ESTABLISHING A BASELINE:

Active Transportation and Health Indicators in the Halifax Region



NUMBER

ESTABLISHING A BASELINE: ACTIVE TRANSPORTATION AND HEALTH INDICATORS IN THE HALIFAX REGION

was made possible with the support of many individuals and organizations who offered their time, knowledge, expertise and passion to establish a better understanding of active transportation in the Halifax region and its influence on individual and population health.

The Nova Scotia Health Authority – Public Health is grateful to the Province of Nova Scotia – Department of Health and Wellness for providing the funding to make this project possible. We are especially grateful to the members of the project Working Group and to those organizations that provided data for the project.

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ESTABLISHING A BASELINE: A MESSAGE FROM OUR MEDICAL OFFICER OF HEALTH



The Halifax region is part of a growing global movement to support forms of active transportation (AT), such as walking and biking, as part of a broader strategy to create livable complete communities. This work matters to the health and well-being of the people of our city. We know that those who use AT, are more physically active and have less risk of cardiovascular disease, lower rates of obesity, and other improved health outcomes overall. AT has

societal benefits such as creating more social neighbourhoods, supporting healthy schools, reducing the risk of vehicle collisions, and decreasing air pollution and greenhouse gas emissions. Ensuring that the experience of moving around the city by walking and biking is safe, convenient and enjoyable is vital.

I want to thank the Working Group for their leadership on this project; the diversity of views and experiences strengthened the final product and will be invaluable as we seek to share the results and lessons learned through this experience with other communities. I also want to congratulate Halifax Regional Council for unanimously adopting the Integrated Mobility Plan which reinforces the role of AT as a viable option for people of all ages and abilities and acknowledges the connection between AT and healthy communities.

The information within this report will be a valuable resource as we continue to work together to encourage future planning to support AT and citizen engagement. Finding ways to identify AT specific indicators and to track and measure progress is essential to encouraging long-term and smart investment in AT. Incorporating an equity lens into AT planning and infrastructure decisions is also important to identify the differential health impacts of these decisions on population groups and neighbourhoods. Highlighting what we do not know and need to find out is also valuable so we can encourage practitioners, advocates, and researchers in this area to help us fill these gaps.

Public Health's protocols calls us to this work to create healthy people and communities for everyone. We are committed to continuing to partner with the AT leaders throughout our region to create a more dynamic, safe and enjoyable AT experience for our citizens.

Dr. Trevor Arnason, MSc, MD, CCFP, FRCPC Regional Medical Officer of Health Public Health, Central Zone, Nova Scotia Health Authority

EXECUTIVE SUMMARY HEALTH BENEFITS OF ACTIVE TRANSPORTATION

The way communities are designed has direct impacts on the ability of residents to engage in healthy activities, such as accessing nutritious food, supporting local businesses, participating in social gatherings, and choosing active ways of getting around. In the Halifax region, health and demographic data show an aging population, low physical activity levels across most age groups and growing rates of obesity. For residents of the Halifax region to achieve and maintain optimal health status throughout their lifespan, communities must be designed to protect the wellness of residents and to make healthy choices easier.

Building communities that better support active transportation (AT) for people of all ages and abilities is one key strategy for making healthy choices easier and supporting positive health outcomes in the Halifax region. Active transportation refers to any form of human-powered transportation such as walking, cycling, using a non-motorized wheelchair, and in-line skating or skateboarding.

Many of the health benefits from AT are the result of an increase in physical activity. These benefits include lower risks for heart disease, stroke, some cancers, diabetes, depression, and falls and fall-related injuries. Active transportation also supports population health by reducing the risk and severity of traffic injuries, reinforcing transit use, improving community cohesion through increased social interactions, and creating less air pollution. Other benefits of AT include economic benefits, such as reduced employee absenteeism through improved health, and environmental benefits, such as lower levels of greenhouse gas emissions.

Project Purpose and Approach

Despite the benefits of AT, there is a lack of basic information in Nova Scotia on active transportation. This lack of local data and analysis make it difficult to measure progress, develop policy, justify and prioritize investments, inform decision-makers, and plan effectively using timely, local evidence.

The Nova Scotia Health Authority (NSHA), Public Health-Central Zone, in partnership with a multidisciplinary team of stakeholders, initiated this project to respond to this clear public health potential and better understand what local AT data exists to support evidence informed decisions. The hope is that this report will inform actions and interventions, and raise awareness and understanding about the role AT can play in addressing population health.

The project relied on a collaborative process led by a working group and supplemented by additional data partners (see Acknowledgements). While 40 key indicators were identified for ongoing monitoring, this project was also used as an opportunity to capture as much local AT-related data as possible. The intent of this was to provide additional context for the discussion on AT and health in the Halifax region and better inform the key indicators and associated data gaps. The indicators fall into five categories:

- 1 Health/Physical Activity (11)
- **2** Transportation (12)
- 3 Investment (4)
- 4 Infrastructure (9)
- **5** Information (4)

Of the 40 key indicators identified, baseline data was established for 28 of these indicators, including 12 which allowed for comparison with other municipalities. The decision to still identify a specific indicator for future monitoring even though baseline data was not available recognizes that this project was viewed by the project team as a starting point for future work and collaboration moving forward.

KEY FINDINGS – HALIFAX REGION PROFILE

Demographics, Physical Activity, and Health

- The Halifax region has an aging population with a high proportion of seniors. This trend will increase in the future as currently the largest age group is people in their fifties. Young adults aged 20–29 make up the next largest demographic.
- The population of the Halifax region has lower rates of chronic disease than the rest of Nova Scotia however rates are generally higher than the national average.
- It is estimated that over one third of youth (12-17 years old) in the region have overweight or obesity. While lower than the rest of Nova Scotia, the proportion of both youth and adults who have overweight or obesity is increasing and above the national average.
- When compared with Canadian cities of a similar size the Halifax region has a high rate of self-reported physical activity levels and ranks the highest in Atlantic Canada. These self-reported rates have increased for adults in recent years.
- Residents report high levels of overall life satisfaction.

Transportation and Safety

- The top-three factors influencing a person's decision to walk or cycle were:
 - Heat and humidity;
 - Having to transport items or passengers; and,
 - The presence of separated bicycles lanes along the route.

- Two-thirds of Halifax region residents would like to walk more and 50% would like to bike more.
- The proportion of people commuting to work in a vehicle is increasing.
- Approximately 80% of commuter trips are shorter than 3km for walking and than 5km for cycling.
- When considered against other mid-sized Canadian cities, the Halifax region has a high proportion of people using AT modes for commuting to and from work.
- Almost 30% of people living in the Regional Centre commute using AT. When transit is also included, this value reaches almost 50%.
- Walking is the most common form of AT (8% for walking vs. 1% for cycling).
- Outside of commute-to-work data, AT is used most frequently for 'household work and activities' and 'school and education' purposes.
- Few women choose cycling as a form of transportation.
- Half of people injured while cycling are under 30 while three-quarters are male.
- People who walk and cycle are disproportionally impacted by road-related collisions.
- Over 60% of vehicle-pedestrian collisions involve a crosswalk.
- There were over 240,000 crossings of the Macdonald Bridge by people walking and biking in 2014.
- Ferry ridership experienced a significant increase when additional services were added.
- Halifax Transit sold over 400,000 transit passes in 2015/2016. Of these, almost 9,000 were passes sold through its Smart Trip Employee Transit Pass program operated in partnership with Halifax region employers.

Investment

- AT is gaining increasing focus in Halifax Regional Municipality (HRM) strategic plans and operational decisions.
- There are eight adopted/endorsed HRM strategic plans that address AT issues and three under development. Of these, nine explicitly make the link between AT and positive health outcomes.
- HRM has seven full-time staff dedicated to AT project planning.
- Snow-clearing policies for walking and cycling infrastructure are under review for HRM.
- HRM's Capital Budget highlights:
 - Four percent is allocated for AT-Related Projects;
 - AT capital spending is projected to more than double over ten years from 2012/13 levels; and,
 - Projected new capital spending for AT-related projects over 5-years is \$54.7 million.
- The Province of NS has been developing a provincial active transportation framework and a new Traffic Safety Act to replace the outdated Motor Vehicle Act.

Infrastructure

- 1271 km of AT-infrastructure exists in the Halifax region.
- Local online crowd sourcing tools, such as Cycle snAPP and the Bicycle Nova Scotia Incident Reporting System, help planners and AT users better understand the local bike network.
- Significant additions to multi-use pathways and other biking infrastructure have been completed since 2006.
- Accessibility factors are increasingly considered however further work is needed, including developing meaningful indicators to monitor progress in this area.

- Annual transit service hours (i.e. the total number of hours of service provided to residents every year) have increased by 44% per capita since 2006/07.
- 59% of transit stops meet Halifax Transit's Accessibility Standards.
- Over 1400 people are members of a local car sharing service.
- Opportunity exists to incorporate equity considerations into planning and infrastructure decisions.

Information

- The Halifax region has a very active civil society playing the role of educators and advocates.
- Nine community and institutional 'Sustainable Transportation Champions' were identified, two with a direct link to health.
- Bike Week has grown significantly since 2006 with 60 events and over 7000+ participants in 2016.
- Between 2015 and 2017 the Making Tracks/Try a Ride and Welcoming Wheels cycling programs reached over 5000 people, including 160 new Canadians.
- 5600 people participated in Winter Walk Day and International Walk to School Day in 2017 through Halifax area schools.

Knowledge Transfer and Next Steps

When this project was initiated, it was viewed as a first step in a discussion around AT and health that few were talking about in Nova Scotia. Over the course of this project however, the team observed a significant local shift in momentum with AT gaining increasing support as a valid transportation option that supports positive, sustainability and economic health outcomes. The knowledge transfer component of this project is designed to support and build on this momentum. This includes sharing project learnings with other communities and stakeholders, identifying information gaps and supporting efforts to fill these gaps, and building on other indicator work to complete the baseline data and monitor trends moving forward.

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INTRODUCTION

PURPOSE AND OBJECTIVES

The way communities are designed has direct impacts on the ability of residents to engage in healthy activities, such as accessing local, nutritious foods; participating in commercial and economic ventures; partaking in social gatherings; and choosing active ways of getting around. In the Halifax region,^A health and demographic data show an aging population, low physical activity levels across most age groups and growing rates of obesity.¹ Social and physical environmental profiles also indicate the Halifax region could do more to adapt to the impacts of climate change and to foster healthier and safer environments. For residents of the Halifax region to achieve and maintain optimal health status throughout their lifespan, communities must be designed to protect the wellness of residents and to make healthy choices *easier*.



Active transportation refers to any form of human-powered transportation. Examples include: walking, cycling, using a non-motorized wheelchair, and in-line skating or skateboarding²

Building communities that better support active transportation (AT) for all ages and abilities allows residents to incorporate physical activity into their daily routine which in turn supports chronic disease prevention.

Creating supportive communities for safe and convenient active transportation also is key to preventing and reducing the severity of road related injuries.³

Despite the extensive benefits of AT, there is a lack of basic information in Nova Scotia on:

- The amount and quality of AT infrastructure;
- Who is using AT and why they are choosing it;
- What mode they are using;
- Where they are going;
- What barriers exist; and
- The heath, economic and social impacts of AT.

This lack of local data and analysis make it difficult to measure progress, develop policy, justify and prioritize investments, inform decision-makers, and plan effectively using timely, local evidence. The Nova Scotia Health Authority (NSHA), Public Health-Central Zone, in partnership with a team of stakeholders, initiated this project to respond to this clear public health potential and better understand what local AT data exists to support evidence informed decisions. The hope is that this report will inform actions and interventions, and raise awareness and understanding about the role AT can play in addressing population health.

This project has five objectives:

- 1. To increase awareness about the impact that AT has on individual and population health;
- 2. To inform the development of evidence-based policies and opportunities for future interventions;
- 3. To establish a baseline and, when data are available, trends on key AT indicators;
- 4. To identify data gaps and/or areas with insufficient data in order to identify future actions and research projects; and,
- 5. To develop a model for AT data collection, including tools, templates, and resources that can be used within the Halifax region and adapted to other Nova Scotian communities.

^AThis report focuses on the Halifax Regional Municipality (HRM) boundaries, herein referred to as 'the Halifax region'." The NSHA Central Zone health unit also includes the Town of Windsor and Municipality of West Hants which where not reviewed in this report.

APPROACH

The project relied on a collaborative process with several organizations participating through a multidisciplinary team which included representatives from: Dalhousie University's Healthy Populations Institute, Child Safety Link (IWK), the Ecology Action Centre, the Halifax Cycling Coalition, the HRM, the Halifax Regional Police, the Nova Scotia Health Authority, and the Province of Nova Scotia (Health and Wellness). The Working Group developed a logic model (Appendix A) to aid in indicator selection and to ensure common understanding of the theory of practice. The conceptual framework shown in Figure 1, based on healthy built environment work conducted by Lawrence Frank⁴ and Reid Ewing⁵ and health promotion behaviour change work led by Karen Glanz⁶, guided the development of the model.

FIGURE 1: Healthy Built Environment Conceptual Framework

HEALTHY BUILT ENVIRONMENT CONCEPTUAL FRAMEWORK

 INVESTMENT
Plans, policies, budgets
 INFRASTRUCTURE
Facilities, networks
 INFORMATION
Events, education, promotion

INVESTMENT: Investment includes monetary investment, political leadership, supportive plans, policies and initiatives. Leadership can come from within government (e.g. municipal staff members, elected officials) and outside (e.g. local advocates, business executives)⁷. Investment in infrastructure, funding of human resources dedicated to AT, development of supportive plans and policies at all levels is needed. **INFRASTRUCTURE:** Supportive infrastructure includes things like protected and painted bike lanes, sidewalks, crosswalks and off-street trails. Bike racks on buses, bike lockers at transit terminals, connected networks, greenways also help facilitate active transportation. **INFORMATION:** Special events, community campaigns, education programs and training opportunities allow residents to build skills and confidence in trying active modes of transportation. Promotion and wayfinding signage also help residents know about places and routes to use to feel most comfortable getting around actively.

IMPACT ACTIVE TRANSPORTATION BEHAVIOUR Building on the logic model, the Working Group identified several criteria to inform indicator selection:

INDICATOR SELE	CTION CRITERIA
Current	Data must be the most recent available (2010-onwards);
Timeline	Data must be available during the data collection periods (May – October 2016, January/February 2018 update);
Representative	Data must be meaningful to the region;
Access	Data must be readily and easily available;
Relevant	Data collected will be useful in informing policies and decision-making;
Transferable	Data may be transferable to other communities; and
Reinforces existing processes	Data feeds into existing monitoring processes.

While 40 key indicators were identified for ongoing monitoring, the Working Group used this project as an opportunity to capture as much local AT-related data as possible. The intent of this was to provide additional context for the discussion on AT in the Halifax region and better inform the key indicators as well as associated gaps in baseline data for these indicators.

In addition, the approach included a comprehensive review of both academic and community-based literature and relied heavily on discussion with, and learnings from, Working Group members.

LIMITATIONS AND FUTURE OPPORTUNITIES

The project limitations are focused in three areas: data access, geographic information system (GIS) analysis capacity, and project resources. The data collection strategy focused on gathering existing information through publicly available sources

and collaborating with Working Group members and other partners to collect data from within their internal systems. At times, it was challenging to get data within scheduled timelines due to resource constraints and data limitations. This issue was compounded because the dedicated staff resources leading this project were allocated based on the initial project schedule. Related to this, the project did not include any primary data collection to fill in specific information gaps. Also, no project budget was allocated to purchase data; this led to an inability to analyze and combine some meaningful variables due to the often significant cost to purchase custom data sets. Despite efforts to incorporate GIS analysis, this was not feasible. As such, the team was not able to generate original data based on spatial analysis of different variables.

Opportunities to expand on the information presented, and considerations for future work, are identified throughout the report and discussed further in Part 3. This includes discussion on lessons learned to help other communities completing similar work.

