A targeted review of issues related to advancing

ACTIVE TRANSPORTATION IN NOVA SCOTIA

September 25, 2013

Justin Forbes
Graduate Research Assistant, Dalhousie Transportation Collaboratory (DalTRAC)

Muhammad Ahsanul Habib, PhD
Assistant Professor, Dalhousie School of Planning and Department of Civil and Resource Engineering

Contents

1.0. Executive Summary

This report examines the issues affecting the advancement of active transportation (AT) in Nova Scotia. One of the unique features of the approach taken in this study is a targeted consultation with diverse professionals working on AT-related initiatives in Nova Scotia. These respondents identified the technical, policy, and program opportunities and challenges to AT advancement in Nova Scotia. Previous research on AT in Nova Scotia has focused primarily on providing an overview of opportunities and barriers to implementation of AT initiatives, rationale for future investment, and identifying initiatives and promotional/educational materials within municipalities; generally, less attention has been given on pinpointing the enabling and limiting factors in the development of AT and collecting information on how to progress.

This study attempts to provide a detailed analysis of the approaches, policies, programs, and dynamics that affect AT from the perspective of those working in the transportation, public works, planning, community development, recreation, and physical activity fields. The information collected comes from targeted informants representing municipal and provincial government, the private sector, and advocacy groups, supplemented with literature reviewed from surveys, reports, and other documents on active transportation barriers and best practices in Nova Scotia.

The findings reveal that standards and guidelines, infrastructure, regulations, and legislation are real issues for advancing AT. Additionally, safety, education, and promotion have been identified as important areas of concern. Finally, planning, coordination, and funding are found to be significant in suppressing AT development. The findings suggest that there a number of issues that require further scrutiny and disentangling so that AT can be improved in Nova Scotia. This will require multidepartment coordination at both the provincial and municipal levels.

2.0 Introduction

With so many benefits to AT, why then do most Nova Scotians continue to choose motorized travel for all their daily travel needs? The share of AT commuters in Nova Scotia can, at best, be described as minimal at 7.6%. Some research has been already been conducted in this area which has

THE PROVINCIAL ACTIVE TRANSPORTATION TASK TEAM defines active transportation as any form of human-powered transportation including, but not limited to, walking and cycling.

Supervisor:
Amy Schwartz, Active Transportation Consultant, Department of Health and Wellness

.

provided an overview of the challenges to active transportation in Nova Scotia.

This document will provide a more detailed analysis of the factors that enable and limit the development of AT and identify the opportunities and means to further improve, encourage, and support AT in Nova Scotia. Through a document review and targeted consultation with key informants at the municipal and provincial levels of government and AT stakeholder groups, this study will provide an evidence-based foundation to help inform provincial policy development.

Although the number of AT users may be low relative to motorized transportation (***Figure 1***), provincial and municipal levels of government are experiencing a shift away from auto-exclusive transportation planning; AT is increasingly being recognized as an important part of our transportation system. In Nova Scotia numerous individuals and organizations are dedicated to improving AT conditions and levels of participation. Decision makers increasingly demonstrate a higher level of understanding and support for advancing AT priorities.

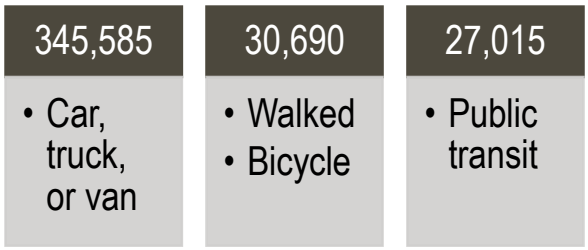

Figure 1: Nova Scotia - Mode of Transportation, 2011 National Household Survey.

AT is on an upward trend in Canada. This is demonstrated by the major AT projects underway throughout the country, the increasingly supportive policy environments, participation of multiple groups in project planning, and overall levels of people using AT[1]. The environmental, health, social, and economic benefits of increasing AT have also resulted in support for AT from diverse interest groups and professions, including doctors and teachers[1]. This national trend is apparent within Nova Scotia (ranked number 7 in Canada in overall AT commuters – see ***Figure 2***) when considering the development and implementation of municipal and provincial AT plans, policies and programs, such as the Thrive! Strategy, the Active Transportation components of the Sustainable Transportation Strategy, and the development of the provincial Active Transportation Policy.

[1] Active Transportation in Canada: a resource and planning guide - Transport Canada, 2008.

