Street features into street design.*

b) Wherever appropriate, prioritize walking, bicycling and transit when allocating road right-of-way space and integrate the needs of people with disabilities into street design.

Action 37: *Develop a framework to prioritize modes and select appropriate street designs and features based on the intended functions for each corridor.*

Action 38: *Rehabilitate streets based on their intended functions and using the Complete Streets approach, with first priority given to improving safety and comfort for pedestrians through design treatments such as barrier-free routes, visual and sensory cues, curb extensions, widened sidewalks, street trees, traffic calming and benches in mixed use commercial areas or adjacent parks.*

Action 39: *Work toward improving accessibility and connectivity of sidewalks, crosswalks and transit stops.*

Action 40: *Incorporate maintenance considerations into the planning and design of Complete Streets and ensure maintenance practices reflect the needs of all ages and abilities.*



c) For street design projects, incorporate elements that create a sense of place.

Action 41: *Identify streets that are considered “places”, based on their key characteristics and their local or regional significance.*

Action 42: *Prioritize “place” streets and develop enhancement plans, emphasizing streets with high volumes of pedestrian activity and of regional significance.*

Action 43: *Develop plans for the enhancement of “places” (streetscaping plans) at the same time as the functional characteristics are worked out.*

Action 44: *Apply progressive best practices based on research and experience in Canada and comparable northern climates.*

Action 45: *Consider opportunities for winter use, activities and attractions.*

Action 46: *Include artwork appropriate to the regional and community context.*

Action 47: *Support communities in re-installing art, such as pavement paintings, if removed as part of a road rehabilitation project.*

Action 48: *Support pilot projects for creative street uses, such as community events or temporary infrastructure to test new ideas for how streets can function.*

Action 49: *Support more frequent and widespread Open Streets initiatives.*

d) For street design projects, incorporate opportunities to support the Urban Forestry Master Plan to improve local ecology and integrate with the *Halifax Green Network Plan* (once approved).

Action 50: *Consult the future Halifax Green Network Plan to determine how streets can improve their open space functions.*

Action 51: *Consult the Urban Forest Master Plan to determine tree canopy targets and appropriate species to plant.*

Action 52: *Replace any trees that must be removed during a project, as determined by the Urban Forester. If there is no space within the nearby street right-of-way, trees may be planted nearby.*

Action 53: *Explore ways to provide incentives for owners to plant trees on private property adjacent to a street.*





TRANSPORTATION DEMAND MANAGEMENT



WHAT IS RIDE-SHARING?

Programs or services, often aided by technology (e.g. internet applications, mobile apps) that enable people to travel together in the same vehicle. Local examples include carpooling and vanpooling. Ride-hailing services (e.g. Uber, Lyft), quickly emerging in other areas, have yet to become established in the Halifax region.



WHAT IS CAR-SHARING?

Programs or agencies that allow several different people to drive the same vehicles at different times for personal use — including one-way car-sharing (leave the vehicle within a designated zone after use) or roundtrip car-sharing (return the vehicle to the same spot after use).

WAYS TO MANAGE DEMAND

EDUCATION, PROMOTION AND OUTREACH:

Raise awareness, improve confidence and build positive attitudes about sustainable transportation choices (e.g. bicycling skills training, special events).

INCENTIVES & DISINCENTIVES:

Influence the convenience of transportation choices, adjust costs and provide rewards (e.g. transit pass discounts, flexible work hours, preferential parking for carpools).

WHAT IS TRANSPORTATION DEMAND MANAGEMENT?

TRANSPORTATION DEMAND MANAGEMENT

aims to reduce peak-hour congestion by providing people with choice in how and when they travel.

By reducing the need to own a vehicle, car-sharing and ride-sharing encourage people to walk, bicycle or take transit when a private vehicle is not necessary.



If 1 in 10 commuters

**LEFT FOR WORK
1 HOUR EARLIER
OR LATER**



CARPOOLED



**WORKED
FROM HOME
1 DAY A WEEK**

Transportation modeling indicates that traffic congestion along key corridors in the Halifax region could decrease by up to 30% during the peak hour

BENEFITS OF USING TRANSPORTATION DEMAND MANAGEMENT



Reduced
**ENVIRONMENTAL
FOOTPRINT**



More efficient use
of existing **ROAD
CAPACITY**



Less **TRAFFIC
CONGESTION**
and delay



**FLEXIBLE WORK
HOURS & locations**
for employees

2.4 Transportation Demand Management

2.4.1 OBJECTIVE

Reduce demand on the road network by supporting a range of convenient and reliable transportation modes and flexible work times and locations.

2.4.2 INTRODUCTION

Transportation Demand Management (TDM) refers to a wide range of policies, programs and services designed to improve the efficiency of the transportation system. This is done by seeking constructive and efficient solutions for mitigating vehicle congestion. Approaches typically include education, marketing and outreach, as well as travel incentives and disincentives to influence behaviour.

Major roads in the Halifax region typically only operate at or near capacity during peak times — approximately one hour in the morning and one hour in the afternoon — when people travel to and from work or school. Shifting some trips to non-peak times and reducing the overall number of vehicle trips would reduce congestion and use existing infrastructure more effectively.

Successful Transportation Demand Management programs, services and products work to influence when, where and how people travel (if at all). These programs, services and products can help shape the economic and social factors behind travel decisions and are complemented by

supportive land use and transportation supply.¹ Efforts to influence transportation demand commonly include:

- » **Encouraging employers to offer flexible work hours:** Adjusting work hours, allowing people to work from home and compressing the work week would reduce peak traffic demands.
- » **Managing congestion rather than eliminating it:** Congestion can discourage people from travelling during peak hours if they have flexibility to travel at other times.
- » **Encouraging off-peak travel by providing lower fares or tolls during less busy periods:** Toll and fare collection technologies can adjust based on time of day or week.
- » **Promoting alternatives to vehicle ownership and single-occupant trips:** Active transportation, transit, car-sharing and ride-sharing reduce demand on roads and parking.

¹ Association for Commuter Transportation of Canada, *The Case for Transportation Demand Management in Canada*, October 2008

Transportation Demand Management initiatives are typically affordable to implement, but can have a substantial impact on demand, in many cases delaying or even eliminating the need for costly new infrastructure.

2.4.3 BACKGROUND

TRANSPORTATION DEMAND MANAGEMENT INITIATIVES IN THE HALIFAX REGION

In the Halifax region, there are several initiatives and organizations that aim to reduce the number of single-occupant vehicle trips.

Municipal-Led Initiatives

SmartTrip Program: Introduced in 2013, Halifax Transit's SmartTrip program encourages commuters to explore viable and sustainable commuting options (e.g. active transportation, transit and carpooling) and consider more flexible work arrangements. SmartTrip partners with over 20 Halifax employers that represent over 19,000 employees. SmartTrip is an umbrella for several different programs:

- » **Employee Transit Pass (EPass):** The most popular program, the EPass program offers an annual discounted transit pass to SmartTrip partner employers.
- » **SmartCycle:** Lunch and learn introductory sessions provide skills and safety training for commuter bicyclists.
- » **Guaranteed Ride Home:** Free taxi vouchers are provided to SmartTrip members for employees who regularly use sustainable commuting modes. These are meant to help in case of emergency (e.g. a regular cyclist or transit user needs to pick up a sick child from school).
- » **Online Ride-matching:** A web-based ride-matching program (HfxRidematch.ca) that facilitates carpooling or vanpooling.
- » **SmartWork:** Encourages flexible work programs, with a focus on flexible working hours, days and/or locations.

Community-Led Initiatives

Ride-sharing: Ride-sharing includes carpooling, vanpooling and commercial ride-sharing services. Nova Scotia has carpool parking lots maintained by the province strategically located at rural interchanges. Commuters can also join commercial vanpools. There are various online tools to find carpools or vanpools.

Car-sharing: Car-sharing is growing in the Halifax region. These programs offer the flexibility of driving a private vehicle when needed, without the cost and commitment of vehicle ownership. For several years, programs in Halifax have operated solely as round-trip models, where people pick up and drop off vehicles at the same designated spot. These spots are currently located within the Regional Centre, where there are more potential subscribers than in suburban or rural areas.

The local car-share service provider has also recently launched a limited fleet for one-way car-share trips. These vehicles can be picked up and dropped off at any location on-street within a set geographical area or in special parking locations in the Regional Centre. Car-share programs of this type benefit from designated parking in high-density commercial areas, such as downtown Halifax and downtown Dartmouth.

Community Initiatives: There are multiple initiatives in the municipality that offer skills training and safety education to encourage more residents to use active transportation. Multiple clubs and community groups help over 5,000 residents take part in Halifax's Bicycle Week, an annual program that includes events, education, celebration and skills training. The municipality's Try-A-Ride is a free program that provides community events with bicycles, skateboards and scooters and teaches people how to safely ride and maintain the equipment.

Community groups, including the Ecology Action Centre, also offer programming, such as:

- » **Making Tracks Program:** Runs programs for bicycling, bicycle maintenance, walking safety, skateboarding, scootering and inline skating.
- » **School Travel Planning:** Helps school and community groups develop active transportation plans for children.
- » **Welcoming Wheels Program:** Aims to help newcomers to Canada stay active while increasing their transportation independence and connectedness with their communities.

PLANNING CONTEXT

The Halifax Transportation Demand Management Functional Plan (2010)

This Plan contributes to establishing an efficient, sustainable transportation network through the development of policy, programs and services that intend to reduce single-occupant vehicles (SOVs) and the negative impacts associated with private vehicle use. It focuses on increasing the use of sustainable transportation modes rather than increasing road capacity.

The following goals outline the framework within which the Transportation Demand Management Functional Plan was developed:

- » Identify and implement opportunities and programs to reduce transportation energy consumption and emissions.
- » Maximize the availability, appeal and use of fiscally sustainable, environmentally responsible and integrated transportation modes.
- » Enhance and support the use of alternatives to single-occupant vehicle trips.
- » Ensure land use and urban design support fiscally and environmentally sustainable transportation.
- » Ensure that Transportation Demand Management is disseminated to both municipal staff and regional residents.

2.4.4 KEY CONSIDERATIONS

EXPANDING AND IMPROVING EXISTING TRANSPORTATION DEMAND MANAGEMENT INITIATIVES IN THE HALIFAX REGION

SmartTrip

Features that could be considered to enhance SmartTrip include:

- » Increasing the flexibility and attractiveness of the SmartTrip EPass program: EPasses are discounted transit passes bought through payroll deductions. Currently, EPasses are available to SmartTrip partners only and there are two intake periods, January and June.
- » Consider expanding the SmartTrip program to include new programs that incorporate innovations in Transportation Demand Management.
- » The municipality intends to develop a more robust and flexible web-based ride-sharing platform to improve how commuters find carpooling partners and reduce single-occupant vehicles, particularly at rush hour. This new tool may also allow transit or active transportation commuters to track their emissions reductions and cost savings.

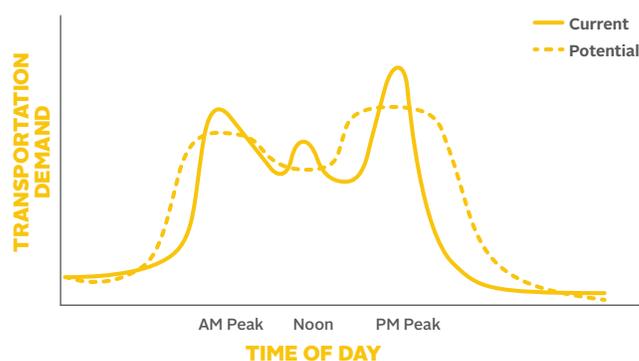


Figure 13: Spreading the Peak Period

Although peak periods represent only a fraction of daily use of the transportation system, they typically dictate the way that our roads are designed. “Spreading the peak” over a longer period can reduce peak transportation demand, improving congestion and limiting the need to expand road infrastructure.



MEET TALIA: *My co-workers and I live in the suburbs and have been carpooling into work together for about a year. We all agree, it was a great decision. It has made the daily journey much less stressful for all of us!*

HOW WILL TALIA BENEFIT FROM THE IMP? SEE **POLICY 2.4.5-D**

Ride-hailing

There is potential for commercial ride-hailing services such as Lyft and Uber, which have grown rapidly in other markets across the country, to emerge in the Halifax Region. The relationship between these services and conventional taxi services is an unresolved issue that requires an appropriate regulatory framework.

Car-sharing

Expanding car-share programs is an important component of integrated mobility and the municipality can support these programs through:

- » **Car-share Locations in Rural Communities:** Car-sharing is currently available in several locations within the Regional Centre, but not in suburban and rural areas. The municipality could work with the province to study the role that car-sharing may play in providing improved and more affordable transportation options for rural communities.
- » **Expanding Car-share Availability:** The municipality may consider subsidizing the operation of a car-share vehicle in unserved areas where demand for this type of service is less certain. This subsidy would be reduced as use grows.
- » **Car-share Parking:** The municipality could consider improving the availability of car-share parking options. For example, car-share vehicles are typically stationed in commercial areas and their reach can be extended through parking permits in residential areas.

POTENTIAL TRANSPORTATION DEMAND MANAGEMENT INITIATIVES

Flexible Work Schedules, Compressed Work Weeks and Working Remotely

Traditional transportation planning practices have led cities like Halifax to size road infrastructure to meet peak demand. Since road network congestion is concentrated during the morning and afternoon peak hours, flexible work schedules can help alleviate some of the pressure.

The following can help improve the distribution of travel demand and reduce strain on the network:

- » Flexible work schedules that begin and/or end outside of the traditional work day (typically 8 am to 5 pm).
- » Compressed work weeks that allow employees to work their required hours over fewer days.
- » Enabling working remotely (i.e. from home), which can reduce the need to commute for some or all work days.

Initiatives like these could help avoid costly capital projects like road widening or new road construction to meet peak demand. They also help attract employees seeking a more flexible work environment. Flexible work schedules are not feasible for all employment sectors and many employers may be hesitant to pursue them for a variety of reasons; however, leadership on this issue from employers such as the municipality can help initiate a culture change.



Pricing Signals

One of the most powerful tools that can influence travel behaviour is cost. When people are required to pay more to use certain elements of the transportation system during specific times of the day or week, they may consider changing their habits. There are a variety of mechanisms that can be used to send “pricing signals” that incentivize or disincentivize travel, including:

- » **Variable Transit Fares:** In some municipalities, peak period transit fares are higher than during the off-peak period. The lower fares in the off-peak period may encourage those with flexibility to shift their trips. This creates more capacity during rush hour.
- » **Congestion Pricing:** Congestion pricing imposes costs to use roads during specific times or at particular locations where congestion is an issue.
- » **Workplace Parking Pricing: Variable, Daily and Monthly Parking Rates:** Even someone who typically commutes by transit or active transportation may need to take their vehicle to work on occasion. If daily parking rates are high and the cost of a monthly parking pass is comparatively low, it is more likely that a person would purchase a monthly parking pass. Once a person has this pass, they will be less likely to take more sustainable modes for the rest of the month. For this reason, it is important that monthly parking rates are set carefully.

- » **Road Pricing:** The road network is a resource that under existing conditions — in the absence of direct tolling — has a fixed financial cost to users that does not change regardless of how much they use. Though user costs are largely fixed, the cost to maintain the road network is variable, since increased use leads to increased maintenance. The concept of road pricing promotes a framework in which road users pay a variable amount based on how much they drive. Road pricing has traditionally been instituted through toll roads, as is done on the Halifax harbour bridges. Now, emerging road pricing frameworks rely on GPS tracking to charge users based on the distance they travel.

Beyond maintenance and upkeep financing, road pricing also has the potential to influence transportation demand, by enabling users to make more meaningful trade-offs with the “real cost” of their road use, which would likely result in a more conscientious approach to travel.

There are many factors that make road pricing challenging to implement. For example, it can be difficult to introduce road tolls that do not penalize some road users more than others solely based on geography. Social equity and affordability are also important considerations. At present, the ability to implement GPS-type road use monitoring is limited by technology requirements and other concerns, most notably privacy.



Bicycle-Sharing

Public bicycle-sharing systems make bicycles available for short-term rental. Bicycles are kept in stations throughout the community and can be borrowed for one-way or round trips. Bicycle-sharing systems can provide a convenient and efficient means of improving travel options in an urban area and are growing in popularity. The municipality has plans to complete a bicycle-share system feasibility evaluation in 2020, once the core bikeway network has been implemented (see section 3.1 Active Transportation). Key issues relevant to the potential implementation of bicycle-sharing in Halifax include:

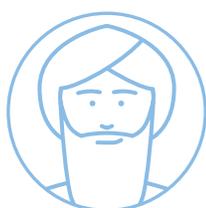
- » Bicycle-sharing systems have a significant capital cost, including the bicycles themselves as well as the stations.
- » Bicycle-sharing systems require considerable physical space.
- » For bicycle-sharing systems to be useful, station coverage is essential. Stations should be abundant and placed in convenient locations.
- » A connected network of quality bicycle infrastructure is important to attract users.
- » Bicycle-sharing typically has a poor rate of use in municipalities where bicycle helmets are mandatory, as is the case in the Halifax region.

Consideration of Transportation Demand Management in new Developments

In some municipalities, a development application must include consideration for how tenants will be making use of Transportation Demand Management strategies. This has the benefit of encouraging or requiring that TDM is incorporated into new developments. Specific considerations could include:

- » Does the development include amenities that support active transportation such as bicycle parking and changing rooms?
- » Can a car-share vehicle be included on-site?
- » Are in-house office facilities available to facilitate flexible work?

These types of considerations can be included as part of the Traffic Impact Assessment that is typically prepared for a new development and can influence the amount of parking required for residents, employees and visitors.



MEET ANAND: *I do enjoy driving, but I don't want to spend my life in my car. To avoid rush hour, I would like to shift my travel times and leave later in the morning and come home later in the evening.*

HOW WILL ANAND BENEFIT FROM THE IMP? SEE **POLICY 2.4.5-C**

Promotion Opportunities for Transportation Demand Management

Promotion is an important component of Transportation Demand Management as in many cases, commuters are not aware of the options available to them. The following lists how the municipality can better promote Transportation Demand Management to residents and employers.

Community/Workplace Events and Competitions are a great opportunity to increase awareness of Transportation Demand Management measures and encourage people to try new ways of commuting. Notable examples include:

- » Bicycle to Work Week
- » Winter Bicycle to Work Day
- » The National Commuter Challenge

Transit Promotion: Promoting transit through special measures such as free transit days or free transit passes for children can encourage the public to use transit more often.

Transit incentives: The municipality may consider exploring some creative incentives to encourage transit use. Some incentives to consider include:

- » Expired bus passes may be presented for a free visit to community pools/arenas etc.
- » Group travel rates or family rates for transit travel.
- » Shopping discounts with partnering businesses.

Targeted Transportation Demand Management: Teenagers and Young Adults

Transportation habits tend to form relatively early in life and, once they are established, can be difficult to change. For many people, taking the bus or riding a bicycle on the street can be intimidating. Providing people with tools to safely use active transportation and transit early in life builds confidence, independence and freedom. Approaches could include:

- » Encouraging the province to site new schools and post-secondary institutions next to walking and bicycling infrastructure.
- » Developing incentive programs to encourage walking and bicycling to school, especially in areas with good connections to active transportation infrastructure.
- » Designing marketing campaigns to appeal to youth.
- » Developing multi-modal skills and safety training customized to teenagers and young adults.
- » Collaborating with universities and colleges to encourage awareness and use of a subsidized annual transit pass (UPass).
- » Considering options for reduced fares for children through the roll out of new fare technology.



2.4.5 POLICIES & ACTIONS

- a) Promote and explain alternatives to single-occupancy vehicle trips, including active transportation, transit and ride-sharing.**

Action 54: Consider pricing signals to promote new transit fare options once improved fare technology is in place.

Action 55: Produce and make available simple online and printed publications explaining:

- » How public investment, land use and mobility affect each other.
- » How street standards, community design and mobility impact each other.
- » How to use transit.
- » What businesses can do to encourage sustainable mobility while saving costs.
- » The hidden costs of parking provision to employers.
- » What households can do to reduce transportation impacts while saving money.

Action 56: Encourage ride-sharing, including carpooling and vanpooling, through improved web-based coordination.

Action 57: Encourage young people to use transit and active transportation.

Action 58: Develop marketing videos for combining multiple sustainable modes in a trip (e.g. riding a bicycle to catch the bus).

Action 59: Improve transit promotion and education by better marketing existing and new services and promoting service changes.

- b) Develop relationships with school boards and post-secondary institutions to promote active transportation and transit to the youth and young adults.**

Action 60: Promote active transportation and provide safety and skills education through:

- » Engaging thought leaders who are popular with youth.
- » Drawing upon available programs such as Active & Safe Routes to School, Walk n' Roll Halifax and Operation Lifesaver.
- » Continuing and expanding upon existing active transportation promotions, such as "Open Streets" initiatives and "Bicycle to Work" Week.

- c) Work with SmartTrip members to encourage and facilitate flexible work locations and hours and incentivize sustainable modes during the peak commuting periods.**

Action 61: Work across municipal departments to implement flexible work schedule pilot programs for employees.

Action 62: Encourage employers who provide subsidized employee parking to provide equivalent benefits to employees who do not drive to work.

Action 63: Encourage employers to provide preferential high-profile carpool or vanpool parking.



- d) Expand the breadth of the SmartTrip program to increase its utility and provide more benefits to members.**

Action 64: *Expand and improve the SmartTrip program to enable and encourage commuters to try new transportation options.*

Action 65: *Increase the flexibility and attractiveness of the SmartTrip Pass program by having more enrollment periods.*

- e) Build a relationship with organizations that support Transportation Demand Management initiatives to share expertise and resources and form community partnerships to support the growth of alternatives to private vehicle ownership such as car-sharing, ride-hailing and bicycle-sharing.**

Action 66: *Develop options to encourage the expansion of locations where car-share vehicles are placed.*

Action 67: *Expand the availability of parking options for car-share vehicles.*

Action 68: *Continue to facilitate car-sharing services within the region.*



3 MODE-SPECIFIC POLICIES

The mode-specific policies in this section build on the foundational policies to provide detailed direction related to each method of travel.

MODE-SPECIFIC POLICIES

- » Active Transportation
- » Transit
- » Goods Movement
- » Road Network
- » Parking

ACTIVE TRANSPORTATION



WHAT IS ACTIVE TRANSPORTATION?

ACTIVE TRANSPORTATION includes walking, bicycling and other “human powered” ways to move around the Halifax Region.



ALL AGES AND ABILITIES BICYCLE NETWORK:

Bicycling should be comfortable and enjoyable for people of all ages and abilities – from children to seniors to new bicyclists. Certain types of facilities make people feel safer and are more fun to use for bicyclists.

Bicycling can be a practical option for short and medium-length trips. This travel time is competitive with travel by private vehicle or transit, especially during the morning and afternoon peak periods.

Principles for the design and implementation of the **REGIONAL CENTRE BICYCLE NETWORK**

CONTINUOUS IMPROVEMENT:

Implement new types of facilities and intersection treatments and evaluate, improve and upgrade as needed.

MAXIMIZE PROJECT BENEFITS:

Connect routes and close network gaps.

25-50%
of Halifax Peninsula residents
WALK TO WORK



50%
of Halifax residents said they would
LIKE TO TRAVEL BY BICYCLE
more than they do now



THE NUMBER OF PEOPLE WHO WALK AND BICYCLE IS DIRECTLY RELATED TO:



QUALITY & CONNECTIVITY
of active transportation
infrastructure



LAND-USE PATTERNS
of where people live, work,
shop and access services



Level of **AWARENESS AND MOTIVATION** that people have for using active modes as a viable transportation option

3.1 Active Transportation

3.1.1 OBJECTIVE

Encourage walking and bicycling by building complete and connected networks that respond to the needs of urban, suburban and rural communities, for all ages and abilities.

3.1.2 INTRODUCTION

Active transportation includes any form of “human-powered” mobility, such as walking, bicycling, skateboarding, using a wheelchair and rollerblading.

Walking (including those who use mobility aids) is the mode of transportation that all residents use for at least part of each trip. It is also the most widely practiced recreational activity in the municipality. The needs of people with disabilities require particular consideration in the design and operation of pedestrian networks. This chapter outlines how the IMP will encourage walking by expanding and refining infrastructure, including:

- » Completing significant gaps in the sidewalk network.
- » Making it easier and safer for walking.
- » Adding pedestrian infrastructure in rural community centres.

Bicycling is an ideal mode for short and medium-length trips — a 5km trip takes less than 20 minutes by bicycle. This plan proposes an accelerated build-out of local and regional networks of protected bicycle lanes, multi-use pathways (e.g. trails, greenways) and local street bikeways to create a connected network for “all ages and abilities” (AAA). This will increase the appeal of bicycling for those who do not bicycle now. This chapter outlines priorities for:

- » A core Regional Centre bikeway network.
- » Suburban and rural community bicycling networks connected to transit, employment districts, shopping, schools, service centres and other community amenities.
- » Bicycle infrastructure that connects Halifax’s communities.

Advancing walking and bicycling in Halifax is part of implementing more Complete Streets throughout the region.

The benefits of attracting more people to use active transportation in the Halifax region include:

Mobility: Every four trips shifted to active transportation removes three vehicles from the road. This benefits all road users, including those who drive. Having multiple options for mobility allows people to choose the most efficient travel mode to meet their needs.

Health: Active transportation allows people to build physical activity into their daily lives. People who incorporate walking and bicycling into their regular transportation have reduced incidences of chronic diseases such as diabetes, heart disease and obesity.

Accessibility: Active transportation infrastructure, when designed in a barrier-free manner, helps improve freedom of movement for people with different abilities.

Economic: Numerous studies document the economic benefits related to active transportation such as increased residential property values near active transportation facilities, improved productivity of employees who commute actively, reduced personal commuting costs and reduced strain on the health care system.

Environment: Travelling actively does not emit greenhouse gases or other emissions that contribute to poor air quality.

Recreation: Active transportation infrastructure such as bicycle lanes and multi-use paths can double as recreational amenities.

Quality of Life: Using active transportation for commuting and everyday trips enhances personal well-being, opportunities for social interaction and the overall quality of life in communities.

3.1.3 BACKGROUND

Making it convenient for more residents to choose walking and bicycling is key to the success of the IMP. Walking is part of almost all trips, most notably the first and final parts of transit trips. Walking and bicycling can be fast and convenient ways to access destinations and transit within the region. For example, in the Regional Centre, increasing walking and bicycling trips supports land-use planning objectives, helps manage congestion and is often the fastest choice to get around. Providing safer and more comfortable infrastructure for walking and bicycling is an essential part of the municipal transportation network.

The active transportation infrastructure and programs that are planned for implementation over the next several years have the potential to significantly increase the number of people walking and bicycling in the Halifax region. Complemented by other initiatives such as the *Moving Forward Together Plan*, the *Centre Plan* and the future *Halifax Green Network Plan*, the focus going forward will be to:

- » Develop local and regional active transportation networks.
- » Integrate active transportation networks with transit routes and land-use changes.
- » Attract more residents to active modes.

ACTIVE TRANSPORTATION IN THE HALIFAX REGION

There is strong evidence in the Halifax region that when the conditions are favourable for walking and bicycling, residents choose these modes more often. There is also evidence that more people would bicycle if better infrastructure was in place. In Halifax, 50% of residents said they would like to travel by bicycle more than they do now.

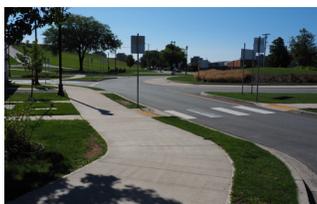


MEET TOM: *To cut down on the use of my car, I have started to walk to work in the morning. Part of my walk is lovely, through quiet neighbourhoods and past my favourite coffee shop. But the other half takes me along a major road that feels really uncomfortable. I wish there were other routes I could take instead.*

HOW WILL TOM BENEFIT FROM THE IMP? SEE **POLICY 3.1.5-E**

Active Transportation Infrastructure

The municipality's expansive network of active transportation infrastructure includes:



Approximately 967KM of concrete and asphalt sidewalk

The older parts of the region, the Halifax Peninsula and central Dartmouth, have dense and complete sidewalk networks. The sidewalk network becomes less complete and less accessible as distance increases from the Regional Centre.