REPORT ROADMAP

The following report is divided into three parts. Part 1 'Current Context' explores the connection between health and AT, profiles leading plans and studies, and provides an overview of the Halifax region. Next, Part 2 provides local AT data for the three conceptual framework factors: Investment, Infrastructure, and Information. The last section, Part 3, speaks to lessons learned through this process and knowledge transfer (KT) resources.



1.0 ACTIVE TRANSPORTATION AND HEALTH

1.1 HOW AT SUPPORTS POSITIVE HEALTH OUTCOMES

Research has demonstrated that active transportation benefits individual and population health in a number of ways. This section looks at the evidence behind this connection and explores the role of design in creating AT-supportive communities.

The Chief Public Health Officer of Canada's 2017 report Designing Healthy Living and the Toronto Public Health report Road to Health: Improving Walking and Cycling in Toronto are excellent resources to learn more about the link between health and AT.

HEALTH COSTS OF PHYSICAL INACTIVITY

A physically inactive lifestyle leads to an increased risk for heart disease, stroke, some cancers, diabetes, obesity, and depression.⁸⁻¹² It can also increase the risk of falls and fall-related injuries by decreasing muscle strength, bone density, balance, and flexibility.¹³ Insufficient physical activity has been identified as one of the leading risk factors for global mortality causing an estimated 3.2 million annual deaths globally.¹⁴ Of concern, only 8% of Canadian kids aged 5–17 years get the 60 minutes of moderate to vigorous daily physical activity recommended to meet the Canadian Physical Activity Guidelines. Also, only 18% of Canadian adults get the recommended 150 minutes of moderate to vigorous physical activity per week. At least 30 minutes of moderate physical activity a day can decrease the risk of premature death by a least 19%.¹⁵ Warburton et al. reviewed available literature and concluded that 33% of deaths related to coronary heart disease, 25% related to stroke and osteoporosis, 20% related to colon cancer, hypertension, and type 2 diabetes, and 14% related to breast cancer could be prevented if Canadian adults followed the physical activity guidelines.¹⁶

Physical inactivity also has economic costs to the public health care system. Applying a prevalence based approach, one study estimated the direct and indirect costs of physical inactivity in Canada (2009) at \$6.8 million (2.4 billion in direct costs and \$4.3 billion in indirect costs) or 3.7% of overall health care costs.¹⁷ Related to this, lost economic productivity from physical inactivity is estimated to cost the Canadian economy \$3.7 billion.¹⁸

ROLE OF ACTIVE TRANSPORTATION

PREVENTS CHRONIC DISEASES

Several Canadian studies have demonstrated the positive role of active transportation in chronic disease prevention by ensuring regular physical activity.^{19–23} In one example, the findings from the My Health My Community Survey (2013–14) in Metro Vancouver included:

33%	Adult car commuters have a 33% higher probability of having overweight or obesity compared to active transportation users;
69%	Active transportation commuters are 69% more likely to achieve the recommended physical activity levels compared to car users; and,
27%	Active transportation users are 27% more likely to report being in excellent or very good health. ²⁴

Another study, demonstrated that the risk of obesity goes up 6% for every hour spent in a car each day, while the risk of obesity goes down by almost 5% for every kilometer walked each day.²⁵ Building on these findings, research suggests people who experience the health benefits from AT may be more active in other areas of their life.²⁶ Canadian research has also shown that regular walking or cycling to school and other activities improves the health of children and adolescents.^{27, 28}

Sedentary behaviours, such as prolonged sitting, watching television, playing passive video games, and driving, are also associated with weight gain, obesity, and poor metabolic health. By reducing time sitting, AT can improve health outcomes.^{29, 30}



IMPROVES MENTAL HEALTH

Regular physical activity has many mental health benefits including helping prevent depression and anxiety disorders, reducing day-to-day stress, lowering the risk of cognitive decline, boosting self-esteem, and increasing self-reported happiness and lower levels of sadness and loneliness.³¹ Also, evidence suggests that engaging in AT promotes more social interactions with other people which in turn can make people feel less isolated and strengthen community cohesion.³²

LOWERS AIR POLLUTION AND GREENHOUSE EMISSIONS

Traffic related air pollution is associated with all-cause mortality at the population level, chronic respiratory conditions and acute respiratory effects, cardiovascular disease, lung cancer, and increased risk of adverse pregnancy outcomes.³³ Also, urban travel in personal vehicles accounts for almost half of the greenhouse gas emissions generated by Canada's transportation sector. Reducing the total vehicle kilometres travelled through AT reduces greenhouse gas emissions and air pollutants.^{34, 35}

REDUCES RISK OF TRAFFIC INJURIES

While declining overall, collisions involving a motor vehicle remain a serious public health concern. Nationally, motor vehicle collisions resulted in approximately 1,700 deaths and 150,000 injuries, 9600 of them serious (2014).³⁶ Also, collisions are one of the leading causes of death of people aged 15 to 24; the impact of deaths in this age group is even more significant when potential years of life lost are considered.^{37, 38} Urban collisions result in approximately 40% of all fatalities and 75% of all injuries.³⁹



Reducing total motor vehicle kilometers travelled lowers the risks of related injuries. Related to this, the 'safety in numbers' theory applies to AT safety: the percentage of people walking and cycling killed or injured is lower in cities with a higher AT mode split.⁴⁰ Furthermore, in cities with lower rates of people walking and cycling those engaging in these activities are at an increased risk of not being seen by people driving.⁴¹ This is supported by research which shows that per capita traffic fatality rates for people who walk and cycle tend to be higher in sprawling communities rather than in compact communities which are more conducive to AT. ⁴²

SUPPORTS TRANSIT

Transit use encourages physical activity as people who use transit tend to also walk, and to a lesser extent cycle, to their transit stop.⁴³ One Montreal-based study found that the average transit commuter in Montreal achieved about 25% of their daily recommended physical activity level by using active transportation modes at the beginning and end of the trip.⁴⁴ Research also indicates that transit use promotes physical activity in general with people who use transit found to make more walking trips than people who do not.^{45, 46} Another Canadian study (Kingston, Ontario) revealed that on average each week transit commuters obtained 80 minutes of commute-related physical activity, and 50 minutes more total physical activity than non-transit users.⁴⁷

BENEFITS THE ECONOMY

In addition to reducing the impact of physical inactivity on the public health system, economic benefits of AT include the potential for:

- Increased retail business;
- Lower personal household transportation spending;
- Lower infrastructure costs for governments;
- Less time and productivity lost as a result of congestion; and,
- Reduced work absenteeism. 48,49

SUPPORTING AT AND POPULATION HEALTH THROUGH COMMUNITY DESIGN

LINK BETWEEN COMMUNITY DESIGN AND AT

Community design has a direct effect on how people experience their community and the decisions they make about where and how they live and move around.

Evidence suggests that building the opportunity to be physically active into people's daily routines through AT and access to recreational opportunities is the most effective way to improve community fitness.⁵⁰

Building on this, compact communities with a mix of land use, efficient transit, pedestrian-friendly design, and AT dedicated infrastructure encourage more people to use AT modes for their daily activities.^{51, 52}



^B Incorporating Crime Prevention through Community Design (CPTED) principles into land use planning and infrastructure decisions can help reduce fear and the incidence of crime. For more information visit CPTED Ontario: http://cptedontario.ca/mission/what-is-cpted/.

Select Canadian findings include:

Neighbourhood characteristics influencing people's choice to use AT include transit stops less than a 15-minute walk, sidewalks, designated bike lanes, level of street traffic, crime rates and safety at night^{B, 53}

Walkable neighbourhoods and the presence of open space and parks within easy walking distance is the single factor most likely to encourage walking $^{\rm 54}$

Living in urban settings encourages AT use among adolescents travelling to $\mathsf{school}^{\mathsf{55}}$

Design factors such as travel distance, block density (i.e. measure of connectivity), walking density, and signalized intersections are highly associated with $\rm AT^{56}$

Cities with more kilometers of bicycle facilities and shorter commuting distances have higher AT mode shares $^{\rm 57}$

Seniors are more likely to walk and take longer trips if they are living in locations with more commercial activities⁵⁸

Higher rates of people cycling were associated with these factors: hilliness; higher intersection density; fewer highways and arterials; the presence of bicycle signage; traffic calming and cyclist-activated traffic lights; greater land use mix; and, higher population density.⁵⁹

Significant factors affecting the incidence of walking trips in urban and suburban areas include distance (less than 600m) and the presence of office and institutional uses (Halifax region study)⁶⁰

ROLE OF PUBLIC HEALTH

Public health practitioners are increasingly recognizing the role of social, economic, and physical environments on population health. While historically greater emphasis was placed on individual-level interventions, recent years have seen an increased focus on the importance of changing the context within which individuals live and make decisions.⁶¹ Advocating for planning policies and design elements which prioritize AT and make engaging in physical activity the easy, default decision, is one example of this work.

Public Health advocates for supportive polices to create communities where the default decisions for people are healthy decisions.

1.2 THE CONVERSATION SO FAR

When this project was initiated, it was viewed as a first step in a discussion around AT and health that few were talking about in Nova Scotia. Over the course of this project however, the project team has observed a significant local shift in momentum with AT gaining increasing support as a valid transportation option that supports positive health outcomes.

Locally, the Integrated Mobility Plan (IMP), approved unanimously by Halifax Regional Council in late 2017, is a major milestone marking this shift.



to schools is part of Public Health's Healthy School Communities work. This program applies a whole school approach to create and support healthy school communities where student learning, health, well-being, and overall achievement are improved.



The Integrated Mobility Plan, approved unanimously by Halifax Regional Council, represents a significant shift towards prioritizing people who walk, cycle and take transit.

Based on four pillars, Connected, Healthy, Sustainable and Affordable, the IMP supports creating vibrant complete communities and prioritizes people who walk, cycle, and take transit. It also places an increased emphasis on designing the city and its transportation network for people of All Ages and Abilities (AAA).⁶² This shift is being supported by work in the academic community, notably through the Dalhousie Transportation Collaboratory (DalTRAC), which has generated significant high-quality data and analysis on AT trends in Nova Scotia and the Halifax region since opening in 2011.

HOW DO WE...

- ...plan for people of all ages and abilities?
- ...encourage people to drive less?
- ...make walking and cycling the easy choice?
- ...recreate the conditions that make AT the easy, default decision for Regional Centre residents in other areas in the Halifax region?

At a national level, Peterborough and Toronto have been leaders in linking the discussion around AT with health outcomes and identifying appropriate indicators and baseline data to track progress.^{63, 64} Smart Growth BC^c contributed significant early evidence about the impact of community design on peoples' well-being and transportation decisions.⁶⁵ Complementing this work, Winnipeg and Saskatoon have highlighted the need for communities to consider equity when setting priorities and making decisions about AT investments.^{66, 67} Of significance, the Transportation Association of Canada (TAC), added a new section on 'Health Indicators' as part of its most recent Urban Transportation Indictors survey (2016).⁶⁸ This section explores the links between transportation, infrastructure, air pollution, and population health for thirty-three Canadian cities, including Halifax, across twenty variables.^D The findings of this survey are referenced throughout the report to illustrate how the Halifax region compares to other communities. Where appropriate select indicators from the TAC survey where included as part of the 40 indicators recommended for ongoing monitoring.

Part 2 considers the current policy context in more detail through the discussion on Investment while Appendix B provides an environmental scan of notable local, provincial and national strategies and resources.

^c Organization no longer exists.

^D The TAC Urban Transportation Indicators survey uses Census Metropolitan Areas (CMAs) as defined by Statistics Canada as the primarily geographic unit.

2.0 COMMUNITY PROFILE KEY TRENDS AND BASELINE DATA

DEMOGRAPHICS, PHYSICAL ACTIVITY, AND HEALTH

Aging population with a high proportion of seniors. This trend will increase in the future as the largest age group are people in their fifties.

Young adults aged 20–29 make up the next largest demographic.

The population of the Halifax region has lower rates of chronic disease than the rest of Nova Scotia.

Approximately 1/4 of youth (12–17 years old) have overweight or obesity.

Self-reported physical activity levels have increased for adults.

When compared with Canadian cities of a similar size the Halifax region has a high rate of self-reported physical activity levels and ranks the highest in Atlantic Canada.



TRANSPORTATION AND SAFETY

The proportion of people commuting to work in a vehicle is increasing.

When considered against other mid-sized Canadian cities, the Halifax region has a high proportion of people using AT modes for commuting to and from work.

Almost 30% of people living in the Regional Centre commute using AT.

Walking is the most common form of AT (8% walk vs. 1% bike).

Few women choose cycling as a form of transportation.

People who walk and bike crossed the Macdonald bridge over 240,000 times in 2014.

2/3 of Halifax region residents would like to walk more and 50% would like to bike more.

Ferry ridership experienced a significant increase when additional service was added.

People who walk and cycle are disproportionally impacted by road-related collisions.

Over 60% of collisions involve a crosswalk.

FUTURE AREAS OF WORK...



More local information on trips for purposes other than travel to/from work and the relationship between travel models and distance

Assessment of local air quality trends and their impact on population health

Spatial analysis exploring the proximity of community amenities such as schools, parks, health centres, and groceries stores by sub-region^E

Details on the percent of school aged children using active modes to get to school

Local primary research on AT and health status to strengthen the link between AT and health

RECOMMENDED INDICATORS FOR ONGOING MONITORING

HEALTH AND PHYSICAL ACTIVITY

Perceived overall health as "very good" or "excellent"

Perceived sense of belonging to their community as "somewhat strong" or "very strong"

Perceived mental health as "very good" or "excellent"

Perceived rating of life satisfaction as "satisfied" or "very satisfied"

Rates of people who have overweight or obesity (18+years/12-17 years)

Rates of asthma

Rates of high blood pressure

Rates of diabetes

Self-reported physical activity: adults 18 years+ (150 minutes/week) and youth 12–17 years (60 minutes/day)

Older adults (65⁺) who were classified as "inactive" in leisure time

Percent of population living within 400m of a public park that allows passive or active use in a natural, green space

TRANSPORTATION

User perception of walking, bicycling, and taking transit as a transportation option

Daily average vehicle-km travelled (VKT, by mode)

Average commute times by mode (minutes)

Vehicle ownership per capita

Number of vehicles per household

Overall mode share of transportation to work

Mode share of transportation to work by sub-region, age and gender: drive alone, passenger in vehicle, walking, bicycling, transit

Percent of households living within 1-km or 5-km of these services: Education, Health, Food, Public Administration

Transit revenue ridership (annual transit trips per capita)

Collision – related serious injury and fatality rates by mode by sub-region

Percent of all 5–18 year old students (grades K–12) walking or cycling to school

Percent of 5–18 year old students (grades K–12) living within a certain distance of a school (400m, 1km, 2km, 3km)

^E Some of this work has been started by DalTRAC. Also, a team of cross-disciplinary researchers at Dalhousie University is working on the Spatial Access to Multitude of Services and Amenities project which is looking at spatial accessibility to different services and amenities and their relationships with health.

2.1 HALIFAX REGION CONTEXT

With over 400,000 people and 220,000 jobs, the Halifax region is the capital of Nova Scotia and a major economic centre in Atlantic Canada.^{69,70} It is home to a diverse well-educated population. A product of amalgamation in 1996, the Halifax Regional Municipality (HRM) contains over 200 communities representing a mix of urban, suburban and rural communities.⁷¹ Approximately half of the population lives within suburban areas while one-quarter lives within the densely populated Regional Centre (Halifax Peninsula and central Dartmouth see Figure 6, p.20) and another quarter in rural areas.⁷² The unique needs of the different types of communities within HRM must be taken into account when developing AT infrastructure and land use, transportation, and healthy living policies and plans.