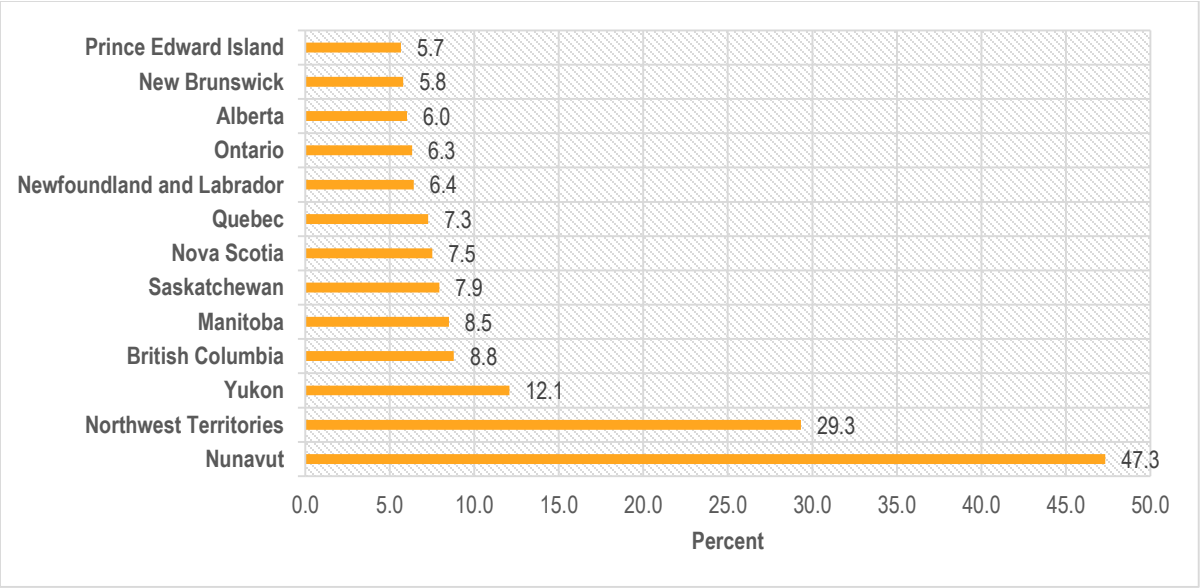

Figure 2: Percent of AT commuters by province/territory, 2011 National Household Survey.

Increasing the use of active transportation in communities across Nova Scotia will provide health and economic benefits, an improved quality of life, and will contribute to our province's long-term viability[2]. The way communities are designed directly impacts our environmental, economic and social wellbeing, and that is why active transportation is a priority area for many working in the fields of public health, physical activity, community development, tourism, transportation, planning, and road safety across our province. There is strong evidence, both in theory and practice, to support more people in using AT more frequently, both for recreational and utilitarian purposes in Nova Scotia[3].

3.0 Context

In 2011, 85% of Nova Scotian commuters travelled to work by a motorized vehicle. Only 7% walked to work, and less than 1% (0.6%) cycled to work. Considering trip distances, many more people could easily use AT, particularly within the population centers. As an example, in Truro, the existing mode share for cycling to work is 0.6%. Close to half of Truro residents (43.4%) could cycle to work in under 30 minutes. The median commuting distance among all Truro residents is 6 km, which corresponds to a cycling trip of 24 minutes[4]. Even more conductive to walking and cycling are trips to schools, stores, and leisure activities where distances are generally shorter than work trips[5].

CBRM also provides a good example of potential mode-share changes. Over half of CBRM residents could walk to cycle to work in under 25 minutes. The median commuting distance among all CBRM residents in 5.9 km, which corresponds to a cycling trip of 23 minutes or less while about 15% of CBRM residents live within 2 km of their place of work, less than a 25 minute walk based on survey results from their AT plan[6]. In CBRM, 67% of municipal

[2] Choose how you move: Sustainable Transportation Strategy - Province of Nova Scotia, 2013.
[3] Thrive! A plan for a healthier Nova Scotia - Province of Nova Scotia, 2012.
[4] Census of Population - Statistics Canada, 2006.
[5] Transportation Tomorrow Survey Internet Data Retrieval System - Data Management Group, 2008.
[6] Active transportation and community health in CBRM – IndEco, 2013.

government staff reported that they would like to walk or cycle to work if there was a dedicated bike lane or sidewalk that brought them to their workplace in 30 minutes or less, indicating significant latent demand for AT[7].

AT is becoming an increasingly important element of a sustainable transport system; the minimal pollutant and noise emissions, as well as low collision risks of AT users contributes to a more attractive and safe built environment[8]. AT also offers economic benefits, such as reduced household expenditure on transportation, less time spent in traffic congestion and increased productivity.[9] Furthermore, there is increased recognition of AT as an effective way for people to meet their physical activity requirements and prevent chronic diseases leading to reduced healthcare costs.[10]

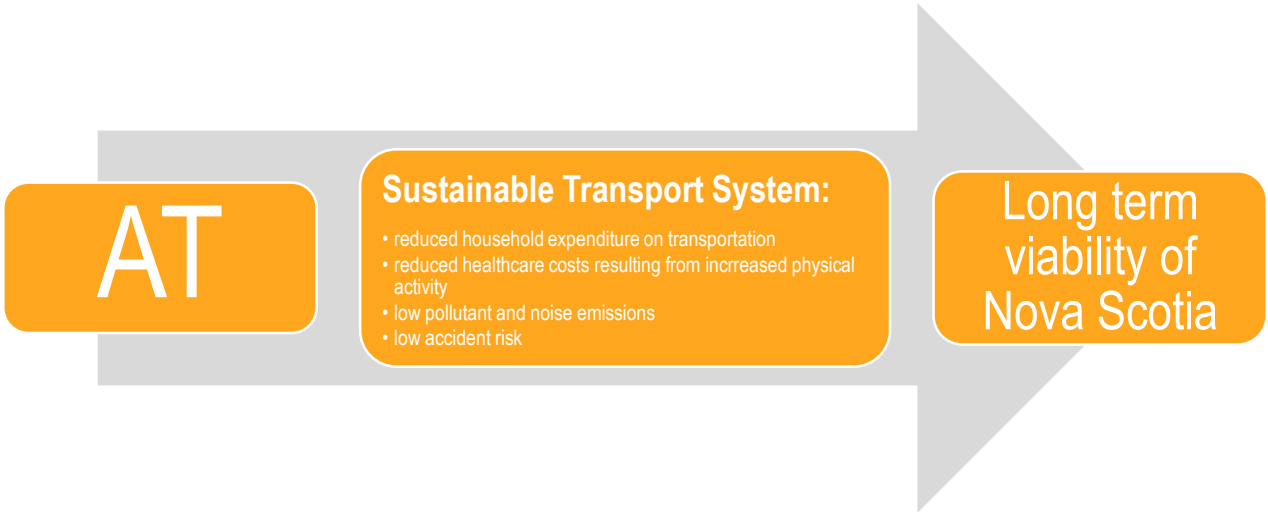

Figure 3: Benefits of AT as an element of a sustainable transport system.