More than 110KM of painted on-street bicycle lanes — 15KM in the Regional Centre, 86KM in suburban areas and 9KM in rural areas.

The first segments of protected bicycle lanes were installed as a pilot project in 2015.



More than 160KM of multi-use pathways (branded as "trails" or "greenways").

Multi-use pathways first appeared in rural parts of the municipality in the 1990s when railway corridors were converted to trails. The 2014 Active Transportation Priorities Plan established the "Active Transportation Greenway Network Vision" of over 300km of separated walking and bicycling facilities to connect communities across the Region. These facilities are often developed by the municipality in conjunction with community groups who serve as advocates, stewards and promoters of the facilities.

PLANNING CONTEXT

Active transportation planning has been in the works since 2002, carrying through to the recently adopted 2014-19 Active Transportation Priorities Plan. The 2014 *Regional Plan* targets increased walking and bicycling mode shares.

At present, implementation efforts for the most recent Active Transportation Priorities Plan are ongoing. The IMP recommends speeding up the implementation of the proposed active transportation network, recognizing the key importance of quality infrastructure and programming in increasing mode share and supporting strategic transportation initiatives.

2002

BLUEPRINT FOR A BICYCLE FRIENDLY REGION

The overall goal of the Halifax region's first Bicycle Plan, adopted in principle by Regional Council in 2002, was to "enhance livability of the municipality and the health and well-being of its residents, by encouraging more people to use bicycles for some or all of their day-to-day transportation needs." This could be done by building a network of primary and secondary bicycle routes and by creating training and promotion programs and bicycle parking. It included a map of candidate bicycle routes and began the process of considering shoulder widening to add bicycle lanes when streets were resurfaced. The plan resulted in painted bicycle lanes on sections of Main Street (Dartmouth), Main Road (Eastern Passage) and the Bedford Highway, among others.

2006

ACTIVE TRANSPORTATION FUNCTIONAL PLAN

The Active Transportation Functional Plan is intended to support the overall objectives of the *Regional Plan*. Key objectives of the plan included:

- » Establish a complete, region-wide active transportation network.
- » Double the number of person-trips walking and bicycling by 2026
- » Make conditions safer through a combination of facility development and promotion and safety education

2014

MAKING CONNECTIONS: 2014–2019 HALIFAX ACTIVE TRANSPORTATION PRIORITIES PLAN

This plan is an update to the 2006 plan and is more strategic in prioritizing candidate projects. Other updates include:

- » Introducing new bicycling facility types (protected bicycle lanes and local street bikeways)
- » Introducing the concept of "all ages and abilities" for attracting more people to use active transportation
- » Focusing on walkability
- » Establishing the vision for a regional network of active transportation multi-use paths.

3.1.4 KEY CONSIDERATIONS

The key walking and bicycling focus areas of the IMP are consistent with the direction of the 2014-19 Active Transportation Priorities Plan. Through implementing the IMP, realizing these opportunities will enhance and accelerate fulfillment of those municipal active transportation objectives.

MAKING IT EASIER & SAFER TO CHOOSE WALKING

To encourage more residents to walk, Halifax will focus on:

Continuing to close gaps in the sidewalk network

Adding new sidewalks in priority areas such as transit routes, school areas and locations for shopping and/or services. Also, updating the municipality's criteria for new sidewalk additions to include social equity considerations and new tools to predict the potential demand for walking facilities.

Strategic Sidewalk Projects

Implementing strategic sidewalk projects in areas with a significant sidewalk deficiency. Specific examples include Dutch Village Road and sections of Herring Cove Road (See Figure 15).

Design Features to Improve Walkability

Walkability can be improved by adding design features such as curb extensions and refuge medians, which reduce pedestrian crossing distances and improve visibility. It can also be enhanced through the design and placement of amenities such as street trees, benches and other features. Walkability also relates to the design of adjacent buildings and the degree to which they enhance the comfort, appeal and safety of the walking environment.

Identify and Classify Pedestrian Priority Routes

A street's functional classification for traffic is often inconsistent with its use by pedestrians. For example, arterial roads do not necessarily have higher pedestrian volumes than local or collector streets, although the *Municipal Design Guidelines* dictates that they should have wider sidewalks. The inability of the *Municipal Design Guidelines* to identify design standards for pedestrian-priority routes separate from a street's functional classification is a limiting factor in the effective design for pedestrian comfort and safety.

Ideally, pedestrian priority routes — also commonly referred to as “arterial pedestrian streets” — should have wider sidewalks and comfortable tree-lined boulevards that provide shade as well as a physical and psychological separation from vehicular traffic. Arterial pedestrian streets also benefit from other pedestrian amenities such as waste bins, benches and enhanced service standards for maintenance.

Improving the context sensitivity of the Municipal Design Guideline's (Red Book) design standards to enable more flexibility in the design of identified pedestrian priority routes is a key opportunity to improve the accommodation of pedestrians.

Make rural community centres more walkable

In rural areas, people tend to live farther from each other and the services they need, making it impractical to walk and necessary to drive to most places. However, rural areas often have concentrations of activity (e.g. commercial service centres), closely spaced and related destinations (e.g. a school near a community centre) and mixed-use hubs (e.g. village centres, hamlets, main streets) where walking



MEET ASHA: *I love walking to school with my friends! After learning about the walk to school program and with the new sidewalk near my house, my mom said it was finally okay for me to walk by myself. My friends all join up with me along the way.*

HOW WILL ASHA BENEFIT FROM THE IMP? SEE **POLICY 3.1.5-A**

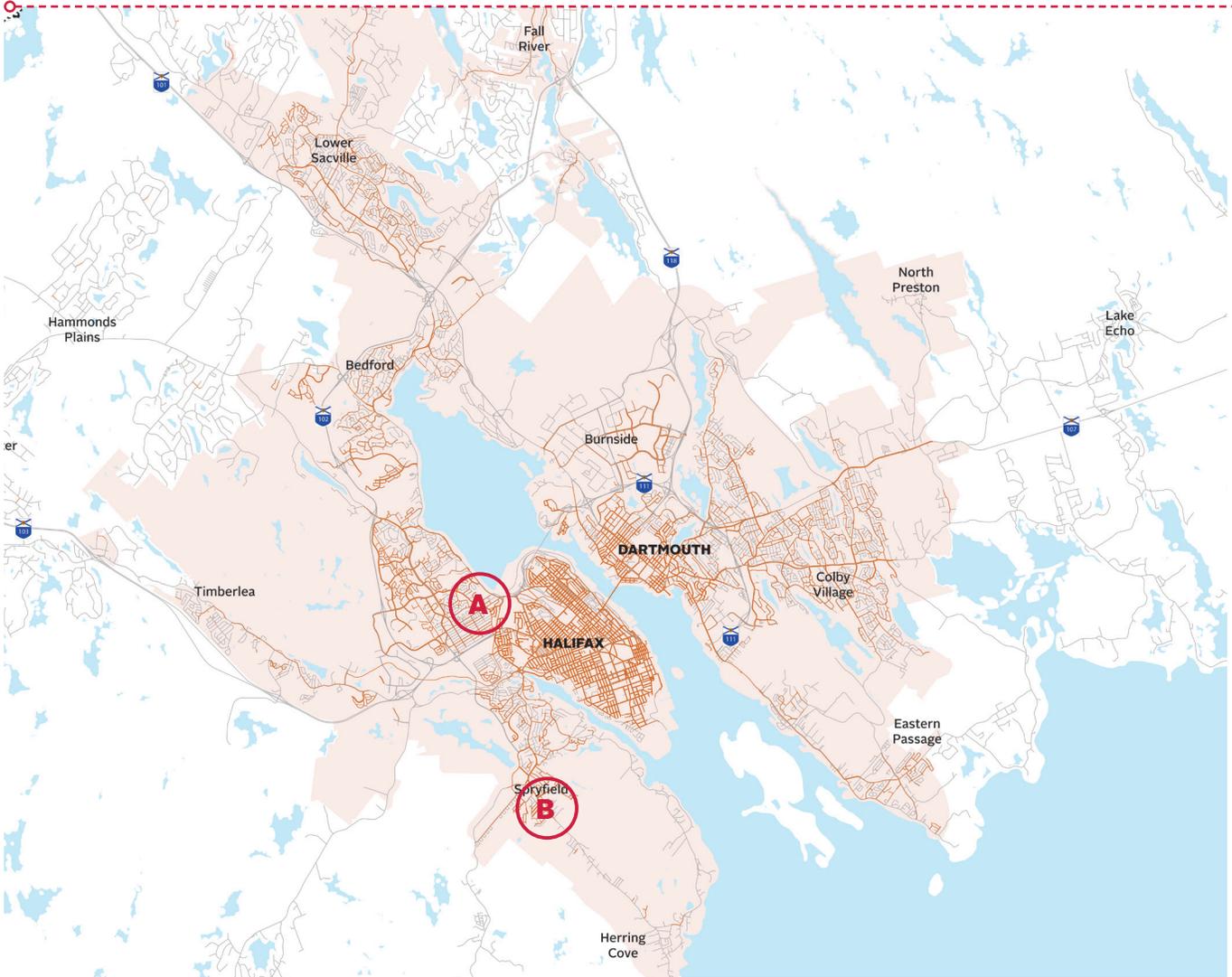
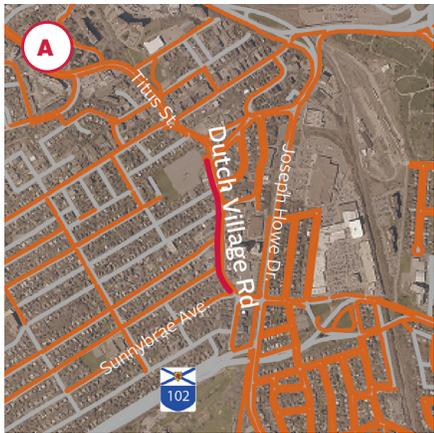


Figure 14: Existing Sidewalks

DUTCH VILLAGE ROAD



HERRING COVE ROAD

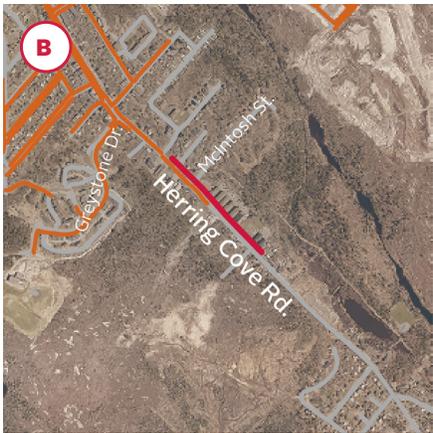


Figure 15: Proposed New Major Walking Connections

from one place to another is practical and, as a result, should be encouraged and supported. In such places, the absence of any pedestrian infrastructure, like sidewalks or paved shoulders, can make walking unpleasant and potentially dangerous.

In the Halifax region, new sidewalks (about 4km per year) are built within the Urban Service Boundary, where their construction and maintenance is funded through the urban general tax rate. In rural areas, the construction of new sidewalks must be funded by a local area rate established each time a decision is made to construct a new sidewalk. There is no program in place to determine the most affordable way to create sidewalks in rural locations where they are needed most.

The development of a rural pedestrian program is a potential solution that would help address some of these issues and better inform the decision making processes. A rural pedestrian program could identify a funding mechanism and method for prioritizing rural pedestrian projects based on such criteria as: risk from vehicle traffic, proximity to schools and locations of shops, services and community facilities.

Continue to build and maintain multi-use pathways for walking and bicycling

The 2014 Active Transportation Priorities Plan established the “Regional Active Transportation Greenway Envisioned Network”. This proposed 300+km network is for shared walking and bicycling facilities that connect communities, parks, commercial hubs and more. As of 2017, over 160km have already been built.

MAKING IT EASIER & SAFER TO CHOOSE BICYCLING

To encourage more residents to bicycle, Halifax will focus on:

Regional Centre All Ages and Abilities Bicycle Network

To achieve the Active Transportation Priorities Plan’s goal of doubling the share of trips to work made by bicycle by 2026, the municipality must accommodate residents who are interested in travelling by bicycle but are fearful of riding in mixed traffic. This will require a network of bicycle routes designed to be comfortable for people of all ages and abilities.

Bicycling routes are most useful when they form a connected and cohesive network that provides direct and convenient access to important destinations like employment districts, shopping, schools, service centres and other community amenities. A good network is easy to understand, has an appropriate density of routes and is spaced closely together in areas with the highest bicycling potential. Topography is also an important consideration, especially in Halifax, where steep hills can discourage people from choosing to ride a bicycle.



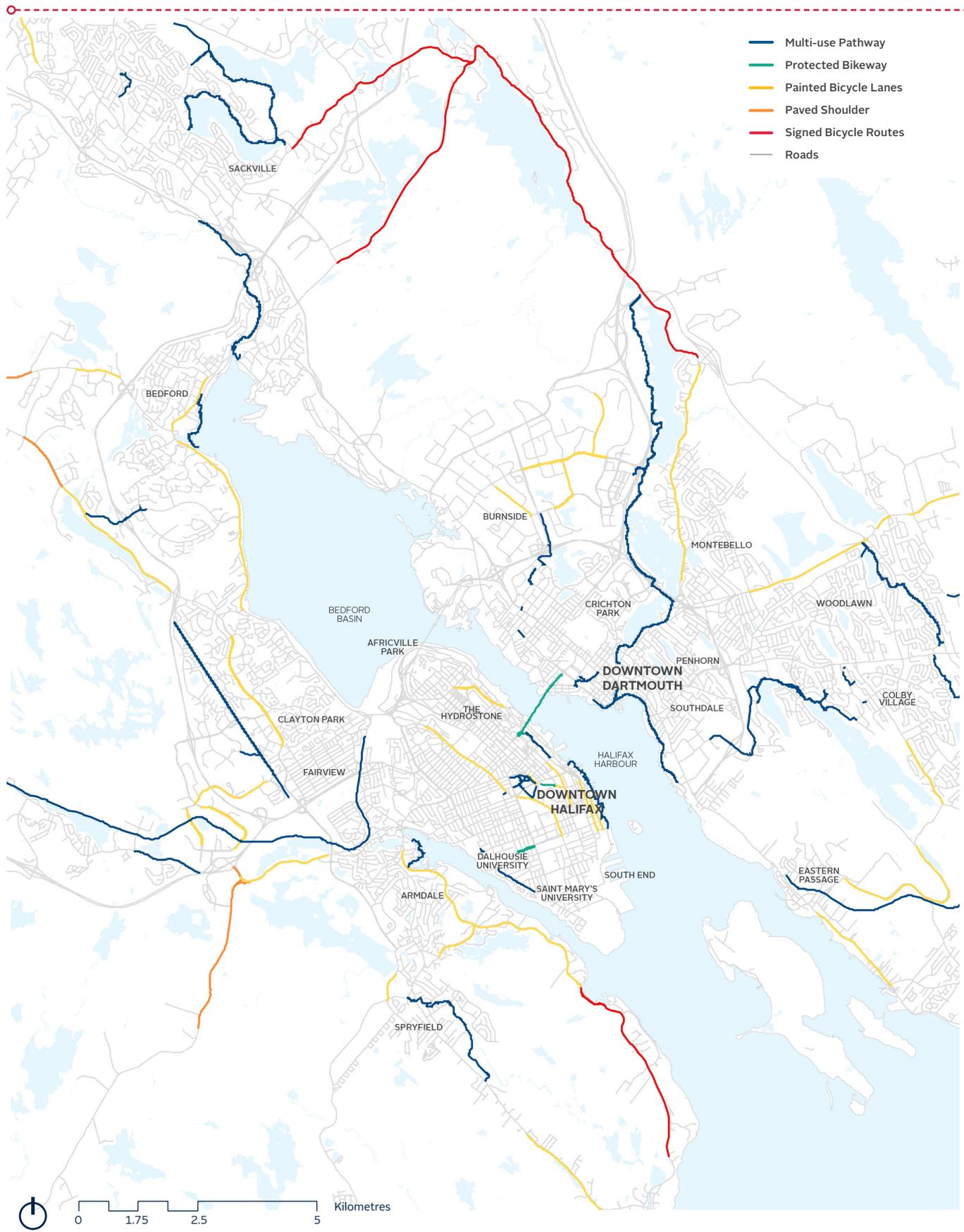


Figure 16: Existing Bicycling Infrastructure Map



Figure 17: Proposed All Ages & Abilities Bicycle Network (2022)

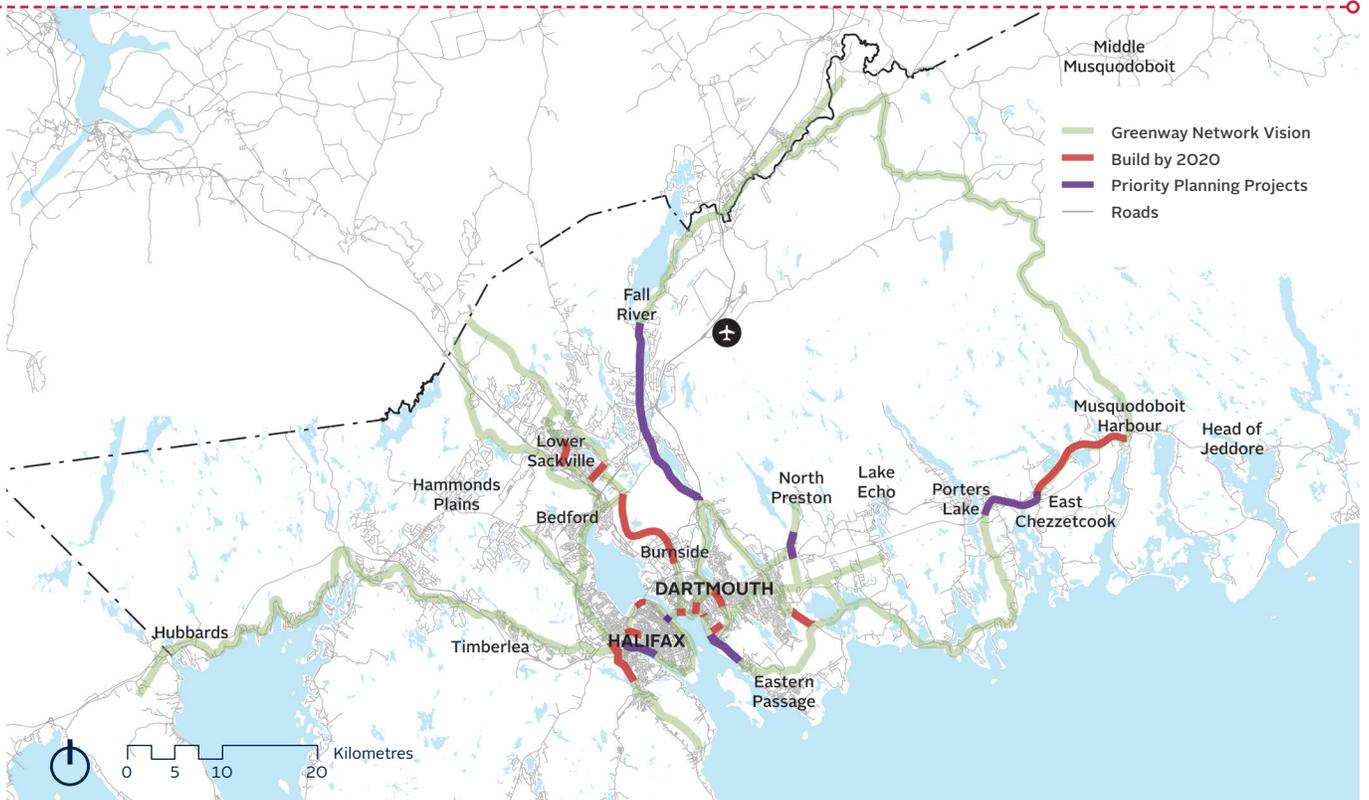


Figure 18: Priority Connections for Multi-Use Pathways

Developing the all ages and abilities bicycle network within the Regional Centre offers the highest potential to attract new bicyclists due to the relatively contiguous and dense mix of uses in a compact form. The *Centre Plan* proposes adding more residential density to this well-served area, furthering the need to increase the number of active transportation users. Several routes are proposed for construction by 2022 (see **Figure 17**).

As Halifax develops an all ages and abilities network of bicycle routes, there will be new facility types such as protected bicycle lanes and the desire to encourage more people to bicycle through the winter. Cleaning these facilities of dirt and clearing away snow may require new processes or even new equipment. This may involve the development of new standards for snow clearing for bicycle lanes, multi-use pathways and local street bikeways. Such services will require additional resources that would be subject to the budgeting process and Council approval.

Suburban and Rural Bicycle Routes

There are opportunities and significant interest in making it easier to use active modes in suburban and rural communities. Beyond the Regional Centre, the Active Transportation Priorities Plan identifies a mix of local street bikeways, bicycle lanes and paved shoulders to implement primarily in conjunction with other road rehabilitation projects.

Suburban Bicycle Facilities:

In suburban areas, the goal is to provide connections to transit stops and terminals, employment districts, shopping, schools, service centres and other amenities within the community. A combination of sidewalks, multi-use pathways, bicycle lanes and local street bikeways will provide connectivity.

Rural Bicycle Facilities:

In rural areas, the goal is to make strategic local connections to transit, schools, shopping and service centres. Most connections will be provided through multi-use pathways and paved shoulders.

PROMOTING & ENABLING ACTIVE TRANSPORTATION

While complete and connected infrastructure for walking and bicycling is critical, this needs to be complemented by programs to promote these networks and facilities, along with safety education and skills training.

Safety Education and Skills Training

Many people avoid bicycling because they are concerned about safety. Promoting safe practices for all road users will encourage more people to choose bicycling.

- » Expand educational initiatives to improve safety for active transportation users (e.g. share the road education for motorists, bicycling skill building workshops and trail etiquette). Education for all road users on how to use types of bicycling infrastructure new to the Halifax region (e.g. bicycle signals, bicycle boxes, cross rides) will also improve safety.

Marketing and Promotion

Effective communication is the key to success for any project; this is especially true for active transportation. Many people may not be aware of the options available to them and effective marketing and promotion can encourage people to try other travel modes.

- » Promote active transportation health, economic and recreational benefits.
- » Support the work of community groups and external partners to promote and educate about active transportation.
- » Implement community-based social marketing approaches to support behaviour change.
- » Promote the use of bicycling and walking infrastructure (e.g. bicycle route maps, websites, ribbon-cutting ceremonies, media campaigns, social media).

Support Open Street Initiatives

“Open Street” events temporarily close streets to vehicles while opening them to people using active modes of transportation. Unlike parades, charity runs or other street festivals, the purpose of these events is to promote physical activity, civic discovery, social cohesion/connection and active transportation. These events also aim to reduce barriers to physical activity.

“Open Streets” events have been successfully implemented in the Halifax region on several occasions in recent years. To date, the events — known as “SWITCH Open Streets” — have occurred periodically (every few months) on routes in downtown Halifax and downtown Dartmouth typically 2-4km in length. Opportunities to expand the current “Open Streets” program include increasing the frequency of the events, as well as expanding the length of the routes. However, the costs and logistics associated with these events can make them challenging to deliver. These include:

- » Barricades and road closure signs
- » Transit detours
- » Policing
- » Traffic management plan
- » Volunteer coordination
- » Advertising/marketing/promotion

A streamlined protocol for arranging and managing these events could reduce the level of effort needed each time, enabling them to be held more frequently.

COORDINATING WITH OTHER ORDERS OF GOVERNMENT

Many active transportation issues that are important to the municipality require consultation with other orders of government, including Nova Scotia's departments of:

- » Transportation & Infrastructure Renewal
- » Energy
- » Education
- » Natural Resources
- » Communities, Culture and Heritage.

Provincial Government

Ongoing coordination with the Province of Nova Scotia is important for the following active transportation issues:

Active Transportation Facilities on Provincial Roads:

The province owns most of the road network outside of the Urban Service Boundary. As part of implementing the Blue Route provincial bicycling network and other active transportation enhancements, the province is adding wider paved shoulders during some road rehabilitation projects. Development of a rural pedestrian program would need to be completed in conjunction with the province.

BICYCLE CORRALS: The Halifax Cycling Coalition (HCC), with support from Halifax staff and Councilor constituency funds, began with one corral as a pilot project in the summer of 2015. Since then, bicycle parking corrals have been installed at five locations on the Halifax peninsula and in downtown Dartmouth. Each corral provides on-street parking for 10 bicycles protected at each end by planter boxes decorated with original artwork.

Bicycle corrals are an effective way to provide bicycle parking where demand is high and the space within the right-of-way to provide additional off-street bicycle parking is limited. Corrals also provide the added benefit of increased visibility at intersections. By preventing large delivery trucks from parking and unloading close to an intersection, the pilot corral location on Agricola Street succeeded in improving visibility for drivers approaching the crosswalk and pedestrians attempting to cross the street.





MEET JAMIE: *Alex and I live in Dartmouth and ride our bicycles to the ferry to get to work in downtown Halifax. Alex feels confident biking along main streets mixed in with traffic, but I refuse to bike unless it's along protected lanes, separate trails or quiet streets.*

HOW WILL JAMIE BENEFIT FROM THE IMP? SEE **POLICY 3.1.5-B**

In some cases, provincial highway infrastructure can be a barrier to active transportation. For example, Highway 111 has some crossings that are not suitable for all ages and abilities and would benefit from improvements. Highway 107 was built on top of the former rail corridor between Porters Lake and East Chezzetcook, interrupting the rails-to-trails corridor. Making and funding necessary improvements will likely fall under municipal responsibility, but the province will be an important partner for providing permissions and coordinating project planning and construction.

Active Transportation Facilities on Provincial Crown Land and in Provincial Parks:

Many kilometres of multi-use pathways are located on former rail corridors (designated as Provincial Crown Land) and in provincial parks. Typically such facilities are built and maintained by volunteer community groups. The Halifax region provides financial support to these groups to construct, maintain and operate these corridors.

Motor Vehicle Act:

The provincial Motor Vehicle Act governs the types of walking and bicycling facilities that can be implemented in Nova Scotia within the right-of-way. Some of the more recently recommended bicycle facilities in national and North American guidelines are not currently permitted under this Act (e.g. "CrossRide" bicycle crossings, bicycle traffic signals). The municipality is working with the province to expand the types of facilities that can be implemented here.

Federal Government

The federal government's past involvement in active transportation has been minimal. Currently, active transportation projects may be eligible under some infrastructure funding programs to monitor both bicycle and pedestrian activity.

MONITORING & EVALUATION

An important tool to help understand the use of active transportation facilities and their effectiveness is the collection and analysis of data. Though data is currently gathered periodically to support bikeway planning and to evaluate new facilities, a more comprehensive program is needed.

INTEGRATED PLANNING

Integrating active transportation strategies with other focus areas of the IMP offers important potential synergies:

- » Land Use: Integrate active transportation with land use by encouraging sidewalk-oriented shops and avoiding front yard parking.
- » Transit: Implement high quality, all ages and abilities pedestrian and bicycling facility connections to Halifax Transit terminals. Combined walking and transit trips are the most common mixed-mode form of transportation. Transit access and sheltered waiting areas are an important part of improving walkability.
- » Road Network: Incorporate new or improved active transportation facilities in road network projects.
- » Transportation Demand Management: Use Transportation Demand Management promotional and educational programs to help support active transportation initiatives.

3.1.5 POLICIES & ACTIONS

a) Implement pedestrian infrastructure that is accessible to all ages and abilities.

Action 69: Deliver the following Priority Sidewalk Connections by 2020: Herring Cove Road, Dutch Village Road (see **Figure 15**).

Action 70: Deliver all ages and abilities pedestrian connections to all Halifax Transit terminals by 2022.