The Halifax region's topography is varied with a mix of rocky shorelines, beaches, lakes and rivers, drumlins, exposed bedrock, and forests. Low rolling hills are found in many areas, including in the developed urban and suburban centres. The climate is heavily influenced by the adjacent ocean which has a moderating effect on the temperatures in both the winter and summer and brings significant precipitation to the region. Climate normal data from Environment Canada (1981-2010) shows approximately 1470 mm of precipitation per year falling on an average of 311 days, including 42 with snowfall and 65 days with over 10mm. Temperatures range from an average daily minimum/maximum of -8.2°C/-0.1°C in January to 15.5°C/23.1°C in August. The Halifax region has an average of 234 days where the minimum temperature is above zero.⁷³ Strong winds and storms are common in the region. Research suggests that hilly topography and weather can act as a barrier to people choosing AT.⁷⁴ Specific to the Halifax region, surveys of local residents found that 'poor weather' was identified as a significant factor that acts as a deterrence to walking while 'heat and humidity' were identified for cycling.75,76

2.2 DEMOGRAPHICS

The population of the Halifax region has steadily increased, adding approximately 60,000 people since 1996 with an average annual growth rate of slightly less than 1%.^{77,78} If the region were to continue to see similar growth rates, the population would grow by over 50,000 by 2031.

FIGURE 2: Halifax Region Population by Age Group



HALIFAX REGION – POPULATION, 2006–2016

Source: Statistics Canada Census Profiles for 2006, 2011, 2016 (Halifax CMA).

AGE

The largest age group of Halifax region residents in 2016 was between the ages of 50–59 years closely followed by 20–29 years of age. The median age of the population is lower than the province as a whole (41 vs. 45.5 years) which may be attributed to the increased education and employment opportunities available in the Halifax region. Of significance, the proportion of seniors (over 65 years of age) has increased 40% between 2006 and 2016 and will continue to increase for the foreseeable future. Moving forward, it will be essential to consider the unique transportation needs of an aging population.^{79–81}

INCOME

The Halifax region has a lower proportion of residents earning a low income than the rest of the province (15% vs. 17%) and a higher proportion of visible minorities (11% vs. 6.5%). These two groups have higher concentrations in the Regional Centre. The Aboriginal population is lower in the Halifax region than in the province (4% vs. 6%) This population group however is increasingly living off-reserve and in urban areas.^{82,83}

2.3 POPULATION HEALTH STATUS

This section provides baseline information on the current health status of the population. The information presented was obtained from the two most recent Statistics Canada's Canadian Community Health Surveys (2014, 2016)^F (CCHS), the Canadian Cancer Registry Database (2016), the National Household Survey (2011). Unless noted, the data captures the health status of residents over the age of 12 years in the NSHA Central Zone.^G When available, discussion is included on how the Halifax CMA compares with other urban centres across Canada as outlined in the TAC Urban Transportation Indicators.^{H,1}

2.3.1 OVERALL HEALTH

This first group of indicators are based on self-reported data of people's perceptions of their health status. The built environment plays an important role in people's interaction with and perception of their community which in turn impacts their overall well-being.

For comparison purposes, the TAC Urban Transportation Indicators survey found the Halifax region ranked in the:

Top-one-third (10/33) for people rating their health as "very good" or "excellent" and was 4/11 for comparable cities¹ and closer to the middle of the group for people rating their health as "fair" or "poor" (14/33, tied with 2 other CMAs);

Middle (16/33, tied with 3 other CMAs) for people rating their sense of belong to their community as "somewhat strong" or "very strong" and 7/11 for comparable cities;

Top one-third (9/33) for people rating their mental health as "very good" or "excellent" and 6/11 for comparable cities; and,

Second for people rating their life satisfaction as "satisfied" or "very satisfied" (tied with Saint John and Calgary).

^F As a result of the 2015 redesign, the CCHS has a new collection strategy, a new sample design, and has undergone major content revisions. With all these factors taken together, caution should be taken when comparing data from previous cycles to data released for the 2015 cycle onwards.

⁶ While the majority of the data in this report uses a combination of the Halifax CMA and HRM data, the health data is presented for the Central Zone health region (i.e. it includes the Town of Windsor and West Hants).

^H The TAC Urban Transportation Indicators Survey uses health data from the 2011/12 CCHS. This information is included to demonstrate how the Halifax region compares with other CMAs^a

I The Halifax CMA was included in 'Group C' which also includes the CMAs for Kitchener-Cambridge-Waterloo, London, St. Catharines-Niagara, Oshawa, Victoria, Windsor, Saskatoon, Regina, Sherbrooke, and St. John's.





MENTAL HEALTH Perceived health, very good or excellent (12 years+)





PERCEIVED LIFE STRESS

Perceived most days, quite a bit or extremely stressful (15 years+)

SENSE OF BELONGING Reported belonging, very strong or somewhat strong (12 years+)

2013-2014		2015–2016		2013–2014		2015–2016		
CENTRAL ZON	e 21%	CENTRAL ZONI	≡ 20% ☺	CENTRAL ZONE	69%	CENTRAL ZONE	73%	\odot
NOVA SCOTIA	19%	NOVA SCOTIA	19% 😐	NOVA SCOTIA	73%	NOVA SCOTIA	75 %	:
CANADA	23%	CANADA	22% 🙂	CANADA	66%	CANADA	68 %	:

Source: CCHS (2014, 2016), Canadian Cancer Registry Database (2016), and National Household Survey (2011).

2.3.2 CHRONIC CONDITIONS

Chronic conditions have a significant impact on people's overall quality of life and are costly to the health-care system. Participation in AT is one component that helps mitigate the risk of many of these conditions. For Nova Scotia (CCHS 2016), all chronic diseases measured are statistically higher than the national rate (arthritis, diabetes, asthma, Chronic Obstructive Pulmonary Disease (COPD) and high blood pressure). For Central Zone (which includes the Halifax region), all chronic diseases are not statistically different than the national rate, but arthritis and high blood pressure are significantly lower than the NS rate (numbers for COPD are too small to interpret).⁸⁴

When compared with other Canadian municipalities, the TAC Urban Transportation Indicators survey ranked the Halifax region in the:

Top-one-third (8/33) for people with overweight or obesity and 2/11 for comparable cities (only behind St. John's);

Middle for people with a high blood pressure diagnosis (19/33), 4/11 for comparable cities, and lowest in Atlantic Canada;

Top one third (9/33) for people with a diabetes diagnosis, 5/11 for comparable cities, and lowest in Atlantic Canada; and,

Top one third for people with an asthma diagnosis (7/33) and 2/11 for comparable cities (behind Saskatoon and tied with Oshawa).



2013-2014		2015-2	016	
CENTRAL ZONE 58%		Data unavailable by	publication	date.
NOVA SCOTIA	62%			
CANADA	54%			
OVEI	RWEIGH	T OR OBESITY 7 years		
2013-201	4	2015–2	016	
CENTRAL ZONE	25%	CENTRAL ZONE	35.1%	
NOVA SCOTIA	23%	NOVA SCOTIA	38%	:
CANADA	22%	CANADA	26%	:

Source: CCHS (2014, 2016), Canadian Cancer Registry Database (2016), and National Household Survey (2011).



2013-2014		2015-2016			
CENTRAL ZONE	9%	CENTRAL ZONE	10%	:	
NOVA SCOTIA	<mark>9</mark> %	NOVA SCOTIA	10%	:	
CANADA	9%	CANADA	9 %	\odot	



2013-2014		2015-2016				
CENTRAL ZONE	15%	CENTRAL ZONE	16%	:		
NOVA SCOTIA	20%	NOVA SCOTIA	21%	:		
CANADA	18%	CANADA	17%	\odot		



2013-2014		2015-2016				
CENTRAL ZONE	6%	CENTRAL ZONE	8%	:		
NOVA SCOTIA	9%	NOVA SCOTIA	9%	<u>:</u>		
CANADA	7%	CANADA	7%			





2013		2015				
NOVA SCOTIA	559	NOVA SCOTIA	531	\odot		
CANADA 521		CANADA* 493 (
		*excludes Quebec				

Source: CCHS (2014, 2016), Canadian Cancer Registry Database (2016), and National Household Survey (2011).

2.3.3 PHYSICAL ACTIVITY AND SEDENTARY BEHAVIOUR

Physical inactivity and sedentary behaviours negatively impact people's health and overall well-being. The main source of data on physical activity levels comes from the CCHS. Data in this survey is based on self-reported physical activity. While self-reported time for physical activity is greatly over-estimated, ^J this dataset remains helpful for monitoring trends over time. Based on the 2016 CCHS results, NS is not statistically different from the national percentage for both adults and youth (12–17 years old). Similarly, NS inactivity would not be significantly higher or lower than Canada's.⁸⁵

The TAC Urban Transportation Indicators Survey also compared CCHS results for people who self-reported as 'moderately active' or 'active' during leisure time. The Halifax region ranked:

Top-one-third (9/33) of Canadian urban municipalities overall;

Middle behind Victoria for cities of a similar size: and.

First in Atlantic Canada.

SELF REPORTED PHYSICAL ACTIVITY 2015-2016





ACTIVE ADULTS (18 YEARS+) 150 minutes per week

CENTRAL ZONE	61%
NOVA SCOTIA	57%
CANADA	58%



ACTIVE YOUTH (12–17 YEARS) 60 minutes per day

CENTRAL ZONE	70%
NOVA SCOTIA	63%
CANADA	60%

The Regional Physical Activity Strategy for the Halifax Region -Stepping Up, also created a series of indicators and targets to monitor local physical activity trends (Table 1).⁸⁶ This information shows an increase in activity levels (decrease in inactivity) for adults and no significant change for children/youth.

TABLE 1: Regional Physical Activity Strategy - Indicators

INDICATOR	BASELINE	TARGET 2014	ACTUAL 2014	TREND OBSERVATIONS
Population 20 ⁺ who were classified as "inactive" in leisure time	53.8% (2007/08)	43.8%	42.4%	Statistically significant decrease in inactivity
Boys and Girls aged 5–19	11,106 average steps daily (2005–2007)	Increase	10,800 average steps daily 	No significant change in NS averages whereas some other provinces and national average did show some decreases in activity levels
Older adults 65 ⁺ who were classified as "inactive" in leisure time	67% (2007/08)	57%	55% ©	Close to a significant decrease inactivity
Population 20 ⁺ who report walking for transportation to work or school (at least once in three months)	23.4% (2007/08)	33.4%	25.7%	No significant change in this indicator (weak trend observed).

Source: HRM – Parks and Recreation

¹ The Canadian Health Measures Survey (CHMS, 2013) directly measured (with technology) physical activity in all domains. About one in five adults achieved the recommended 150 minutes of moderate-to-vigorous physical activity. This is in great contrast to the near-half of adults in CCHS who self-reported meeting the guidelines. In CHMS, adults aged 18 to 79 accumulated an average of about 12 minutes per day, or 84 minutes per week, of moderate-to-vigorous physical activity. CCHS has data representative for Nova Scotia, CHMS does not.

2.4 TRANSPORTATION COSTS

Making the decision to not own a car and use options such as walking, biking, and transit generates significant household savings while also facilitating a healthy lifestyle. Nova Scotia households spent approximately 20% of all consumption-related household spending on transportation costs in 2016, the second highest expense after shelter costs (26%).^{K, 87, 88} Specific to households in the Halifax region, the average spent was approximately \$11,600, or 19% of consumption spending, of which \$10,500 was associated with private transportation costs. This is comparable with CAA driving estimates which shows the typical annual cost of driving at approximately \$10,000.⁸⁹ In comparison, a standard annual transit pass costs slightly less than \$950⁹⁰ while an estimate for the annual operating costs for bicycle commuting is \$100–300 (includes cost of bicycle based on a 10-year lifespan).⁹¹

2.5 TRAVEL BEHAVIOUR

2.5.1 WALKING AND BIKING BEHAVIOURS, PERCEPTIONS AND BARRIERS

People's perceptions of AT, including how safe, convenient, and accessible it is, influences whether they decide to try or regularly use AT to move around the city. The HRM Physical Activity Community Survey among Adults (Nov. 2015) provided useful insight into AT behaviours and perceptions, including barriers to participation.

HRM PHYSICAL ACTIVITY COMMUNITY SURVEY – ADULTS⁹²

Respondents recognize the link between physical activity and health with 59% identifying health reasons for why they are active, 20% for stress relief, and 17% to lose weight/get fit (responses not exclusive).

Walking and physically active household tasks are the most common physical activities.

Walking is the most common top choice for increased participation in physical activity. Biking is a common top three choice for more participation.

Concerns about the quality and safety of walking and biking infrastructure were identified as barriers to participation.

- 45% do not feel safe riding a bicycle
- 21% do not feel safe walking

Almost half of respondents walk to a specific destination at least once a week. Very few use a bicycle for AT on a weekly basis.

Approximately 2/3 want to walk more often.

Better connections and improved infrastructure would have the greatest influence on increased bicycling. Well maintained sidewalks would have the greatest influence to increase walking.

^K In addition to consumption spending, total expenditures include 'income tax', 'personal income payments and pension contributions', and 'gifts of money, support payments, and charitable contributions.' Transportation spending is 15% of total household spending in NS and 14% in HRM.

Preliminary Halifax region findings from the study, the Impacts of Cycling Infrastructure in Mid-sized Canadian Cities, found that of respondents:

IMPACTS OF CYCLING INFRASTRUCTURE IN MID-SIZED CANADIAN CITIES SURVEY

34% indicated they had used a bicycle in the previous 12 months with approximately half typically cycling less than once per month (28% women vs. 40% men);

19% took their children on cycling trips either sometimes or always;

21% were comfortable cycling on a major street with no bike lane however 86% would be comfortable if there were bike lanes separated from traffic;

Of those who cycled, 3% reported being involved in a crash or fall in the past 3-months while riding a bike in the Halifax region;

50% agreed they would like to cycle more than they do now; and

39% thought cycling was dangerous while 26% thought it was safe.⁹³

The top 3 factors influencing a person's decision to cycle/not cycle were:

- 1. Heat and humidity
- 2. Having to transport items or passengers
- 3. The presence of separated bicycle lanes along the route



2.5.2 COMMUTE TO WORK - MODAL SPLIT

When looking at travel behaviour, much of the information and analysis available relates to people's journey to work as this information is regularly collected by Statistics Canada. Having more people use AT and transit rather than personal vehicles for their commute has significant benefits including reducing congestion and air pollution and incorporating more physical activity into people's daily routine.

When compared to other mid-sized Canadian cities, the Halifax region has a relatively high proportion of people who walk and take transit and a low proportion of people who drive, second only to Victoria.

Recent research/data indicates:

- The rate of people driving to work continues to grow while rates for people travelling in a vehicle as a passenger (suggestive of carpooling), taking transit, walking and biking are declining (Figure 3)⁹⁴;
- The percentage of people walking is significantly higher than people cycling (around 8% vs. 1%)⁹⁵;
- Males are more likely to bike, while females have higher walking rates⁹⁶; and,
- The proportion of people walking is highest in the '15 to 24 years' age category (13.8%) followed by '65 years and over' (9.0%), while the proportion of people biking, which is low across all age categories, is highest in the '25 to 44 years' age category (1.0%) (2011 data).⁹⁷

FIGURE 3: Halifax Region – Journey to Work Mode Share



HALIFAX REGION – JOURNEY TO WORK, 2006–2016 (%)

Source: Statistics Canada, 2006, 2011 and 2016.

The percent of people who cycle is comparable across all cities, with the exception of Victoria which has a significantly higher number (Figure 4).

FIGURE 4: Journey to Work – Transit and AT Comparison with Other Canadian Cities

TRANSIT AND AT COMPARISON WITH OTHER CITIES, 2016 (%)



Source: Statistics Canada, 2016. Based on the Census Metropolitan Areas (CMAs). All cities are classified as mid-size CMAs with the exception of Moncton which is considered a small CMA.