Given the benefits of AT, understanding the enabling and limiting factors for active transportation development is an important consideration. This report will provide a detailed analysis of the factors that enable or impede the development of AT which will be useful to municipal and provincial policymakers in moving forward with an Active Transportation Policy that addresses the real issues on the frontlines of active transportation development. Previous research has provided a useful overview of the challenges and opportunities to active transportation, although limited research has explored these challenges in detail, with a focus on the perspectives of professionals working in transportation, planning, community development, and physical activity.

4.0 Previous Work

Most previous research on active transportation in Nova Scotia has focused primarily on providing an overview of opportunities and barriers to implementation of AT initiatives, rationale for future investment, and identifying initiatives and promotional/educational materials within municipalities; generally, less attention has been given on pinpointing the enabling and limiting factors in the development of AT and collecting information on how to progress. The surveys,

[7] Active Transportation Survey CBRM – ACAP – Cape Breton, 2010.
[8] Determinants of bicycle use: do municipal policies matter? – Rietveld and Daniel, 2004.
[9] Active Transportation in Canada: a resource and planning guide - Transport Canada, 2008.
[10] Report Card – Active Kids Healthy Kids Canada. 2013.

reports, and documents described in the following sections are not an exhaustive inventory of interventions, programs and projects related to active transportation in Nova Scotia, but rather have been selected as key materials that provide background analysis for the enabling and limiting factors for active transportation in the province.

4.1 Active Transportation Background Paper

The Active Transportation Background Paper, an internal document prepared by the Provincial Active Transportation Task Team, provides the context for AT in Nova Scotia. The report provides a summary the knowledge that already exists and notes rationale towards continued investment in AT. The paper recognizes that although travel choices are highly individual, there are similar reasons for not using AT. These challenges include: poor weather, safety concerns, a lack of walking and cycling infrastructure, time pressures, and a lack of secure bicycle parking. The following summarizes the key challenges identified in the AT Background Paper:

- Funding: Underinvestment, nominal budget dedication, and multiple finance partners for AT projects is a common challenge.
- Data: Basic information on user's habits, trip purposes, route choices and other personal motivators is minimal.
- Built form: Dispersed infrastructure and services, constrained road rights-of-way, and prioritization of traffic flow present challenges.
- Physical geography and climate: Water, wind, weather, and hills are natural barriers that present unique challenges to AT users. Snow presents operational challenges related to maintenance of AT facilities.
- Institutional: Partnership building, staff training, overlapping jurisdictional issues, and coordination pose as challenges.
- Safety: Interaction with other road users, unsafe crossings, missing/unmaintained AT facilities, and theft are considered real and perceived challenges.

4.2 Ipsos Reid Municipal Recreation and Fitness Survey

The Department of Health and Wellness funded a survey to collect data on physical activity behaviors and to measure satisfaction with municipal recreation services and programs. The survey shows how well local recreation offerings align with citizen's behaviors and needs. Of particular interest to this study on enabling and limiting factors is a survey question which asks respondents about the main barrier to their participation in physical activity and exercise. It cites the top five personal barriers to participating in physical activity and exercise as: not enough time, existing health issues, weather, lack of motivation, and a lack of facilities/activities/programs/trails. ***Figure 4*** compiles the findings of the most recent round of surveying (2012).

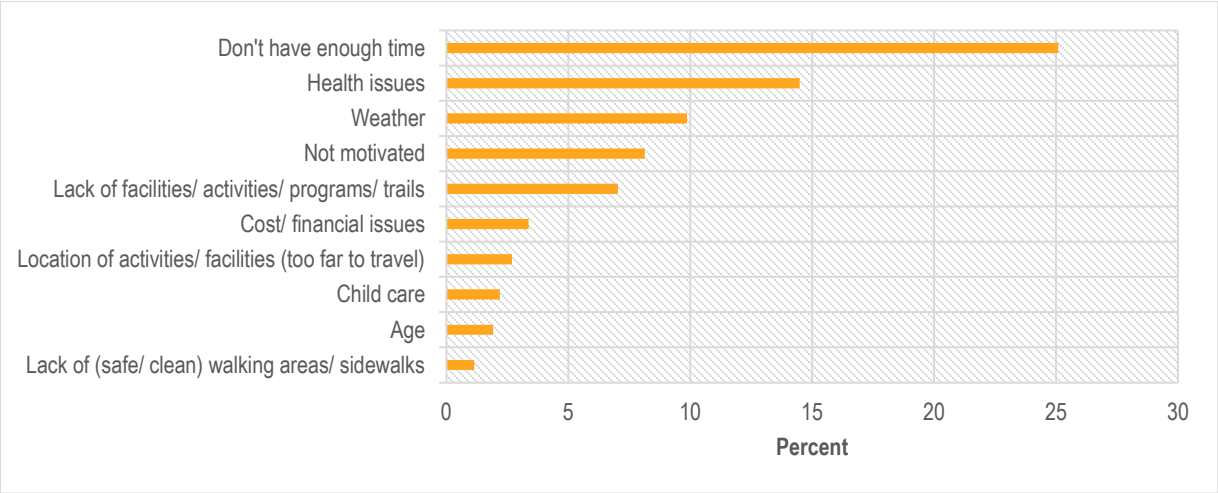

Figure 4: Barriers to physical activity and exercise, Ipsos Reid Municipal Recreation and Fitness Survey, 2012.