Action 71: Update the criteria for selecting new active transportation projects to better respond to equity considerations, demand, future development, coverage and other factors.

b) Halifax will help to enable year-round bicycling in the “all ages and abilities” bicycle network. This would require additional resources and would be subject to the budgeting process and Council approval.

Action 72: Deliver the Regional Centre all ages and abilities bicycle network by 2022 (see **Figure 17**).

Action 73: Deliver all ages and abilities bicycling connections to all Halifax Transit terminals by 2022.

Action 74: Pursue the regulatory and legislative changes in the Nova Scotia Motor Vehicle Act necessary to enable best practice bicycle facilities including such items as bicycle signals and crossrides.

Action 75: Implement a branding and wayfinding system by 2022. Aim for 100% network coverage.

Action 76: Conduct annual state-of-good-repair inventories of bicycle facilities and develop maintenance standards that are specifically designed to maintain the surfaces, surface markings, physical barriers and signage of bicycle infrastructure in a state suitable for users of all ages and abilities.

Action 77: Develop enhanced options for snow clearing and cleaning standards for bicycle routes. Identify cost implications. Submit to Council for consideration.

Action 78: Prepare a marketing and enabling campaign by 2018, including a strategy to deliver information and education as new facilities are implemented and as new bicycling facility types are introduced.

c) Expedite the planning, design and construction of the regional network of multi-use pathways.

Action 79: Deliver the Priority Active Transportation Greenway Network connections by 2022 (see **Figure 18**).

Action 80: Review and update the community development model for planning, constructing and maintaining Active Transportation Greenways.



d) Expand active transportation connections in rural communities.

Action 81: *Continue to work with other orders of government to implement the rural active transportation network, including along provincial roads.*

Action 82: *Establish a rural pedestrian program, including:*

- » *A financing mechanism which recognizes that rural pedestrian safety is affected by regional traffic.*
- » *Criteria to prioritize development of pedestrian infrastructure in village centres, hamlets or other rural areas of concentrated pedestrian activity.*
- » *Opportunities for cost sharing with other orders of government.*

e) Connect communities by facilitating improved links for active transportation across geographical or structural barriers.

Action 83: *Identify and implement solutions to facilitate active transportation links across railways, highways and watercourses, consistent with the Active Transportation Priorities Plan.*

Action 84: *Investigate the feasibility of a bicycle-pedestrian crossing across the Northwest Arm (e.g., seasonal floating "seabridge" or bike-pedestrian ferry), while considering important views and the need for sailboats to navigate the Arm.*

f) Monitor and evaluate the effectiveness of active transportation in the region.

Action 85: *Obtain baseline data of pedestrian volumes and bicycle use, including counts at strategic locations.*

Action 86: *Update data periodically and correlate with infrastructure improvements to help determine their effectiveness.*

g) Prepare for ongoing implementation of the Active Transportation Priorities Plan beyond 2019.

Action 87: *Postpone a full review of the Active Transportation Priorities Plan from 2019 to 2023 to allow for the evaluation of 2022 networks.*

Action 88: *Complete a bicycle share feasibility study by 2019.*



TRANSIT



CURRENT
Transit Services



POTENTIAL FUTURE
Transit Services



WHAT ARE TRANSIT PRIORITY MEASURES?

TRANSIT PRIORITY MEASURES are tools that prioritize the movement of buses over other vehicles, reducing travel time and increasing reliability. Common examples include bus queue jump lanes, transit signal priority, and dedicated bus lanes.

WHAT ARE TRANSIT PRIORITY CORRIDORS?

TRANSIT PRIORITY CORRIDORS are streets that have been prioritized for transit through the use of multiple Transit Priority Measures.

WHAT IS BUS RAPID TRANSIT (BRT)?

BUS RAPID TRANSIT (BRT) is fast, reliable bus service that uses features such as dedicated lanes, Transit Priority Measures at intersections, off-board fare payment and platform-level boarding.

In 2015,
Halifax Transit carried over
25 MILLION PASSENGERS



OVER 90%
of residents in the
Urban Transit Service
Boundary live within
500m OF A BUS ROUTE

HALIFAX TRANSIT SERVICE CURRENTLY OPERATES:

67
transit routes



330
buses



5
harbour ferries

3.2 Transit

3.2.1 OBJECTIVE

Enhance transit service by increasing the priority of transit and improving the integration of transit service with land use and settlement patterns.

3.2.2 INTRODUCTION

Transit provides residents with inexpensive, efficient ways to travel. Halifax Transit operates 67 transit routes across the region with a fleet of nearly 330 buses and five harbour ferries that sees approximately 100,000 trips each weekday. The overall structure of the existing transit network is a radial grid, with the primary focus of most routes on either downtown Halifax or downtown Dartmouth. In the suburbs and semi-rural parts of the region, some local routes converge at the nearest terminal, where passengers can transfer to routes that travel downtown or to other areas.

In Halifax, like many mid-sized cities in Canada, transit service is challenged by changing and evolving land uses. An increasing amount of employment and residential development has been locating in a dispersed, peripheral land-use pattern and ridership has stagnated in recent years. The IMP recognizes how an integrated transportation system can move people efficiently and can benefit from and contribute to complete communities. For example, compact communities with a mix of destinations are more efficiently served by transit vehicles than dispersed neighbourhoods with circuitous streets. High-quality transit,

easily accessed through walkable communities, can help shape both local and regional growth.

Today, approximately 12% of commuting trips in the Halifax region are made by transit. The *Regional Plan* has targeted an increase to 16% or more by 2031. Achieving this ambitious ridership target is an important component in meeting municipal sustainability and livability goals. However, it is important to recognize that, in order to achieve these targets, Halifax Transit must not only improve transit service but also integrate with land use planning and other transportation modes.

Halifax Transit's Mission Statement

"Working together to provide a safe, reliable and sustainable transit system for all."

The IMP will help the municipality build on past successes and recent direction provided by the *Moving Forward Together Plan*, to create even better transit service that is integrated with other modes and considered a part of the land-use planning process.

Specifically, the IMP:

- » Considers the potential for expanding service options to include higher order transit such as commuter rail, bus rapid transit and a larger network of ferries.
- » Explores transit oriented development and how it will be pursued as an approach to better integrate transit into the daily lives of residents (see **Section 2.2 Land Use & Transportation**).

3.2.3 BACKGROUND

EXISTING TRANSIT SERVICE IN THE REGION

Recent investment in transit services has improved the quality, accessibility and availability of transit in Halifax, significantly improving the user experience. Notable service improvements in recent years include:

- » All buses are accessible and have no steps at the front or rear doors with an entrance ramp that can be deployed as required.
- » An improved telephone departure line and a new stop announcement system inside and outside of Halifax Transit buses.
- » Automatic vehicle location technology used in trip planners like Google Maps and 3rd party mobile apps.
- » Bicycle racks on all transit vehicles to facilitate multi-modal trips.

- » Partnerships with a local car-sharing service to offer an annual subsidized transit pass to car-share members.
- » The launch of three new harbour ferries to allow for more consistent and reliable ferry service.
- » The completion of the new Lacewood Terminal, which has achieved LEED Silver accreditation.
- » Approval of the *Moving Forward Together Plan*, providing strategic direction for transit service changes.

Projects currently underway at Halifax Transit and planned for completion in early 2018 include:

- » **The Halifax Ferry Terminal Refresh Project:** The Halifax Ferry Terminal, constructed in 1978, requires a significant cosmetic upgrade. The scope of work for this project includes improved passenger flow, a new security/fare collection kiosk, improvements to the main entrance and washrooms, new wayfinding and information boards and general improvements to building operations and customer experience.
- » **Transit Priority Measures:** In 2017/2018, work on Transit Priority Measures will include the construction of a queue jump lane on the west side of Windmill Road, from Seapoint Road to Bancroft Lane and the construction of a bus queue jump lane outbound on Windmill Road from Victoria Road to Wright Avenue.
- » **Transit Priority Measures Corridor Study:** Both Bayers Road and Gottingen Street have been identified as critical areas for the introduction of a series of Transit Priority Measures. This project will analyze and design appropriate Transit Priority Measures for each area to ensure transit vehicles' efficient movement through traffic.
- » **Bus Rapid Transit Study:** The purpose of this study is to conduct an analysis of the opportunities and feasibility of implementing a Bus Rapid Transit service in one of the Transit Priority Corridors identified in the IMP.
- » **Mumford Terminal Replacement:** The existing Mumford Terminal is both over capacity and ageing and requires upgrading or replacing. In 2017/2018, funding will be used to assess potential sites to accommodate the future terminal.



Figure 19: Halifax Transit Ridership



MEET ALIZA: *I work part-time while attending university. I drive in everyday, because getting from my classes to my job on the bus is just too slow and is always standing room only. I would love to drive less, if my options were improved.*

HOW WILL ALIZA BENEFIT FROM THE IMP? SEE **POLICY 3.2.5-B**

PLANNING CONTEXT

Transit planning has been an important consideration of the municipality's overall regional planning efforts since amalgamation. Planning initiatives and policy direction that guide transit in Halifax include:

The Halifax Transit Moving Forward Together Plan

The *Moving Forward Together Plan*, approved by Regional Council in 2016, is intended to initiate the restructuring of the transit network and guide the implementation of service improvements. The Halifax Transit *Moving Forward Together Plan* initiated the restructuring of the bus network in Halifax based on four core priorities as identified by members of the public. These priorities, called the Moving Forward Principles, are as follows:

- » Increase the Proportion of Resources Allocated Towards High Ridership Services.
- » Build a Simplified Transfer Based Network.
- » Invest in Service Quality and Reliability.
- » Give Transit Increased Priority in the Transportation Network.

Specifically, the *Moving Forward Together Plan*:

- » Builds on the strengths in the existing network by increasing frequency of service and extending the service day.
- » Focuses on enhancing the reliability of service in high transit ridership corridors by identifying key locations for Transit Priority Measures and increasing transit service.
- » Builds on the success of the existing MetroLink and Urban Express services, which offer limited stop service in order to improve the overall attractiveness of the Halifax Transit network, improve the experience for existing users and make transit more competitive with private vehicles.

The five-year network redesign described by the *Moving Forward Together Plan* is being implemented in phases. It provides specific direction on the transit network and identifies capital upgrades to improve customer experience. The *Moving Forward Together Plan* also offers a number of operational and service design policies related to transit stop spacing, service frequency, level of service by route type and ridership standards, amongst other things. By contrast, the IMP provides a more comprehensive, long-term vision for transportation in Halifax and its relationship to land use and regional planning.

The Regional Municipal Planning Strategy

As noted earlier, the *Regional Plan* establishes a long-range, region-wide strategy that outlines where, when and how future growth and development should take place. It establishes an Urban Transit Service Boundary to focus resources and improvements to transit service within the urban service boundary (Regional Centre and suburbs). As mentioned in previous sections, the *Regional Plan* focuses on growth in centres while providing for strategic transit planning focused within the Urban Transit Boundary, aiming for increased transit ridership with reduced private vehicle trips. This helps focus investment in the areas where transit service can operate most efficiently. It also helps municipal staff set clear expectations for residents and businesses as to where new transit service is likely to be added in the future.

The *Regional Plan* recognizes that mobility is also very important in rural areas and enables the municipality to consider programs to encourage and assist communities with developing their own community-based transit services in areas beyond the Urban Transit Service Boundary.

3.2.4 KEY CONSIDERATIONS

TRANSIT PRIORITY MEASURES & TRANSIT PRIORITY CORRIDORS

Transit Priority Measures reduce the impact of traffic congestion on transit vehicles through the use of physical or policy-related interventions.

Halifax Transit commissioned a study in 2015 that developed criteria to evaluate Transit Priority Measures in the region and analyzed 13 transit priority installation opportunities. Since the completion of that study, several of the Transit Priority Measures have been implemented, are planned for construction or are in the final stages of detailed design.

Transit Priority Corridors are streets that have been strategically chosen to include measures to improve the efficiency of buses along the entire corridor. Along Transit Priority Corridors, Transit Priority Measures will be implemented in a cohesive manner along the length of the corridor, in order to provide the best advantage possible. Though any single Transit Priority Measure may only result in a few seconds of time savings, when several Transit Priority Measures are installed along a corridor, the benefits can add up considerably, reducing overall delay and improving service reliability. Windmill Road in Dartmouth is a good example: the series of Transit Priority Measures currently in place provides corridor-level benefits — while each queue jump or transit signal may seem small on its own, over the length of the corridor, buses save many minutes each day by bypassing traffic.

A key benefit of Transit Priority Corridors is the visual perceived benefit and how it can serve as a marketing tool for transit. They can create a positive feedback loop: when drivers or passengers within private vehicles see transit vehicles moving through traffic quickly, they may be encouraged to take transit in the future, boosting ridership and building the case for further investment in Transit Priority Measures.

The implementation of Transit Priority Corridors will require some important trade-offs. Changes to traffic lane configurations can affect traffic flow and the lack of space may require the removal of curb access for vehicles (i.e. parking, loading). These types of trade-offs can impact residents and businesses. It is important to consider these impacts during the planning and design of Transit Priority Corridors and to measure these impacts against the transit benefits.

Proposed corridors for the Halifax region are shown on the Transit Priority Corridors Map (see **Figure 20**).

COMPLETED TRANSIT PRIORITY MEASURES IN THE REGION:

There are several Transit Priority Measures currently in place in the municipality, including three installed in 2017. Most were installed as part of the MetroLink express bus service, launched in 2005 and 2006. Other notable examples include the “Bus-only” lane entering the Bridge Terminal on Wyse Road and the “Bus-only” entrance to the Fairview Overpass at the end of Main Avenue.



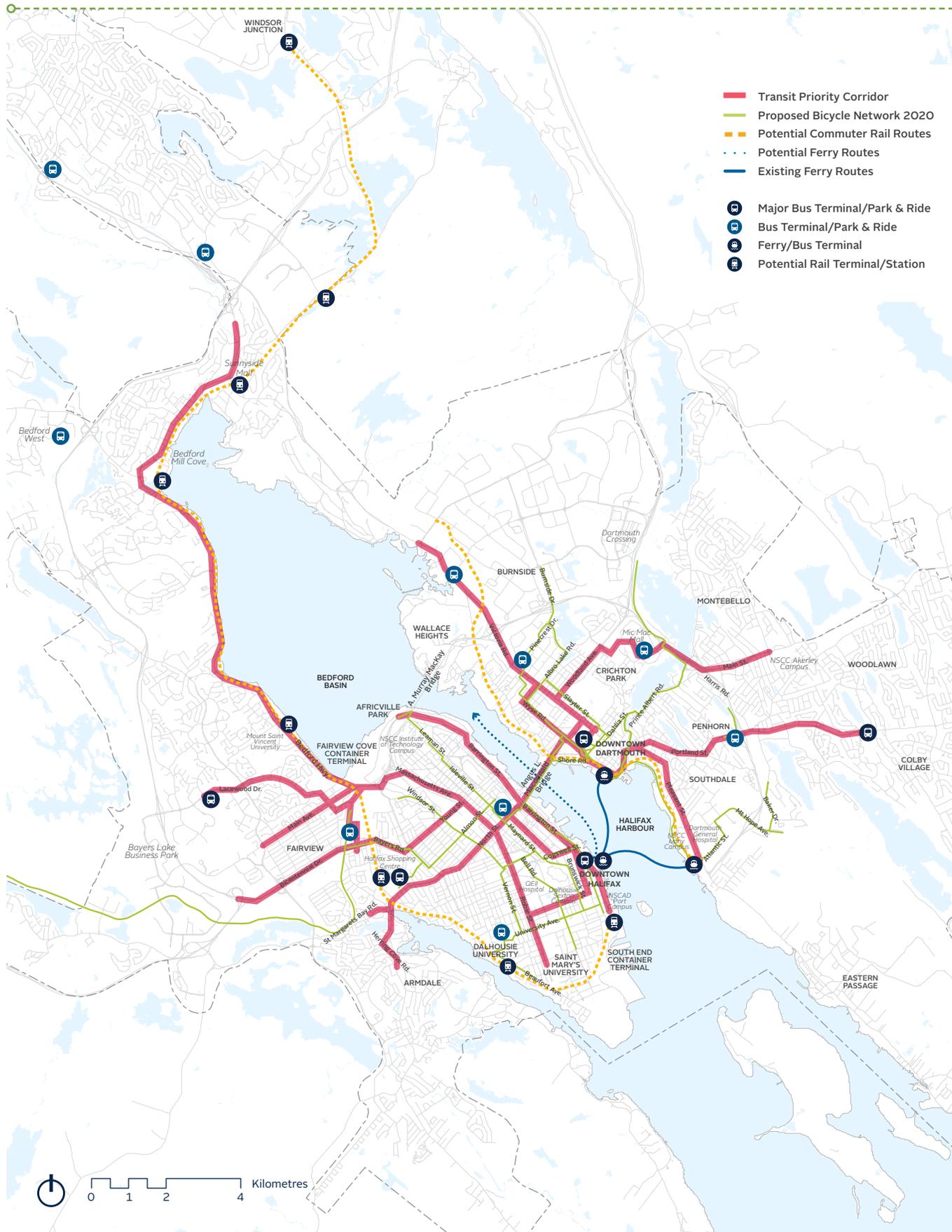


Figure 20: Proposed Transit Priority Corridors Map

How were Transit Priority Corridors Identified?

The corridors on the map were designated by:

- » Identifying parts of the road network where transit would benefit from Transit Priority Measures, starting with the roads identified in the *Moving Forward Together Plan*.
- » Identifying corridors with high-transit demand in both directions, all day.
- » Building on the concept of Transit Priority Corridors identified in the *Moving Forward Together Plan* to create a connected network that integrates with higher order transit like ferries and potential commuter rail and serves employment, campuses and strategic growth areas.
- » Identifying strategic road links that could benefit one or more bus routes if buses could bypass congestion.
- » Considering other factors, including: public feedback, ridership data, traffic modeling and congestion.

Investments in new infrastructure, most notably along Transit Priority Corridors, should be integrated with meaningful policies to promote and facilitate transit oriented development (see **Section 2.2 Land Use & Transportation**).

COMMUTER RAIL

Commuter rail has long been considered as an option to provide higher order transit service in the Halifax region, particularly along the corridor between the Halifax peninsula and Bedford (and points beyond). Typically found in cities much larger than Halifax, commuter rail is often considered too costly, complex and inflexible for smaller regions. Despite these challenges, the distinctive characteristics of the Bedford-Halifax corridor — notably, a growing population and direct link onto the peninsula via the existing rail corridor — suggest that rail-based transit could potentially improve transit mode share and catalyze transit oriented development around terminals or stations.

The existing rail line offers a strategic alternative to the Bedford Highway corridor. The Bedford Highway has right-of-way constraints that severely limit the potential for its use for higher order transit. By comparison, the adjacent railway line already provides an additional entry point onto the Halifax Peninsula and is underutilized, in good condition and almost entirely grade separated.

Passenger trains would travel along the existing CN rail corridor between downtown Halifax (Via Rail Station) and outlying areas, most likely terminating near Windsor Junction. Intermediate terminals or stations would be located at key locations along the corridor and could include places such as Dalhousie University — St. Mary's University, Mumford Terminal — Halifax Shopping Centre, Mount Saint Vincent University, Mill Cove, Sunnyside Mall and near the Bedford Common. These potential stops can connect to active transportation routes, such as the Halifax Urban Greenway Trail and to other transit opportunities. Park & Ride facilities could be provided at the terminus of the line to enable rural commutershed residents to use the trains.



Key Factors

Key factors that influence the feasibility of commuter rail service in the Halifax region include:

- » **Trains:** The type of train used affects passenger capacity, speed, travel time and cost. Due to the existing configuration of the rail corridor, light rail is not a viable option for commuter service. As a result, conventional rail - most likely short trains of self-propelled railcars - is likely the most affordable option.
- » **Population Density:** Population density along the corridor is very important, as it determines the number of people who conveniently access the service. Since there are already pockets of density along the route and there is limited available space to accommodate Park & Ride traffic at most locations along the corridor, most patrons would access terminals via active transportation and transit.
- » **Terminal Locations:** The proximity of terminal locations to key origins and destinations is critical. Research suggests that compact neighbourhoods and strong connections between the Via Rail terminus and downtown Halifax would boost transit ridership.
- » **Integration with Other Modes:** The ability of the service to integrate seamlessly with other modes is essential. Effective and well connected active transportation and transit links would be required to encourage catchment from the surrounding communities.
- » **Track Leasing Agreements:** Use of the rail corridor for commuter rail service would require a leasing agreement with CN. The track leasing agreement would be subject to negotiation.



Figure 21: Commuter Rail Operating Schematic

Source: Halifax Commuter Rail Feasibility Study (2015) - conceptual only and subject to change

SUBURBAN GROWTH: Bedford and the Mainland North portion of Halifax were among the fastest growing census tracts in the municipality between 2011 and 2016. As of 2009, the Fairview-Clayton Park / Bedford area accounted for about 30% of the total suburban population, with approximately 55,000 residents. Strong interest in residential development continues and this area has been projected to account for 37% of the total suburban population by 2031, accommodating as many as 89,000 people.

Commuter Rail Feasibility Study (2015)

Commuter rail has been studied for the Bedford-Halifax corridor since before amalgamation. The Commuter Rail Feasibility Study in 2015 concluded that commuter rail service between Windsor Junction and downtown Halifax is operationally possible, but not expected to be economically viable. Despite these findings, it is important to note that the study scope based its findings on established settlement pattern projections and did not consider or attempt to capture the economic benefit or ability of rail transit to catalyze transit oriented development and downtown regeneration - two key factors that are expected to affect the economic viability and overall feasibility.

Other Considerations

There are other considerations that will be important in evaluating the potential for commuter rail in the region. Further study and investigation will be required to better understand the following:

» **Feasibility of Extending Service into Downtown**

Halifax: The Bedford to Halifax rail corridor terminates on the southern edge of downtown Halifax, not inside the downtown core itself. Rail service could potentially be extended using an in-street track in a dedicated transit lane, or using some form of shuttle service, bringing passengers closer to the Halifax Ferry Terminal and a more concentrated employment area. In the meantime, the potential for a future extension should be considered when planning the configuration of downtown streets. Further study is required to better understand the available options.

» **Feasibility of a Woodside-Burnside Rail Connection in**

Dartmouth: Dartmouth has an existing rail line that could be used to connect industrial employment at Burnside and Woodside - two areas with extensive industrial, commercial and institutional uses. The route could also serve high-density residential development already existing in downtown Dartmouth and as proposed at Shannon Park. Direct transfers to both ferry routes for downtown Halifax could be provided. The feasibility and cost of rail on the Dartmouth side of the Harbour would depend on CN freight needs and track use charges.

» **Integration of Transit Oriented Development (TOD):**

Population density is arguably the most critical factor in determining the economic viability of commuter rail service in the region. Population along the corridor is projected to increase; however, the scale of density expected to be required at each terminal would require significantly more intensive development around the terminals than is currently typical in the region. Based on a preliminary review of the proposed terminal locations, it does appear that there is potential to develop high density population nodes in their vicinity. A better understanding of the transit oriented development potential is required to inform a decision on the service that can be provided. The following issues will need to be considered:

- » What type and scale of development is possible based on available land and municipal infrastructure?
- » How does high density, mixed-use development fit with existing local land use by-laws? How would by-laws need to change to enable or mandate transit oriented development?
- » How will existing residents be impacted? Will they be in support?
- » What market conditions will be necessary to support demand for high density development in these areas?
- » How would transit oriented development be implemented over time?
- » How would Park & Ride facilities be incorporated into, or transition to transit oriented development areas?

BUS RAPID TRANSIT

Bus Rapid Transit (BRT) is a high-quality, bus-based transit system that provides transit users with fast, frequent, comfortable, high capacity and cost-effective service. BRTs typically include:

- » Bus only lanes that improve travel time and reliability.
- » Bus only facilities along the centre of the road to reduce the impact of right turning traffic or parked vehicles.
- » Off-board fare collection to reduce the delay associated with on-board fare collection.
- » Intersection treatments, including signal priority and restricted turn movements.
- » Level boarding between a transit vehicle and platform for improved accessibility and speed.
- » Conversion from frequent stops to limited terminals (with greater amenities, sense of place etc.).

As BRTs contain many features comparable to a light rail or system (e.g. dedicated right-of-way), they are much more reliable, convenient and faster than regular bus services. If implemented in Halifax, this type of service could provide a more attractive and comfortable service than conventional buses and would likely be less costly to implement than some other higher order transit modes, while still maintaining the flexibility that buses offer.

Halifax Transit is currently completing a Bus Rapid Transit Feasibility Study that is reviewing opportunities to implement BRT corridors in the region and will identify the preferred Transit Priority Corridors to implement a BRT-style service. It is anticipated that public consultation will begin in late 2017.

FERRY SERVICE

Halifax Harbour is one of the defining characteristics of the region and is an opportunity to provide uninhibited cross-harbour trips. This plan directs staff to consider an expansion of the Halifax Transit ferry network and specifically recommends a feasibility study for a new ferry service connecting North Dartmouth and Downtown Halifax.

Halifax Harbour is the second largest ice-free harbour in the world. There are currently two ferry routes: Alderney and Woodside. The Alderney Ferry service operates seven days a week, between Downtown Dartmouth and Downtown Halifax. The Woodside Ferry service operates between Halifax and the Woodside Ferry Terminal on weekdays only. All three Ferry Terminals are integrated with the bus network and connect with the active transportation network. Both the Alderney and Woodside Terminals also feature Park & Ride facilities.

TRANSIT SERVICE IN RURAL COMMUNITIES

Fixed transit service is suited primarily to urban and suburban areas with higher population densities and although there is demand in rural areas for transit service, it is typically more difficult to accommodate in a cost-effective manner. Alternative service and cost sharing models are being pursued in some areas in an effort to allow service expansion to locations without the density or demand to justify conventional transit service.





MEET GRANT: *I don't own a vehicle, so I rely on the bus to get to work, do errands and take our two kids to their extra-curricular activities. We choose which lessons the kids can participate in based on whether they are easily accessible by transit and close together to reach them on time.*

HOW WILL GRANT BENEFIT FROM THE IMP? SEE **POLICY 3.2.5-A**

Rural Transit Funding Program

Recognizing that the Halifax Transit service model of fixed routes and fixed schedules may not be the most effective service in rural communities, Regional Council has approved the Rural Transit Funding Program, which provides funding support to community organizations offering transit services to residents. Approved in August 2014, as of August 2017, three rural transit service providers receive funding through this program as well as through the provincial Community Transportation Assistance Program (CTAP). In 2016 alone, these service providers delivered 182,000km of community-based transit services to regional residents.

This plan directs staff to continue to expand the rural transit funding program for services operating in Halifax outside of the Urban Transit Service Boundary. It also recommends further investigation of flexible, alternative transportation solutions in rural communities including, for example, the concept of shared taxis in areas not served by Halifax Transit.

3.2.5 POLICIES & ACTIONS

- a) Plan new and existing Transit Priority Corridors and terminals as focal points for higher density, compact development with a mix of residential, commercial and employment uses within walking distance of transit service.

Action 89: Plan transit terminals based on transit oriented development principles, such as strong pedestrian connections and human scale design (see Section 2.2 Land Use & Transportation for more direction)

- b) Accommodate Transit Priority Measures in strategic locations by reallocating road right-of-way capacity from private vehicles and parking to transit.

Action 90: Prioritize transit in locations identified on the Transit Priority Corridors Map (see Figure 20) through the use of transit priority measure (e.g. queue jump lanes, dedicated bus lanes).

Action 91: Prioritize the delivery of Transit Priority Corridors, starting with but not limited to:

- » Bayers Road (Romans Avenue to Windsor Street).
- » Gottingen Street (North Street to Cogswell Street).
- » Robie Street (Young Street to Inglis Street).
- » Young Street (Windsor Street to Robie Street).

Action 92: Continue to implement Transit Priority Measures where opportunities exist and priority is required to reduce transit delay or increase operating efficiency. This could include:

- » Priority at individual intersections or corridors.
- » Transit-only shortcutting.
- » Strategic removal of parking along certain roads to increase the right-of-way capacity dedicated to transit.