The average commute time for Halifax region residents is 24 minutes. Approximately two-thirds of residents have commutes less than a half hour each direction while 5% of commuters travel more than an hour each way.⁹⁸ When compared with other mid-size Canadian cities, Halifax region commuters on average have a longer commute time (range is from 17 minutes for Moncton to 24 minutes in the Halifax region). In terms of travel time by mode, the Halifax region falls slightly above the comparable cities average for personal vehicle use, transit, and AT (Figure 5).⁹⁹

Related to this, the Health Indicators section of the 2016 TAC Urban Transportation survey looked at the average length of time for vehicle trips as an indicator of sedentary behavior for both the journey to work and for all other trip types. Of the thirteen urban communities that supplied this information, the Halifax region and Moncton were the highest for the journey to work (information not available for other trip types).^{L,100} The TAC survey also looked at transit vehicle trip length however no information was available for the Halifax region. FIGURE 5: Average Travel time by Mode – Comparison with Other Canadian Cities



TRAVEL TIME BY MODE - COMPARABLE CITIES, 2016 (MINUTES)

Source: Statistics Canada. Journey to Work – Key Results from the 2016 Census.

^L Data was supplied by the individual CMAs. Unless otherwise noted, all data sources are 2011. Communities are Montreal, Vancouver, Ottawa-Gatineau, Quebec, Winnipeg, Kitchener-Cambridge-Waterloo, London, Halifax, Oshawa, Sherbrooke, Kelowna (2013), Greater Sudbury/Grand Sudbury, and Moncton (2014). The value for Halifax was approximately 30-minutes. This data may have been provided by the city using traffic models as opposed to census data.



2.5.3 COMMUTE TO WORK – TRAVEL DISTANCE

The ability to use AT methods to commute to work is closely related to travel distance. A Bicycle Nova Scotia study of AT trends in NS, completed by DalTRAC in 2014, found "that the majority (81%) of all commuter walking trips are shorter than 3km in distance, with 41% being shorter than 1km. Further, the majority (78%) of all commuter cycling trips are less than 5km in distance, with 50% occurring within commuting distances of 1 to 3km."¹⁰¹

The 2014 Bicycle Nova Scotia study completed by DalTRAC on AT trends in Nova Scotia is a significant contribution to the local and provincial AT discussion.



An analysis completed by HRM Planning & Development staff demonstrates modelled average travel distances for different areas of the Halifax region (2011 National Household Survey data).¹⁰² FIGURE 6: Average Travel Distances within the Halifax Region, 2011



Average Commute Distance Between Sub-Areas (Km) – PM Peak (2011)					
GEOGRAPHY (sub-area)	PENINSULA	CENTRAL Dartmouth	INNER URBAN	OUTER URBAN	RURAL
Peninsula	3 km	8 km	10 km	13 km	27 km
Central Dartmouth	7 km	4 km	7 km	11 km	30 km
Inner Urban	10 km	9 km	9 km	13 km	28 km
Outer Urban	22 km	16 km	15 km	9 km	24 km
Rural	31 km	29 km	28 km	24 km	23 km

Source: Halifax Planning and Development.

49% OF REGIONAL CENTRE RESIDENTS WALK, BIKE OR USE TRANSIT TO GET TO WORK

Travel distances for commuters within the Peninsula and Central Dartmouth, together identified as the 'Regional Centre' in the Regional Planning Strategy, tend to be shorter. This is reflected by proportions that are twice as high for people walking, biking, and using transit to get to work (49% for the Regional Centre vs. 24% for the Halifax region).¹⁰³ Specific to AT, the proportions of people walking and biking to work for the Halifax region as a whole are slightly higher than for the province (9.2% vs. 6.9%).¹⁰⁴ The high proportions in the Regional Centre (25% walking, 3% biking) however masks the fact that the proportions found elsewhere in the municipality (3% walking, \leftarrow 0.5% biking) are lower than other areas of Nova Scotia.¹⁰⁵

2.5.4 OTHER TYPES OF TRIPS

The 2014 Bicycle Nova Scotia report also provides substantial analysis on the use of AT for other types of trips beyond the journey to work data included in the standard federal census process. The report found that overall trends for all purpose trips are similar to commute to work trips. Overall AT use is declining and walking is significantly more popular for AT trips than bicycling for both genders and all age categories. The report found AT is highest for household work related trips (Figure 7).¹⁰⁶

FIGURE 7: AT Trips by Trip Purpose



AT TRIPS BY TRIP PURPOSE (2010)

AT TRIPS AS A % OF TOTAL TRIPS (ALL MODES)

Source: 2014 Bicycle Nova Scotia.

2.5.5 COUNTS OF PEOPLE WHO WALK AND CYCLE

Peninsula Screenline Counts

Each spring and fall, a screenline count of people who cycle is conducted by the HRM. This is completed during the morning and afternoon rush hour on one day at several locations at all of the intersections crossing Quinpool Road and Cogswell Street from one side of the peninsula to the other. Data for this count comes from a combination of people at the locations and the use of cameras. In a screenline count, an imaginary line is drawn across a specific area and every time a person biking crosses this line, the person is counted. Screenline counts are useful to show general trends over time and help prioritize where AT investments should be made and network connections added.¹⁰⁷

Macdonald Bridge Bikeway

Data is also collected by the Halifax Harbour Bridges for the Macdonald Bridge Bikeway. This data will provide a useful baseline to evaluate the impact of the planned infrastructure upgrades to the bikeway connection on overall usage by people who walk and cycle. Counts for people walking and cycling for 2011 were completed over two days in September, a busy time of year, by volunteers. The average was 480 for people who walk and 518 for people who cycle. The most recent data, 2014, uses digital counters and showed:

109,317 annual crossings by people **CYCLING** (daily average of 299); and,

133,178 annual crossings by people WALKING (daily average of 365)[™]

While the 2014 daily average is lower than the 2011 data, it is based on annual data which includes low-use winter months. When daily averages for September 2014 are compared directly against September 2011 however an increase in total usage is observed (577 people cycling and 573 people walking).¹⁰⁸

FIGURE 8: HRM Screenline Bi-Annual Bicycle Counts

PENINSULA SCREENLINE BI-ANNUAL BICYCLE COUNTS (TOTAL #)



Source: Halifax Transportation & Public Works.

^M Counting people who walk with the digital counter is problematic and may be underrepresenting the actual numbers. An audit of the data found that the camera sometimes counted two people walking side by side as one person.


Halifax Street Sense Network

The Halifax Street Sense Network, a partnership between HRM, DalTRAC and the Halifax Cycling Coalition, shows live count data for people who cycle for four locations on the Peninsula: two sites monitoring the protected bike lane on University Avenue, one on South Park Street, and one on Agricola Street.¹⁰⁹

2.5.6 TRANSIT USAGE

Transit usage is closely linked with AT as the majority of transit trips are combined with walking, and to a lesser extent, cycling trips. Research also shows that people who use transit are more likely to engage in more walking trips overall.¹¹⁰

Halifax Transit offers three types of service: conventional fixed route bus service (63 routes), ferry service (2 routes), and para-transit service (Access-a-Bus) for people with mobility limitations.¹¹¹ In 2016/17, Halifax Transit had over 25.2 million boardings, serving an estimated 18.8 million riders.^N Between

2007/08 and 2016/17, the average boardings per day has increased by 12% for conventional bus service (79,800 to 89,600)^o and 232% for ferry service (2000 to 6500). Figure 9 shows that annual ridership for ferry and conventional bus service is up overall but down slightly since its peak in 2013/14.^{P, 112}

FIGURE 9: Annual Ridership – Ferry and Conventional Bus Service



ANNUAL RIDERSHIP – FERRY AND CONVENTIONAL BUS SERVICE

Source: Halifax Transit.

^N Boardings refer to the number of times people get on the bus. Traditionally Halifax Transit has used on-board surveys to collect this information however automatic passenger counters were recently added. Estimated ridership is calculated using fare revenue.

- Additional ferry service added in 2016 and 2017 to respond to construction on Macdonald Bridge (i.e. the Big Lift project) accounts for an approximately 65% increase between 2015 and 2016/2017 (2600 additional annual boardings).
- ^P A labour disruption impacted service (all categories) in 2011/12.

With regards to Halifax Transit's Access-A-Bus service, annual ridership has increased by 20% between 2012/13 and 2016/17.¹¹³

Monthly passes encourage regular transit usage and provide a steady source of revenue and ridership around which the core system can be designed. Between April 2015 and March 2016, Halifax Transit sold approximately 400,000 transit passes. Figure 10 shows the breakdown of pass sales. Due to the significance of the Universal Transit Pass Program (U-Pass), offered through five post-secondary institutions in the region, overall pass sales significantly drop between May and August (slight decline also noticed in summer months for regular adult fares).¹¹⁴ Students only buy one U-Pass per year; data in Figure 10 assumes that there are this many people with a U-Pass for a given month.

6% Other Products 4% Student 3% Senior/Child 23% Adult 64% U Pass

MONTHLY TRANSIT PASS SALES, 2015/16

Source: Halifax Transit Data

FIGURE 10: Monthly Transit Pass Sales

One specialty fare-product of note is the Smart Trip Employee Pass (E-Pass) which offers discounted transit fares through agreements with Smart Trip program employers. Almost 9,000 passes with an average of 730 passes per month were sold in 2015/16. Another fare program is the Low Income Transit Pass which offers a 50% discount on various monthly transit passes. Starting first as a pilot program for 500 people in 2016, the program expanded in 2017 for 1,000 and will increase to 2,000 residents starting in 2019/20.¹¹⁵ This program offers significant savings for eligible residents allowing them to spend more of their household budget on rent, food, and other needs.¹¹⁶

HALIFAX

The Low Income Transit Pass program,

introduced in 2016, provides eligible residents significant savings allowing them to spend more of their household budget on other needs.

2.5.7 VEHICLE OWNERSHIP

As with the trend towards more people using a personal vehicle to travel to work, the total number of road motor vehicle registrations in Nova Scotia has increased by 5.6% between 2011 and 2016. The per capita vehicle registrations value has also increased slightly from 0.65 registrations per person to 0.69. These values are similar to the national average of per capita vehicle registrations. This is a concern as increased personal vehicle use supports a sedentary lifestyle. Related to this, DalTRAC's 2013 Halifax Household Mobility and Travel Activity Survey found 80% of households owned a vehicle: 42% owned one, 28% owned two, 8% owned three, and 2% owned four or greater.¹¹⁷

2.6 COLLISIONS, INJURIES AND FATALITIES

FIGURE 11: Road Related Collisions

ROAD RELATED COLLISIONS, 2015



FIGURE 12: Road Related Fatalities

ROAD RELATED FATALITIES, 2015



Source: Halifax Regional Police, 2016.

2.6.1 ROAD RELATED COLLISIONS (ALL MODES)

Road related collisions are an important health concern in the Halifax region; the Halifax Regional Police reported 7253 collisions in 2015. While road-related collisions only involve people who walk or cycle in a small number of cases, they disproportionately involve them in fatalities (15 total in 2015, 6 involving people who walk and cycle)¹¹⁸. Local and national research has identified concerns about safety as a barrier to people choosing AT.¹¹⁹⁻¹²¹





Road-related fatalities disproportionately involve people who walk and cycle

The 2016 TAC Urban Transportation survey, also looked at traffic related fatalities by mode type. While the Halifax region did not provide data, future surveys offer an opportunity to assess how the Halifax region compares with other Canadian communities.

2.6.2 PEDESTRIAN COLLISIONS AND INJURIES

The Halifax Regional Police collects extensive data on pedestrianvehicle collisions. Between 2013 and 2017 there were 1064 pedestrian-vehicle collisions (an average of 214 collisions/year) and 1100 victims. Of these, 37% of collisions had no injury while 12% involved moderate or severe injury and 1.7% involved a fatality (19 people) (Figure 13). Women were more likely to be involved in a collision (56% vs. 44%). The most commonly impacted ages were people 21–30, 11–20 and 51–60 years (Figure 14).^{122–126}

VEHICLE – PEDESTRIAN COLLISIONS

SEVERITY OF INJURY, 2013-2017

FIGURE 13: Vehicle-Pedestrian Collisions, Severity of Injury



Source: Halifax Regional Police, 2016.



Analysis for the past three years (2015–2017) also shows that **over 60% of vehicle-pedestrian collisions involved a crosswalk**

FIGURE 14: Vehicle – Pedestrian Collisions, Age and Gender



VEHICLE – PEDESTRIAN COLLISIONS AGE AND GENDER, 2013–2017 (TOTAL #)

Source: Halifax Regional Police. Vehicle/pedestrian collision reports 2013–2017.

While the fall/early winter months have the highest proportion of collisions (Figure 15), approximately two-thirds of collisions occurred during daylight hours, with one-third of those on sunny days (Figure 16).

Related to this, almost half of collisions involve some type of turn, and left-turns accounted for approximately one-third of total collisions (Figure 17).

FIGURE 15: Vehicle-Pedestrian Collisions by Month



Source: Halifax Regional Police. Vehicle/pedestrian collision reports 2013–2017.

FIGURE 16: Vehicle-Pedestrian Collisions, Weather and Daylight



VEHICLE – PEDESTRIAN COLLISION WEATHER AND DAYLIGHT, 2013–2017 (TOTAL #)

Source: Halifax Regional Police. Vehicle/pedestrian collision reports 2013–2017.

FIGURE 17: Collision Type – Turn Direction and Crosswalk Involved



CROSSWALK INVOLVED, 2013–2017



Source: Halifax Regional Police. Vehicle/pedestrian collision reports 2013–2017.

Information on injuries as reported through the health care system (e.g. emergency room, walk-in-clinic, family doctor) was provided by the NS Department of Health and Wellness.^{Q, 127} The data reported through the public health care system showed a similar trend for gender (56% female, 44% male) as the Halifax Regional Police, however the percentage of injuries was double the percentage of collisions for people over the age of sixty (31% vs. 16%).^R Of these, approximately 80% of pedestrian injuries occurred through a collision with a vehicle. Overall trends for the Halifax region are comparable with the rest of the province however a slightly higher proportion of seniors are injured outside the Halifax region (which could be a reflection of the higher median age for the Province).

^a Data provided from the Department of Health and Wellness relies on ICD codes and is designed to capture all visits and interactions with the healthcare system. Limitations exist with this dataset: there are inconsistencies in the use of ICD codes in Nova Scotia, therefore missing details and/or diagnoses are possible.

2.6.3 CYCLIST COLLISIONS AND INJURIES

Approximately one-quarter of total pedestrian/cyclist/vehicle collisions (reported to the police) involved people who cycle over the last three years (average of 66/year, total of 197).¹²⁸ While the Halifax Regional Police does not release a detailed analysis on cyclist/vehicle collisions (as with pedestrians), the NS Department of Health and Wellness data provides some information about injuries to people who cycle:

- Approximately three-quarters are male;
- Half are under the age of 30;
- Over 60% of accidents do not involve a vehicle; and,
- Trends are similar for the Halifax region and NS.

Half of the people who are injured cycling are under 30 and approximately three-quarters are male



Bicycle Nova Scotia is building a crowdsourced database tracking incidents involving people who cycle and vehicles. Following an incident, people who cycle are asked to self-report what occurred and when, using an online form which then links this information to a map (Figure 18).¹²⁹ Since starting in July 2017,^s 145 incidents have been reported across five categories:

- Near Miss (75)
- Harassing Behaviour by Motorist (37)
- Cyclist Hit by Motorist (24),
- Death of Cyclist (6),
- Cyclist 'Doored' by Motorist (3).

FIGURE 18: Bicycle Nova Scotia – Bicycle/Car Incidents



2.7 ENFORCEMENT

Strategic plans focused on road safety typically consider enforcement, along with engineering and education (and more recently evaluation and engagement), as pillars around which the plans are developed. Enforcement seeks better compliance with road safety laws and encourages behavioral change when education and engineering do not achieve the desired results. The Halifax Regional Police has provided data on enforcement related to Motor Vehicle Act (MVA) violations by people who cycle and people who drive. This data should be viewed with caution as the numbers can be heavily influenced by individual officers and/or certain offences may be captured differently under the broader MVA sections.¹³⁰

^R While the two data sets captured different years, the comparison was made using the same four-year period where they overlapped (2012-2015).