4.3 Scan of Active Transportation Municipal Bylaws

In 2010, Dalhousie University's Management Without Borders (MWB) reviewed bylaws in Nova Scotia that affect AT and found few bylaws to have a direct affect. Bylaws that influence AT provide communities with guidance on what to implement and what to avoid if possible. A general lack of AT-related bylaws leaves room for interpretation of policy in ways that can support or inhibit AT. Although many municipalities have yet to develop bylaws that support AT, many of them have expressed the desire to increase their commitment to AT through the implementation of Municipal Planning Strategies or in other municipal planning documents such as their Integrated Community Sustainability Plans. A number of recurring themes and patterns were found in the bylaw review including: abutter responsibility, enforcement, land use, zoning, sub-division and parkland transfers, committees, bicycles, skateboarding, sidewalk cafes, and aesthetic value. The MWB study found that bylaws can help in strengthening the policy framework that supports AT, however municipal strategies and plans have a stronger impact on AT development in Nova Scotian communities. For more detailed information see MWB Project #18 – Scan of Active Transportation Municipal Bylaws, Final project report, December 2010.

4.4 UNSM AT Survey

In 2010, the Active Transportation committee of the Union of Nova Scotia Municipalities (UNSM) conducted a survey of municipalities within the province. The survey largely recorded AT initiatives within the province but also identified several barriers at both the municipal and provincial levels. At the local level, improvement of infrastructure (e.g. widening sidewalks, expansion of trails, and bike lanes and racks) were frequently proposed. Education and awareness about AT was seen as an opportunity at the municipal level. Another potential opportunity was updating policies to support AT. The need for the province to take a lead in establishing provincial land use planning and policies supportive of AT was also highlighted. At the provincial level, barriers to advancing AT included the lack of AT vision (and the cost of developing one), buy in from decision makers (at all levels of government), and dedicated funding. The findings highlighted that moving forward on advancing AT in Nova Scotia will require a coordinated effort consisting of investment in infrastructure, education and awareness, and policy development at local and provincial levels. The word cloud in ***Figure 5*** represents the compiled responses regarding opportunities and barriers to advancing AT in the Province. The cloud gives greater prominence to words that appear more frequently in the survey results

Figure 5: Frequency word cloud of opportunities and barriers.

4.5 Thrive! and the Sustainable Transportation Strategy

The Thrive! Plan for a Healthier Nova Scotia and the Choose how you move Sustainable Transportation Strategy are key provincial documents which provide context for AT in Nova Scotia. Thrive! Is Nova Scotia's policy and environmental approach to healthy eating and physical activity. The plan acknowledges AT as one of the best ways to increase physical activity on a daily basis and improve health for all age groups. It includes actions to develop a provincial active transportation policy and plan. The Sustainable Transportation Strategy sets out a plan for improving and expanding on AT, public and community transit, urban and rural planning and vehicle and fleet efficiency in the province. The Sustainable Transportation Strategy demonstrates strong resolve for developing active transportation because it:

- Commits to an AT policy and plan and supports the concept of an interconnected provincial network of bikeways (the Blue Route).
- Commits to the development of a Statement of Provincial Interest on healthy communities and sustainable transportation.
- Includes actions that support public and community transit.

5.0 Methodology

Key informants with professional experience related to transportation, planning, public works, community development and physical activity at the municipal and provincial levels of government, as well as and AT stakeholder groups, were targeted for consultation. The aim of the consultations was to determine priorities around active transportation and to better understand the enabling and limiting factors to its advancement. Informants were asked specific details about their experiences in AT development in their community and practice.

Key informants were identified by the Provincial Active Transportation Task Team. Consultations were conducted in person and via phone correspondence. A total of 28 participants, representing various geographic regions (Figure 6), levels of government, and private and non-profit organizations participated in discussion in the study. Geographic regions included: Cape Breton Regional Municipality, Colchester County, Town of Truro, Halifax Regional Municipality, Municipality of the Town of Bridgewater, Municipality of Clare, and the Municipality of the District of Chester.