Action 93: Implement the first phase of the Barrington Street Transit Priority Corridor in conjunction with the Cogswell Redevelopment project.

- c) Continue to implement the **Moving Forward Together Plan**.

Action 94: Improve passenger waiting environments at bus stops, as per the Passenger Amenity Classifications described in the Moving Forward Together Plan (Section 5.1).

Action 95: Develop targeted marketing for planned, large scale route changes associated with implementation of the Moving Forward Together Plan with the goal of increasing ridership.



d) Consider other modes of transit service such as Bus Rapid Transit (BRT), commuter rail and expanded ferry service (see Figure 20).

Action 96: *Deliver a feasibility study of Bus Rapid Transit.*

Action 97: *Increase the priority of transit in the transportation network by implementing a BRT system in Halifax with dedicated bus lanes, based on the findings of the Bus Rapid Transit Feasibility Study currently underway.*

Action 98: *Complete a rail capacity study for the Windsor Junction — Bedford — Halifax rail corridor in collaboration with rail industry stakeholders to better understand the costs and logistics of operating a Commuter Rail service in Halifax.*

Action 99: *Continue to review the land use, fiscal and economic implications of higher order transit.*

Action 100: *Study the feasibility of other commuter rail options for the Halifax region, including:*

- » *The feasibility of extending commuter rail service into the core of downtown Halifax.*
- » *The feasibility of a Woodside — Downtown Dartmouth — Burnside rail service.*

Action 101: *Conduct a feasibility study to analyze opportunities for a ferry connection between North Dartmouth and Downtown Halifax.*

Action 102: *Continue to monitor ridership trends and consider opportunities to upgrade sections of the network to higher order modes.*

e) Consider alternate service and cost sharing models to serve low-density areas outside of the Urban Transit Service Boundary

Action 103: *Identify areas without the density or demand to justify full transit services and study alternative service and cost sharing models to support specialized trips or to enable service expansion. These options could include:*

- » *Shared taxis in areas not served by Halifax Transit*
- » *Subsidized taxis (including “taxibus” service).*
- » *Ride-sharing, ride-hailing and car-sharing*
- » *Subsidies for pilot or start-up routes or trips.*
- » *Expansion of the Rural Transit Funding Program.*

f) Improve transit promotion and education

Action 104: *Consider new fare options (e.g. day passes, weekly passes) once new fare management technology is in place.*

Action 105: *Consider special measures such as free transit days or child transit passes.*





HALIFAX
TRANSIT

HALIFAX TRANSIT

CRAIG BLAKE

CRAIG BLAKE

GOODS MOVEMENT

The **REGIONAL GOODS MOVEMENT OPPORTUNITY SCOPING STUDY** was completed in November 2016. That study was the starting point for examining goods movement issues for the IMP.



CONNECTED: Modes such as truck, rail, marine and air can complement each other or be linked together. Information technology can optimize dispatching and routing to make better use of existing infrastructure.

HEALTHY: The goods movement network should use modes and routes strategically to minimize greenhouse gases, local air pollutants, neighbourhood impacts, collisions and spills.

AFFORDABLE: Responsible freight planning reduces impacts to the public, while being mindful that goods movement must remain economically viable or business could migrate to competing ports or railheads, in the case of long-distance routes.

SUSTAINABLE: A sustainable goods movement network respects air, land and water resources, considers the needs of all people — including those who live or work near major freight routes — and uses financial resources wisely.



Halifax is the

4th

BUSIEST PORT IN CANADA

(after Vancouver, Montreal & Prince Rupert)



Halifax is the

9th

BUSIEST ATLANTIC COAST PORT

in North America

3.3 Goods Movement

3.3.1 OBJECTIVE

Continue to facilitate the efficient and economically sound movement of goods in the Halifax region, while striving to minimize the associated social and environmental impacts

3.3.2 INTRODUCTION

The transportation network moves goods, as well as people. Goods movement includes a wide range of modes — from long ocean crossings by cargo ship to small goods ordered online and delivered by bicycle courier. A variety of interconnected modes are used to move goods from their origin to destination.

The movement of both goods and people in the Halifax region are intertwined and both rely largely on the same transportation infrastructure network. The region is a prime example of an area that thrives with a strong freight transportation industry at its core. With a strategically located deep water port, international airport and direct connections to road and rail infrastructure, Halifax is a key multi-modal freight destination on the eastern seaboard. The Halifax region also serves as an important logistics hub nationally and internationally, and goods movement is critical to the Halifax region's local economy.

Goods movement is complex and includes a wide range of stakeholders. Though it has significant implications for urban mobility, it is an area where the municipality has arguably less direct involvement and influence than other components within the IMP.

As the Halifax region grows, communities welcome more people and urban areas intensify, the importance of goods movement will increase. A goal of this plan is to enable and support goods movement modes, routes and technologies that improve the efficiency of the overall mobility network, strengthen the economy and support neighbourhoods. An integrated mobility network links goods and people movement using infrastructure and technology. It also identifies and prioritizes facilities and routes that are well-suited to specific uses (e.g. goods movement, transit, active transportation).

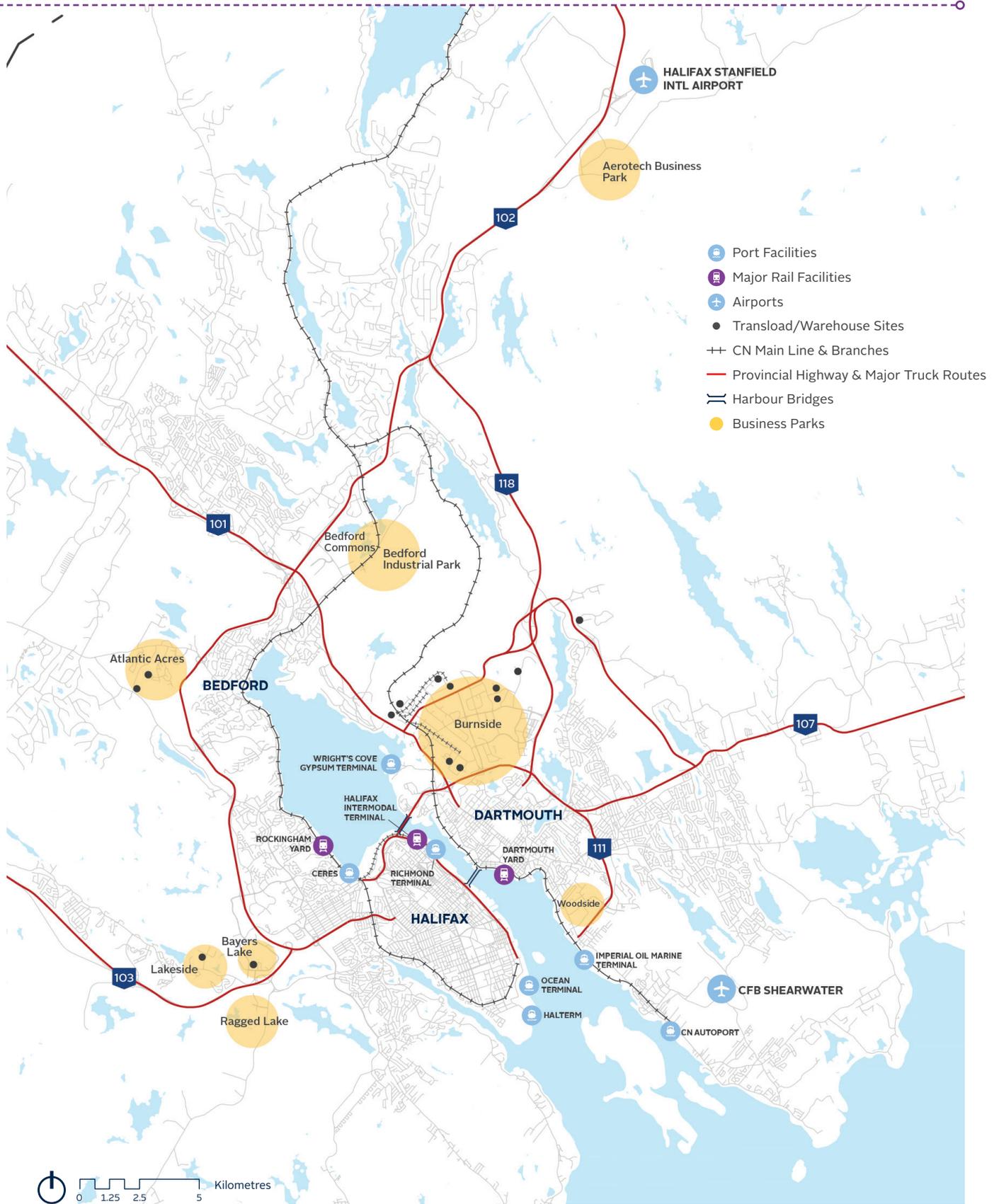


Figure 22: Goods Movement Facilities

3.3.3 BACKGROUND

GOODS MOVEMENT IN THE HALIFAX REGION

The Halifax region offers a truly multi-modal goods movement network, encompassing sea and airport terminals, road and rail infrastructure and logistics facilities.

Logistics Facilities

Regional goods movement in Halifax relies on logistics facilities located across the region, though these are concentrated primarily in and around the Burnside Industrial Park. These facilities receive, sort and redistribute goods locally and regionally.

Sea Port Terminals and Operations

Halifax Harbour has several key terminals and associated facilities.

Container Terminals: The South End Container Terminal (Halterm) and the Fairview Cove Container Terminal (often referred to as Ceres or Cerescorp) are major goods movement facilities located at the south and north end of the Halifax peninsula, respectively. Both terminals, which are served by cargo ships from around the world have direct access to rail and road links.

Autoport: Autoport is a rail, marine and road served facility in Eastern Passage that ships and receives motor vehicles to/from international and domestic markets.

Oil Terminals: There is a major Irving Oil terminal in Woodside that receives and distributes oil refined in Saint John, NB. A smaller oil terminal owned by Wilsons Fuels is located on Barrington Street in the north end of Halifax.

Other Terminals/Facilities: Other key sea port facilities include the Irving Shipbuilding facility, Richmond Terminals and DND's Maritime Forces Atlantic (north end Halifax); National Gypsum Wharf (Wrights Cove) and Woodside Industrial Wharf. Supporting facilities include the Halifax Grain Elevator and P&H Milling, both located adjacent to Halterm.

Port of Sheet Harbour: This remotely located port facility and adjacent industrial park is used for shipping bulk products such as wood chips and for specialty shipments associated with offshore operations. Lacking rail and freeway connections, it benefits from a trunk road across the province to a pulp mill in Abercrombie, Pictou County. Access to Burnside and Halifax industries is available via Highway 7.

Road

The regional road network is vital to goods movement. Provincial 100-Series highway links include Highways 101, 102, 103, 107, 111 and 118. They provide key local and regional road connections to goods movement facilities. Municipal streets within the Regional Centre also have an important role in goods movement, particularly in the case of truck access to/from the South End Container Terminal.

Rail

CN Rail operates a rail network within the region that connects to major facilities in both Halifax and Dartmouth. The mainline, entering from the northeast by way of Truro, diverges as two separate lines running to Halifax and Dartmouth around the Bedford Basin. The rail line between the South End Container Terminal and Fairview Cove Container Terminal runs along a 6.9km "rail cut", an excavated corridor that provides grade separated rail access along the west and south edge of the peninsula. On the



MEET FRED: *I've been driving trucks from the ports to the distribution centres for years. I prefer not to drive on city streets, especially when traffic is heavy. Sometimes I wait an hour for traffic to subside before completing my route.*

HOW WILL FRED BENEFIT FROM THE IMP? SEE **POLICY 3.3.5-C**

2003

RAILWAY CUT FEASIBILITY STUDY

This study examined options and costs for building a truckway in the existing rail cut.

2006

HALIFAX INLAND TERMINAL & TRUCKING OPTIONS STUDY

This study evaluated the feasibility of shuttling containers from the port to an inland terminal by rail to be transferred to trucks at the inland terminal.

2008

HRM BY DESIGN

The downtown plan emphasized the need to mitigate the impact of downtown truck traffic to encourage residential growth.

2008

ATLANTIC GATEWAY DISTRIPARK PLAN

This plan evaluated a distribution park concept for Burnside where containers would be shuttled by rail to a campus of distribution facilities.

2009

INTEGRATED TRANSPORTATION CORRIDOR FEASIBILITY STUDY

This study evaluated the feasibility of expanding the rail cut corridor to include rail and two-way trucks and transit buses.

2016-ONGOING

PORT OF HALIFAX MASTER PLAN

The Halifax Port Authority is currently developing a Port Master Plan. A primary goal of that plan is to determine how the port should handle increasingly large container ships. The Plan is considering multiple options for future port operations and transportation planning.

Dartmouth side, rail spurs serve Burnside Business Park and the track continues along the waterfront through downtown Dartmouth to Woodside and the Autoport near Eastern Passage.

Air

In addition to passenger trips, the Halifax Stanfield International Airport (HSIA) is an important and growing hub for goods movement, especially seafood. Investments in airport infrastructure, including the main runway extension, have focused on attracting air cargo carriers to include a stop at Halifax. Because of these improvements, HSIA is now able to handle the largest air cargo aircraft available. The airport is well served by the regional road network, and additional retail and service development is planned nearby.

PLANNING CONTEXT

The municipality's core responsibilities associated with goods movement are distinct from most other mobility areas considered in the IMP. Much of the inter-regional freight is regulated at higher levels of government: federal for air, ports and rail, and provincial for freeways and truck safety. Nevertheless, the municipality can influence these aspects through such means as partnerships and the designation of truck routes.

3.3.4 KEY CONSIDERATIONS

TRUCKS IN DOWNTOWN HALIFAX

A significant volume of goods moving to and from the South End Container Terminal are moved by truck. The absence of a direct connection to higher order roads (i.e. freeways) requires trucks to access the terminal via streets on peninsular Halifax, including through the downtown core. Port-related activity is the largest contributor to heavy truck traffic on the Halifax Peninsula and container truck traffic through the downtown has resulted in public criticism, traffic congestion, noise pollution, poor air quality and vibrations on nearby buildings.

Peak period traffic congestion on streets, such as Lower Water Street, can inconvenience commuters and delay trucks, which can impact port operations and competitiveness. As the downtown becomes more densely populated and with the planned redevelopment of the Cogswell Interchange lands, there is likely to be increased pressure for resolution of this issue.

Table 1: Potential Options for Removing Truck Traffic from Downtown Halifax

Description	Benefits	Issues/Challenges
OPERATIONAL IMPROVEMENTS		
<p>Modifications to operation that would aim to reduce truck traffic during peak traffic periods:</p> <ul style="list-style-type: none"> » Appointment systems. » Financial penalties for peak hour trips. » Off-dock storage of empty containers. 	<ul style="list-style-type: none"> » Minimizes truck waiting times at container terminals. » Spreads truck traffic evenly throughout the day. » Minimal capital investment required. 	<ul style="list-style-type: none"> » Financial penalties could be seen as detrimental to port promotion.
TRUCK ROUTE THROUGH RAIL CORRIDOR		
<p>This option involves construction of a truck route through the rail cut to provide grade-separated road access to the port. The corridor is currently underused – one freight train travels in each direction per day, three Via Rail trains travel in each direction per week and some local transfer movements also occur. There are two basic variants to this proposal: A single, reversible lane within the existing railway cut and a two-lane truckway in a widened cut. Both would retain at least a single rail line. This two-lane concept was analyzed in detail as part of the 2009 Integrated Transportation Corridor Study, NSTIR).</p>	<ul style="list-style-type: none"> » Significantly reduces truck traffic through downtown. » Improves time efficiency for truck operations. 	<ul style="list-style-type: none"> » Rail cut widening required for a two-way truckway. » Significant cost (>\$200-275M) for a two-way truckway. » Significant maintenance costs. » Neighbourhood impacts. » Potential operational impacts between trucks and rail. » Uncertainty associated with other potential uses of the rail cut including commuter rail and Via Rail proposed inter-city service.
RAIL SHUTTLE		
<p>Rather than loading containers onto trucks at the port, a rail shuttle could move containers off the Halifax Peninsula to a location with better freeway links and proximity to frequent shippers, warehouses and empty storage yards. Previous studies have considered the potential for developing an inland terminal at either Rocky Lake or Burnside. A rail shuttle could also run between the South End Container Terminal and the Fairview Container Terminal; this option could become increasingly palatable if the two terminals merge operations.</p>	<ul style="list-style-type: none"> » Almost eliminates truck traffic through downtown. » Uses existing rail infrastructure. » Potential synergy with track and signalling improvements associated with commuter rail » Council enable faster truck driver and tractor turnaround. 	<ul style="list-style-type: none"> » Would have to be coordinated with other potential rail traffic. » Additional handling of containers adds operational cost and possible transit time.
CROSS HARBOUR TRUCK FERRY		
<p>A cross harbour ferry could transfer containers, trailers and/or trucks from Halterm to Woodside, where Highway 111 provides a direct route to Burnside Business Park with freeway connections to New Brunswick and beyond.</p>	<ul style="list-style-type: none"> » Significantly reduces truck traffic through downtown. » Uses available cross harbour marine capacity and the underutilized Woodside Marine Terminal. » Direct access to 100-series highway network. 	<ul style="list-style-type: none"> » Uncertainty of time requirements and subsequent impacts on trucking operations. » Additional handling of containers adds operational cost and possibly transit time. » Additional capital costs for vessel(s) and container handling facilities in Woodside. » Significant increases to truck traffic on Highway 111.

Description	Benefits	Issues/Challenges
TERMINAL RELOCATION		
<p>The most ambitious option is the potential relocation of the South End Container Terminal across the harbour to the Woodside / Shearwater area. The availability of oceanfront industrial land with good access to the 100-series highway network makes port relocation an intriguing option. The redevelopment potential of the existing port lands in south end Halifax is also an important consideration, including the potential to leverage the land values to fund the massive cost of port relocation. This option is currently being considered in detail as part of the Halifax Port Authority's ongoing Port Master Plan.</p>	<ul style="list-style-type: none"> » Almost eliminates truck traffic through downtown. » Potential to use the soon to be available industrial lands in the Woodside/Shearwater area. » Direct access to 100-series highway network. » Reduced freight demand on CN rail cut provides potential for other uses. 	<ul style="list-style-type: none"> » Significant uncertainty associated with: <ul style="list-style-type: none"> » Cost implications. » Potential to redevelop existing port lands and associated financial implications. » Physical feasibility to construct port facilities capable of accommodating international shipping traffic. » Capacity constraints of existing rail links that run through downtown Dartmouth. » Significant increases to truck traffic on Highway 111.

Ongoing concerns have prompted several studies in recent years to investigate potential solutions. These range from minor interventions, such as operational improvements (delivery schedule restrictions) to major interventions, such as relocating port facilities away from the South End. Most of this work, however, has focused on repurposing the CN Rail cut to improve freight mobility, either through introduction of a truckway or rail freight shuttle. An overview of some of the options that have been considered to reduce truck traffic in downtown Halifax is provided in **Table 1**.

TRUCK TRAFFIC: ROAD SAFETY, DESIGN & MAINTENANCE

To support the movement of goods, trucks use the road network both locally and regionally. As such, it is important to accommodate truck traffic in an efficient manner to reduce impacts to safety, comfort, infrastructure condition and the environment.

Truck Route Planning & Design

Existing major truck routes in the region are shown in **Figure 22**. The amount of truck traffic on each truck route varies considerably and though the municipality does not have comprehensive data on truck movements, data is

available for key routes to and from the South End Container Terminal and Fairview Cove Container Terminal.

The Complete Streets approach that is being embraced by the municipality should consider the importance of accommodating trucks for some, but not necessarily all, streets.

Road Safety

The safety implications associated with trucks is an important consideration, particularly where they integrate with general traffic, pedestrians and bicyclists in urban areas. The additional size and weight of trucks impacts key factors, including vehicle maneuverability (stopping distance, turning radii) and driver visibility. Most importantly, collisions involving heavy trucks tend to have a higher potential for severe injury.

Truck routes in Halifax have been observed to have increased incidence of collisions. The Regional Goods Movement Opportunity Scoping Study (2016) determined that between 2005 and 2015, the rate of collisions involving commercial vehicles on truck routes was more than 50% greater than for roads in the Halifax region as a whole.



MEET SOOK: *I own a flower shop in the Regional Centre. I ask my delivery trucks to park on the side street around the corner and use hand carts for deliveries, instead of parking on the main street out front in the bicycle lane. As a bicyclist myself, I know how unsafe blocking the bicycle lane can be.*

HOW WILL SOOK BENEFIT FROM THE IMP? SEE **POLICY 3.3.5-A**

Road Maintenance

Truck traffic increases road maintenance costs at a level disproportionate to other vehicles due to size and weight. This is an important factor in determining which routes trucks are permitted to use.

LAND USE & GOODS MOVEMENT

The urban harbour area is an increasingly desirable place to live and visit for recreation, tourism and shopping. Integrated solutions are required to determine how goods movement can co-exist with residential, recreational and commercial uses while remaining cost-effective.

“LAST MILE” URBAN DELIVERY

Local pickups and deliveries are growing due to the rise of online shopping. Although online shopping reduces trips to stores, it increases commercial vehicle trips into residential areas. This results in congestion, noise and emissions. However, if deliveries take place during typical work hours, their impact on residents is lessened. Parking strategies can also ensure that small commercial vehicles have space for loading and unloading.

GOODS MOVEMENT COORDINATION

In addition to the municipality, several organizations make decisions and plans that affect goods movement in the Halifax region including the province, Halifax Port Authority, CN Rail, Halifax International Airport Authority and numerous commercial organizations. Decisions made by these organizations can affect the regional transportation system. Coordination between all stakeholders and good, reliable data is crucial to ensure goods movement is efficient and integrates with land use and the transportation system.



3.3.5 POLICIES & ACTIONS

- a) Ensure that the accommodation of trucks and commercial vehicles is considered in the planning and design of the transportation network.

Action 106: Complete a review of the current Truck Route By-Law to determine if and where any revisions would be beneficial based on current and projected truck demands and land use / settlement patterns

Action 107: Complete streets projects on designated truck routes should incorporate design elements that accommodate trucks.

- b) Develop strategic working relationships with other stakeholders in transportation to collaborate and communicate on mutual transportation objectives (e.g. Halifax Gateway, Halifax Port Authority, Halifax Chamber of Commerce, Stanfield International Airport, CN Rail).

Action 108: Provide an ongoing forum for input from regional stakeholders to discuss issues and build consensus for goods movement solutions.

Action 109: Compile and share data and apply analytical tools to identify goods movement needs and assess the effects of goods movement strategies and proposals.

- c) Work with the Halifax Port Authority, CN Rail and trucking companies to develop and implement an alternative for trucking through the Halifax Peninsula.

Action 110: Work with CN and the Halifax Port Authority to retain and augment rail capacity through the South End rail cut.

Action 111: Investigate the possibility of using track and signaling improvements that would be needed for a potential commuter rail service, to enable trucks, trailers and containers to be shuttled by rail between the South End container terminal and the provincial freeway network.

Action 112: Explore other opportunities for transporting containers within the region to minimize truck impacts without hampering transport economics. These opportunities may include a rail shuttle, cross-harbour truck ferry and truckways.

- d) Plan for future rail and freeway access improvements for Burnside Business Park and other industrial parks within the municipality.

Action 113: Work with CN, Nova Scotia Transportation and Infrastructure Renewal and private landowners to reserve the right-of-way for a future rail spur into the Burnside Expansion Area and adjacent municipal industrial land reserve.



ROAD NETWORK



Why expanding roads will not **SOLVE TRAFFIC CONGESTION**:

INDUCED DEMAND: *As road capacity is increased (through widening & expanding roads), additional drivers choose to use the road, creating more traffic and eventually heavier congestion.*

TRAFFIC EVAPORATION: *As roads reach capacity or lanes are converted for other uses, driving becomes less attractive at peak times. If good transit is provided or employers offer flexible work times, people change their behaviour to use other modes of transportation or travel at different times.*



268
Signalized intersections in the region



3800km
of roadway (lane-km)

What is the potential future of **AUTOMATED VEHICLES**?



By travelling with little space between vehicles, **ROAD CAPACITY** could increase up to tenfold.



Road lanes may not require as much width, because **GUIDANCE SYSTEMS** will keep vehicles more precisely aligned.



Many people will likely not own a personal automated vehicle, but rather **SUBSCRIBE TO A SERVICE**, similar to car-sharing.



With vehicles being in near-continual use, the **DEMAND FOR PARKING** could decrease and be replaced with "staging" areas for brief stops.

DID YOU KNOW?

The Macdonald Bridge carries more people during peak periods than the MacKay Bridge, even though it has one less lane.



3.4 Road Network

3.4.1 OBJECTIVE

Limit the expansion of the road network and focus any additional investment in road infrastructure on strategic upgrades that support the municipality's mandate of encouraging a shift toward sustainable transportation modes.

3.4.2 INTRODUCTION

Roads link people and communities to each other and to goods, services and employment. They are the key component of the transportation network and one of the municipality's largest public infrastructure investments. Roads not only facilitate the movement of vehicles; they can support multiple interconnected and sustainable transportation modes.

Transportation planning has undergone considerable changes in recent years in many cities and road network planning is a primary agent for these changes. There is a growing concern about society's reliance on the private vehicle for transportation and its consequences for the environment, community health and quality of life.

It has become clear that continued expansion of the regional road network is not prudent from a financial, societal and environmental perspective. The integrated mobility planning approach prioritizes a shift away from conventional investment in road expansion, towards more sustainable transportation modes (i.e. transit and active transportation) and strategic, focused road enhancements.

3.4.3 BACKGROUND

THE REGIONAL ROAD NETWORK

The Halifax region has an expansive regional road network that comprises more than 3,800 lane-km of roads ranging from local streets to major freeways. The road network accommodates many types of users, dominated primarily by motor vehicles that range from private autos to transit buses to heavy trucks. The road network is also the backbone of the active transportation network, with complementary facilities such as sidewalks and bicycle lanes serving as the primary means of transportation for pedestrians and bicyclists.

Ownership of the road network is split between the municipality and the province (NSTIR), with the municipality responsible for most of the roads within the urban and suburban areas and the province responsible for 100-series highways and a large portion of the roads in the rural areas. Halifax Harbour Bridges owns and operates the two harbour bridges, as a commission with representation from the province and the municipality.

1996

AMALGAMATION

The 1996 amalgamation consolidated multiple jurisdictional road networks, each with their own unique characteristics (e.g. street classification hierarchy, design standards, operational frameworks, etc.).

2006

REGIONAL PLAN

The 2006 *Regional Plan* included a significant investment plan for the road network based on the projected population growth, settlement patterns and mode share targets. Several major road projects were identified, which included proposed expansions to existing corridors, new highway interchanges and new road links providing key or parallel capacity to congested corridors.

2014

REGIONAL PLAN

The 2014 *Regional Plan* retained the road network projects identified in the 2006 *Regional Plan*, but included the caveat that no listed road project could be approved for construction until public consultation has been conducted and further consideration given to the *Regional Plan* growth targets, sustainable transportation alternatives and the associated capital and maintenance costs. The *Regional Plan* also recommended the completion of a “Road Network Priorities Plan” to further examine where additional vehicle capacity is required to “prevent existing congestion levels from increasing”.

PLANNING CONTEXT

Road network planning is a part of transportation planning and has been an important consideration in the municipality’s regional planning efforts since amalgamation.

Since the 2014 *Regional Plan* was adopted, several factors have emerged that have prompted staff and Council to reconsider its approach to regional transportation planning. In large part, this has resulted from increasing apprehension – both locally and across the country – about the continued investment in road infrastructure and the resulting economic, environmental and societal costs. These concerns, compounded by the ongoing uncertainty associated with the potential for higher order transit (i.e. commuter rail, BRT, ferry service expansion) and the *Centre Plan*’s direction to focus more growth in the Regional Centre, prompted Regional Council to revise its approach. In 2015, at the direction of Council, the “Road Network Priorities Plan” that had been recommended in the 2014 *Regional Plan* was deferred in favor of the IMP, to consider the wide range of factors influencing transportation in the region, including the two-way relationship between mobility and land use.