^s These incidents do not represent total incidents that occurred since the program started but also include historic incidents, particularly with regard to fatalities.



TABLE 2: Motor Vehicle Act – Cyclist Related Infractions

SECTION OF MVA	CYCLIST RELATED OFFENCES	2015	2016	JAN – MAY 19, 2017
171 (2)	Riding bicycle on sidewalk	33	16	2
171(1)	Riding bicycle with both hands or feet off	2	-	_
171(4)	Fail to drive bicycle to right hand side of street	4	-	1
171(5)	Fail to drive bicycle same way as traffic flow	_	-	_
170A	Riding bicycle without a helmet	92	67	13
	TOTAL	131	83	16

TABLE 3: Motor Vehicle Act – Driver Related Infractions

SECTION OF MVA	DRIVER RELATED OFFENCES	2015	2016	JAN – MAY 19, 2017
100D(1)	Use of cell phone while driving	1793	1168	612
171B(1)	Not giving cyclist 1 metre rule while passing	3	4	4
106	All related speed offences	4135	6679	4135
	TOTAL	5931	7851	4751

Source: Halifax Regional Police, 2017.

Source: Halifax Regional Police, 2017.



3.0 INVESTMENT KEY TRENDS AND BASELINE DATA



AT is gaining increasing focus in HRM strategic plans and operational decisions



8 adopted HRM strategic plans, plus 3 in progress, address AT issues. Of these 9 explicitly make the link between AT and health





7 full-time staff are AT capital spending dedicated to AT is projected to more project planning than double over ten years from 2012/13 levels Projected new capital spending for AT-related projects over 5-years is \$54.7 million

4% of Capital Budget

AT-related projects

is allocated for



Snow-clearing policies for walking and cycling infrastructure are under consideration

HOW DO WE...

- ...ensure policies in high-level strategic plans translate to AT infrastructure on the ground?
- ...make sure that sufficient funding is allocated for AT?

3.1 PLANS AND POLICIES

The inclusion of active transportation supportive language in strategic plans, policies and internal operating procedures is an important component of AT investment. This section provides a high level overview of the strategic policy context at the municipal, provincial, and federal level. As the municipal level is the primary area where AT strategy and investment is occurring, the analysis of capital budget trends is limited to HRM. An environmental scan of significant AT strategies and resources (Appendix B) supplements the policy review.

3.1.1 STRATEGIC PLANS AND POLICIES FOR THE HALIFAX REGION

Recent strategic documents adopted by HRM Council show an increasing level of support for AT and healthy communities for people. Overarching plans such as the 2017–2021 Strategic Plan, the 2014 Regional Plan, and now more recently, the 2017 Integrated Mobility Plan set the stage for corresponding strategies/plans that implement this direction. Table 4 provides a summary of notable strategic documents for the Halifax region that support AT and identifies whether each document makes a direct link between AT and positive health outcomes. While not included in this table, AT related policies are also addressed in regulatory documents that take direction from the Regional Plan and IMP, such as the Land Use Bylaw, Secondary Municipal Planning Strategies, and the Municipal Standards Design Manual (Red Book). This is important as these are the policies/standards which direct development at the neighbourhood and site level.

TABLE 4: Strategic HRM Documents with an AT Component

CATEGORY	DOCUMENT	HEALTH	DESCRIPTION
Overarching Strategies and Community Statutory Plans	<u>Halifax Strategic Plan</u> 2017–2021 (2017)	YES	 Council priority areas include: Healthy, Liveable Communities – includes safety, sustainability, structured and unstructured recreation, and community health programs. Transportation – focuses on an integrated multi-modal approach.
	HRM Regional Plan (2014)	YES	• Directs where, when and how growth and development should take place across the region until 2031 (statutory plan).
			 Links land use and transportation and incorporates several policies around AT and integrated mobility.
			 Includes wording "fostering the growth of healthy and vibrant communities" in its vision statement.
	Integrated Mobility Plan (2017)	YES	• Demonstrates substantial commitment to support AT and integrated approaches to land use and mobility (unanimous support by Regional Council).
			 Significant shift in priorities to focus on people and active/sustainable modes of travel, i.e. pedestrians, bicycles, transit, personal vehicles.
			• Includes 'healthy' as one of four plan pillars and language about health in its vision.
			 Recognizes need for multi-pronged approach to address mobility challenges in HRM, including improved AT infrastructure and transit service and Transportation Demand Management (TDM) programs.
	HRM Centre Plan (In Progress)	YES	 Plan builds on several of the policies in the IMP and has a strong focus on integrated transportation and land use and creating healthy communities. Principles include Complete Communities and Pedestrian First.

CATEGORY	DOCUMENT	HEALTH	DESCRIPTION
Transportation	Making Connections: AT Priorities Strategic Plan 2014–2019 (2014)	YES	 Functional plan identifying AT priority initiatives to encourage walking and bicycling and create safe and comfortable connections to destinations and transit. The plan's time frame has been extended to 2023.
	<u>Moving Forward Together</u> <u>Plan (2016)</u>	NO	 Functional plan identifying priorities for transit service improvements. Includes 500-m walking distance as an important factor in route planning and identifies the need for integrated cycling infrastructure, e.g. bike racks at transit hubs and on buses.
	<u>Transportation Demand</u> <u>Management Functional</u> <u>Plan (2010)</u>	YES	• Functional plan outlining strategies, including AT, to increase the efficiency of the transportation network, decrease single occupant vehicle travel and encourage behavioural change.
	<u>Regional Parking Strategy</u> Functional Plan (2008)	NO	 Functional plan looking at parking demand. Includes strategies to decrease parking demand including improving transit and promoting AT
	Strategic Road Safety Plan (In Progress)	YES	 Will guide HRM and its road safety partners towards creating safer roads and reducing the number of collisions and thus, reducing injuries and fatalities (multi-modal approach). Recognizes Public Health as a key partner in the conversation.
Recreation and Open Space	Stepping Up: Physical Activity Strategy for the Halifax region (2009)	YES	 Comprehensive strategy developed in partnership by seven organizations, including HRM, to improve the physical activity levels of residents in the Halifax region. Recognizes role of built environments to support people walking and 'wheeling' as both a leisure activity and as a means of transportation.
	<u>Halifax Green Network Plan</u> <u>(In Progress)</u>	YES	 Will provide comprehensive direction for planning and managing open spaces to balance conservation, recreation, transportation, growth and development in the region. Primer document recognizes role of open spaces to improve the physical, psychological and social health of a community.

While a detailed review of existing operating procedures is outside the scope of this project, elements that came up during project research include:

- Regional Council has expanded its sidewalk snow clearing policy in recent years with a focus on areas of the municipality with the highest levels of pedestrian traffic;
- The Transportation Standing Committee has directed staff to make recommendations on changes to snow clearing standards and timelines for AT infrastructure (currently under review);¹³¹ and,
- Enhanced pedestrian safety and accessibility features are standard procedure for all new and upgraded intersections.¹³²

In addition, the HRM Citizen Survey, conducted every two years, provides direction to Council on resident priorities and changing perceptions and acts as an important input into strategic and operational decisions. Recent surveys have included questions on AT-infrastructure and programs, pedestrian safety, informal recreation activities (many of which support AT), and downtown accessibility (parking focus/link to AT).

3.1.2 PROVINCIAL GOVERNMENT

The Government of Nova Scotia also plays a role in framing and supporting the discussion on AT in Nova Scotia. This includes setting strategic direction, facilitating collaboration, updating applicable legislation, managing roads and trails under provincial jurisdiction (common in rural areas), and developing programs and funding opportunities. Much of the significant provincial work remains under development.

ADOPTED STRATEGIES

SHIFT: Nova Scotia's Action Plan for an Aging Population (2017)

defines the vision, goals and commitments for multiple provincial government departments to lead in developing Nova Scotia as a province that values, promotes and supports older adults. One commitment is to support community transportation.

Nova Scotia's Action Plan for Education (2015) states a need for a framework for physical activity including safe active transport to and from school. Raise the Bar: A Coherent and Responsive Education Administrative System for Nova Scotia (2018) recommends having one provincial student transportation policy rather than multiple regional policies (note: report authored by Avis Glaze for the Province of NS).

Shared Strategy for Advancing Recreation in Nova Scotia (2015)

clarifies a shared vision and set of priorities that reflects the aspirations and the broader potential of the recreation sector in the province. An area of focus is supporting communities to develop and maintain active transportation routes that safely and easily connect people to places.

Nova Scotia Choose How you Move: Sustainable Transportation

Strategy (2013) seeks to enable sustainable mobility choices for residents in both rural and urban communities in Nova Scotia. This strategy outlines a process for progress which includes high-level direction for guiding principles, leadership, engagement, developing sustainable networks and tracking progress.

UNDER DEVELOPMENT

Nova Scotia Active Transportation Policy Framework is an interdepartmental vision with policies and actions to advance active transportation in Nova Scotia, in collaboration with stakeholder organizations.

A Shared Strategy for Trails in Nova Scotia will define a shared vision and a set of strategic goals and actions to advance trails in the province (under development in partnership with the NS Trails Federation). The Board of Directors of the NS Trails Federation has endorsed the strategy in principle. The Province's Interdepartmental Committee on Trails is seeking government direction on the draft trail strategy.

OTHER SIGNIFICANT INITIATIVES IN PROGRESS

A Road Safety Advisory Committee comprised of government and non-government organizations is making recommendations about road safety to the Province for amending the Motor Vehicle Act (1996; 1989). An Active Transportation Subcommittee is making recommendations for improving safety for road users who are walking, cycling and rolling.

FOR DISCUSSION:

What operational policies and procedures are acting as barriers to AT?

What is the relationship between AT investment and targets for increasing AT mode-share?

HOW DO WE...

..ensure that departments and different levels of government work together to support AT in rural areas?

A Statement of Provincial Interest on Healthy Built Environments

(2016 draft, unknown status) was drafted for governments to adopt land-uses and create built environments that are supportive of healthy eating, physical activity and active transportation. Statements of Provincial Interest are policies adopted by the Province, under the powers of the Municipal Government Act (MGA), to identify the provincial interest in the use and development of land. The MGA requires that municipal planning documents must be "reasonably consistent" with these Statements.

3.1.3 FEDERAL GOVERNMENT

While the Federal Government has had a limited role in supporting AT to-date, the Federal Minister of Environment and Climate Change recently signaled an interest in developing a national AT strategy. This initiative is in the early stages of consideration and is not funded. The Minister has invited an alliance of walking, cycling, and active school travel organizations to submit a joint proposal to undertake strategy development (alliance includes Canada Bikes, Green Communities Canada (Canada Walks) and the National Active and Safe Routes to School Working Group).¹³³ The alliance has developed a backgrounder on why a national strategy is needed and is encouraging people to endorse the campaign and contact their elected officials.

3.2 FINANCIAL INVESTMENTS

Reviewing municipal operating and capital budgets shows if, and to what degree, a municipality supports AT infrastructure development. At HRM, the total approved operating budget for 2017/18 is \$742 million with \$92 million allocated to the Department of Transportation and Public Works. Specific to AT, the operating budget is approximately \$345,000, up 25% from \$275,000 in 2016/17. The operating budget remains the same in 2018/19.¹³⁴ The 'AT' operating budget highlights only part of the operational resources for AT as it only includes dedicated AT project planning staff (5 FTE) and some limited funds for Bike Week. Components such as ongoing maintenance, snow removal, sweeping, and line painting are not included as these costs are covered within other program areas and not pulled out explicitly through the budget process. Further to this, HRM utilizes capital funding to support long-term contract positions for specific AT-related projects (2 FTE).

Figure 19 shows the HRM Approved Capital Budget for 2017/18.^T Of this, 51% is allocated to transportation related projects such as AT, roads, infrastructure, transit, and traffic improvements. An additional 9% is allocated towards parks and playgrounds which are included here due to their role as an AT destination and in supporting healthy lifestyles. AT-related projects, which include AT strategic projects, sidewalk renewals, and the Macdonald Bridge Bikeway Connectors Project, represent about 4% of total capital funding. This is consistent with the previous budget year. While this value will increase to 5% in 2018/19 this is due to an overall decline in capital funding and not an increase in AT investment.

FIGURE 19: HRM Approved Capital Budget



HRM APPROVED CAPITAL BUDGET, 2017/18

HRM has projected \$54.7 million in new funding for AT-related projects over the next 5 years. This includes \$30.2 million for strategic AT projects, \$7 million for the Macdonald Bridge Bikeway Connectors project, and \$17.5 million for sidewalk renewal. Figure 20 shows the trend in AT related spending over a ten year budget cycle from 2012/13 to 2021/22.^U

[†]Other capital costs include buildings, business tools, district activity funds, equipment and fleet, Halifax Water (CWWF), and solid waste. Budget numbers are based on gross new spending.

^U For year-over-year comparison purposes, AT Strategic Projects includes (where applicable) budget lines AT Strategic Projects, AT Plan Implementation, New Sidewalks, and Regional Trails/AT.

FIGURE 20: AT Related Projects – Capital Spending



AT RELATED PROJECTS – CAPITAL SPENDING, 2017/18

Source: HRM Archived Budget Books

AT spending is projected to more than double from 2012/13 levels through to 2021/22.¹³⁵ A significant jump is noticed in 2019/20 which is attributed to the Macdonald Bridge Bikeway Connectors project, the implementation of the Integrated Mobility Plan, and an anticipated increase to internal capacity to manage projects. The 10-year budget projections in the 2017/18 approved capital budget maintain similar AT funding levels through to 2026/27. New AT related funding for 2017/18 is \$7.5 million.¹³⁶ A review of key indicators against other municipalities was not completed due to the challenge of maintaining consistency across municipal budget categories. Future reports should explore this question in more detail and also review the literature for recommended AT spending targets. The Municipal Benchmarking Network of Canada releases cross-municipality indicators for Transit and Roads and may provide insight on how to develop a similar analysis for AT.¹³⁷

FURTHER WORK

Compare AT budget/investment across other municipalities

Further review of on-the-ground operational policies and procedures, including an analysis of how these compare with high-level strategic plans

Gain a better understanding of the role of the Province in promoting AT and funding/constructing AT infrastructure

RECOMMENDED INDICATORS FOR ONGOING MONITORING (INVESTMENT)

Number of adopted strategies/plans with AT content (HRM/Province of NS)

Number of adopted strategies/plans that link AT content directly to positive health outcomes (HRM/Province of NS)

% of HRM Capital Budget allocated for AT-Related Projects

Number of full-time staff dedicated to AT project planning

4.0 INFRASTRUCTURE KEY TRENDS AND BASELINE DATA





1271 km of ATinfrastructure exists in the Halifax region

Local online crowd sourcing tools, such as Cycle snAPP and the Bicycle Nova Scotia Incident Reporting System, help planners and AT users better understand the local bike network



Significant additions

to the biking and

2006

Multi-use pathway

(MUP) infrastructure

were completed since



Greater consideration for accessibility in recent years but gaps still exist



Annual transit service hours increased by 44% per capita since 2006/07

FOR DISCUSSION:

What is the relationship between infrastructure and people choosing to walk and bike as their primary form of transportation?

What role should crowdsourcing AT data play in infrastructure improvements and planning?

4.1 ABOUT AT INFRASTRUCTURE

AT infrastructure refers to a range of infrastructure components that support people using AT modes to move around the community from point A to point B. Table 5 lists existing and planned AT infrastructure in the Halifax region.