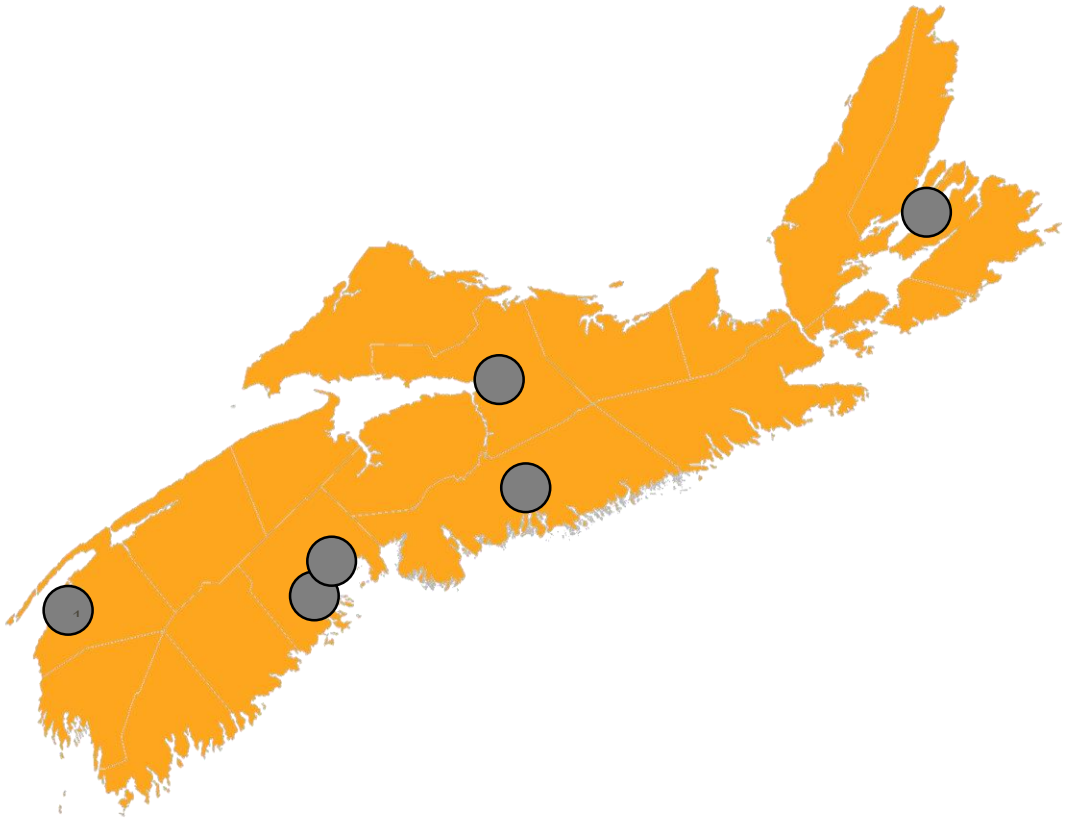

Figure 6: Geographic distribution of municipalities and counties.

5.1 Roles of consultation informants

Provincial

1. Active Living Coordinator
2. Active Communities Coordinator
3. Mi'kmaw Physical Activity Project Coordinator
4. Physical Activity Coordinator
5. Road Safety Advisory Committee Coordinator
6. Senior Highway Design Engineer
7. Traffic Engineering Manager

Municipal

8. Active Transportation Coordinator
9. Director of Community Development
10. Director of Community Services
11. Director of Planning
12. Director of Recreation and Parks
13. Manager of Recreation Services
14. Operations Supervisor
15. Parks and Trails Coordinator
16. Planner
17. Public Works Director
18. Recreation Program Coordinator
19. Senior Engineering Technologist
20. Senior Planner
21. Senior Recreation Manager
22. Transportation Demand Supervisor

Private

23. Civil Engineer

NGO

24. Active Transportation Coordinator

6.0 Findings

Despite growing support for AT in Nova Scotia, professionals working at the municipal, regional, and provincial levels of government refer to hurdles in AT development. The following section details the specific challenges and opportunities which have been identified through discussion with key informants. There are many people and organizations involved in improving AT conditions and levels of participation in Nova Scotia. It is evident that supporters of AT development view the benefits of AT, and approach to development of AT, through different lenses: health, planning, engineering, tourism, energy, community, development, etc. Although diverse expertise is critical, moving towards a more holistic understanding of the benefits of AT will help develop a more coordinated approach. Interviewees agree that stakeholders working on AT has significantly advanced how they work together, but the research suggests that more progress can be made. Interviewees agree that if we continue to look at AT though singular lenses, we are undervaluing the true benefits of AT by only making partial considerations. Respondents say that the provincial government has the opportunity to be a great example and take the lead on AT in Atlantic Canada and note previous successes such as recycling improvements and smoking cessation as public policy approaches to emulate. Each of the following sections is a qualitative analysis of themes and does not necessarily reflect the opinion of every respondent. It is also important to mention that the findings may present the opinions of respondents and may be perceptual in nature.

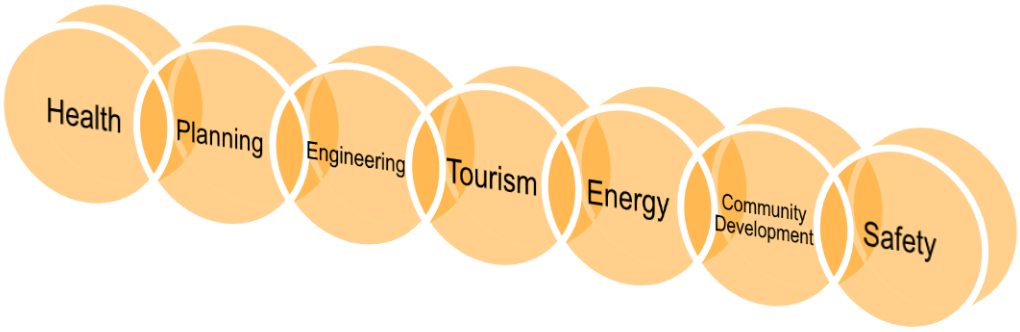

Figure 7: Active transportation involves a diverse set of expertise.

AT informants have identified a number of challenges that impede the progress of AT. Four overarching themes emerged:

1. Action

Respondents explained that there is great deal of AT rhetoric but not enough action. They note that the province has departments who are truly on board with AT, while some appear to be at the table because they are told to be there, while other departments do not see themselves as having a role to play in AT development. Most respondents explained the need for immediate action on AT from the province.

2. Leadership

Many interviewees identify that it should be the province who takes the lead in developing AT. The leadership role will require unpopular decisions to be made. The Transportation Association of Canada (TAC) says that proactive change requires leadership which can come from within government (e.g. municipal staff members, elected officials) and outside (e.g. local advocates, business executives)[11].