PLANNED ROAD NETWORK PROJECTS

The 2006 and 2014 *Regional Plans* referenced a long list of road network projects that were anticipated to accommodate planned growth. Some of these proposals had originated many years earlier and prior to municipal amalgamation. The projects were designated as “Programmed”, “Planned”, “Future Potential” and “Future Community Connector”.

- » **Programmed:** Identified in the immediate three-year capital budget.
- » **Planned:** Anticipated to be built within the 25-year time frame of the *Regional Plan*.
- » **Future Potential:** Anticipated to be built beyond the 25-year time frame of the *Regional Plan*.
- » **Future Community Connector:** Community access projects anticipated to be built within the 25-year time frame of the plan.

The status of several key road projects has undergone changes in response to shifting municipal priorities.

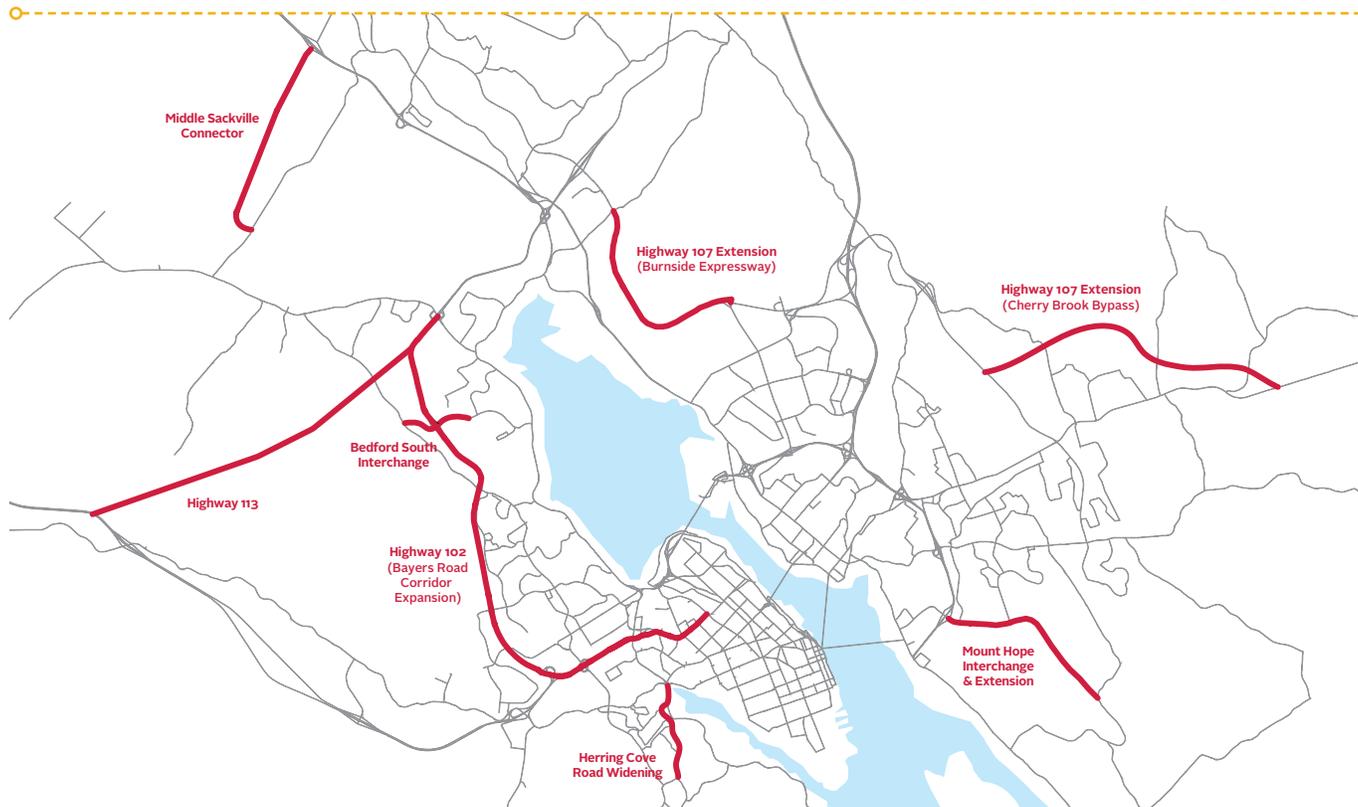


Figure 23: 2014 *Regional Plan* Recommended Road Network Projects

Completed Projects

Several of projects have been completed, including:

- » The Highway 111 – Mount Hope Interchange.
- » The Highway 102 – Bedford South Interchange.
- » The Highway 101 – Margeson Drive Interchange.
- » Key connection improvements on the MacKay Bridge Halifax approaches.

Programmed Projects

Projects that were identified as “Programmed” projects in the 2014 *Regional Plan* but that have yet to be implemented include:

- » **Herring Cove Road Widening (Armdale Roundabout to Old Sambro Road):** The widening of Herring Cove Road was originally recommended to provide additional capacity to accommodate growth in the Herring Cove and Spryfield areas. These areas are designated as Urban District and Urban Local growth centres in the *Regional Plan*. Revised growth projections in the area have lessened the need for the additional capacity. More importantly, modeling indicates that there is minimal benefit to widening Herring Cove Road without major upgrades to the Armdale Roundabout.

Planned Projects

Projects that were identified as “Planned” projects in the 2014 *Regional Plan* but that have yet to be implemented include:

- » **Mount Hope Extension to Caldwell Road (Shearwater Connector):** A connection to Caldwell Road from the recently completed Mount Hope interchange was envisioned to serve as an alternative route to the constrained Portland Street corridor and facilitate increased growth in areas abutting Caldwell Road. Challenges associated with this connection’s proximity to the CFB Shearwater airfield have constrained the road’s development for years and it remains uncertain whether it can be constructed under current conditions.
- » **Margeson Drive Extension to Lucasville Road (Middle Sackville Connector):** This road connection is intended to provide a more direct connection for residents in the Hammonds Plains – Lucasville areas to Highway 101, as well as a link to a proposed Halifax Transit Park & Ride facility at the Highway 101 interchange. Portions of the route have been built; however, the link between Highway 101 and Lucasville Road has not been completed. In addition to reducing congestion on Hammonds Plains Road, this connection was considered a key opportunity to improve access to transit for the Middle Sackville area, an Urban Local growth centre that presently has a low non-private vehicle mode share.

- » **Highway 102 / Bayers Road corridor:** Significant upgrades to the Highway 102/Bayers Road corridor were considered necessary to accommodate planned suburban growth areas along the Bedford-Halifax corridor. The municipal portion of this project, which includes Bayers Road (Highway 102 to Windsor Street), was originally envisioned as an expanded traffic corridor with additional traffic lanes. More recently, the municipality has considered the potential to focus improvements on transit facilities that would provide bus priority. The Bayers Road corridor has property constraints and adding lane capacity will require property acquisition, much of which the municipality has done incrementally over the years as properties became available.

Under Review

Projects that were planned in the 2006 *Regional Plan* but identified as “Under Review” in the 2014 *Regional Plan* include:

- » **Highway 107 Extension (Burnside Expressway):** The proposed section of Highway 107 connecting the Burnside Business Park to Bedford has long been under consideration by the province. This proposed connection is intended to improve access to Burnside and the 100-Series highway network, relieving congestion on the Magazine Hill / Windmill Road corridor. In 2017, the project was re-prioritized by the province and has been “programmed” for construction within its 5-year plan. Though it is a province-led project, the municipality has committed funds to support construction and maintenance of an active transportation connection running parallel to the road.
- » **Lacewood Drive Extension to Dutch Village Road:** The final component of a proposed continuous 4-lane connection between Lacewood Drive and the MacKay Bridge is constrained by property ownership challenges.



Future Potential

There were several long-term planned projects, most of which have not been considered in detail since adoption of the 2006 / 2014 *Regional Plans*.

» Municipal:

- » Road widening projects on Barrington Street and Bedford Highway.
- » Beaver Bank Bypass.

» Provincial:

- » New connection between Highway 103 and Highway 102 (Highway 113).
- » Highway 107 Extension (Cherry Brook Bypass).

» Halifax Harbour Bridges:

- » MacKay Bridge Twinning and Connection to Bedford Highway

Future Community Connector

There are several “Future Community Connector” projects that have not been pursued in any significant detail to date, but have been retained for local consideration as communities build out over time. These include connections to Highway 102 (Cobequid Road, Wellington), Highway 103 (Sussex Drive) and Highway 107 (Lawrencetown).

COGSWELL INTERCHANGE REDEVELOPMENT: AN UNPRECEDENTED CITY-BUILDING OPPORTUNITY

1971 | Cogswell Interchange Built

Part of a waterfront expressway that would have cut through downtown Halifax, destroying historic buildings and character. Citizen protest caused the expressway project to be abandoned.

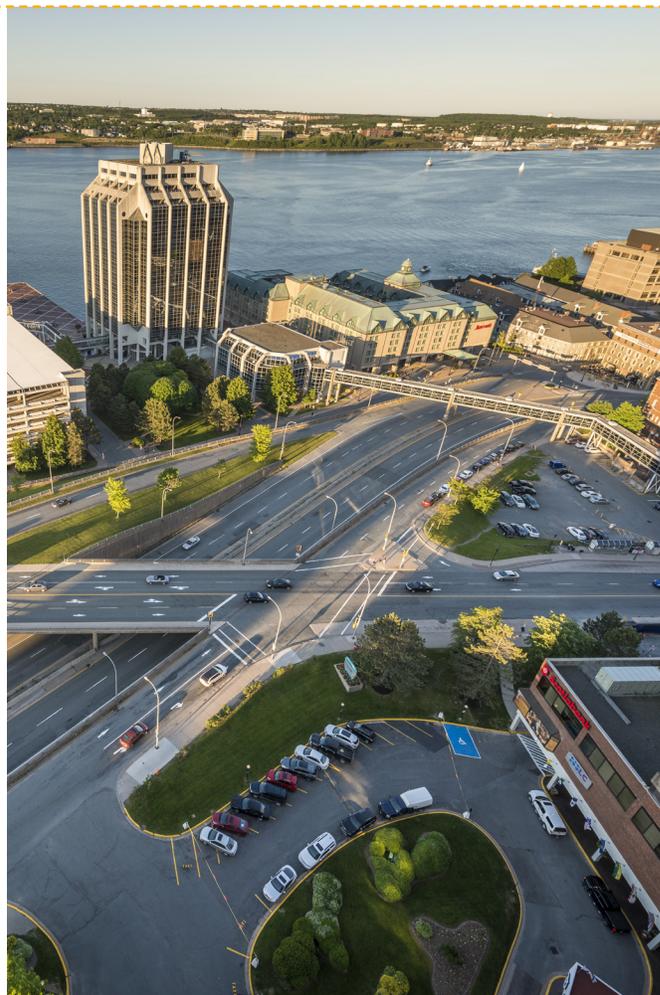
1999 | Replacement Feasibility Study Conducted

The interchange sits on valuable land and makes it difficult to access the waterfront by walking and bicycling. The study recommended that the Cogswell Interchange be removed and replaced with mixed use development and more modest roads.

2018 | Interchange Replacement to Begin

The new street grid and improvements to replace the Cogswell Interchange will create benefits addressing all four principles of the IMP:

- » **Complete Communities:** Redevelopment of lands into high density mixed-use and green space.
- » **Moving People:** Safer, easier, more enjoyable access to the harbour; potential for transit-only lanes and expanded terminal facilities
- » **Managing Congestion:** Marks a shift in thinking about congestion management.
- » **Integrate Strategies:** New design considers many factors: access to waterfront, vibrant public spaces, goods movement, integration with surrounding lands.



3.4.4 KEY CONSIDERATIONS

WHAT ARE THE IMPLICATIONS OF NOT EXPANDING THE ROAD NETWORK?

A key objective of the IMP is to limit planned expansion of the road network to the extent possible to reduce infrastructure costs and encourage a shift to non-private vehicle modes that will support a more sustainable transportation system. This represents a significant shift in the municipality's transportation planning approach and it is important to consider its implications. Modeling was completed to evaluate the implications for mode share targets and traffic congestion if road network expansion is avoided in favour of the sustainable transportation initiatives included in the IMP.

- » Travel demand modeling indicates that realizing the revised growth scenarios in the *Centre Plan* and adopting sustainable transportation initiatives will enable the municipality to achieve its aggregate 2031 mode share targets. Importantly, this assumes that none of the outstanding road network projects in the 2006 / 2014 *Regional Plans* are implemented and that traffic congestion levels would be permitted to exceed 2011 levels.
- » The importance of the *Centre Plan* growth targets, which have increased the proportion of growth allocated to the Regional Centre from 25% to 40%, is clear. If only 25% of household growth is realized in the Regional Centre, modeling indicates that:
 - » Transit trips will decrease by 5%.
 - » Non-private vehicle mode share will decrease by 2%.

By comparison, modeling indicates that with *Centre Plan* settlement targets, non private vehicle mode share targets in the *Regional Plan* are achievable.

These observations highlight the relationship between mode share targets, the implementation of the various IMP initiatives and major road infrastructure projects.

DEFINING AN “ACCEPTABLE” LEVEL OF TRAFFIC CONGESTION

Traffic congestion has long been an important measure to evaluate road network effectiveness. Traffic congestion is difficult to quantify and define in a meaningful and acceptable manner; consideration should also be given to removing explicit congestion targets in favor of a more qualitative approach.

Private vehicle congestion plays an important role in personal travel decisions. However, an increasing number of people would be willing to take transit and use active transportation if those options were better connected, more reliable and/or more efficient. For this reason, it can be argued that some congestion is beneficial to the success of alternative modes — so long as they are prioritized to avoid delays.



Figure 24: How Does the Halifax Region Compare? Average Daily Commute Time

Source: National Household Survey (Statistics Canada, 2011)

ROAD NETWORK CONSTRAINTS & STRATEGIC IMPROVEMENTS

The municipality's road network has geography and right-of-way constraints that limit the amount of traffic capacity that can be easily added. For example, the Halifax Peninsula has a limited number of access points and many key corridors are narrow. As a result, the ability to increase road capacity is limited and in some cases, would involve major infrastructure projects (e.g. harbour crossings) or corridor widening projects with significant property impacts.

Recognizing the challenges associated with increasing capacity in the road network, strategic targeted improvements can provide a cost-effective alternative to major infrastructure projects and in many cases can improve the ability to accommodate alternative modes.

Transportation “Bottlenecks”

Much of the existing traffic congestion that occurs during peak periods in the region is caused primarily by a limited number of key “bottlenecks” — locations that act as pinch points in the road network. Notable examples include the limited entry points to the Halifax peninsula and the locations that cross the Circumferential Highway in Dartmouth.

Bottlenecks represent locations where strategic improvements can potentially provide significant operational benefits. Efforts to improve traffic flow at bottlenecks benefit all users and need not be motivated by the objective of moving more private vehicles. For example, targeted bottleneck improvements can help provide priority for buses that in turn can incentivize transit.

Planning “Strategic Corridors”

There are several transportation corridors that can be considered strategically important based on their role in traffic operations, transit, goods movement and active transportation. Though the municipality has the desire to retain and improve the functionality of these corridors, in many cases there is a lack of vision for how they should ultimately look, feel and function.

Given that improvements to major corridors often occur in phases over time and are typically integrated with related infrastructure work (e.g. curb / asphalt rehabilitation), establishing long-term plans for key corridors needs to be purposeful. They have the potential to capitalize on property acquisition (or preservation) or redevelopment opportunities.

Effective planning of “strategic corridors” does not guarantee that a project will occur in the future, but it does help identify necessary and desirable opportunities for key upgrades.

Additionally, Transportation Reserve Zones have a significant potential to strengthen the municipality's ability to efficiently plan and implement its strategic corridors. These zones can be included in Land Use By-laws to prevent development from taking place which would obstruct construction of transportation links. They can be applied to private property on an interim basis, but that property must be acquired within five years; otherwise it reverts to zoning which allows private development.



EVALUATING ROAD NETWORK NEEDS

The way road network upgrades are assessed is an important factor in determining which projects to pursue. For this reason, the assessment approach and evaluation criteria must be consistent with the municipality's mobility objectives.

Traditionally, road upgrades have been identified based on a comparison of projected traffic demand (vehicle volumes) with available road capacity (number of lanes) at key locations such as major road "screenlines" or intersections. Where traffic volumes are shown to approach or exceed capacity, consideration is given to increasing road or intersection capacity to better accommodate these demands. Often, traffic analysis focuses more on the "number of vehicles" than the "number of people", which can undervalue the benefits provided by other modes, most notably transit. It also does not explicitly consider how well other modes are, or could be accommodated.

There has been a recent shift toward evaluating the performance of transportation facilities based on a "Multi-Modal Level of Service" framework that evaluates the performance all modes, including vehicular traffic, in addition to other modes including walking, bicycling and transit. These guidelines, which have been established and used by many cities across Canada, typically incorporate metrics such as pedestrian crossing distance, bicycle

facilities and transit capacity, many of which are not explicitly considered in the municipality's current analysis framework. This approach enables better consideration for how a proposed project affects all modes and provides a valuable tool to use in infrastructure planning for efficiently moving people.

DATA COLLECTION & MONITORING

The ability to make evidence-based decisions is directly influenced by the quality and quantity of available data. The following data sources help to inform evidence-based mobility decisions:

- » **Household Travel Survey:** Computer modeling helps determine the municipality's transportation needs into the future. In partnership with Dalhousie University's DalTrac program, the municipality is currently undertaking a "Household Travel Survey" that is expected to provide insights into citizens' travel habits and significantly improve the capabilities of the modeling process.
- » **Traffic Data:** Traffic data enables an ongoing understanding of growth trends and temporal variation in transportation demand. This is regularly collected by the municipality's Traffic Management Department at specified intersections and street sections throughout the municipality.
- » **Transit Usage:** Recently installed electronic counting devices now enable Halifax Transit to record the number of users on different transit routes and at different stops, throughout the service day.
- » **Bicycle and pedestrian counts:** Bicycle and pedestrian counts will also be factored into roadway usage analysis.



An important component of the implementation of the IMP will be the measurement of progress. It is apparent that a more robust approach to data collection will be required to facilitate improved progress monitoring. In addition, there is an opportunity to coordinate and use transportation information that is already collected by multiple municipal business units and other organizations to implement an IMP monitoring program.

ADVANCES IN TRANSPORTATION TECHNOLOGY

Advancements in transportation technology have significant benefits related to automation and communication. These technologies will improve safety and reduce congestion. However, they will also come with challenges; for example, developing appropriate infrastructure, reviewing regulatory frameworks, perceptions of safety and public acceptance.

Advanced Traffic Signal Control

Traffic signal control can improve the efficiency of intersection operation and increase capacity of the overall road network. Other benefits include efficient transit (signal priority), emergency (signal pre-emption) and active transportation accommodation. The municipality is currently in the process of implementing a modern traffic signal control system that will help realize these benefits.

Variable Message Signs

Variable message signs are typically installed over major roads to provide changeable messages to drivers. They can be used for traffic management by informing drivers about incidents, weather conditions and road closures and can be highly effective in traffic management. The municipality has partnered with Halifax Harbour Bridges and NSTIR to install variable message signs at several key points around the region.

Emerging Technologies

There is a great deal of excitement surrounding emerging technologies in transportation and the potential they could hold for improving the efficiency, safety and convenience of how we travel.

- » **Ride-sharing/Ride-hailing:** Ride-sharing /ride-hailing has rapidly grown in popularity and has spread to cities around the world. Uber and similar ride-sharing services use mobile apps for efficient travel coordination. Due to the perceived impact on other industries — primarily taxi services — ride-sharing as a private business has been controversial and typically requires regulatory oversight.
- » **Autonomous Vehicles:** Autonomous vehicles, or driverless vehicles, use sophisticated technology to operate without a driver. Removing the human element of vehicle operation can improve safety and efficiency. In terms of real world deployment, autonomous vehicle technology is in its infancy; however, it is moving rapidly and is generally accepted to represent the future of road transportation.

Many larger jurisdictions are investigating the implications and implementation of these technologies. Though it is unclear when or to what extent these new transportation technologies will impact the region, the municipality should be aware of best practices and be prepared to take necessary actions. Two opposite scenarios have been conjectured by some analysts: one where free road use and low density development perpetuate urban sprawl and environmental degradation and the other, where clustered settlement and complete communities linked by high quality transit corridors encourage people to use autonomous vehicles as an on-demand service in lieu of vehicle ownership. The time is now, to lay the groundwork for a sustainable mobility future through forward-thinking policy and investment.



MEET PIYA: *My real estate business has me working out of my vehicle most of the time, so I rely on the roads to be efficient to perform my job. At the end of the day, I love to drive to different parks and beaches around the region for my daily run.*

HOW WILL PIYA BENEFIT FROM THE IMP? SEE **POLICY 3.4.5-D**

EMERGENCY EVACUATION

The road network plays a crucial role in emergency evacuation. In the event of a major disaster requiring large scale evacuation (e.g. flood, fire, hazardous material spill), the primary function of the road network will be to facilitate the timely movement of residents away from affected areas.

The Halifax Master Emergency Evacuation Plan is in place to coordinate the evacuation process, but has not undergone any major revisions since it was approved by Council in 2003.

COORDINATING WITH OTHER ORDERS OF GOVERNMENT

Road related issues in many cases require coordination between the municipality and other orders of government, most notably the province.

Provincial Government

Ongoing coordination with the province is important for the following road network-related issues:

- » **Minimum Posted Speed Limit:** The minimum posted speed limit permitted on public roads (per the Nova Scotia Motor Vehicle Act) is 50km/h, although the municipality can reduce the minimum speed limit below 50km/h on a case-by-case basis with approval from the province. Increasing the ability of the municipality's Traffic Management Department to apply reduced speed limits within the region would be beneficial, though its application would also require increased enforcement and design considerations.
- » **High-Occupancy Lanes and Shoulder Bus Lanes:** High-occupancy vehicle (HOV) lanes and shoulder bus lanes are facilities that could provide opportunities to improve vehicle occupancy and transit service in the region. The municipality's ability to make changes to the 100-series highway network, where they would likely provide the most benefit, is subject to approval by NSTIR, who own and operate these highways.

3.4.5 POLICIES & ACTIONS

a) Limit further investment in additional road infrastructure by reducing reliance on private vehicle trips and encouraging a shift towards more sustainable modes:

Action 114: Continue to strive toward achieving the mode share targets outlined in the 2014 Regional Plan.

b) Apply a holistic lens to the evaluation, planning and design of road projects:

Action 115: Develop Multi-Modal Level of Service guidelines for the municipality that can be used to assess road projects and be incorporated into the municipality's Guidelines for the Preparation of Transportation Impact Studies.

Action 116: Update the Municipal Design Guidelines to include guidelines for road retrofitting and transportation design for the municipality's urban areas. Street design should accommodate people of all ages and abilities, including those with physical, visual, auditory and mental disabilities. The Municipal Design Guidelines should be periodically reviewed and updated to reflect best practices.

Action 117: Develop and implement a "Transportation Data Collection Strategy" with increased breadth and quality of data to support multi-modal transportation planning and progress monitoring. The strategy should consider:

- » The municipality's existing data collection approach and areas that need to be expanded or added.
- » Equipment and staff resources needed to implement and maintain ongoing data collection.
- » Opportunities and safeguards for partnerships.

Action 118: Evaluate any planned new additions or major improvements to the regional road network using the evaluation matrix that includes the four pillars of this plan: Connected, Healthy, Affordable and Sustainable, together with impacts on mode choice, users/abutter experience and land use.

Action 119: When the people-moving capacity of a strategic transportation corridor must be prioritized over other street functions (e.g. street parking, trees, snow storage etc.), the municipality shall examine and implement solutions to mitigate these losses.

Action 120: Review best practices for High-Occupancy Lanes and Shoulder Bus Lanes and develop a strategy for use in conjunction with NSTIR.

c) Make strategic upgrades to the road network, particularly when they support multi-modal improvements.

Action 121: Identify “Strategic Corridors” — existing road corridors that are key to regional traffic flow, transit, goods movement and active transportation — and develop plans that will guide their development over time.

Action 122: Identify where strategic improvements to “bottlenecks” can be implemented. Consider opportunities to integrate priority measures for transit and connections for active transportation at these locations.

Action 123: Maintain the downtown one-way street network. One-way streets may also be considered to optimize limited road space for other road functions, such as loading and deliveries, bicycle facilities and transit.

Action 124: Where total corridor road capacity is increased through the construction or expansion of a parallel road, explore opportunities to give higher priority to active transportation or transit within that corridor.

- » Example: The construction of the Burnside Expressway should be coupled with the opportunity to install dedicated bus lanes on Windmill Road, between Akerley Boulevard and Victoria Road.

d) Improve the efficiency of the road network using current and future technological advancements:

Action 125: Continue the municipality’s efforts to implement an advanced traffic signal control system for the network of signalized intersections.

Action 126: Develop an implementation plan that stipulates when and how variable messaging signs should be used by the municipality and identifies the communication protocol with Halifax Harbour Bridges and NSTIR required to facilitate these activities.

Action 127: Keep abreast of ongoing developments related to autonomous vehicles in terms of infrastructure requirements and the potential implications for transportation and land use planning. While these technologies are not an explicit focus of this plan, the municipality should continue to monitor technology advances to anticipate, prepare for and shape their use.

Action 128: Complete a best practices review in order to update the municipality’s Master Emergency Evacuation Plan by considering changes to evacuation routes, shelter and muster stations, and new developments in the region.



PARKING

Parking lot occupancy at 45 suburban stores in the Halifax region was surveyed at different times of the day and during different seasons.



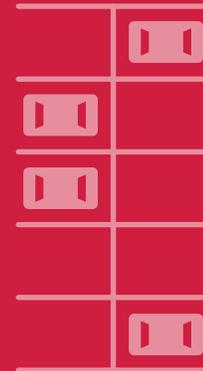
1500
Metered Parking Spaces



\$2.8 MILLION
Annual Gross Revenue from Metered Parking



\$1.50 Halifax
\$1.00 Dartmouth
Hourly Costs for Metered Parking



On average, parking lots were less than **40% FULL**

This indicates that parking is significantly oversupplied.

(SOURCE: 2009 REGIONAL PARKING STRATEGY, SURVEY COMPLETED FOR STRATEGY)

(SOURCE: THE HALIFAX REGION PARKING)

PARKING MANAGEMENT — REGIONAL PARKING STRATEGY



IMPROVE EFFICIENCY
of existing parking supply or
INCREASE PARKING CAPACITY



REDUCE DEMAND
for parking



SUPPORTING STRATEGIES:
use technology,
improve governance & funding
structure, integrate parking
with urban design

3.5 Parking

3.5.1 OBJECTIVE

Align parking management with the goal of shifting more trips to active transportation, transit and car-sharing, while supporting growth in the Regional Centre and in Transit Oriented Developments and Communities proposed by this plan.

3.5.2 INTRODUCTION

Parking, which facilitates access to land uses for vehicle-based trips, is an essential part of the transportation network. It has important ties to land use, built form, economic development, quality of life, street design and functionality and is a scarce and costly commodity. The setting of parking policy is a complex issue involving many interests and stakeholders. Due to its direct association with travel by private vehicle, parking plays an important role in mobility choices; parking scarcity and cost are key factors that the public must consider when determining how they will travel.

Parking is an important consideration for virtually all other components of the IMP. The effective management of parking can serve as a powerful tool in pursuit of the municipality's mobility goals. Improved parking efficiency can reduce the amount of space needed for parking, providing opportunities to develop more community-oriented off-street spaces and supporting the potential reallocation of on-street parking space for other uses such as active transportation and transit infrastructure.

Effectively managing the supply and pricing of parking can also help to influence travel habits, improving the potential to promote a shift to more sustainable transportation options.