TABLE 5: Existing and Planned AT Infrastructure in the Halifax Region

STREET NETWORK	INTERSECTIONS	OTHER ELEMENTS
Painted bike lanes	Marked crosswalks	Multi-use Pathways
Protected bike lanes	Signalized intersections	(MUPs) in parks or
Local street bikeways	RA-5 Signals (i.e.	
The Macdonald Bridge Bikeway Connectors	lighted pedestrian crossings)	Bike racks at
Sidewalks	Bicycle sensors	destinations/housing
Paved shoulders	Bicycle signage/signals	Bike racks on ferries/buses
Multi-use Pathways	Accessibility features	Bike lockers
(MUP3)		Bike repair stands
		Signage/wayfinding



59% of transit stops meet Halifax Transit's Accessibility Standards

Over 1400 people are members of a local car sharing service





People's use of AT-infrastructure is supported by transit service as well as through programs/services such as car and bike sharing. Related to this, recreation infrastructure such as trails and parks, support active living and encourage a culture of walking and cycling.

4.2 BICYCLE AND PEDESTRIAN NETWORK

4.2.1 NETWORK COMPONENTS

Core AT infrastructure (Table 6), forms the backbone of the AT network and includes bike lanes, MUPs, paved shoulders, and sidewalks. Where available, historic information is included.^{138 - 140}

HOW DO WE...

- ...make our communities more accessible for people of all ages and abilities?
- ...ensure that new AT infrastructure maximizes connectivity?

HOW CAN WE...

- ...ensure equity plays a role in planning AT infrastructure?
- ...use redevelopment to leverage
- AT network improvements?

TABLE 6: Core AT Network Infrastructure

DESCRIPTION	2017 DATA	OTHER INFORMATION	
MULTI-USE PATHWAYS (Formerly greenways)			
Paved or crushed dust trails that form part of a network intended for walking, cycling and other active modes	158.2 km	• 68 km in 2006 • 146 km in 2013	
PAINTED BIKE LANES			
On street bike lane marked by a bike symbol and a solid white line separating bikes from traffic	112.5 km (15km – Regional Centre, 86 km – Suburban, 9 km – rural)	• 15 km in 2006 • 108 km in 2013	
PROTECTED BIKE LANES			
Bike lanes physically separate from motor traffic and distinct from sidewalks	1.4 km	• 2-year University Avenue pilot project underway until August 2018	
PAVED SHOULDERS			
Paved shoulders on roads without curbs	32.2 km	• Historic data not found	
SIDEWALKS			
A concrete pedestrian path beside road	967 km	• 850 km in 2015 • 760 km in 2006	

Targets play an important role in evaluating and monitoring progress. Examples of significant infrastructure targets identified in the recently adopted IMP include:

- Develop the Regional Centre All Ages and Abilities Bicycle Network by 2022; and,
- Build the Priority Connections for Multi-use Pathways by 2020 (working towards a long-term vision of a network over 300-km in size).

RECENTLY COMPLETED AT INFRASTRUCTURE PROJECTS (2013–2017)

\checkmark	Devonshire Avenue Bicycle Lane
\checkmark	Cole Harbour Road Paved Shoulders
~	Hammonds Plains Road Paved Shoulders
\checkmark	Rainnie Drive Two-Way Parking-Protected Bicycle Lane
 Image: A start of the start of	Highfield AT Greenway
~	St. Pat's Greenway (stage 2 of Windsor-Vernon- Seymour Bikeway)
√	Bissett AT Greenway
~	Windsor Street Bicycle Lane (stage 1 of Windsor-Vernon-Seymour Bikeway) ¹⁴¹

OTHER BICYCLE SUPPORTIVE INFRASTRUCTURE¹⁴²

421 bike racks in HRM street right-of-ways (private rack data not available)

9 publicly accessible bicycle repair stands in the Regional Centre

100% of transit buses and ferries have bike racks

4 transit facilities have bike lockers (38 lockers total)^v

All urban and suburban Land Use Bylaws include dedicated bicycle parking standards

PEDESTRIAN CROSSWALKS AND ACCESSIBILITY FEATURES (2017)^{143, 144}

2480

total crosswalks

320

uncontrolled basic, marked crosswalks

181

pedestrian controlled illuminated crossings

268

signalized intersections

 $^{\rm v}{\rm These}$ lockers are underutilized (less than 5% occupancy).

4

locations with Rectangular Rapid Flashing Beacons

83

Accessible Pedestrian Signals providing audible cues

7

intersections with tactile warning strips (2017) – Pilot Projects

PROFILE – HFX BIKE MAP AND CYCLE SNAPP

The Halifax Cycling Coalition has created two different interactive online resources designed to raise awareness about biking infrastructure in the Halifax region. The first, the <u>HFX Bike Map</u>, uses a google map based interface to showcase local bike infrastructure. This includes bike lanes, repair stations, bike shops, and bike counters.¹⁴⁵

HFX BIKE MAP



The second, developed in partnership with Dalhousie University, is <u>Cycle snApp</u> a crowdsourcing App which allows users to upload pictures and notes to capture real time data about cycling concerns in the Halifax region. Examples include parking or construction in bike lanes, broken repair stands, and faded bike lane markings.¹⁴⁶

CYCLE snAPP



4.2.2 ACCESSIBILITY CONSIDERATIONS

An important element of supporting equitable communities and healthy lifestyles is to design and maintain AT networks so they can be used by people of all ages and abilities. While significant barriers to universal mobility still remain in the Halifax region, recent years have seen an increased recognition and commitment to addressing these barriers through improved community design, updated standards/policies, and targeted infrastructure retrofits. The Municipal Accessibility Framework, started in 2018, will provide further guidance in this area. Future work on AT indicators and health outcomes should look to this framework to identify meaningful indicators in collaboration with the HRM Accessibility Advisory Committee.

4.3 TRANSIT

4.3.1 OVERVIEW

Transit is closely integrated with AT modes of travel as the majority of transit trips involve either walking or cycling to a transit stop. Transit infrastructure in HRM includes:^{147, 148}

- 63 fixed transit routes
 - 11 bus terminals
- 2 transit centre 3 ferry terminals
- 16 park and ride lots
- 361 buses and 5 ferries

Halifax Transit has significantly expanded its overall annual service hours,^w reporting an increase of 47% between 2006 and 2016.¹⁴⁹ Total service hours in 2016/17 were 964,000 hours (Figure 21).^{X, 150}

FIGURE 21: Transit Annual Service Hours



TRANSIT ANNUAL SERVICE HOURS, 2016/17

FIGURE 22: Amount of Transit Service per Capita

SERVICE HOURS/CAPITA (CONVENTIONAL AND FERRY)



Total service hours per capita are up 44% since 2006/07. Further to this, the Moving Forward Together Plan noted Halifax (at the time of plan adoption) had the highest level of service hours per capita compared with other transit systems serving similar populations.¹⁵¹

^w This increase is based on the total service hours for conventional bus and ferry service as reported to the Canadian Urban Transit Association (CUTA).

^x Service hours per capita are based on the total population within 1-km of a transit stop. This data does not include Access-A-Bus data.

Due to the challenges associated with providing transit service to rural areas, Halifax Transit adopted a formal Urban Transit Service Boundary in 2014; approximately three-quarters of HRM residents fall within this service area with over 90% of these residents living within 500m of a bus route.^{152,153} The Moving Forward Together Plan outlines significant route changes and service improvements. Halifax Transit collects extensive data and information on key performance indicators; several of these factors are benchmarked nationally through the Canadian Urban Transit Association.^Y



4.3.2 SERVICE ACCESSIBILITY

Halifax Transit, along with transit systems nationwide, has been taking steps in recent years to increase the accessibility of its fixed bus transit routes.

Accessibility facts:

- 100% of the fixed route bus fleet became low floor accessible in 2017 (ferries are already accessible).
- 59% of bus stops meet Halifax's Transit accessibility standards while an additional 30% can accommodate a wheelchair. Work to bring all bus stops up to Halifax Transit's accessibility standards is ongoing (Figure 23).¹⁵⁴

FIGURE 23: Transit Stop Accessibility

TRANSIT STOP ACCESSIBILITY



Complementing the fixed-route transit service, Halifax Transit also offers Access-A-Bus which is a "shared ride, door-to-door transit service for persons unable to use the conventional transit system due to physical and cognitive disabilities".¹⁵⁵ In 2016/17, the Access-A-Bus service delivered 75,000 serviced hours and carried over 150,000 passengers.¹⁵⁶

^Y While CUTA produces an annual fact book for both conventional and para-transit service (i.e. doorto-door accessible service) this information is only available to CUTA members. It is used primarily by transit systems to monitor system performance against other transit systems of a comparable size.

4.4 RELATED INFRASTRUCTURE

4.4.1 CAR AND BIKE SHARING SERVICES

Car sharing and bike sharing services complement traditional AT infrastructure by providing additional mobility options and increased flexibility for people choosing to either not own a vehicle or leave it home.¹⁵⁷ The Halifax region does not yet have a bike sharing service; factors associated with this include topography, low population density, and financial feasibility.¹⁵⁸ CarShare Atlantic has been operating a car sharing service in the Halifax region since 2008.

CarShare Atlantic Facts:

- Over 1400 members (up from 1200 members in November 2016)
- 37 'return-trip' station-based cars located in Halifax and Dartmouth, including five vehicles serving three university campuses
- Introduced a 'one way' (FLEX) car program with 18-cars in June 2017 (serves downtown Halifax)
- Plans to expand its fleet size to around 60 cars in spring 2018

4.4.2 RECREATIONAL TRAILS

Given its large size, the Halifax region has an extensive recreational trail system made up of formal and informal trails. The HRM website identifies 25 formal 'walking, biking, and hiking trails' in the city with a total of 235km (overlap exists between recreation trails and AT MUPs). Almost half of the trails have at least a portion of the trail classified as wheelchair accessible. HRM adopted a community development model for trail building in 2000 which has led to several volunteer groups being engaged in developing, building and maintaining trail infrastructure.¹⁵⁹

4.5 EQUITY ANALYSIS

Health equity is an important consideration when talking about AT and health outcomes. Health equity "occurs when everyone in a population has the resources and opportunities they need to achieve their full potential.¹⁶⁰ It includes the fair distribution of and access to resources and support/services to be healthy.

One example illustrating how equity is linked with AT comes from the study Obesity in Canada. For the Halifax region, researchers found that the prevalence of people with obesity is higher in areas with a lower socio-economic status.¹⁶¹ As AT supports physical activity and positive health outcomes (discussed in section 1.1), taking steps to target AT-supportive initiatives/infrastructure to these areas could have substantial benefits to overall population health. This example highlights the importance of applying an equity lens to AT planning and investment decisions to achieve equitable health benefits.

To achieve equitable AT-related health benefits, planning and investment decisions should consider the unique needs of subpopulations and neighbourhoods.



While outside the scope of this project, a useful process to assess potential impacts of decisions is a demographic and spatial-based equity analysis. In this type of analysis, socio-economic and other demographic factors are used to identify vulnerable neighbourhoods. This information is then combined with proposed AT networks and infrastructure upgrades to assess whether these neighbourhoods are receiving the full benefit of planned network improvements. This type of analysis is particularly helpful when exploring the different network location options and/or making decisions about the timing and priority of network upgrades. Both Saskatoon and Winnipeg have incorporated this work into their AT infrastructure planning and prioritization process.^{162, 163}

FURTHER WORK

Consistent mechanism, linked to a GIS, to track core AT infrastructure by type and monitor the condition of this infrastructure.

Spatial analysis to identify network gaps and priority connections based on the location of community amenities/ services and anticipated demand.

Connectivity analysis assessing quality of the street and cycling network to identify gaps and potential opportunities.

Identify meaningful accessibility indicators.

Complete an equity analysis of existing and proposed AT infrastructure networks.

Explore the effectiveness of online crowdsourcing tools for municipal services in general and specific to AT

RECOMMENDED INDICATORS FOR ONGOING MONITORING (INFRASTRUCTURE)

% of residents within 500m of a transit stop within the Urban Transit Service boundary

% of residents within 500m of a bicycle route by sub-region

% of all ages and abilities bicycle network completed in the Regional Centre

Length and connectivity of bicycle routes, sidewalks, and multi-use pathways (MUPs)

Percent of streets with sidewalks on both sides of the street

Metres of new sidewalks added and repaired sidewalks

% of bus stops that meet Halifax Transit's accessibility standards

Total members of local car-sharing services

Number of walkability enhancements added per year

5.0 INFORMATION KEY TRENDS AND BASELINE DATA



The Halifax region has a very active civil society playing the role of educators and advocates



9 Sustainable Transportation Champions, 2 with links to health







Between 2015 and 2017 the Making Tracks/Try a Ride and Welcoming Wheels cycling programs reached over 5000 people, including 160 new Canadians. 5600 participants for Winter Walk Day and International Walk to School Day in 2017



HOW DO WE...

..effectively monitor the stability of Sustainable Transportation community groups as an indicator of the momentum around AT in NS?

FOR DISCUSSION...

What role can both community and municipal champions play in promoting AT and framing the discussion?

5.1 SUSTAINABLE TRANSPORTATION CHAMPIONS

The Halifax region has a strong civil society engaging with issues around active transportation on an ongoing basis. Fulfilling the vital role of 'champions', these groups help frame the discussion around AT in the Halifax region, provide education and training programs, and promote healthy lifestyles. Tables 7 and 8 highlight community and institutional sustainable transportation champions working in the Halifax region.

7 community and 2 institutional sustainable transportation champions exist in the Halifax region, 2 with direct links to the health sector.

All of these groups have paid staff or are supported by paid staff (with one exception), and for the non-profit organizations, are registered as an active society in NS.¹⁶⁴ Of note, the stability and effectiveness of community groups in particular tends to be fluid over time with certain groups having more capacity at different stages. The groups identified as champions were included based on their current visibility in the local AT discussion and high activity levels. We recognize that there are numerous other community groups, small businesses, elected officials, and people within different levels of government who are working to advance active transportation in the Halifax region.

TABLE 7: Sustainable Transportation Champions, Non-Profit Sector

BICYCLE NOVA SCOTIA Paid staff, Provincial http://bicycle.ns.ca/	 Invests in promoting cycling culture, improving infrastructure, and strengthening the cycling community. Engages in advocacy, community education and event promotion. Works in partnership to develop the Blue Route, a proposed ~3000km provincial cycling network connecting NS communities using roads, streets, trails, and signage.
ECOLOGY ACTION CENTRE Paid staff, Provincial https://ecologyaction.ca/	 A broad-based environmental organization looking to create a healthier and sustainable world. The Transportation group engages in advocacy and education programs to increase the percentage of people/goods using sustainable transportation, encourage supportive community design, and increase safety.
HALIFAX CYCLING COALITION Paid staff, Local https://cyclehalifax.ca/	 Coalition of concerned citizens dedicated to improving cycling conditions and raising awareness of cycling issues in the HRM. Operates a number of campaigns to promote cycling in the Halifax region and has partnered with DalTRAC on bicycle counts as part of the Street Sense Network.
HEART & STROKE FOUNDATION Paid staff, National/provincial with Halifax region office – Health Sector http://walkaboutns.ca/	 National organization committed to reducing risk factors for and death from heart disease and stroke. A major component of this work focuses on promoting healthy lifestyles. The Heart & Stroke Walkabout[™] (partnership with the EAC and Province) is a strong supporter of AT and helps to implement common sense strategies into communities all over the province. Walkabout encourages communities, workplaces and schools to be more active through walking, including by providing grants to communities to support walking efforts.
HALIFAX REGIONAL TRAILS ASSOCIATION Volunteer with HRM support, Local https://hrta.ca/wp/	 Assists and supports community trail groups to develop, build, maintain and promote a system of interconnecting AT and other trails in HRM. Made up of 23 member trail groups, all registered societies and engaged in trail work in HRM.
IT'S MORE THAN BUSES Volunteer driven, Local <u>https://morethanbuses.ca</u>	 A public transit research, education and outreach organization in the HRM. Strategic goals include: advocating for fast, frequent, reliable, accessible and user friendly transit and land-use planning; communicating the value and importance of transit; and, engaging in broader planning initiatives.
NOVA SCOTIA FEDERATION OF MUNICIPALITIES Paid staff, Provincial www.nsfm.ca	 Since 2008 the Active Transportation Committee, made up of members from municipalities across the province, has been promoting strategies to support active transportation among its membership and the provincial government. It advocates for improved roads and other infrastructure to develop and encourage safe walking, cycling and other active modes for both residents and visitors.