3. Clarity

Interviewees cited a need for clarity on on-road bicycle infrastructure for Nova Scotia; including traffic lights for bikes, geometric guidelines for cycle tracks, bike lanes in roundabouts, bike boxes, and crosswalks for bicycles were cited as examples of supportive AT infrastructure that exists in other jurisdictions but is not possible within the current guidelines or legal framework of Nova Scotia. Additionally, policy statements and funding for AT have been described as unclear or, as of yet, not implemented. Provincial and municipal employees are concerned that an AT policy might sit on the shelf or not be adequately funded.

4. Priorities

Many interviewees explained the importance of prioritization of AT planning, infrastructure development and projects that focus on safety, funding, and partnerships development.

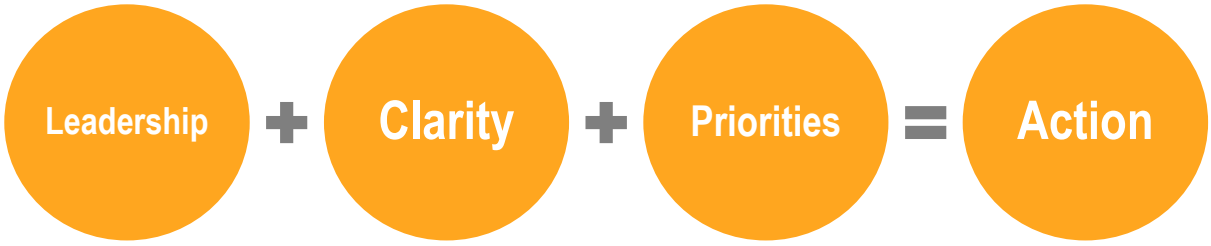

Figure 8: Themes of challenges that impede the progress of AT in Nova Scotia.

6.1 Built Environment and Implementation Tools

6.1.1 Standards and Guidelines

From new crosswalk designs that improve pedestrian safety to cyclist activated crossing lights, street design standards are evolving to better support pedestrians and cyclists[12]. Standards and guidelines help improve and expand the AT network. Guidelines give roadway planners and designers specific criteria to consider for accommodating pedestrian travel, including adjacent land use, existing pedestrian traffic, local pedestrian and bike plans, transit stops, and public interest and demand[13].

[11] Primer on Active Transportation – TAC, 2012.
[12] Case Study Compendium – Pedestrian and Bicycle Information Center, 2010.
[13] Active Transportation in Canada: a resource and planning guide - Canada, 2008

Informants identified a general lack of clarity about what municipalities are allowed to implement in terms of on-road bicycle facilities. Specific frustrations were expressed that basic AT infrastructure that exists in other jurisdictions are not allowed here. In some cases the legal implications of developing AT infrastructure that has not been tested in Nova Scotia are ambiguous. Most respondents emphasized that the provincial government needs to take a leadership role and work with municipal traffic authorities to provide greater guidance to ultimately enable implementation.

TAC offers guidelines that establish nationwide standards and guidelines that should be followed when developing, installing, and maintaining traffic control facilities. Transportation and Infrastructure Renewal (TIR) look to TAC guidelines to get the guidance they require but informants state that guidance is not adequate for cycling and pedestrian facilities. Several considerations which have been identified by informants are presented in the following points:

- TAC's Geometric Design Manual does not provide adequate guidance on AT facilities.
- TAC's Geometric Design Manual is about to be rewritten, and a major component of that rewrite will be the inclusion of AT.
- TAC Bikeway Traffic Control Guidelines have not officially been espoused by the province,
- The TAC documents have generally been described as out of date. Fortunately, there are plans for revisions that will improve AT standards and guidelines in the near future.

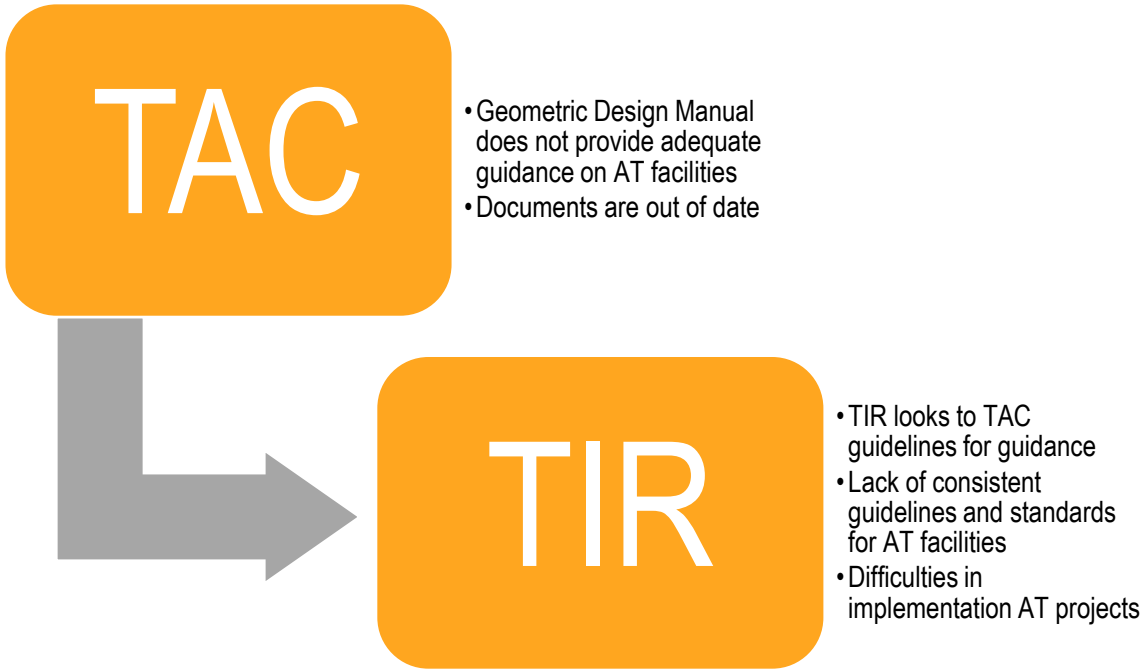

Figure 9: Issues with TAC guidelines lead to challenges for developing AT in Nova Scotia.