3.5.3 BACKGROUND

The Regional Parking Strategy (2009) noted that the Halifax region currently has a fragmented approach to parking management, both in the downtown areas as well as across the region. While this is a common approach in smaller or developing communities, the parking system in the Halifax region is too complex not to have a body responsible for integration and coordination. In assessing the historical lack of municipally-owned off-street parking, the study went on to say, "While some may view the dominance of the private sector in the provision of collective parking facilities in central areas as the most efficient use of resources, there are several reasons why the municipality should build capacity to be able to develop publicly-owned, collective parking facilities".

2000

MAYOR'S TASK FORCE ON PARKING

A Mayor's Task Force on Parking was established in response to ongoing concerns that the supply of downtown parking was at risk. The Task Force recommended that the municipality play a more hands-on role in the development of parking facilities and establish minimum parking requirements accompanied by a cash-in-lieu policy in the downtown.

2002

RESIDENTIAL ON-STREET PARKING POLICY

Regional Council adopted the policy and supported By-law P-1000. The goal was to address parking problems on residential streets with high outside demand, while also maintaining a reasonable number of spaces for non-local motorists to use. Since the policy was adopted, parking controls have been placed on approx. 30 blocks. Strategies vary from street to street, but include limiting parking by time of day, by the length of time vehicles can be parked and to permit-holders only.

2009

REGIONAL PARKING STRATEGY

The Regional Parking Strategy was approved by Regional Council. The strategy aims to increase the efficiency of the available parking supply, reduce demand for parking and provide supporting policies for governance, funding and urban design.

2013

PARKING STRATEGY PROJECT ROADMAP

The roadmap focused on three key aspects of the Regional Parking Strategy: on-street parking technology, supply/demand inventory and governance, and specific short-term deliverables. It resulted in the creation of a Parking Coordinator position to better develop parking as a municipal service.

2018

CENTRE PLAN

The policies of the forthcoming *Centre Plan* aim to optimize parking requirements and parking lot design, while reducing the number, size and negative effects of surface parking lots in the Regional Centre.

Since completion of the Regional Parking Strategy, steps have been taken to increase the municipal role in the planning and setting of policy for parking.

PLANNING CONTEXT

Parking has been an important consideration in all of the municipality's previous regional planning processes.

The municipality has completed a significant amount of parking management initiatives and the implementation of the Parking Strategy Project Roadmap is underway. The IMP will further strengthen the case for improved parking management efforts and recognize the important role that parking management can play in supporting strategic transportation initiatives.

3.5.4 KEY CONSIDERATIONS

PARKING MANAGEMENT

Given the significant costs associated with parking and its influence on mode choice, parking management is increasingly important in municipalities. Effective parking management should strike a balance between supply and demand for various types (e.g. short-term, long-term, accessible), simultaneously limiting the oversupply of parking spaces.

PARKING TECHNOLOGY

There is a wide range of technology that can make parking management more effective and convenient.

- » **On-Street Parking Payment:** There are a variety of alternatives to the traditional coin-operated parking meter that can better serve users and the municipality. The municipality recently completed a thorough review of options that considered the replacement of all existing parking meters with "Pay by Plate" stations. The stations would allow people to enter their license plate number and purchase parking with coin, credit card or pay-by-phone. This technology would give the municipality more opportunity to vary pricing to match changing demand.
- » **Management and Enforcement:** New technology can add to the reliability of parking enforcement and provide better data.

- » **Residential Parking Monitoring:** The purchase of parking permits for residential areas will be monitored through a registry of vehicle license plates, rather than existing windshield decals.
- » **Parking Supply Information:** Providing better guidance and information to parking customers can improve parking utilization and provide real-time availability information.

CURBSIDE PRIORITIES

Curb space exists on every street and is allocated in a variety of ways. Though parking is an important component on many streets, other streets do not permit parking in favor of functions such as vehicle movement and loading.

Establishment of a curbside priority hierarchy is important to help guide decisions related to curbside space. The Curbside Priority Chart illustrated on in **Figure 25** identifies a proposed priority level for potential uses of curbside space. With the exception of accessible parking, on-street parking is typically a lower priority when compared to uses such as emergency/service vehicle movement, goods movement and travel modes. Among the types of parking identified, accessible parking has the priority, followed by parking for residents and high-turnover uses. On-street parking by all-day commuters is assigned the lowest priority.

INTEGRATING PARKING MANAGEMENT & MOBILITY

Integrating the management of existing parking spaces with other mobility considerations can help create new opportunities for street and land use. For example, in some cases, street right-of-ways can be reallocated to allow the implementation of dedicated bus lanes, bicycle facilities, expanded pedestrian areas, expanded one-way routes, bicycle-shares and car-shares. The Halifax region has many streets with narrow right-of-ways and implementation of these projects often requires trade-offs, one of which is the loss of on-street parking spaces.

Given the importance of parking in many areas and the impact that removal can have on residents and businesses, it is important to consider potential consequences. Where possible, the replacement of lost on-street parking should



Figure 25: Curbside Priority Chart

Curbside priority on most streets in the region generally follows the hierarchy above. However, not all streets assign priority in this order. Examples include those designated as priority transit or bicycle routes.

be explored. Implications of changes should be communicated to the public along with an overall context for the project.

COMMERCIAL / INSTITUTIONAL AREA PARKING

Supplying adequate short-duration parking in commercial and institutional areas within the Regional Centre is important for the continued viability of these uses. Determination of “how much” parking is required is difficult; however, it can be better understood through parking inventories and utilization surveys.

An inventory of parking supply within the five Regional Centre Business Districts has been undertaken since 2013 and 2016; results are shown on **Figure 26**. Monitoring of on-street parking utilization was initiated in 2017 and the preliminary results of that survey are shown on **Figure 27**.

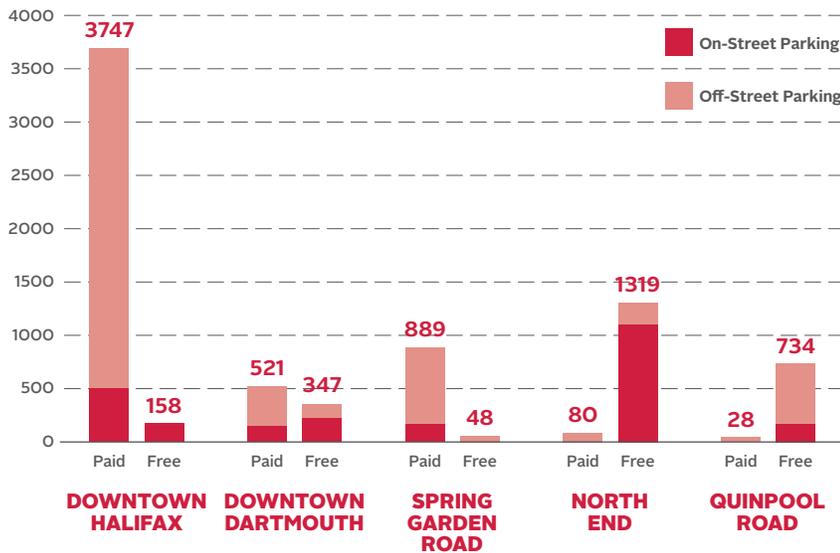


Figure 26: Total Parking Spaces in Regional Centre Business Districts, 2016

Note: Data not available for the Institutional District

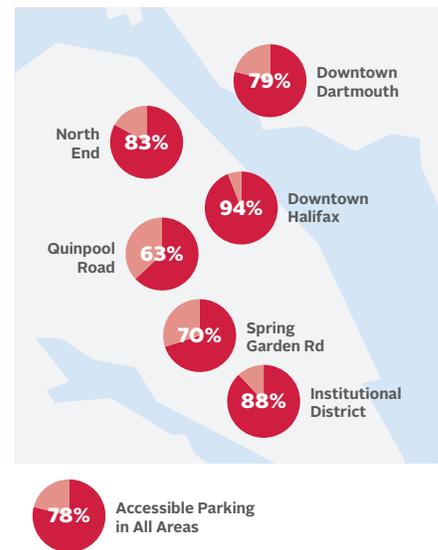


Figure 27: Peak Weekday On-Street Parking Utilization, 2017

In many cases, streets with high parking demands are identified as candidates for bicycle and transit improvements. These may in turn impact on-street parking. When projects are initiated that require reallocation of on-street parking to optimize street space for other modes, a utilization study should be undertaken and consideration should be given to opportunities to offset the parking supply loss. This can be through the addition of new nearby on-street spaces or potentially the development of municipally-owned off-street parking.

ACCESSIBLE PARKING

Meeting the region's accessible parking needs is critical for community livability. The municipality needs to play a more active role in ensuring accessible parking is meeting the needs of the community it serves and that there is sufficient supply.

PARKING & LAND USE BY-LAWS

Parking in private developments is controlled by land use by-laws that influence supply through minimum and/or maximum requirements based on the size and type of development. Many of these by-laws are outdated and need to be updated to reflect more recent parking analysis and principles of the IMP.

Other approaches to consider in promoting a shift towards sustainable mobility choices include:

- » **Maximum Parking Requirements:** Parking maximums place a cap on the number of parking spots in a development.
- » **Shared Parking for Mixed Use Developments:** Residential uses and many different commercial uses have parking demands that peak at different times of the day. Utilizing this information can improve the efficiency of shared parking areas while meeting demand.
- » **Parking Reductions Near Transit:** Transit oriented development results in higher transit use reducing the number of parking spots required.
- » **Car-share in-lieu of Parking:** Car-sharing results in reduced private vehicle trips and as a result, a reduced demand for parking spaces. Residential developments that provide space for car-sharing can encourage tenants to use this service rather than owning a private vehicle (or second private vehicle) and can justify a reduced need for tenant parking.

THE COST OF PARKING

The cost of parking can play an important role in mode choice with high parking costs encouraging alternative travel modes. While the municipality does not control the cost of all parking in the Halifax region, there are several strategies that can be used to manage parking prices:

- » **Parking Rates:** Charge for parking in high-demand areas where on-street parking is currently free. Establish downtown parking rates high enough to influence mode choice while not unfairly penalizing downtown businesses and institutions over similar uses in suburban areas, where parking is abundant and free.
- » **Duration Based Price Ratios:** Set price ratios between short and long-term parking to encourage casual use of parking over constant use. High hourly or daily parking rates in comparison to monthly rates can encourage more driving as it can be less expensive to purchase a monthly pass than multiple short-term passes.
- » **Decouple Rents from Parking Costs:** Requiring developers and landlords to charge for parking separately from apartment rents and condominium prices can enable lower housing costs for residents who choose not to own a vehicle.
- » **Discourage Employer Parking Subsidization:** Many businesses and institutions provide free or subsidized parking without similar consideration for employees who commute by transit or active transportation. Some institutions in the Halifax region have a below-market parking rate written into collective agreements. Rather than removing such privileges, a more palatable option might be to encourage comparable subsidies for transit users or carpoolers in lieu of a parking spot

PARKING GOVERNANCE STRUCTURE

The 2013 Parking Roadmap considered three types of governance structures for parking:

- » **Municipal Service Operation:** Emphasis is on service and broader corporate objectives operating within a municipal business unit.
- » **Parking Authority:** Emphasis is on running the service like a business, building parking supply while operating at arms-length from the municipality.
- » **Parking Commission:** Emphasis on providing parking services through the guidance of a board of directors with budgeting and business planning resting with Regional Council.

While the Roadmap recommended the municipal service operation option (moved in April 2017 to the Transportation & Public Works Department) exploration of the benefits of the other models will continue.

Other major cities that have an authority or commission or manage parking themselves while owning a large percentage of downtown parking, can provide a higher level of governance than the Halifax region where downtown parking supply is owned by several distinct private and public bodies. Nevertheless, the municipality can take a leadership role in coordinating various aspects of parking such as payment technology, enforcement, communication, marketing and wayfinding.



MEET IRENE: *I rarely drive downtown, since it is so easy to walk where I need to, but when I do drive, I can always find parking on the street or in lots that are close by. On the other hand, I will always drive to the mall, because I hate walking through the huge parking lot from the bus stop.*

HOW WILL IRENE BENEFIT FROM THE IMP? SEE **POLICY 3.5.5-C**

3.5.5 POLICIES & ACTIONS

a) Allocate curbside parking based on the Curbside Priority Chart (see Figure 25).

Action 129: Rewrite Bylaw P1000 to reflect the curbside priority chart.

Action 130: Implement on-street parking spaces for floating car-share vehicles that do not have a home base (See Transportation Demand Management section).

Action 131: Where mode share can be impacted, consider the curbside priority for key transit and active transportation corridors.

b) Use the price of parking to encourage active transportation, transit and car-sharing.

Action 132: Set downtown parking rates high enough to influence mode choice and ensure a sufficient number of vacant short-term parking spaces, while not unfairly penalizing downtown businesses and institutions over similar uses in suburban areas, where parking is abundant and free.

Action 133: Set price ratios for short and long-term parking to encourage casual use of a vehicle over constant use.

c) Continue to implement the 2013 Parking Roadmap.

Action 134: Implement technology changes that connect allowable parking in controlled areas to vehicle licence plates (pay-by-plate).

Action 135: Complete the parking technology conversion as per the 2013 Parking Roadmap.

Action 136: Conduct an analysis of parking supply and demand to determine parking needs in commercial and institutional areas.

Action 137: Engage with stakeholders to ensure the service of public parking meets the needs of its customers.



4 MONITORING AND EVALUATION

4.1 Monitoring & Evaluation

Establishing and monitoring indicators will measure progress towards achieving the vision and objectives of the IMP. The performance of indicators over time will signal to the municipality when it should refine initiatives, shift funding or respond to evolving opportunities and challenges.

The IMP will expand upon and inform the key performance indicators currently used to measure the success of the *Regional Plan*. Additional indicators include important metrics used by Halifax Transit and Transportation and Public Works. Indicators will be chosen based on their usefulness and on data availability. They may also change or be refined in the future as new data becomes available.

Potential performance indicators are included on the pages that follow. Most of the indicator data comes from external sources and is collected every two to five years.

A simple logic model and list of key performance indicators are included on the pages that follow. The logic model outlines inputs, activities, outputs and outcomes the IMP

will work towards. It communicates how the policies and actions will lead to the overarching mobility changes. The logic model will help establish a common understanding of the overarching theory of change behind the IMP and its expected outcomes among municipal staff, council, stakeholders and the public. Logic models typically outline the process shown in **Figure 28**.

The logic model has been used to inform a list of Key Performance Indicators (KPIs). These KPIs will be used to measure the IMP's progress. The data will be obtained from both internal and external sources and will require collaboration with partners, including academic, government and non-government organizations. The logic model will also be regularly reviewed, updated as needed and serve as the foundation for an overall IMP Monitoring, Evaluation and Learning Plan. This plan will outline a program for evaluating and reporting on the IMP, determine resource allocation (staff time and funding) and define data collection methods and reporting cycles. Annual progress updates will be compiled and shared with council, staff and the public.



Figure 28: Logic Model

Table 2: Integrated Mobility Plan Logic Model

GOAL: Increased number of people walking, bicycling and using transit

INPUTS	ACTIVITIES	OUTPUTS	SHORT TERM OUTCOMES (1-3 YEARS)	MEDIUM TERM OUTCOMES (4-10 YEARS)	LONG TERM OUTCOMES (11+ YEARS)
Municipal funding	Review and Amend Plans and Policies				Decreased fatalities and injuries
Provincial funding	Update policies to enable complete communities, transit oriented development, human-scaled design	Updated Regional Municipal Planning Strategies	Increased alignment between land use plans (e.g., RMPS) and the IMP	Supportive policy environment that enables complete communities, Transit Oriented Development, pedestrian scaled developments	More communities are increasingly complete, with jobs, schools, houses, services within walking distances and connected to other complete communities by transit
Federal funding	Create pedestrian design guidelines to support pedestrian oriented site design, transit oriented developments, etc.	Updated Secondary Municipal Planning Strategies and Land Use By-laws	Increased ability among staff to develop context sensitive street designs		
The Halifax region staff time and resources	Update design standards to better reflect current best practices in transportation facility design	Updated <i>Municipal Design Guidelines</i>			
Partner time and resources	Develop Infrastructure				Less need for private vehicle ownership
Project costs	Identify strategic corridors for active transportation, transit, Complete Streets, the road network, etc.	Active transportation infrastructure upgrades	Priority active transportation and transit infrastructure implemented	Increased quality and connectivity of active transportation infrastructure	More efficient use of existing road capacity
	Implement Transit Priority Measures and transit corridors	Transit Priority Measures	Improved understanding of strategic corridor needs	Increased quality and connectivity of transit infrastructure within Transit Service Boundary	Better transportation options for all ages and abilities
	Implement pedestrian and bicycling networks	Transit Oriented Development Guidelines			
	Implement parking management technology improvements	Strategic Corridor Plans		Increased transit vehicle operating speed and schedule adherence	
	Build Awareness and Skills				
	Support safety and skills education efforts	Education and awareness programs (e.g., workshops, materials, events, etc.) for varied audiences	Increased knowledge and skills among residents	Increased perception of safety on streets	
	Market and promote transit use		Increased support for education programs	Increased confidence and integration to use active transportation and transit	
	Develop staff capacity to undertake work program.		Increased knowledge of staff to support IMP implementation	Increased skill level of staff to support IMP related processes	

INPUTS	ACTIVITIES	OUTPUTS	SHORT TERM OUTCOMES (1-3 YEARS)	MEDIUM TERM OUTCOMES (4-10 YEARS)	LONG TERM OUTCOMES (11+ YEARS)
Municipal funding	<p>Partner</p> <p>Develop and strengthen strategic partnerships with stakeholders and providers</p> <p>Work with key stakeholders to implement Transportation Demand Management programs</p> <p>Work with partners to create complete communities</p> <p>Work with providers to enable transit and active transportation improvements.</p>	New partnerships	New partnerships established	Increased support and collaboration	Decreased fatalities and injuries
Provincial funding		Strengthen existing partnerships	Strengthened existing partnerships	Increased provision of sustainable services or infrastructure which require collaboration with other agencies	More communities are increasingly complete, with jobs, schools, houses, services within walking distances and connected to other complete communities by transit
Federal funding			Increased understanding of roles in and value of implementing the IMP among key stakeholders		
The Halifax region staff time and resources					
Partner time and resources					Less need for private vehicle ownership
Project costs	Monitor and Evaluate				
	Identify data needs (e.g. methods, partners, resources)	Data collection programs	Increased understanding of data needs (e.g. methods, partners, resources)	Increased ability to monitor and report on trends	More efficient use of existing road capacity
	Expand data collection program	Reporting structure		Improved evidence based decision making	Better transportation options for all ages and abilities
	Apply holistic lens in monitoring road network projects	Reports			
		Multi-Modal Level of Service Guidelines			

Focus areas within the IMP: integrated planning, land use and transportation, transit, Complete Streets, active transportation, goods movement, road network and parking

4.1.1 KEY PERFORMANCE INDICATORS

In addition to using the logic model to inform Key Performance Indicators (KPI) for the IMP, the following selection criteria also informed the final list of KPIs: ¹

- » **Validity** – Does the indicator allow you to be precise in measuring the results (quantity, quality, timeframe)?
- » **Relevance** – Is it relevant to the activity, product or process being measured?
- » **Reliability** – Is it a consistent measure over time?
- » **Simplicity** – Is the information available and will it be feasible to collect and analyze?
- » **Affordability** – Can we afford to collect and analyze the information?

Table 3: Key Performance Indicators

	PERFORMANCE INDICATOR	DATA SOURCE	FREQUENCY	RESPONSIBILITY
1	Household and population growth by sub-region	Planning and Development (the municipality)	Every 5 years	Planning and Development (the municipality)
2	% of residents within 500m of a transit stop within the Urban Transit Service Boundary.	Halifax Transit (the municipality)	Annually	Halifax Transit (the municipality)
3	% of residents within 500m of a bicycle route by sub-region	Planning and Development (the municipality)	Annually	Transportation and Public Works (the municipality)
4	# of Land Use By-law & Municipal Planning Strategy policy statements that support transit oriented development	Planning and Development (the municipality)	Annually	Planning and Development (the municipality)
5	Collision-related serious injury and fatality rates by mode by sub-region	Halifax Regional Police and RCMP	Annually	Transportation and Public Works (the municipality)
6	Truck related collisions over time along truck routes	Halifax Regional Police & RCMP	Annually	Planning and Development (the municipality)
7	On-street parking utilization rates in downtown Halifax and Dartmouth	Planning and Development (the municipality)	Annually	Planning and Development (the municipality)
8	User perception of transportation infrastructure improvements on strategic corridors (e.g. Complete Streets projects, bicycle facilities, Transit Priority Measures, etc.)	The Halifax region Citizen Survey + Academic partners	Annually	Planning and Development/ Transportation and Public Works (the municipality)
9	User perception of walking, bicycling and taking transit as a transportation option	The Halifax region Citizen Survey + Academic partners	Annually	Planning and Development/ Transportation and Public Works (the municipality)

¹ Source: https://www.otc-cta.gc.ca/sites/all/files/altformats/books/performance_e.pdf

PERFORMANCE INDICATOR	DATA SOURCE	FREQUENCY	RESPONSIBILITY
10 Citizen participation in and exposure to education and promotion activities	Transportation and Public Works (the municipality) + NGO Partners	Annually	Transportation and Public Works (the municipality)
11 Daily average vehicle-kilometres travelled	Statistics Canada	Every 5 years	Planning and Development (the municipality)
12 Average commute times by mode	Planning and Development (the municipality)	Annually	Planning and Development (the municipality)
13 Duration of peak periods	Transportation and Public Works (the municipality)	Annually	Planning and Development (the municipality)
14 Vehicle ownership per capita	Access Nova Scotia	Annually	Planning and Development (the municipality)
15 Mode share of transportation to work by sub-region, age and gender: drive alone, passenger in vehicle, walking, bicycling, transit	Statistics Canada + Academic partners	Every 5 years	Planning and Development/ Transportation and Public Works (the municipality)
16 % of streets with sidewalks by sub-region	Transportation and Public Works (the municipality)	Annually	Transportation and Public Works (the municipality)
17 % of all ages and abilities bicycle network completed in the Regional Centre	Transportation and Public Works (the municipality)	Annually	Transportation and Public Works (the municipality)
18 Length and connectivity of new bicycle routes, sidewalks and greenways	Transportation and Public Works (the municipality)	Annually	Transportation and Public Works (the municipality)
19 Kilometres of dedicated right-of-way for transit vehicles (including rail and ferry routes)	Halifax Transit (the municipality)	Annually	Halifax Transit (the municipality)
20 # of transit riders on dedicated right-of-ways for transit	Halifax Transit (the municipality)	Annually	Halifax Transit (the municipality)
21 # of intersections with Transit Priority Measures	Halifax Transit (the municipality)	Annually	Halifax Transit (the municipality)
22 Average operating speed (network wide)	Halifax Transit (the municipality)	Annually	Halifax Transit (the municipality)

5 IMPLEMENTATION

5.1 Implementation Process

The IMP provides the framework to guide transportation planning until 2031. The success of the IMP depends on the ability of the municipality to collaborate effectively with other orders of government, institutions, the private sector and the public. This collaborative approach ensures that the IMP is responsive to community needs and opportunities. The policies and actions identified in Sections 2 and 3 will both guide and enable the successful implementation of the IMP. The actions are repeated in this section with further detail to guide their implementation, as well as their alignment with the pillars and principles. Providing this level of detail and prioritization allows for the successful implementation of the IMP over its fifteen-year lifespan. Changing mobility patterns throughout the region to facilitate more trips through walking, bicycling and transit requires a shift in how transportation projects are financed and budgeted. The municipality has multiple sources of funding to facilitate this shift and ensure investment in mobility is financially sustainable.

5.1.1 INTEGRATED STAFF TEAM

An inter-departmental, inter-disciplinary, internal team was created to develop the IMP, representing a significant step forward for the municipality in developing a comprehensive transportation system that truly integrates across business units. This integrated staff team was assembled to undertake the research, writing and execution of the IMP. This same team who wrote the IMP will be available and engaged in its multi-year implementation strategy. It is recommended that an IMP implementation team be created to ensure that this integrated approach to mobility planning continues.



5.1.2 PUBLIC ENGAGEMENT

Implementing the IMP will involve changes to the way streets are designed and operated. Though there is rarely opposition to the idea of achieving complete networks, their implementation on-the-ground can be challenging with multiple differing public opinions. For instance, implementing Transit Priority Corridors, sidewalks and bicycle lanes may require space historically dedicated to on-street parking or vehicle travel lanes, which in turn requires the municipality to re-examine how it allocates street right-of-way. The municipality — in consultation with the public — will need to consider trade-offs between familiar road elements (e.g. vehicle lanes, on-street parking, loading areas) and new elements (e.g. dedicated transit lanes, bicycle facilities). Regardless of the extent of proposed changes, trade-offs can become controversial, particularly if their impacts are poorly understood. Public engagement is therefore a vital tool to both inform and learn from the public to make decisions that address a variety of needs.

The Role of Public Engagement

Public engagement can help the public understand a project's rationale and provide project staff with a full understanding of the project's potential impacts and opportunities. The purpose of engagement varies depending on the project, ranging from simply informing a community about an upcoming project to gaining feedback to help shape how or if a project goes ahead. In addition to project-specific engagement, the public should also be regularly consulted about mobility in the region overall to note changing preferences, trends and points-of-view and gather insights about user experience that cannot be garnered from data alone.

When to Engage

The IMP has been approved by Council as a policy and action driven priorities plan. During the course of the IMP development, twenty-two public engagement sessions were held across the municipality that shaped the policy direction and actions. Many of the projects in this plan have already been consulted on and much of the time municipal staff will spend with the public will be keeping them informed about actions that Regional Council has already approved. The

guidelines that follow (see **Table 4**) will help the municipality decide whether additional public engagement should be undertaken or not. If the response is “yes” to multiple questions, then public engagement is advised. These guidelines could pertain to all projects that implement the IMP (e.g. road, transit, bicycle routes, sidewalk and land use), except state-of-good repair projects (see **Section 5.2.1 Budget & Financing Considerations**).

How to Engage

While most projects are implemented in stages, for a number of practical reasons, public engagement or public information sessions for individual projects should never lose sight of the big picture: these individual projects are forming a network to achieve integrated mobility and support mobility choice. It should always be clear to the public that any proposed project is part of an integrated network. To help convey this message, engagement should bundle projects together, when possible, particularly if they are proposed for the same area. Public engagement will be considered based on the guidelines of **Table 4**. It will also be considered based on a spectrum of engagement that would identify the goal of public participation prior to going out to the public. The goal of the engagement could be informing, consulting, involving, collaborating, or empowering the public.

Networks of infrastructure are intended to be supported by appropriate densities and land use mix. While public engagement about land use planning applications is subject to separate statutory requirements under various municipal plans, as well as Charter requirements, efforts should be made to integrate discussions about transportation projects with discussion about existing and proposed land uses.

In addition to broader public consultation, the municipality needs to ensure that the opinions and advice of people with different abilities is considered. The municipality should continue to consult with groups representing people with disabilities to determine appropriate strategies when designing and redesigning streets.

YES – PUBLIC ENGAGEMENT IS A GOOD IDEA	NO – PUBLIC ENGAGEMENT IS NOT NEEDED
A major change to the street or significant level of service reduction for one mode in favour of another.	Change is relatively small, involves no trade-offs, or provides a “win-win” solution for multiple modes.
Located in a high profile area, has many stakeholders and will have an impact on many members of the public.	The public is not significantly impacted by the project (e.g. there are few neighbouring properties). In these cases, engagement may be limited to stakeholders only.
There are conflicting elements among various municipal documents or plans with regard to the desired future vision for a street.	Public engagement was recently undertaken and direction is clear (e.g. recent council direction, Municipal Planning Strategy amendment or approved streetscape plan).
A municipal plan has identified an approved vision for a street but the community has significantly changed since it was approved, or what is suggested in the plan is physically or practically unachievable.	There is no existing or planned community art or neighbourhood placemaking component.
There is a community art or neighbourhood placemaking component to the project.	The project must happen within a short timeframe (no opportunity for public feedback) or public engagement will have no impact on the design (e.g. watermain replacement, fiscal year end spending).
The project is optional, discretionary or will be implemented in the long-term.	Relatively small amounts of parking or parking with low occupancy is removed for other uses of the street.
Large amounts of well-used parking would be removed for other uses of the street.	Relatively few trees need to be removed (less than ten) or the affected trees are immature.
Several mature street trees would have to be removed for other uses of the street.	Similar projects have been done many times before, in other areas with great support or without much interest from the community.
A pilot project that includes lots of new features and/or programs for an area.	