TABLE 8: Sustainable Transportation Champions, Institutional Sector

DALHOUSIE TRANSPORTATION Collaboratory (DalTRAC), Paid staff, Provincial https://www.dal.ca/sites/daltrac.html	 A multi-disciplinary research facility dedicated to the advancement of transportation engineering/planning research and practice at Dalhousie University. Work includes significant NS/HRM specific data collection and research focused on AT. Organizes community events and AT-related education opportunities.
IWK CHILD SAFETY LINK Paid staff, Maritimes – Health Sector <u>http://childsafetylink.ca/</u>	 An injury prevention program at the IWK Health Centre focused on reducing the number and severity of unintentional injuries and deaths among children and youth 0–14 years of age. Priority areas include: Safety at Home, Safety on the Road, and Safety at Play. Uses the following approaches: Partnership & Capacity Building, Communications & Public Relations, Advocacy & Healthy Public Policy, and Research & Evaluation. AT work includes advocating for an all ages and abilities approach in urban and rural planning and encouraging child and youth safety in decisions when siting schools and other amenities concerned with developing AT infrastructure.

In addition to the 9 sustainable transportation champions identified, a number of other community groups and organizations are involved in supporting AT in the Halifax region. This includes providing AT-focused services, creating a supportive culture that encourages AT and the development of complete communities, and facilitating recreational opportunities. In addition to the groups identified below, a number of local/national businesses provide services and sell products to support AT activities such as walking and biking. In some cases, businesses also organize events and engage in community partnerships to implement AT-related projects/initiatives. TABLE 9: Other Local Organizations/Clubs Supporting AT

AT FOCUSED	CREATING SUPPORTIVE CULTURE	RECREATION-ORIENTED
Bike Again	Planning & Design Centre	NS Ramblers Bicycle Club
Dalhousie Bike	Trips by Transit	Dartmouth Volksmarch Club
Centre	Our HRM Alliance	Local trail groups*
	Walk'n Roll Halifax	Woman on Wheels
	Halifax Active Living Alliance	Meet-up! (4 local groups)**
	The Deanery Project	

*Several community-based trail groups exist in the region. A list of many of these is found on the Halifax Regional Trail Association webpage: <u>https://hrta.ca/wp/members/</u>.

**Four biking/walking/hiking specific groups were found on a search up of Meet-up! Additional groups focused on outdoor adventures also include AT supportive activities.

5.2 EDUCATION PROGRAMS AND EVENTS

Education programs and events are an important part of creating an AT supportive culture and giving people the skills they need to feel comfortable biking and walking. There is a diverse mix of programs and events occurring in the Halifax region targeted at different age groups and populations. Many of these are using strategic partnerships to fund and implement activities.

While not possible to capture the full range of related events and education programs, or their respective participant numbers, select programs and events are included where data is available with a focus of profiling programs of sustainable transportation champions, the HRM, and local school boards. Complementing this information, the HRM AT Priorities Plan 2014–2019 also includes information on different programs and events in the Halifax region.

HRM Bike Week is an annual 10-day celebration of cycling held each June involving several different community groups, the HRSB, and local businesses. The celebration has grown from 18 events with just over 800 participants in 2006 to 34 events reaching over 7000 participants in 2017.¹⁶⁵ Examples of events include group rides, including one with the Mayor, skills training and cycling lessons, repair/maintenance sessions, and a presentation from the City on cycling network plans and priorities. Since starting in 2006 the total number of Bike Week events has ranged from 20 to 60. The 2017 Bike Week Recap Report observed that more events is not necessarily better as it becomes challenging to coordinate events and participants can become overwhelmed.¹⁶⁶

FOR DISCUSSION...

What supports and resources do community groups need to be an effective voice for AT?

What is the best method to track community events and participation rates in AT training and measure their effectiveness?

Making Tracks Program/Welcoming Wheels, organized by the EAC, helps children and youth develop AT skills and confidence to allow them to safely choose AT as a means of travel within their communities.¹⁶⁷ Programs are based around training adult/older youth leaders who then run sessions with children and youth. There are several different program streams. Since the program started in 2008 over 13,000 children/youth have participated with over 800 adults/older youth having become program leaders (all streams). Included with these numbers is the HRM Try a Ride program which uses HRM staff trained through the EAC Making Tracks Program to run additional programs in the community. Between 2015 and 2017 the Making Tracks/Try a Ride cycling programs reached over 5000 people:

- 10 leader training sessions 71 adults/older youth
- 40 skills sessions 4931 children/youth
- Almost 4000 people reached through Try A Ride, or 80% of total participants.

The Welcoming Wheels program, introduced in 2016, follows a similar approach as Making Tracks but is targeted at new Canadians. Since its inception 11 programs were held with 158 participants. Walk to School programs include International Walk to School Day (October) and Winter Walk Day – Take the Roof Off Winter (February). These programs are organized by the EAC in partnership with the HRM and the local school boards. Approximately 5600 total participants at 23 schools were recorded in 2017.^{Z, 168}

2015 **Pedestrian Safety Symposium,** hosted by Child Safety Link in collaboration with several other partners, brought together over 60 stakeholders from across the province to create connections and spark discussion on a unified vision for pedestrian safety in Nova Scotia.¹⁶⁹

DalTRAC runs several programs and events including its **Thumbs Up! Share the Road** Nova Scotia campaign. This campaign is designed to promote positive behavioural change and safer sharing of all roads by users in Nova Scotia. In addition to the people reached through social media and other promotional activities, 120 people were engaged through open houses/ community sessions around the province. DalTRAC also organized the **Crosswalk Safety Information Café** in 2015 attended by 40 people.¹⁷⁰

The Heart and Stroke Foundation has hosted in partnership 7 Walkable Communities workshops since 2017 with over 100 attendees. The Heart&Stroke Walkabout[™] program has over 9,000 participants from all over the province with 3.3 billion steps walked since it began in 2007. The program offers resources and support to anyone looking to create or continue walking groups in Nova Scotia. Through its Walkability Grants program, the organization has given out over \$100,000 over the past 2 years, much of which has been focused on AT in both the Halifax region and the rest of the province.¹⁷¹ Bicycle Nova Scotia organized 29 cycling events around Nova Scotia in 2016. It is also runs the **Woman on Wheels** program which now holds group rides in six HRM locations with a weekly drop-in format. The organization also hosts significant information on its website including information on events, resources for people who cycle, and current advocacy campaigns (e.g. The Blue Route, One Metre Rule).¹⁷²

Switch: Open Street Sundays, organized in partnership by the Planning and Design Centre is a festival held annually in the downtowns of Halifax and Dartmouth. The festival encourages people to enjoy the Halifax region in a new way by walking, biking, and moving around safely and comfortably in the festival area.

Other programs and community events include:

- HRM Bike Camps 4 camps with 50 children/youth participants (2016);
- 16 community grants provided through the HRM;
- The Halifax October Trail challenge (45 events in 2017);
- HRM Bike Friendly Certification Program; and,
- Can-Bike courses (several different options offered in the Halifax region).¹⁷³

² Participant numbers do not reflect unique people as many schools participate in both events. The 2017 numbers are down significantly from previous years due to lower levels of teacher and principal involvement as a result of concerns about their contract and its scope.



FURTHER WORK

Explore the relationship between recreation groups and AT

Develop a tracking system to better monitor community events/ programs and participation

RECOMMENDED INDICATORS FOR ONGOING MONITORING (INFORMATION)

Number of community and institutional Sustainable Transportation Champions (total/health sector)

Citizen participation in and exposure to education and promotion activities

Number of events and participants for Bike Week

Number of schools and participants in Winter Walk Day and International Walk to School Day



6.0 DISCUSSION AND KNOWLEDGE TRANSFER

6.1 SUMMARY OF KEY INDICATORS

The volume of information in this report highlights the growing role of active transportation in how people move around the Halifax region. It also demonstrates that the health benefits of AT, at both the individual and population level, are increasingly being recognized and factored into people's choices and government policy and budgetary decisions. This is a good news story that should be celebrated in the Halifax region.

At the same time, it is important to establish indicators to track and monitor progress and maintain the momentum that the adoption of the Integrated Mobility Plan has helped create. While a large amount of local data was collected through this project, 40 key indicators were identified to support this ongoing monitoring. The indicators fall into five categories:



Of the 40 key indicators identified, baseline data was established for 28 of these indicators, including 12 which allowed for comparison with other municipalities. The decision to still identify a specific indicator for future monitoring even though baseline data was not available recognizes that this project was viewed by the project team as a starting point for future work and collaboration moving forward. A summary table of the key indicators and baseline data is included as Appendix C.

HEALTH/PHYSICAL ACTIVITY

Perceived overall health as "very good" or "excellent"

Perceived sense of belonging to their community as "somewhat strong" or "very strong"

Perceived mental health as "very good" or "excellent"

Perceive rating of life satisfaction as "satisfied" or "very satisfied"

Rates of people who have overweight or obesity (18+years/12–17 years)

Rates of asthma

Rates of high blood pressure

Rates of diabetes

Self-reported physical activity: adults 18 years+ (150 minutes/week) and youth 12–17 years (60 minutes/day)

Older adults (65+) who were classified as "inactive" in leisure time

Percent of population living within 400m of a public park that allows passive or active use in a natural, green space

TRANSPORTATION

User perception of walking, bicycling, and taking transit as a transportation option

Daily average vehicle-km travelled (VKT, by mode)

Average commute times by mode (minutes)

Vehicle ownership per capita

Number of vehicles per household

Overall mode share of transportation to work

Mode share of transportation to work by sub-region, age and gender: drive alone, passenger in vehicle, walking, bicycling, transit

Percent of households living within 1-km or 5-km of these services: Education, Health, Food, Public Administration

Transit revenue ridership (annual transit riders per capita)

Collision – related serious injury and fatality rates by mode

Percent of all 5 to 18 year old students (grades K–12) walking or cycling to school

Percent of 5-18 year old students (grades K–12) living within a certain distance of a school (400m, 1km, 2km, 3km)

INVESTMENT

Number of adopted strategies/plans with AT content (HRM/Province of NS)

Number of adopted strategies/plans that link AT content directly to positive health outcomes (HRM/Province of NS)

Percent of HRM Capital Budget allocated explicitely for AT-Related Projects

Number of full-time staff dedicated to AT project planning (HRM/ Province of NS)

INFRASTRUCTURE

Percent of residents within 500m of a transit stop within the Urban Transit Service boundary

Percent of residents within 500m of a bicycle route by sub-region

Percent of all ages and abilities bicycle network completed in the Regional Centre

Length and connectivity of bicycle routes, sidewalks, and multi-use pathways

Percent of streets with sidewalks on both sides of the street

Metres of new sidewalks added and repaired sidewalks

Percent of bus stops that meet Halifax Transit's accessibility standards

Total members of local car-sharing services

Number of walkability enhancements added per year

INFORMATION

Number of community and institutional Sustainable Transportation champions (total/health sector)

Citizen participation in and exposure to education and promotion activities.

Number of events and participants for Bike Week

Number of schools and participants in Winter Walk Day and International Walk to School Day

6.2 DATA GAPS AND FUTURE WORK

While this project demonstrates that a lot of information is available about active transportation and health for the Halifax region, it also highlights that data gaps exist. Areas for future work identified through this project are summarized below.

COMMUNITY HEALTH AND TRANSPORTATION PROFILE

Collect more local information on trips for purposes other than travel to/from work and the relationship between travel modes and distance.

Assess local air quality trends and their impact on population health.

Use spatial analysis to explore the relationship between AT, health, and the proximity of community amenities such as schools, parks, health centres, and groceries stores by sub-region.

Track information on the per cent of school aged children using active modes to get to school.

Complete local primary research on AT and health status to strengthen and better understand the link between these two factors in the Halifax region.

INVESTMENT

Compare AT budget/investment across other municipalities.

Review on-the-ground operational policies and procedures, including how these compare with high-level strategic plans.

Gain a better understanding of the role of the Province in promoting AT and funding and constructing AT infrastructure.

INFRASTRUCTURE

Develop a consistent mechanism, linked to a GIS, to track core AT infrastructure by type and monitor the condition of this infrastructure.

Identify the impact of AT infrastructure improvements on user data.

Use spatial analysis to identify network gaps and priority connections based on the location of community amenities/services and anticipated demand.

Assess the quality of the street and cycling network using a connectivity analysis to identify gaps and potential opportunities.

Identify meaningful accessibility indicators.

Complete an equity analysis of existing and proposed AT infrastructure networks.

Explore the effectiveness of online crowdsourcing tools for municipal services in general and specific to AT.

INFORMATION

Explore the relationship between recreation groups and AT.

Develop a tracking system to better monitor community events/ programs and participation.

6.3 LESSONS LEARNED

Over the course of the project, several lessons were learned about completing this type of project. Some of these are based on project successes while others were identified by reflecting on project challenges. These 'lessons learned' are included in this report to help stimulate conversations for others looking to undertake similar work.

A diverse mix of partners is essential to the project's success. Clearly identify the role, capacity, and expectations of each partner at the start of the project. A strong-commitment from appropriate municipal partners is important in particular as they are often holders of relevant local data and implementers of AT policy and infrastructure. Related to this, look beyond formal project partners for other synergies and collaboration opportunities to enhance the project and potentially discover new data sources and relevant evidence. Collaborative relationships will last beyond the project.

Plan for a **flexible timeline** and recognize that collecting data from different sources and project partners takes time and patience. In some cases, the type of data required to analyze AT trends is not typically tracked. While available within the database, it may require customized data reports and/or some time consuming manual manipulation. Build this into the schedule at the planning stages and allocate project staff accordingly. At the same time, ensure the project is on track to be completed before the collected data becomes outdated/irrelevant.

Make decisions about the **project scope** as a team to ensure everyone has the same understanding. Determine primary and secondary priorities for this project and revisit these at different stages to ensure they are still reasonable given potential constraints and opportunities as the project progresses. As part of the scoping exercise decide who the audience is for the project and identify a clear purpose statement and objectives.

Spatial analysis provides the opportunity to define priorities, identify network gaps, and create new local data and maps to communicate ideas. It requires additional time and resources however, including access to the appropriate software, quality data, and someone with the skills to complete the analysis and develop the maps.

Visual representation of key ideas and findings is an effective communication tool. Determine the level of graphic design and customization required for the project and plan accordingly. Assess whether the project team has these resources, including skills and software access, in house, or if this works needs be contracted out.

Primary data collection through methods such as interviews and surveys can help researchers understand the local context and provide the opportunity to make clear links to AT and perceived health. This requires a significant investment of time and should be pursued with caution. This project relied on consultation findings from other planning processes however relevant results may not be available in other communities.

Significant volumes of data are collected by Statistics Canada and independent researchers and organizations. While some of this data is available publicly for free, often more nuanced local data combining specific variables in non-standard ways is expensive. At the outset of the project, decide whether there is a **budget for data purchase**, and if so, what the priorities are.

6.4 KNOWLEDGE TRANSFER AND NEXT STEPS

An important component of this project is to undertake knowledge transfer with other communities and health zones interested in promoting active transportation and making the connection to individual and population health. With the completion of the project report, the project team will move into implementing the KT plan. While the KT plan will evolve as new opportunities present, four different components form the backbone of this plan.

Developing a series of 2-page information sheets such as:

- AT in the Halifax region Key Project Findings (baseline data, barriers, opportunities);
- Connecting AT and Health;
- How to Identify Indicators and Collect Data; and
- Opportunities to Incorporate Equity & GIS Analysis.

Completing formal and informal presentations on findings in a variety of settings (e.g. conferences, lunch and learns, meetings) to the project team's target audiences which include:

- Community organizations;
- Health, planning, and transportation engineering professionals;
- Decisions makers and advisory boards; and,
- Community Health Boards.

Creating a half-day 'AT and Health Indicators' workshop designed to be delivered to targeted audiences interested in completing a similar project.