Some municipal respondents noted difficulties in implementation of NS Moves Projects due to a lack of AT guidelines or standards for Nova Scotia. Concerns have been expressed by municipal traffic engineers about planned bike lanes and signage which may not be consistent with a provincial standard, since a provincial standard on cycling facilities does not exist. TIR has explained that it will issue a Technical Bulletin on design guidelines in 2013. The guidelines will not be obligatory to municipalities, but they will provide guidance for consistency with municipal traffic authorities.

6.1.2 Municipal Services Exchange

The Provincial-Municipal Exchange was implemented in 1995, resulting in changes to services provided by municipalities and grants provided by the province to municipalities to help fund such services. TIR informants state that:

- The Municipal Services Exchange transferred responsibilities of pedestrian facilities from the province to municipalities.
- The Exchange is not in favor of AT in municipalities with limited budgets.
- If an AT facility is not a shoulder widening it is no longer considered part of the provincial jurisdiction.
- There is an "us vs. them" mentality between municipalities and TIR which results from the Municipal Services Exchange.
- AT is not legally defined in TIR's mandate
- New sidewalks are the responsibility of the municipalities that would like to install them. If a project severs or removes portions of existing infrastructure, TIR will typically replace the infrastructure. Maintenance is the responsibility of the municipality.

The Municipal Services Exchange is a challenge because it is unclear who is responsible for providing facilities for AT users. For example, the Municipal Services Exchange states that sidewalks are entirely a municipal responsibility, however, it appears to some stakeholders that the interpretation of "sidewalk" by the province is unclear. Ownership and responsibility of other pedestrian aspects (gutters adjacent to sidewalks, cross-walk paint, and pedestrian by-passes of highways on provincial roads) have been described by some as ambiguous. One informant explained: Provincial transportation officials claim that AT is not their area of responsibility due to the Municipal Service Exchange. Bikeways however are part of the road right-of-way and are the responsibility of the owner of the road. The owner of the road is either the municipality or the province. Therefore AT is not adequately addressed in the Service Exchange and the informant believes that it is the responsibility of the province to provide bike-ways on provincially owned roads.

6.1.3 Infrastructure

Well-designed networks and purpose-built infrastructure can greatly improve pedestrian and cyclist safety[14]. AT infrastructure includes:

- Bike paths and lanes
- Sidewalks
- Paths and trails
- Traffic calming measures
- Greenways for walking and cycling
- Intermodal connection facilities e.g. secure bicycle parking at transit connections
- Safety enhancements[14,15,16].

Informants with an engineering background state that implementing AT into new construction and development is fairly straight forward as everything can be designed to fit from the start. The challenge is "retrofitting" AT into established communities and villages where the space is often quite limited, leading to challenges in designing to current standards. Municipal informants state that TIR is willing to allow variances to make retrofits for AT work which help in facilitating development of AT infrastructure.

[14] Active Transportation in Canada: a resource and planning guide - Canada, 2008.
[15] Active Transportation Policy Issues – Victoria Transportation Policy Institute, 2003.
[16] Built Environment & Active Transportation Community Planning and Grant Program – BC Recreation and Parks Association, 2010.

Developing active transportation in low density, rural communities can be challenging when considering the costs of infrastructure. For example, in Guysborough, the population density is 2 persons per square kilometer while Cole Harbour has 1045 persons per square kilometer. Informants indicated that when AT is desired in communities with low densities, the projects require longer AT facilities which are typically more costly. Municipal informants state that infrastructure is dependent on funding and that the cost of maintenance is the more significant challenge; generally, capital funding is not the issue. Another infrastructure challenge in rural communities is shared facilities of AT users with motorized recreational activities (i.e. snowmobiling, ATV riding). Some informants explain that this can result in conflicts between users.

6.1.4 Motor Vehicle Act (MVA)

The MVA restricts cyclists from sidewalks (with exception to children or locations where the local traffic authority has declared the sidewalk as a trail). The MVA also outlines the operation of bicycles along provincial highways, and prohibits roller-blading and skateboarding within the highway right-of-way, unless at a designated crosswalk. Informants were critical of the MVA, stating that other jurisdictions have more flexibility and are more willing to try new AT measures. Several challenges associated with the MVA were identified:

- The MVA occasionally requires interpretation. Municipal traffic authorities are reluctant to approve or warrant AT measures that have not been done before in Nova Scotia.
- The MVA requires bicycles to drive as closely as possible to the right edge or curb unless it is not practical to do so. A lack of clarity has been identified for use of bicycle facilities such as sharrows and bike boxes as they can be used to pull cyclists to the middle of a lane (for example in a roundabout a sharrow could be used to indicate a cyclist should take the lane). It appears the MVA does not permit these facilities. Some municipalities are not using these facilities because they are unsure if they can be applied legally.
- Several respondents explained that the process for making changes to the MVA to support active transportation is unclear. One municipality explained that the process, when attempted, took an inordinate amount of time; upwards of 6 years until the necessary amendment was made.
- The province recently introduced the Innovative Transportation Act. The Act allows more flexibility and responsiveness to test and evaluate modern transportation innovations on highways. The Act allows the province to authorize pilot projects to test new approaches that would otherwise not be permitted under existing laws. Informants indicated that the Innovative Transportation Act has yet to be tested for AT related issues. Municipal informants have indicated a reluctance to use it as implementation ultimately depends on the willingness of the local traffic authority.