Table 4: When to Engage Guidelines

5.2 Action Plan

The following table outlines the actions to be undertaken and their respective timeframes, to implement the IMP. The action plan identifies timeframes for each action outlined in the plan. These timeframes can be identified as follows:

- » **SHORT:** 1-3 year time frame.
- » **MEDIUM:** 4-10 year time frame.
- » **LONG:** 10+ year time frame.

It is important to note that some of the actions in the action plan may take multiple years to plan, design and construct. In addition, some of the actions (e.g. the recommendation of Transit Priority Corridors and bus only lanes for the Bayers Road, Young Street, Robie Street corridor) if approved by Council, should be planned, designed and constructed as a continuous project instead of broken down into individual sections. This will demonstrate the full approach to bus-only lanes along a full corridor that the public can instantly start using and benefiting from

Table 5: Action Plan

ACTIONS	TIMEFRAME	LEVEL OF EFFORT	RESOURCES	INTEGRATION
FOUNDATIONAL POLICIES				
A1 Revise the municipal street classification system and standards to support all travel modes, street functions and land uses; ensure the <i>Municipal Service Guidelines (the Red Book)</i> reflect these revisions.	MEDIUM	High	Medium	Land Use Complete Streets Active Transportation Transit
A2 Review the <i>Municipal Design Guidelines (the Red Book)</i> annually to incorporate best practices for all transportation design elements.	SHORT	High	Medium	Complete Streets
A3 Prepare and implement a <i>Municipal Accessibility Plan</i> for mobility in the region with respect to the built environment, transit, transportation infrastructure and the delivery of goods and services.	SHORT	High	High	Land Use Complete Streets Active Transportation Transit
A4 Implement multidisciplinary safety strategies including the <i>Strategic Road Safety Plan</i> , to maximize the safety and security of all people on the street, with an emphasis on the most vulnerable users.	SHORT	Medium	Medium	Complete Streets Active Transportation
A5 Collaborate with Operation Lifesaver Canada, a partnership initiative of the Railway Association of Canada and Transport Canada, to raise awareness of motorists, pedestrians and bicyclists about railway hazards.	SHORT	Low	Low	Complete Streets Transit
A6 Use pilot projects, such as Rectangular Rapid Flashing Beacons (RRFBs), leading pedestrian intervals and pedestrian countdown signals to trial, monitor and enhance pedestrian safety.	SHORT	Low	Low	Complete Streets Active Transportation
A7 Identify and implement new sidewalks, multi-use pathways and enhanced crossing treatments to connect networks and better manage interactions between pedestrians and motor vehicles.	MEDIUM	Medium	Medium	Complete Streets Active Transportation Road Network
A8 Develop a Transportation Monitoring and Evaluation Strategy to expand and integrate transportation and land use data collection in partnership with other agencies, including Statistics Canada, Halifax Port Authority, provincial agencies and the Dalhousie Transportation Collaboratory (DalTRAC) and gather a minimum of one year of baseline data.	MEDIUM	Low	Low	Land Use Goods Movement Road Network
A9 Establish a program for long term/permanent traffic data collection. Consider the potential to collect data related to vehicle type, speed and occupancy.	SHORT	Low	Low	Land Use Active Transportation Transit Road Network TDM
A10 Formally establish boundaries for reporting sub-regional mode share in the Halifax region based on the boundaries included in the 2014 <i>Regional Plan</i> . The perimeter of the Outer Urban area should align with the Urban Service Boundary. Statistics Canada data should be requested based on the consistent boundaries, regardless of changes to census tract locations.	SHORT	Low	Low	Road Network TDM
A11 Revise mode share targets for each sub-region to better align with more realistic values, while retaining the current 2031 region-wide targets.	SHORT	Low	Low	Land Use Active Transportation Transit TDM

ACTIONS	TIMEFRAME	LEVEL OF EFFORT	RESOURCES	INTEGRATION
A12 Use the project evaluation scorecard to advance projects that support the vision for integrated mobility.	SHORT	Medium	Medium	Land Use Active Transportation Transit Road Network Complete Streets Parking TDM Goods Movement
A13 Establish partnerships and ongoing collaboration to enable the municipality to continue to collaborate on projects, expand educational programs, promote sustainable and healthy mobility, monitor the success of initiatives and more.	SHORT	Low	Low	Active Transportation Transit Complete Streets TDM
LAND USE & TRANSPORTATION				
A14 Refine the boundaries of the potential transit oriented communities identified in Figure 10 and develop policies and design guidelines to enable walkable, mixed use, complete communities in these key locations.	SHORT	High	Medium	Complete Streets Active Transportation Transit
A15 When planning and implementing transit oriented development and Park & Ride lots, pursue opportunities to reduce housing costs through such measures as reduced parking requirements, optional parking for each residential unit, bonus zoning, partnerships, land banking and innovative technologies.	SHORT	Low	Low	Land Use Active Transportation Transit Complete Streets Parking
A16 When reviewing the <i>Regional Plan</i> and <i>Secondary Municipal Planning Strategies</i> , rationalize the location and size of Regional Centre, suburban and rural growth centres in relation to the transit oriented communities shown on Figure 10 , while recognizing and supporting the economic importance of other service centres throughout the region.	MEDIUM	Medium	Low	Transit
A17 When reviewing the <i>Regional Plan</i> and <i>Secondary Municipal Planning Strategies</i> or considering Plan Amendments, designate and zone for transit oriented communities (see Figure 10) around proposed Transit Priority Corridors, existing and planned bus terminals, ferry terminals and potential Bus Rapid Transit and commuter rail stops, wherever there is potential for redevelopment.	MEDIUM	Medium	Low	Transit
A18 Any replacement for Mumford Terminal should be sited in a location that is supportive of transit oriented development, with consideration for integration with potential commuter rail.	SHORT	High	Low	Transit
A19 Apply infrastructure charges to development applications to assist with the capital costs of implementing Transit Priority Measures and commuter rail.	SHORT	High	Low	Transit
A20 Publish transit oriented development design guidelines to promote and explain complete community design principles to residents and developers.	SHORT	Low	Low	Transit Active Transportation TDM
A21 Amend Municipal Planning Strategies and land use by-laws as necessary to implement the reduced parking requirements recommended in the <i>Halifax Regional Parking Strategy</i> .	SHORT	Medium	Low	Parking Land Use

ACTIONS	TIMEFRAME	LEVEL OF EFFORT	RESOURCES	INTEGRATION
<p>A22 Amend Municipal Planning Strategies, the Subdivision By-Law and land use by-laws as necessary to require developers to: Plan and implement pedestrian, cyclist and transit facilities, including roads needed for transit through-routes, in early phases; Provide a grid pedestrian and bicycling network where the topography and other environmental conditions allow; Connect street and pathway networks with those of existing communities and neighbourhoods; Ensure direct bicycling and pedestrian access to schools, recreation centres, libraries, retail and transit; Locate public facilities, shops and offices in walkable areas.</p>	MEDIUM	Medium	Medium	<p>Active Transportation Transit Road Network</p>
<p>A23 Encourage developers to provide incentives to enable bus service that would otherwise not be justifiable until future subdivision phases are built and occupied.</p>	SHORT	Low	Low	<p>Transit TDM</p>
<p>A24 When acquiring land for Park & Ride facilities, consider their suitability as land banks for future transit oriented development, including affordable housing component.</p>	MEDIUM	Low	Low	Transit
<p>A25 Meet regularly with agencies responsible for siting, refurbishing and/or designing public facilities, government buildings, hospitals and educational amenities to ensure those agencies are familiar with the objectives of this plan.</p>	SHORT	Low	Low	<p>Complete Streets Active Transportation Transit TDM Road Network Parking</p>
<p>A26 Amend the Municipal Planning Strategies and land use by-laws as needed to include requirements for pedestrian-oriented and human-scale design.</p>	MEDIUM	High	Low	Complete Streets
<p>A27 Consider focusing commercial land use inside designated mixed-use growth centres and minimize these uses in other areas.</p>	MEDIUM	Low	Low	Land Use
<p>A28 Ensure that consideration is given to retaining industrial zoning wherever direct rail or marine frontage is available, to facilitate goods movement by rail or water.</p>	MEDIUM	Low	Low	Goods Movement
<p>A29 Refine the designations and zoning for industrial parks to minimize residential and commercial encroachment of land suitable for industry.</p>	MEDIUM	Low	Low	Goods Movement
<p>A30 Re-evaluate the recommendations of relevant land-use studies in light of the upcoming Port Master Plan and an upcoming major rehabilitation / replacement project for the Mackay Bridge.</p>	MEDIUM	Low	Low	<p>Complete Streets Active Transportation Transit TDM Goods Movement</p>
COMPLETE STREETS				
<p>A31 Adopt the Complete Streets approach to inform the design and maintenance of streets.</p>	SHORT	Low	Low	<p>Active Transportation Transit Road Network Parking</p>
<p>A32 Identify key multi-modal corridors, apply the Complete Streets approach and engage the public to develop a vision for each corridor.</p>	SHORT	Low	Low	<p>Active Transportation Transit Road Network Parking</p>

ACTIONS	TIMEFRAME	LEVEL OF EFFORT	RESOURCES	INTEGRATION
A33 Prepare preliminary design plans to guide future development and improvements for streets within each corridor.	SHORT	Medium	Medium	Land Use Active Transportation Road Network Parking Goods Movement Transit
A34 Allocate additional funds when budgeting for state-of-good-repair projects, to incorporate Complete Street features.	SHORT	Medium	Medium	Active Transportation Road Network Transit Parking
A35 Define a program to undertake life cycle costing analysis as a decision making tool to "right size" streets that are determined to be built with more (or wider) lanes than necessary.	SHORT	Low	Low	Active Transportation Transit Road Network Parking
A36 Review all street rehabilitation projects annually for the possibility of incorporating Complete Street features into street design.	SHORT	Low	Low	Active Transportation Transit Road Network Parking
A37 Develop a framework to prioritize modes and select appropriate street designs and features based on the intended functions for each corridor.	SHORT	Medium	Medium	Active Transportation Transit Road Network Parking
A38 Rehabilitate streets based on their intended functions and using the Complete Streets approach, with first priority given to improving safety and comfort for pedestrians through design treatments such as barrier-free routes, visual and sensory cues, curb extensions, widened sidewalks, street trees, traffic calming and benches in mixed use commercial areas or adjacent parks.	SHORT	Medium	Medium	Active Transportation
A39 Work toward improving accessibility and connectivity of sidewalks, crosswalks and transit stops.	SHORT	Medium	Medium	Active Transportation Transit Land Use
A40 Incorporate maintenance considerations into the planning and design of Complete Streets and ensure maintenance practices reflect the needs of all ages and abilities.	SHORT	Low	Low	Active Transportation
A41 Identify streets that are considered "places", based on their key characteristics and their local or regional significance.	SHORT	Low	Low	Land Use
A42 Prioritize "place" streets and develop enhancement plans, emphasizing streets with high volumes of pedestrian activity and of regional significance.	SHORT	Low	Low	Land Use
A43 Develop plans for the enhancement of "places" (streetscaping plans) at the same time as the functional characteristics are worked out.	SHORT	Low	Low	Land Use
A44 Apply progressive best practices based on research and experience in Canada and comparable northern climates.	SHORT	Low	Low	Active Transportation
A45 Consider opportunities for winter use, activities and attractions.	SHORT	Low	Low	Active Transportation
A46 Include artwork appropriate to the regional and community context.	SHORT	Low	Low	Active Transportation Road Network
A47 Support communities in re-installing art, such as pavement paintings, if removed as part of a road rehabilitation project.	SHORT	Low	Low	Active Transportation

ACTIONS	TIMEFRAME	LEVEL OF EFFORT	RESOURCES	INTEGRATION
A48 Support pilot projects for creative street uses, such as community events or temporary infrastructure to test new ideas for how streets can function.	SHORT	Low	Low	Active Transportation Road Network
A49 Support more frequent and widespread Open Streets initiatives.	SHORT	Low	Low	Active Transportation Transit Road Network
A50 Consult the future <i>Halifax Green Network Plan</i> to determine how streets can improve their open space functions.	SHORT	Low	Low	Active Transportation
A51 Consult the Urban Forest Master Plan to determine tree canopy targets and appropriate species to plant.	SHORT	Low	Low	Complete Streets
A52 Replace any trees that must be removed during a project, as determined by the Urban Forester. If there is no space within the nearby street right-of-way, trees may be planted nearby.	SHORT	Low	Low	Road Network
A53 Explore ways to provide incentives for owners to plant trees on private property adjacent to a street.	MEDIUM	Low	Low	Land Use
TRANSPORTATION DEMAND MANAGEMENT				
A54 Consider pricing signals to promote new transit fare options once improved fare technology is in place.	MEDIUM	Low	Low	Transit
A55 Produce and make available simple online and printed publications explaining: how public investment, land use and mobility affect each other; how street standards, community design and mobility impact each other; how to use transit; what businesses can do to encourage sustainable mobility while saving costs; the hidden costs of parking provision to employers; and what households can do to reduce transportation impacts while saving money.	SHORT	Low	Low	Land Use Active Transportation Transit Parking
A56 Encourage ride-sharing, including carpooling and vanpooling, through improved web-based coordination.	SHORT	Low	Low	Parking
A57 Encourage young people to use transit and active transportation.	SHORT	Low	Low	Active Transportation Transit
A58 Develop marketing videos for combining multiple sustainable modes in a trip (e.g. riding a bicycle to catch the bus).	SHORT	Low	Low	Active Transportation Transit
A59 Improve transit promotion and education by better marketing existing and new services and promoting service changes.	SHORT	Low	Low	Transit
A60 Promote active transportation and provide safety and skills education through: engaging thought leaders who are popular with youth; drawing upon available programs such as Active & Safe Routes to School, Walk'n'Roll Halifax and Operation Lifesaver; and Continuing and expanding upon existing active transportation promotions, such as "Open Streets" initiatives and Bicycle to Work Week.	SHORT	Low	Low	Active Transportation
A61 Work across municipal departments to implement flexible work schedule pilot programs for employees.	SHORT	Low	Low	TDM
A62 Encourage employers who provide subsidized employee parking to provide equivalent benefits to employees who do not drive to work.	SHORT	Low	Low	Parking

ACTIONS	TIMEFRAME	LEVEL OF EFFORT	RESOURCES	INTEGRATION
A63 Encourage employers to provide preferential high-profile carpool or vanpool parking.	SHORT	Low	Low	Parking
A64 Expand and improve the SmartTrip program to enable and encourage commuters to try new transportation options.	SHORT	Low	Low	Active Transportation Transit
A65 Increase the flexibility and attractiveness of the SmartTrip Pass program by having more enrollment periods.	SHORT	Low	Low	Transit
A66 Develop options to encourage the expansion of locations where car-share vehicles are placed.	SHORT	Low	Low	Parking
A67 Expand the availability of parking options for car-share vehicles.	SHORT	Low	Low	Parking
A68 Continue to facilitate car-sharing services within the region.	SHORT	Low	Low	Parking
ACTIVE TRANSPORTATION				
A69 Deliver the following Priority Sidewalk Connections by 2020: Herring Cove Road, Dutch Village Road.	SHORT + MEDIUM	Medium	Medium	Complete Streets
A70 Deliver all ages and abilities pedestrian connections to all Halifax Transit terminals by 2022.	SHORT	Medium	Medium	Complete Streets Transit
A71 Update the criteria for selecting new active transportation projects to better respond to equity considerations, demand, future development, coverage and other factors.	MEDIUM	Low	Low	Complete Streets
A72 Deliver the Regional Centre all ages and abilities bicycle network by 2022 (see Figure 17).	SHORT + MEDIUM	High	High	Complete Streets Road Network
A73 Deliver all ages and abilities bicycling connections to all Halifax Transit terminals by 2022.	SHORT + MEDIUM	High	High	Complete Streets Road Network Parking TDM
A74 Pursue the regulatory and legislative changes in the <i>Nova Scotia Motor Vehicle Act</i> necessary to enable best practice bicycle facilities including such items as bicycle signals and crossrides.	SHORT	Low	Low	Complete Streets Road Network
A75 Implement a branding and wayfinding system by 2022. Aim for 100% network coverage.	SHORT	Low	Low	Complete Streets Road Network
A76 Conduct annual state-of-good-repair inventories of bicycle facilities and develop maintenance standards that are specifically designed to maintain the surfaces, surface markings, physical barriers and signage of bicycle infrastructure in a state suitable for users of all ages and abilities.	SHORT	Low	Low	Complete Streets Road Network
A77 Develop enhanced options for snow clearing and cleaning standards for bicycle routes. Identify cost implications. Submit to Council for consideration.	SHORT	Low	Low	Complete Streets Road Network
A78 Prepare a marketing and enabling campaign by 2018, including a strategy to deliver information and education as new facilities are implemented and as new bicycling facility types are introduced.	SHORT	Low	Low	Complete Streets
A79 Deliver the Priority Active Transportation Greenway Network connections by 2022.	SHORT + MEDIUM	High	High	TDM
A80 Review and update the community development model for planning, constructing and maintaining Active Transportation Greenways.	MEDIUM	Medium	Low	Active Transportation

ACTIONS	TIMEFRAME	LEVEL OF EFFORT	RESOURCES	INTEGRATION
A81 Continue to work with other orders of government to implement the rural active transportation network, including along provincial roads.	MEDIUM	Low	Low	Complete Streets Road Network
A82 Establish a rural pedestrian program, including: a financing mechanism which recognizes that rural pedestrian safety is affected by regional traffic; criteria to prioritize development in village centres, hamlets or other rural areas of concentrated pedestrian activity; and opportunities for cost sharing with other orders of government.	SHORT	Low	Low	Land Use
A83 Identify and implement solutions to facilitate active transportation links across railways, highways and watercourses, consistent with the Active Transportation Priorities Plan.	MEDIUM	Low	Low	Road Network
A84 Investigate the feasibility of a bicycle-pedestrian crossing across the Northwest Arm (e.g., seasonal floating "seabridge" or bike-ped ferry), while considering important views and the need for sailboats to navigate the Arm.	MEDIUM	Low	Low	Active Transportation
A85 Obtain baseline data of pedestrian volumes and bicycle use, including counts at strategic locations.	SHORT	Low	Low	TDM
A86 Update data periodically and correlate with infrastructure improvements to help determine their effectiveness.	SHORT, MEDIUM + LONG	Low	Low	Parking Road Network Complete Streets TDM
A87 Postpone a full review of the Active Transportation Priorities Plan from 2019 to 2023 to allow for the evaluation of 2022 networks.	MEDIUM	High	Medium	Active Transportation Road Network Complete Streets Parking TDM Goods Movement
A88 Complete a bicycle share feasibility study by 2019.	MEDIUM	Medium	Medium	Active Transportation Road Network Complete Streets Parking
TRANSIT				
A89 Plan transit terminals based on transit oriented development principles, such as strong pedestrian connections and human scale design (see Section 2.2 Land Use & Transportation for more direction).	MEDIUM	Low	Low	Land Use Complete Streets Road Network Active Transportation
A90 Prioritize transit in locations identified on the Transit Priority Corridors Map (see Figure 20) through the use of transit priority measures (e.g. queue jump lanes, dedicated bus lanes).	MEDIUM	Low	Low	Road Network Parking
A91 Prioritize the delivery of Transit Priority Corridors, starting with but not limited to: Bayers Road (Romans Avenue to Windsor Street); Gottingen Street (North Street to Cogswell Street); Robie Street (Young Street to Inglis Street); Young Street (Windsor Street to Robie Street).	SHORT, MEDIUM + LONG	High	Medium	Land Use Road Network Parking
A92 Continue to implement Transit Priority Measures where opportunities exist and priority is required to reduce transit delay or increase operating efficiency. This could include: Priority at individual intersections or corridors; Transit-only shortcutting; Strategic removal of parking along certain roads to increase the right-of-way capacity dedicated to transit.	SHORT, MEDIUM + LONG	Low	Medium	Land Use Road Network Parking

ACTIONS	TIMEFRAME	LEVEL OF EFFORT	RESOURCES	INTEGRATION
A93 Implement the first phase of the Barrington Street Transit Priority Corridor in conjunction with the Cogswell Redevelopment project.	SHORT	Low	Low	Land Use Road Network
A94 Improve passenger waiting environments at bus stops, as per the Passenger Amenity Classifications described in the <i>Moving Forward Together Plan</i> (Section 5.1).	SHORT + MEDIUM	Medium	Medium	Active Transportation
A95 Develop targeted marketing for planned, large scale route changes associated with implementation of the <i>Moving Forward Together Plan</i> with the goal of increasing ridership.	SHORT	Low	Low	TDM
A96 Deliver a feasibility study of Bus Rapid Transit.	SHORT	Medium	Low	Road Network
A97 Increase the priority of transit in the transportation network by implementing a BRT system in Halifax with dedicated bus lanes, based on the findings of the Bus Rapid Transit Feasibility Study currently underway.	SHORT	Medium	Low	Road Network
A98 Complete a rail capacity study for the Windsor Junction – Bedford – Halifax rail corridor in collaboration with rail industry stakeholders to better understand the costs and logistics of operating a Commuter Rail service in Halifax.	SHORT	Medium	Medium	Land Use
A99 Continue to review the land use, fiscal and economic implications of higher order transit.	MEDIUM + LONG	Medium	Low	Land Use
A100 Study the feasibility of other commuter rail options for the Halifax region, including: the feasibility of extending commuter rail service into the core of downtown Halifax and the feasibility of a Woodside-Downtown Dartmouth-Burnside rail service.	LONG	Low	Low	Land Use
A101 Conduct a feasibility study to analyze opportunities for a ferry connection between North Dartmouth and Downtown Halifax.	MEDIUM	Low	Low	Land Use
A102 Continue to monitor ridership trends and consider opportunities to upgrade sections of the network to higher order modes.	MEDIUM + LONG	Low	Low	Land Use
A103 Identify areas without the density or demand to justify full transit services and study alternative service and cost sharing models to support specialized trips or to enable service expansion. These options could include: shared taxis in areas not served by Halifax Transit; subsidized taxis (including "taxibus" service); ride-sharing, ride-hailing and car-sharing; subsidies for pilot or start-up routes or trips; and expansion of the Rural Transit Funding Program.	SHORT	Low	Low	TDM
A104 Consider new fare options (e.g. day passes, weekly passes) once new fare management technology is in place.	SHORT	Low	Low	TDM
A105 Consider special measures such as free transit days or child transit passes.	SHORT	Low	Low	TDM
GOODS MOVEMENT				
A106 Complete a review of the current <i>Truck Route By-Law</i> to determine if and where any revisions would be beneficial based on current and projected truck demands and land use / settlement patterns.	SHORT	Low	Low	Land Use Active Transportation Road Network Complete Streets Parking Transit

ACTIONS	TIMEFRAME	LEVEL OF EFFORT	RESOURCES	INTEGRATION
A107 Complete streets projects on designated truck routes should incorporate design elements that accommodate trucks.	SHORT	Low	Low	Land Use Active Transportation Road Network Complete Streets Parking Transit
A108 Provide an ongoing forum for input from regional stakeholders to discuss issues and build consensus for goods movement solutions.	SHORT	Low	Low	Road Network
A109 Compile and share data and apply analytical tools to identify goods movement needs and assess the effects of goods movement strategies and proposals.	SHORT, MEDIUM + LONG	Low	Low	Road Network
A110 Work with CN and the Halifax Port Authority to retain and augment rail capacity through the South End rail cut.	SHORT	Low	Low	Road Network
A111 Investigate the possibility of using track and signaling improvements that would be needed for a potential commuter rail service, to enable trucks, trailers and containers to be shuttled by rail between the South End container terminal and the provincial freeway network.	SHORT	Low	Low	Road Network
A112 Explore other opportunities for transporting containers within the region to minimize truck impacts without hampering transport economics. These opportunities may include a rail shuttle, cross-harbour truck ferry and truckways.	SHORT	Low	Low	Land Use Road Network
A113 Work with CN, Nova Scotia Transportation and Infrastructure Renewal and private landowners to reserve the right-of-way for a future rail spur into the Burnside Expansion Area and adjacent municipal industrial land reserve.	SHORT	Low	Low	Land Use
ROAD NETWORK				
A114 Continue to strive toward achieving the mode share targets outlined in the 2014 <i>Regional Plan</i> .	SHORT	Medium	Medium	Active Transportation Transit
A115 Develop Multi-Modal Level of Service guidelines for the municipality that can be used to assess road projects and be incorporated into the municipality's <i>Guidelines for the Preparation of Transportation Impact Studies</i> .	SHORT	Low	Low	Complete Streets Active Transportation
A116 Update the <i>Municipal Design Guidelines</i> to include guidelines for road retrofitting and transportation design for the municipality's urban areas. Street design should accommodate people of all ages and abilities, including those with physical, visual, auditory and mental disabilities. The <i>Municipal Design Guidelines</i> should be periodically reviewed and updated to reflect best practices.	SHORT, MEDIUM	High	High	Land Use Active Transportation Road Network Complete Streets Parking TDM Goods Movement
A117 Develop and implement a "Transportation Data Collection Strategy" with increased breadth and quality of data to support multi-modal transportation planning and progress monitoring. The strategy should consider: The municipality's existing data collection approach and areas that need to be expanded or added; Equipment and staff resources needed to implement and maintain ongoing data collection; Opportunities and safeguards for partnerships.	SHORT	Medium	Medium	Active Transportation Transit

ACTIONS	TIMEFRAME	LEVEL OF EFFORT	RESOURCES	INTEGRATION
A118 Evaluate any planned new additions or major improvements to the regional road network using the evaluation matrix that includes the four pillars of this plan: Connected, Healthy, Affordable and Sustainable, together with impacts on mode choice, users/abutter experience and land use.	SHORT, MEDIUM + LONG	Low	Low	Land Use Complete Streets Active Transportation Transit
A119 When the people-moving capacity of a strategic transportation corridor must be prioritized over other street functions (e.g. street parking, trees, snow storage etc.), the municipality shall examine and implement solutions to mitigate these losses.	SHORT	Low	Low	Active Transportation Transit Parking
A120 Review best practices for High-Occupancy Lanes and Shoulder Bus Lanes and develop a strategy for use in conjunction with NSTIR.	SHORT	Medium	Medium	Active Transportation Transit Goods Movement
A121 Identify “Strategic Corridors” – existing road corridors that are key to regional traffic flow, transit, goods movement and active transportation – and develop plans that will guide their development over time.	SHORT	Medium	Medium	Active Transportation Transit Goods Movement
A122 Identify where strategic improvements to “bottlenecks” can be implemented. Consider opportunities to integrate priority measures for transit and connections for active transportation at these locations.	SHORT, MEDIUM + LONG	Low	Medium	Active Transportation Transit Goods Movement
A123 Maintain the downtown one-way street network. One-way streets may also be considered to optimize limited road space for other road functions, such as loading and deliveries, bicycle facilities and transit.	SHORT, MEDIUM + LONG	Low	Low	Active Transportation Transit Goods Movement
A124 Where total corridor road capacity is increased through the construction or expansion of a parallel road, explore opportunities to give a higher priority to active transportation or transit within that corridor. Example: The construction of the Burnside Expressway should be coupled with the opportunity to install dedicated bus lanes on Windmill Road, between Akerley Boulevard and Victoria Road.	SHORT, MEDIUM + LONG	Medium	Medium	Active Transportation Transit
A125 Continue the municipality’s efforts to implement an advanced traffic signal control system for the network of signalized intersections.	SHORT, MEDIUM + LONG	Low	Low	Land Use Active Transportation Transit
A126 Develop an implementation plan that stipulates when and how variable messaging signs should be used by the municipality and identifies the communication protocol with Halifax Harbour Bridges and NSTIR required to facilitate these activities.	MEDIUM	Low	Low	Transit Goods Movement
A127 Keep abreast of ongoing developments related to autonomous vehicles in terms of infrastructure requirements and the potential implications for transportation and land use planning. While these technologies are not an explicit focus of this plan, the municipality should continue to monitor technology advances to anticipate, prepare for and shape their use.	MEDIUM + LONG	Low	Low	Transit Goods Movement Parking
A128 Complete a best practices review in order to update the municipality’s Master Emergency Evacuation Plan by considering changes to evacuation routes, shelter and muster stations, and new developments in the region.	MEDIUM	Low	Low	Road Network

ACTIONS	TIMEFRAME	LEVEL OF EFFORT	RESOURCES	INTEGRATION
PARKING				
A129 Rewrite Bylaw P1000 to reflect the curbside priority chart.	SHORT + MEDIUM	Medium	Low	Complete Streets Active Transportation Goods Movement
A130 Implement on-street parking spaces for floating car-share vehicles that do not have a home base.	SHORT	Low	Low	TDM
A131 Where mode share can be impacted, consider the curbside priority for key transit and active transportation corridors.	SHORT	Low	Low	Active Transportation Road Network Complete Streets Parking Goods Movement Transit
A132 Set downtown parking rates high enough to influence mode choice and ensure a sufficient number of vacant short-term parking spaces, while not unfairly penalizing downtown businesses and institutions over similar uses in suburban areas, where parking is abundant and free.	MEDIUM	Low	Low	TDM
A133 Set price ratios for short and long-term parking to encourage casual use of a vehicle over constant use.	SHORT	Low	Low	TDM
A134 Implement technology changes that connect allowable parking in controlled areas to vehicle licence plates (pay-by-plate).	SHORT	Medium	Medium	Road Network
A135 Complete the parking technology conversion as per the 2013 Parking Roadmap.	SHORT	High	High	Road Network
A136 Conduct an analysis of parking supply and demand to determine parking needs in commercial and institutional areas.	SHORT	Medium	Low	Road Network
A137 Engage with stakeholders to ensure the service of public parking meets the needs of its customers.	SHORT	Low	Low	Road Network

Across the Region: Actions Summary

Most of the actions within the IMP apply across the Halifax region; however, there are some actions that are particularly relevant to the Regional Centre, suburban and rural areas. The table below presents a selection of these actions.