Leveraging online opportunities to host project information and appropriate KT tools online and promote project findings through social media and webinars.

By identifying indicators for ongoing monitoring, many of which are linked with other local and national monitoring/data collection processes, identifying future areas of work, and implementing the KT plan, the project team is laying out a framework to continue this conversation. Evidence clearly shows active transportation and increased physical activity are closely linked to positive health outcomes; building on the existing momentum and support for AT in the Halifax region and helping expand this to other areas of Nova Scotia is essential to building healthy communities supportive of the well-being of residents.
APPENDIX A – LOGIC MODEL

DOMAIN	INPUT	ΑCTIVITY	OUTPUT	OUTCOMES
INVESTMENT	Funding Human resources Political leadership Municipal Plans Other AT plans and policies	Budget for infrastructure that supports AT (both municipal and provincial) Cross sectoral working groups Plans and policies that support AT Budget for maintenance of AT infrastructure	<pre>\$ invested in AT infra- structure and facilities # AT policies # funding policies endorsed Amount of funding leveraged for AT projects # cross-sectoral working groups/committees/ coalitions</pre>	 investment in AT Incorporation of AT into planning and transport engineering Improved culture around the built environment/ infrastructure for AT AT options for all users More equitable access to AT Quality AT policies understanding within the public, staff, Council about the importance of policies and budgets that support AT. commitment among Council to invest in and prioritize AT policies, budgets and infrastructure
INFRASTRUCTURE	Facilities for AT (e.g., bike racks, protected bike lanes, greenways etc.) Complete Streets upgrades Multimodal infrastructure (e.g., bike racks on buses, connected networks, bike storage facilities, etc.)	Connected trails and bike lanes, e.g., schools Street design and AT infrastructure that comfortable and connected network Road upgrades that incorporate AT	 # kms of roads that include new and well-maintained bicycle and pedestrian facilities Proportion of road network that has traffic calming measures # kms of pedestrian infrastructure kms (existing and new) 	 ↑ infrastructure for AT ↓ vehicle traffic ↓ emissions/pollution Higher walk/bike score in more neighbourhoods ↓ conflict between road users Safer routes No/fewer fatalities
INFORMATION	Special events In-school education programs and events School travel planning programs Wayfinding elements	Develop/disseminate promotional materials Positive newspaper articles	 # people using AT # commuter Challenge participants # in-school cycling education programs + events 	Commuter behaviour changes

APPENDIX B – ENVIRONMENT SCAN – ACTIVE TRANSPORTATION REPORTS/STRATEGIES

The 'active transportation discussion' has been gaining increasing momentum in recent years. Provincial departments, local governments, and non-profit organizations have completed and are developing policy and reports important for local consideration. Building on the local and provincial conversation, a number of national plans/projects also inspired Public Health – Central Zone's work exploring the link between AT indicators and positive health outcomes.

SIGNIFICANT HRM PLANS

While several HRM plans and reports touch on AT and its connection to health (Table 4, pg. 34), this section highlights the adopted HRM Plans that are most relevant to this project.

Regional Municipal Planning Strategy (2014) (Regional Plan +5) is the overarching statutory land use plan directing where, when and how growth and development should take place across the Halifax region through to 2031. The Regional Plan links land use and transportation and incorporates several policies around integrated multi-modal mobility and AT. The Integrated Mobility Plan and AT Priorities Plan take their direction from the Regional Plan+5 and support the implementation of its growth and mobility targets. The Regional Plan+5 also prioritizes creating healthy communities and makes the link between AT and positive health outcomes.

Integrated Mobility Plan (2017) (IMP) outlines a series of strategic mobility initiatives that are necessary to achieve the mobility targets in the Regional Plan by the year 2031. The plan has four pillars – connected, healthy, sustainable and affordable – selected to support the creation of vibrant complete communities with greater mobility choice. For AT, the IMP recommends that municipal design guidelines be changed to facilitate Complete Streets with increased priority for pedestrians, bicyclists, and public transit, and design features sensitive to the needs of All Ages and Abilities (AAA). The IMP also outlines major sidewalk connections and a Regional Centre AAA Bicycle Network to be completed by 2020 and 2022 respectively as well as identifies priority Active Transportation Greenway connections.

Making Connections: 2014–19 Halifax Active Transportation

Priorities Plan (2014) provides a review of the previous 2006 AT Functional Plan and summarizes public engagement outcomes and progress. The plan identifies priority initiatives for 2014–19 to connect and expand AT infrastructure, improve links to transit and other network components, and make AT accessible to more residents for work, shopping, and recreation. This plan suggests different approaches and priorities for various types of land-uses and communities. The plan's time frame has been extended to 2023.

<u>Centre Plan (Draft)</u> (2017) provides guidelines and growth strategies for the development, use, and form of the Regional Centre to meet the needs of a diverse population. The plan recommends various mobility and urban structure related AT policies (e.g. pedestrian network, AT network connectivity, street improvements, local bikeways, etc.) that will make people more likely to walk, cycle, and use public transit. The Centre Plan also refines the Regional Plan+5 growth targets to increase the proportion of people living in the Regional Centre which in turn will support the overall regional mobility targets. This plan is the first Secondary Municipal Planning Strategy (SMPS) update since the Regional Plan+5 was updated and will help set the direction for future SMPS updates.

PROVINCIAL SCOPE – ACADEMIC AND NON-PROFIT SECTOR PUBLICATIONS

This section focuses on academic and non-profit sector publications. An overview of applicable strategies and programs led by the Government of Nova Scotia is included as Section 3.1.2 (p. 36).

Transport Infrastructure Indicators in Nova Scotia (S. Jellicoe, 2015) compiles infrastructure indicators for both vehicular and active transport. Using primary and secondary data sources, the report provides per capita data for roads, trails, bicycle lanes, and sidewalks for ten municipalities in Nova Scotia.

The State of Active Transportation in Nova Scotia (Bicycle Nova Scotia, 2014) showcases key active transportation trends and patterns in Nova Scotia and highlights major data gaps and recommendations for future data collection. Data sources include General Social Surveys conducted by Statistics Canada between 1986 and 2010 and the Household Mobility and Travel Survey (2013) completed by DalTRAC. This work was completed by DalTRAC for Bicycle Nova Scotia.

<u>Pedestrian Safety in Nova Scotia</u> (IWK Child Safety Link, 2014) provides an environmental scan of pedestrian safety stakeholders and initiatives across Nova Scotia. While the focus of this work is on children and youth, many of the principals involved can be applied to the design of AT networks for people of all ages and abilities.

<u>Active Transportation 101</u> (Ecology Action Centre, 2014) is a guide to help support and mobilize communities to develop and implement an active transportation plan. It synthesizes active transportation information and experiences from planners, advocates and citizens to inspire new leaders.

LEADING NATIONAL PROJECTS/PLANS

While a significant volume of work exists on active transportation at the national level, this section focuses on the key reports and plans used to inform this project. It includes both documents specific to a jurisdiction and those with a national scope.

Pedestrian and Cycling Strategies and Annual Action Plans,

(City of Winnipeg, 2015–2018) outlines short, medium, and long-term actions for the next 20 years and beyond based on broad community engagement around accessibility, comfort, and safety of AT. The plan also considers several socio-economic equity factors to set priority actions. Core improvement concepts are connectivity, convenience, safety and accessibility, maintenance, vibrancy, and awareness.

<u>Designing Healthy Living</u> (Public Health Agency of Canada, 2017) is the Chief Public Health Officer's report on the state of public health in Canada in 2017. This report recognizes the impact of the built environment on health and articulates a number of strategies to build healthier communities. This includes opportunities for increasing physical activity and making AT the easy choice.

<u>Active Transportation Plan</u> (City of Saskatoon, 2016) provides a long-term vision for AT in Saskatoon. The plan identifies the priority areas through an equity analysis considering sociodemographic and existing AT facilities and explores possible actions to be taken to ensure connectivity, safety, convenience, accessibility, and awareness. Urban Transportation Indicators: Fifth Survey (Transportation Association of Canada, 2016) provides the results of its most recent survey on urban transportation indicators for all 33 Census Metropolitan Areas (CMAs) as defined by Statistics Canada. New to this survey was a section on 'Health Indicators' which puts more emphasis on AT as well as on air quality and other factors that influence human health. Eleven variables from the Canadian Community Health Survey (2011/12) and CMA reported measures on the built environment/AT trends were included.

2014 Peterborough City and County Active Transportation and

Health Indicators Report (Peterborough Count-City Health Unit, GreenUP, and the City of Peterborough, 2014) develops an extensive list of indicators and established baseline data for pedestrians, cyclists and transit users to support AT decision making in the City of Peterborough. Broader categories of indicators include travel behavior, built environment, programs and advocacy, and health and safety.

<u>Benchmarking Active Transportation in Canadian Cities</u> (Clean Air Partnership, 2012) identifies 39 AT indicators organized into 5 themes: Infrastructure, Safety, Travel Behaviour, Demography, and Geography. The report includes case studies and baseline data for Toronto, Montreal, Calgary, and Vancouver. <u>Greenest City 2020 Action Plan</u> (City of Vancouver, 2012) is a strategy with long and medium-term goals to continue Vancouver's leading position as a sustainable city. Along with other green policies, the plan includes several AT related strategies and targets. These include targets to increase the percent of trips taken by walking, cycling, and using public transit to 50%, and reduce the average driving distance per resident by 20%.

Road to Health: Improving Walking and Cycling in Toronto

(Toronto Public Health, 2012) addresses the health benefits of AT in the City of Toronto. The report describes the current status of AT in Toronto, compiles evidence and quantifies health benefits and risks (e.g. injury) of AT use and recommends strategies for AT improvements.

APPENDIX C – KEY INDICATORS AND BASELINE DATA

#	INDICATOR	BASELINE	YEAR	SOURCE	MONITORING			
HEALTH AND PHYSICAL ACTIVITY								
1	Perceived overall health as "very good" or "excellent"	63.0%	2015/2016	CCHS	TAC			
2	Perceived sense of belonging to their community as "somewhat strong" or "very strong"	73.2%	2015/2016	CCHS	TAC			
3	Perceived mental health as "very good" or "excellent"	68.6%	2015/2016	CCHS	TAC			
4	Perceive rating of life satisfaction as "satisfied" or "very satisfied"	91.9%	2015/2016	CCHS	TAC			
5	Rates of who have overweight or obesity (18+years/12–17 years)	58% (18 years+) 35.1% (12-17 years)	2013/14 2015/16	CCHS	TAC			
6	Rates of asthma	9.8%	2015/2016	CCHS	TAC			
7	Rates of high blood pressure	16.0%	2015/2016	CCHS	TAC			
8	Rates of diabetes	8.0%	2015/2016	CCHS	TAC			
9	Self-reported physical activity: adults 18 years+ (150 minutes/week) and youth 12–17 years (60 minutes/day)	Adults: 61.4% Youth: 70.3%	2015/2016	CCHS	TAC			
10	Older adults (65+) who were classified as "inactive" in leisure time	55%	2013/2014	CCHS/HRM	HRM Physical Activity Strategy			
11	Percent of population living within 400m of a public park that allows passive or active use in a natural, green space	Not established	N/A	HRM	TAC; Centre Plan			
TRANSPORTATION								
12	User perception of walking, bicycling, and taking transit as a transportation option	Not established	N/A	HRM	IMP			
13	Daily average vehicle-km travelled (VKT, by mode)	VKT per person per day for all activities = 21km. An average of 9km was by transit or AT modes.	2015	DalTRAC	IMP			
14	Average commute times by mode (minutes)	Personal vehicle: 22.5; Transit: 39; AT: 16.6	2016	Statistics Canada General Survey	TAC			
15	Vehicle ownership per capita	0.69	2016	Statistics Canada General Survey	IMP			
16	Number of vehicles per household	No vehicles – 20%; 1 vehicle – 42%; 2 vehicles – 28%; 3 vehicles – 8%; 4+ vehicles – 2%	2012/2013	DalTRAC	None			
17	Overall mode share of transportation to work	Driver – 70%; Passenger – 7%; Transit – 12%; Walking – 8%; Biking – 1%; Other – 1%	2016	Statistics Canada General Survey	IMP; TAC			
18	Mode share of transportation to work by sub-region, age and gender: drive alone, passenger in vehicle, walking, bicycling, transit	Not established	2016	Statistics Canada General Survey/HRM	IMP			
19	Percent of households living within 1-km or 5-km of these services: Education, Health, Food, Public Administration	Not established	2015	DalTRAC	None			

CCHS = Canadian Community Health Survey TAC = Transportation Association of Canada Urban Transportation Indicators Survey IMP = Integrated Mobility Plan HRM = Halifax Regional Municipality

APPENDIX C – KEY INDICATORS AND BASELINE DATA

#	INDICATOR	BASELINE	YEAR	SOURCE	MONITORING			
TRANSPORTATION								
20	Transit revenue ridership (annual transit riders per capita)	Total ridership = 18.9 million; per capita not established.	N/A	Halifax Transit	HRM			
21	Collision – related serious injury and fatality rates by mode	Fatalities rates (N=15): Motor Vehicle Occupants (47%); Pedestrians (33%); Motorcyclists (13%); Cyclists (7%).	2015	Halifax Regional Police	IMP; TAC			
22	Percent of all 5 to 18 year old students (grades K-12) walking or cycling to school	Not established	N/A	Not identified	TAC			
23	Percent of 5-18 year old students (grades K-12) living within a certain distance of a school (400m, 1km, 2km, 3km)	Not established	N/A	HRM, Statistics Canada	TAC			
INVE	STMENT							
24	Number of adopted strategies/plans with AT content (HRM/Province of NS)	HRM – 8; Provincial – not established	2017	NSHA Analysis	None			
25	Number of adopted strategies/plans that link AT content directly to positive health outcomes (HRM/Province of NS)	HRM – 6; Provincial – not established	2017	NSHA Analysis	None			
26	% of HRM Capital Budget allocated explicitely for AT-Related Projects	4.0%	2017	NSHA Analysis	None			
27	Number of full-time staff dedicated to AT project planning (HRM/Province of NS)	HRM – 7; Province – 0	2018	HRM	None			
INF	RASTRUCTURE							
28	Number of walkability enhancements added per year	Not established	N/A	HRM	AT Priorities Plan			
29	% of residents within 500m of a transit stop within the Urban Transit Service boundary	90%	2017	Nu	IMP			
30	% of residents within 500m of a bicycle route by sub-region	Not established	N/A	Nu	IMP			
31	% of all ages and abilities bicycle network completed in the Regional Centre	Not established	N/A	Nu	IMP			
32	Length and connectivity of bicycle routes, sidewalks, and multi-use pathways	Length: MUPS – 158.2km, Painted bike lanes – 112.5km, Protected bike lanes – 1.4km, Sidewalks – 967km.	2017	Nu	IMP			
33	Per cent of streets with sidewalks on both sides of the street	Not established	N/A	Nu	TAC			
34	Metres of new sidewalks added and repaired sidewalks	Not established	N/A	Nu	Centre Plan			
35	% of bus stops that meet Halifax Transit's accessibility standards	59%	N/A	Nu	None			
36	Total members of local car-sharing services	1400	2017	Nu	None			
INFORMATION								
37	Number of community and institutional Sustainable Transportation champions (total/health sector)	Community – 7/Institutional – 2; Health sector – 2.	N/A	NSHA Analysis	None			
38	Citizen participation in and exposure to education and promotion activities.	Not established	N/A	Not identified	IMP			
39	Number of events and participants for Bike Week	Events – 34; Participants – over 6000	2017	HRM	Bike week annual report			
40	Number of schools and participants in Winter Walk Day and International Walk to School Day	Schools – 23; Participants – approx. 5600	2017	Ecology Action Centre	None			

CCHS = Canadian Community Health Survey TAC = Transportation Association of Canada Urban Transportation Indicators Survey IMP = Integrated Mobility Plan HRM = Halifax Regional Municipality

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