REGIONAL CENTRE

ACTIVE TRANSPORTATION

Deliver the Regional Centre all ages and abilities bicycle network by 2022.

TRANSIT

Prioritize the delivery of Transit Priority Corridors, including Bayers Road (Romans Ave to Windsor St); Gottingen Street (North St to Cogswell St); Robie Street (Young St to Inglis St); Young Street (Windsor St to Robie St).

GOODS MOVEMENT

Work with CN and the Halifax Port Authority to retain and augment rail capacity through the South End rail cut.

ROAD NETWORK

Identify where strategic improvements to “bottlenecks” can be implemented. Consider opportunities to integrate priority measures for transit and connections for active transportation at these locations.

PARKING

Set downtown parking rates high enough to influence mode choice and ensure a sufficient number of vacant short-term parking spaces, while not unfairly penalizing downtown businesses and institutions over similar uses in suburban area, where parking is abundant and free.

SUBURBAN AREAS

LAND USE

Refine the boundaries of the potential transit oriented communities identified in Figure 12 and develop policies and design guidelines to enable walkable, mixed use, complete communities in these key locations.

LAND USE

Encourage developers to provide incentives for bus service that would otherwise not be justifiable until future subdivision phases are built and occupied.

ACTIVE TRANSPORTATION

Deliver the following Priority Sidewalk Connections by 2020: Herring Cove Road, Dutch Village Road.

TRANSIT

Complete a rail capacity study for the Windsor Junction – Bedford – Halifax rail corridor in collaboration with rail industry stakeholders to better understand the costs and logistics of operating a commuter rail service in Halifax.

GOODS MOVEMENT

Work with CN Rail, Nova Scotia Transportation and Infrastructure Renewal and private landowners to reserve the right-of-way for a future rail spur into the Burnside Expansion Area and adjacent industrial land reserve.

RURAL AREAS

TRANSPORTATION DEMAND MANAGEMENT

Facilitate and enable ride-sharing, including carpooling and vanpooling through improved web-based coordination.

TRANSPORTATION DEMAND MANAGEMENT

Develop options to encourage the expansion of locations where car-share vehicles are placed.

ACTIVE TRANSPORTATION

Continue to work with other orders of government to implement the rural active transportation network, such as along provincial roads.

ACTIVE TRANSPORTATION

Establish a rural pedestrian program, including a financing mechanism which recognizes that rural pedestrian safety is affected by regional traffic; criteria to prioritize development in village centres, hamlets or other rural areas of concentrated pedestrian activity; and opportunities for cost sharing with other orders of government.

TRANSIT

Identify areas without the density or demand to justify full transit services and study alternative service and cost sharing models to support specialized trips or to enable service expansion.

5.2.1 BUDGET & FINANCING CONSIDERATIONS

Implementing the IMP will require strategies to shift more trips to active transportation and transit, clear processes for decision making and a realistic action plan. The action plan is staged to minimize financial impact and the municipality is well-positioned to accommodate the shorter-term investments that will be needed to realize the longer-term benefits. Fewer capital projects have been financed by debt over the past ten years, while more projects are funded directly from operations on a “pay-as-you-go” basis.

The municipality’s total debt levels also continue to decline. In 2015-2016, the principal and interest payments on municipal debt were at 7.4% of municipal revenues (well below the 15% ceiling established for municipalities by the province as an indicator of solid financial health). The municipality is in a strong position to improve mobility through the implementation of the IMP.

Capital Funding Sources for Transportation Projects

Capital projects help maintain or improve municipal assets, including transportation infrastructure. Most revenue (83%) for capital projects comes from property taxes or other general revenues, such as deed transfer taxes (revenue derived from property transactions).

The Federal Gas Tax program, another significant source of capital funding (15%), provides stable long-term funds, with the flexibility to address multiple community priorities. In the past, gas tax revenue has been used to fund traffic improvements and transit projects. For 2016/17, gas tax revenue was estimated at \$29 million, with \$21.2 million used for street recapitalization projects.

The project evaluation criteria in this plan will ensure that funding for mobility projects is prioritized based on their ability to contribute to each of the pillars as well as improve mode choice, enhance user experience and align with land-use planning.

Funding for Transit Services

In 2009, the municipality changed its tax approach for transit services. Costs for transit services were moved from residential general rates to specific transit rates that vary depending on a property’s access to transit. Costs are arranged into two specific transit rates:

- » **Regional Transportation** rate covers services of regional significance, including the MetroLink, the MetroX and ferries. The costs for these regional services are shared by almost all taxpayers.
- » **Local Transit** rate is paid in addition to the regional transportation rate by those who live within a one kilometre (15 minute) walk of a transit stop.

This approach to taxation will need to be re-examined over the longer term, to ensure that it aligns with the new integrated approach to mobility. While it is entirely appropriate to continue with the transit taxation strategy in the short term, it would be prudent to review the approach over the longer term as the transit, roads and active transportation systems become more successfully integrated.

State-of-Good-Repair Projects

These projects maintain the condition of municipal assets (roads, sidewalks, etc. plus municipal buildings and parks). State-of-good-repair projects include maintenance, repair, rehabilitation and replacement. The 2016/17 capital budget allocated \$130.9 million to these projects, or 66.3% of the total budget. Infrastructure can be costly to build; however, it is important to understand the lifecycle maintenance implications of every transportation project.

Service Improvement Projects

These projects enhance service levels or introduce new facilities to developed areas (e.g. new sidewalks or playgrounds in existing developed areas).

Growth Related Projects

These projects are primarily driven by the need to provide services to new residents or businesses, such as infrastructure in new development areas, industrial park expansions, some transit expansions and increasing capacity on main roads.

The capital expenditures that have been identified to implement this plan are primarily Service Improvement and/or Growth Related projects. However, maintaining an asset often provides an opportunity to increase its level of service and as a result, public works projects can include elements of state-of-good-repair, service improvement and growth. The IMP will provide another set of criteria under which to evaluate projects, that will result in assessing state-of-good-repair projects against opportunities to integrate other mobility options. For example, the road renewal and sidewalk replacement programs will be assessed for opportunities to provide Complete Streets.

Public Opinion about Mobility Spending

During the budget consultation process, Halifax residents provided input on budget allocations. Approximately 56% of respondents supported increased transit funding. Also, during this process approximately seven out of ten respondents indicated that they would pay more taxes to improve services to:

- » Fund enhanced green building and infrastructure projects.
- » Make it easier to walk and bicycle around the entire Halifax region, not just the downtowns.
- » Support transit, youth programs and community services.
- » Provide non-private vehicle related infrastructure.
- » Improve snow clearing, police and fire services, street maintenance and extra playgrounds/parks.



5.2.2 COSTS OF THE PLAN

Implementing the IMP represents a significant investment for the municipality. Investment is required to accommodate anticipated growth and to achieve the target of 30% of all trips to be made by active transportation or transit. The cost associated with new infrastructure to achieve this target must be balanced with the need to maintain and renew existing infrastructure.

The total capital cost of the recommended actions in this plan is estimated at **\$190 million**.

This can be broken down as follows:

- » **\$130 million** for transit.
- » **\$45 million** for active transportation.
- » **\$15 million** for road related expenditures.

Annual operating and maintenance costs associated with new capital can be expected to be between 5-15% of capital costs. Operating costs are expected to exert a net cost increase for 5-10 years after this plan is adopted, increasingly offset by savings if the mode share and settlement patterns anticipated by the *Regional Plan* are achieved. There is evidence to suggest that the net savings to the municipality of meeting the growth targets contained in the *Centre Plan* exceeds \$300 million over the next 20 years, when compared to the observed trend since adoption of the *Regional Plan* in 2006¹.

¹ p. 9.6, *Quantifying the Costs and Benefits of Alternative Growth Scenarios*, Stantec Consulting, April 2013, estimated #337 million in net municipal savings between 2009 – 2031 if *Centre Plan* targets are met

5.2.3 FUNDING THE PLAN

Funding for mobility projects comes from several sources. Active transportation and roads related projects are typically funded from the general property tax rate, federal gas tax funding, development charges, area rates for local improvements and cost sharing with other orders of government. Transit projects are funded from the regional transit tax rate, local transit tax rates, federal gas tax, transit fares, commercial general tax rate and Public Transit Infrastructure Fund.

When the service improvement and growth-related projects that are currently in the ten-year capital plan, but not required by the IMP, are accounted for, between \$5M – \$10M per year in additional funding will be required over the next 10 years.

To meet the capital requirements of the IMP and to ensure long-term fiscal sustainability, the impact of the IMP on current funding sources needs to be examined. Federal grants that rely on a sustainable plan to demonstrate benefit may be available and additional development charges may be adopted to pay the growth-related share of IMP projects. Given that a significant amount of capital is required in the early years of the Capital Plan, priorities may need to change and projects be shifted to the later years of the plan.

A close partnership will also be required with NSTIR. The *Regional Plan* includes a list of road network projects that were anticipated to address vehicle demand. The estimated cost of implementing these projects is \$750 million shared between all three orders of government. Successful implementation of the IMP will rely on a postponement or change in scope of some of these projects to align with the objectives and projections of the IMP.



A GLOSSARY

Accessible: Planning, design and programming that enables access by people with a variety of physical and mental abilities.

Active Transportation: Human-powered, personal travel chosen as an alternative to motorized travel; includes walking, running, hiking, the use of a wheelchair, bicycling, cross-country skiing, skateboarding, canoeing, rowing or kayaking.

All Ages and Abilities (AAA): Planning, design and programming that enables use by people of all ages and with a variety of physical abilities.

Arterial Road: A major, high capacity road.

Barrier-free: Design that enables access by people with or without a variety of physical abilities.

Bicycle-Sharing: Short-term bicycle rental system that enables users to borrow bicycles from stations located throughout a community to make one-way or two-way trips.

Bikeway: Routes or paths used for bicycling.

Blue Route: A provincial bicycling network that will connect Nova Scotia's communities through designated bicycling routes on secondary highways with paved shoulders, low traffic volume roads, hard surfaced trails and city streets. Once completed, the Blue Route will comprise an approximately 3000km network of signed bicycle routes, connecting riders with communities across the province.

Bollards: A bollard is a short post designed to guide traffic and protect from vehicle intrusions. Bollards can be manufactured and installed to withstand significant vehicle impacts, but they can also be used as visual barriers. Many bollards also contribute decorative elements to complement building and landscape designs.

Bottlenecks: Areas of localized reduction in road capacity that result in traffic congestion.

Bus Rapid Transit (BRT): A high-quality, bus transit system that provides transit users with fast, frequent, comfortable, higher capacity service. Where possible, it uses bus-only lanes, with bus facilities in the centre of the street to reduce the impact of right turning traffic or parked cars. Off-board fare collection and level boarding improve accessibility and reduce time spent at terminals.

Business Parks: Tracts of suburban or rural land set aside for retail, office and/or industrial uses. May include campus-style office parks, big-box retail and precincts set aside only for industry (industrial parks). Characterized by large floor areas, abundant free parking and wide roads suited for trucks.

Capital Projects: Designing and implementing the construction or rehabilitation of physical assets owned or operated by a public agency.

Carpool: People travelling in the same vehicle together. A form of ride-sharing.

Car-share: A service that allows several people to have access to the same motor vehicle for personal use at different times.

Community Design: The layout, appearance and planning of neighbourhoods and communities, including street pattern, streetscape and built form.

Commuter-oriented: Commuter-oriented transit service traditionally utilizes rail or bus modes to connect residential communities with major employment centres.

Commuter Rail: Local train service oriented to peak-hour trips to work or school, primarily using existing tracks.

Commutershed: The area from which a significant proportion of residents commute to work in the metro area.

Compact Communities: Communities that use land efficiently and are generally characterized by medium to high density, interconnected streets and shorter distances between origins and destinations.

Complete Communities: Communities that include a range of uses and housing options to accommodate people in all stages of life and at a variety of income levels. Complete communities provide a place for residents to live, work, shop, learn and play. These communities contain mixed uses and compact development that enables people to safely and conveniently access the goods and services they need in their daily lives, all within a short journey and without the need to depend on a personal motor vehicle.

Complete Streets: An approach to planning, design, operations and maintenance of roads, sidewalks, landscaping and rights of way that enables safe, convenient and comfortable travel and access for users of all ages and abilities regardless of transportation mode (e.g. on foot, on a bicycle, using transit, in a private vehicle). It recognizes that public streets are also places that can serve a social, economic and ecological function.

Crossrides: Designated bicycle crossing facilities that enable people on bicycles to legally cross a street without dismounting.

Cultural Landscapes: Distinct areas, taking any shape, that provide recognizable character and cultural identity and reflect the human interaction with the land over time.

Curb Extensions: A treatment that increases the width of a sidewalk while also reducing the width of a street to shorten pedestrian crossing distance, improve visibility, reduce traffic speeds and improve off-street amenities. Curb extensions, which can be located on intersection corners as well as at mid-block, are commonly referred to as 'bump-outs' or 'neck downs'.

Decorative Paving Band: Typically, a strip of small concrete 'bricks' located between the sidewalk and the curb, when grass becomes too challenging to maintain in this zone (e.g. due to high pedestrian volumes or intense curbside use). This element enhances area aesthetics and can define the edge of the pedestrian clear zone, as there may be obstacles such as poles, trees, bicycle racks and other street furniture within the zone of the paver edge. Colours and patterns may differ across areas of the municipality to reinforce neighbourhood character.

Density: A measure of the number of people or housing units occupying a given area of land. The measure may reflect the general character of the housing types in a neighbourhood. Low density typically involves one and two unit housing; medium density usually refers to townhouses or apartment buildings no taller than 6 storeys; and high density can involve taller apartment buildings resulting in more people per hectare. Nevertheless, density does not refer specifically to building configuration. For example, apartment towers widely separated by parking lots and greenspace may yield a relatively low density, while closely spaced townhouses on narrow, tree-lined streets with shared parking may involve a higher density.

Dial-a-ride (Door-to-door demand responsive transit): A flexible public transportation service which responds to user requests for trip times, origins and destinations based on reservations made by phone or online. All or a portion of the trip may be shared with other users.

Employment Centre: Concentrated areas of offices and businesses that result in a large number of workers relative to surrounding areas. Ideally, employment centres should resemble traditional downtowns or town centres which are compact and walkable and offer a mix of activities. However, many business parks are also employment centres due to the large number of jobs compared with their surroundings.

Employee Transit Pass (EPass): Annual discounted transit pass, purchased through payroll deduction by SmartTrip partners.

Form-based Zoning: Zoning regulations prescribing the layout, shape and appearance of buildings and characteristics of a place, rather than the traditional zoning method primarily prescribing land uses.

Greening: Planting more trees, plantings or ecologically sustainable landscape features.

Transportation Functional Plan: A suite of strategic documents, each identifying capital investment and operational initiatives mandated by the 2006 *Regional Plan* to implement a specific aspect of regional transportation policy. See also "Transportation Priorities Plan".

Transportation Priorities Plan: A suite of strategic documents, each identifying capital investment and operational initiatives mandated by the 2014 *Regional Plan* to implement a specific aspect of regional transportation policy. See also “Transportation Functional Plan”.

Goods Movement: The transportation of freight by road, rail, ship or air, between communities (regional/national/international) or within communities (local/pick-ups/deliveries).

Greenway: Three to four-metre wide paved or granular trails that form part of a network intended for walking, bicycling and other active modes. Usually designed in conjunction with landscaping and typically following natural or cultural features, such as watercourses, waterfronts and railway right-of-ways.

High-Occupancy Vehicle (HOV) Lane: A road lane designated for use only by vehicles with a specified minimum number of occupants, usually two or three. High-occupancy vehicle (HOV) lanes can also be opened to buses.

Higher Order Transit: Includes all forms of rapid transit typically within its own right-of-way.

Human Scale: The impression of a building when seen in relation to its surroundings at street level, or the size and proportion of parts of a building or its details, that relates in a positive way to the visual and physical experience of a pedestrian.

Industrial Land Reserve: Land designated or purchased by a public agency for future industrial use. Includes portions of the *Regional Plan* Business/Industrial Park Designation, community MPS industrial designations, Burnside Business Park Expansion Area and lands acquired by the municipality for future extensions to Burnside.

Land Use: The classification of the natural and built environment, as it exists or as prescribed by policy or regulation.

Level of Service Assessment: An analysis used to evaluate the potential impacts or influence of a proposed development on various transportation modes, including the speed, convenience, comfort and security of transportation facilities and services as experienced by users. The assessment is used to identify transportation problems and potential solutions and influence the design of a development.

Light Rail Transit (LRT): A metropolitan electric railway system characterized by its ability to operate single vehicles or short trains along exclusive right-of-ways at ground level, on aerial structures, in subways, roadway medians, or in segregated street lanes, and equipped to board and discharge passengers without the need for steps or lifts. Unlike commuter trains, LRT trains have more frequent stops and normally must be segregated from conventional railway vehicles. Unlike streetcars, LRT includes significant segments of track segregated from road traffic, covers longer distances and has less frequent stops.

Link: The role of a street in serving as a facility for the movement of people through the corridor.

Local Street Bikeway: Designated routes for bicycling on quieter, local streets.

Low Impact Development (LID): Low Impact Development (LID) minimizes stormwater water runoff at its source, mimicking natural hydrological processes, through site planning and physical installations. LID can improve water quality in terms of pollutant removal, reduced nutrient loading through the use of plants and distributes stormwater through natural features. LID installations most frequently include grassy swales (bioswales), which can include pipe filter drains, curbs with cutouts or infiltration trenches and pits.

Mixed-use: Different activities and building occupancies that are arranged close to one another. These different uses may be located on the same site, in the same building or along the same street.

Mobility: The ability to travel and move around the city easily and efficiently.

Mode Choice: The ability to choose between more than one form of transportation (e.g. walking, bicycling, transit).

Mode Share: The percentage of people using a given mode of transportation.

Mode Shift: The change from using one mode of transportation to another.

Multi-modal: Refers to facilities or trips that incorporate more than one mode of transportation.

Multi-modal Level of Service (MMLOS): A framework used to evaluate transportation infrastructure, often applied when considering changes to existing streets and intersections. MMLOS ratings consider the level of comfort and delay felt by private vehicles, pedestrians, bicyclists and transit users and enables the analysis of “tradeoffs” of various allocations of the urban street cross section. In contrast to traditional traffic engineering ‘Level of Service’ frameworks, MMLOS is intended to provide a more complete representation of how key variables impact a facility’s accommodation of different users.

Multi-use Pathways: Three to four metre wide paved or crusher dust trails that form part of a network intended for walking, bicycling and other active modes. (Active Transportation Plan) They connect communities and provide mobility options for multiple modes of transportation.

Open Streets: Public events periodically hosted on key streets that include street closures and the encouragement of a wide variety of transportation modes. The Open Streets concept, which is used in cities around the world, attempts to change the way people perceive and use public space.

Park & Ride: Parking lot located at a transit terminal or stop, enabling people to leave their private vehicles there and continue their journey using transit.

Peak Hour: For transportation modeling, the “AM or PM peak hour” is a single hour that occurs during the morning or afternoon peak where the largest number of persons are commuting between work/school and home. The peak hour is different for each intersection and, each region and varies from day to day.

Peak Hours: A general term referring loosely to the peak period.

Peak Period: For transportation modeling purposes, the “PM peak period” occurs between 3 pm and 6 pm. The “AM peak period” occurs between 7 am and 9 am.

Pedestrian Oriented: Elements of planning and urban design that prioritize the needs and comfort of pedestrians. The intent is to create safe, comfortable and more enjoyable environments for people of all ages and abilities. Specific pedestrian orientated design elements include interconnected streets, short blocks, four way intersections, hard surfaced pathways and an extensive sidewalk network.

Place: The role of a street in serving as a destination for people to spend time.

Placemaking: An approach to planning and design that aims to create memorable, quality public spaces.

Protected Bicycle Lane: Bicycle lane separated from motor vehicle traffic with a physical barrier between the bicycle and motor vehicle lanes.

Rail Cut: A 6.9km long excavated corridor that provides grade separated rail access along the west and south edge of the peninsula between the South End Container Terminal and Fairview Cove Container Terminal.

Rail Spur: A secondary track used in rail operations that provides a location for trains to access adjacent land uses and load/unload railcars without interfering with operation of the mainline track(s).

Rails-to-trails: Active transportation trails created on former rail lines.

Rapid Transit: Transit service separated partially or completely from general road traffic and therefore able to maintain higher levels of speed, reliability and vehicle productivity than can be achieved by transit vehicles operating in mixed traffic.

Refuge Median: The strip of land between the lanes of opposing traffic on a divided road, enabling pedestrians to pause in a safe location while crossing.

Ride-matching: Online system that helps to connect people wishing to carpool, typically between a similar origin and destination.

Ride-hailing: Method of transportation whereby a user can arrange for pick-up and be driven to their destination for a time and distance-based fee. Common examples include traditional taxi services and emerging mobile technology-focused services such as Uber and Lyft.

Ride-share: A service or arrangement that enables people to travel in the same vehicle together.

Right-of-way (ROW): A strip of public land including and bordering a street, road or pathway.

Rail Right-of-way: The strip of private or public land including and bordering a railway.

Red Book (Municipal Design Guidelines): Dictates the design elements and criteria that should be included for new municipal infrastructure projects including streets.

Road Setbacks: The distance between the edge of a transportation corridor and adjacent structures. Setbacks provide protection of right-of-way space to enable a variety of uses that may include municipal infrastructure, streetscaping elements and future corridor widening.

Screenlines: A strategically placed threshold over which transportation demand is measured and analyzed. Screenlines are typically located in places of interest where there are few crossing points, which can minimize the

amount of data that needs to be collected to capture all persons or vehicles moving between two areas. Locations often used for screenlines include geographic barriers such as watercourses and rail/highway corridors.

SmartCycle: Program providing skills and safety training for commuter bicyclists.

SmartTrip: Program offered by the municipality to residents and employers in the region to support Transportation Demand Management goals, such as commuting by a sustainable means.

State-of-Good-Repair: The condition in which a capital asset operates at full level of performance. Maintenance of State-of-Good-Repair for transportation infrastructure is a core component of asset management.

Strategic Corridor: Transportation corridors that are important based on their role in traffic operations, transit, goods movement and active transportation.

Streetscape: The elements within and along the street that define its appearance, identity and functionality, including adjacent buildings and land uses, street furniture, landscaping, trees, sidewalks and pavement treatments, among others.

SWITCH: A local example of an Open Streets application that is periodically implemented on streets in Halifax and Dartmouth, typically on Sundays and public holidays.

Taxibus: A public transportation service suitable for low-density, dispersed communities, using shared taxis operating between designated stops with no fixed routes. Riders book ahead for trips between any two of the designated stops. Routes and times continually adapt to when and where people want to be picked up or dropped off. Vehicles are typically cars, often involving partnerships with taxi companies. Fares are cheaper than for conventional taxi. Unlike conventional dial-a-ride services, trips are offered between stops and are not door-to-door.

Towards Zero: A goal of zero fatalities and serious injuries due to road collisions.

Traffic Calming: Measures to slow the speed of traffic.

Transit Hub: A bus, rail or ferry terminal or stop that supports a high volume of transit users and is integrated with multiple modes of transportation, including walking and bicycling.

Transit Oriented Development (TOD) / Transit Oriented Community: An approach to development that focuses a Complete Community around a transit terminal or within a transit corridor, with emphasis on higher residential densities, walking distance and a mix of uses, facilities and activities..

Transit Priority Corridor: A street in the transportation network that features measures to give increased priority to transit vehicles, such as dedicated bus lanes.

Transit Priority Measures (TPM): Tools that municipalities and transit agencies use to reduce delays, improve reliability and increase the average operating speed. There are many different types of TPMs and, in many cases, they are used together to create a city-wide network. Some of the most common TPMs include: traffic signal priority, queue jumps, bus lanes and transitways that are separated from motor vehicles (e.g. busways, railways). TPMs can also include traffic regulations, such as “Yield to Bus” legislation.

Transitway: Travelways used primarily by transit vehicles, (e.g. busways).

Transportation Demand Management (TDM) : A strategy aimed at reducing peak hour congestion by providing people with choice in how, when and whether they commute to work.

Transportation Network: All routes and modes of transportation throughout the region and how they are connected.

Transportation Reserve Zones: Lands, typically abutting transportation corridors, that are designated in a Municipal Planning Strategy and zoned for long-term street or pathway needs. Reserve zones can enable the establishment and enforcement of development

restrictions that avoid encroachment on lands that may be used for future transportation projects. A municipality must acquire the lands within five years of applying this special zone, otherwise the zoning reverts to an alternative zone that would allow development.

Travelway: The portion of a road, sidewalk, or path in which people or vehicles travel.

Truckway: A road that primarily or exclusively serves truck traffic.

Urban Forest: Every tree within the city. Includes all the trees in urban communities, including those in parks, along streets and trails, in natural areas and on private property.

Urban Service Boundary: Urban and suburban areas with piped water and sewer services.

Urban Tax Boundary: The area where Halifax applies a general tax rate to all applicable taxable properties.

Urban Transit Service Boundary: The outer limit for providing conventional bus service, as prescribed in the *Regional Plan*It closely follows the Urban Service Boundary.

Visual and Sensory Cues: Design elements that enhance the ability of visually and hearing impaired pedestrians to use a street or intersection safely and comfortably. Common examples include tactile pavement treatments and audible traffic signal systems.

Walkable: Refers to a single route or a network of routes, between points, that is relatively short, barrier free, interesting, safe, well-lit, comfortable and inviting to pedestrian travel.

Walkscore: Walkability score for a location based on proximity to shops, services, schools and other facilities.

HALIFAX