6.2 Human Environments

6.2.1 Safety

Many people face both real and perceived safety challenges in their communities. Safety concerns are associated with having to ride in traffic, unsafe pedestrian road crossings, missing or unmaintained sidewalks, roads and bike lanes, as well as concerns of bicycle theft or personal attack[17].

Informants state that the government would be irresponsible to not consider safety first, second, and last, when it comes to every project. Many informants believe in safety in numbers and agree that creating facilities and programs for AT result in a safer system. Municipal informants noted they use the road safety evidence and promotional

[17] Active Transportation Background Paper - PATT, 2013.

materials of the province. Provincial messaging plays a large role in AT safety. The issue of cycling safety is one which generates strong opinions and positions. Many issues (such as helmet and skateboard legislation) bring up strong differences of opinion among AT proponents on managing risk vs. promoting active transportation. Informants also identified an opportunity for the province to adopt successful safety initiatives that have been successfully developed by NGO's, such as school travel planning. An opportunity was identified to design a safety campaign that could be coordinated by the province and municipalities together which could emulate the concept and delivery method of ParticipACTION.

6.2.2 AT Education and Promotion

The importance of the public education component of AT should not be underestimated[18]. The Canadian Medical Association and provincial medical associations urge all levels of government to encourage AT by developing and enacting public education and awareness programs to increase the understanding of the relationship between health, active transportation, and the environment[19].

Informants stated that education and promotional programs are the key to ensuring the success of AT within communities. A need to educate the public was identified in consultation. Although education for all ages was a common consideration, particular emphasis was placed on children. Informants note that AT is particularly beneficial to children because it supports their physical and social development.[20] AT to and from school presents an opportunity to ensure physical activity is a routine element of daily life for children and youth. Informants indicate a current trend towards the closure of small, community-based schools in favor of the construction of large schools, often situated a distance away from the residents they are intended to serve. Provincial buildings (schools, hospitals, Access Nova Scotia Centers, government offices, etc.) were also identified as in need of more AT supportive siting; in many cases government services are located in areas that people cannot easily access by walking, biking or transit. Informants indicate that there are still government departments and community members who do not see AT as an important issue for the province as a whole. There are also people who promote one type of AT (i.e. cycling) and forget about others or see them as invalid (i.e. skateboarding). Informants described that we need to be better at looking at education and promotion in a more holistic manner.

6.3 Funding and Implementation

6.3.1 Land Use

There are many transportation and land use factors that enable or limit AT users in a community. Residents of communities where multi-modal transportation options are available drive less and use AT modes more than residents of more automobile-oriented communities. Communities that have higher AT participation rates tend to have more mixed-use development patterns, with key destinations in close proximity, good cycling and walking facilities, and good transit service[21]. Sprawling, low density land use patterns tend to discourage more active forms of transportation with longer distances between destinations and minimal cycling and walking facilities. The longer a

[18] A Review of Active Transportation Plans in Atlantic Canadian Communities – Rifaat and MacDonald, 2010.
[19] Making the Case for Active Transportation – Canadian Fitness and Lifestyle Research Institute, 2009.
[20] Are We Driving our Kids to Unhealthy Habits? – Active Kids Healthy Kids Canada, 2013.
[21] Active Transportation Policy Issues – Victoria Transportation Policy Institute, 2003.

trip takes, the less likely people are to choose a more active form of transportation[22]. TAC notes that land-use decisions have long-term implications for the potential to walk and cycle, and for the quality of walking and cycling trips[23].

Informants stated that the provincial government needs to be more strategic in its land use planning. Informants also explained that more guidance to municipalities on land-use is key so that sprawling development, which is not conducive to AT, is limited. Informants iterate a need for the province to promote recentralization of infrastructure to limit sprawling development. Including land use policies within a provincial AT policy was identified by informants as an important consideration. Mandatory, optional, and incentivizing green belting has been identified as policy lever that could help in maintaining sprawl and benefit AT. It is believed that proper land use planning will not happen if the responsibility is continued to be left with the municipality.

6.3.3 Coordination

In order to better integrate social, economic, and health priorities with engineering standards and decision-making structures, a more integrated approach to decision-making and planning is necessary. AT issues require a multidimensional approach, and working in coordination across departments and jurisdictions can accelerate progress. Many informants hope for a future where the province and municipalities work together on AT and have more cross jurisdictional partnerships. Although more partnerships are required for coordination of AT, there are issues that exist separately within the provincial and municipal government.

Coordination barriers were cited as:

- Lack of capacity and staff with dedicated time to AT at the municipal level
- Confusion in municipalities about areas of collaboration with TIR and a desire for clarity on when and how to coordinate AT plans and priorities with the province.
- Coordination between municipalities and the province on AT priorities is not consistent from TIR 'area' to area. This differs depending on individual approach of TIR area manager.
- There is a desire within municipalities for Regional AT coordination within TIR. Regional AT coordination with TIR would:
  - Integrate municipal AT priorities and plans with the transportation plans of the province.
  - Establish a permanent channel of communication of AT priorities.
  - Provide expertise on AT design and standards to TIR and municipalities.
  - Help advance AT in each region.

[22] Active Transportation in Canada: a resource and planning guide - Canada, 2008.
[23] Primer on Active Transportation – TAC, 2012.

A need was expressed to review effective models for inter-governmental and inter-sectorial coordination of AT. It was recognized that advancing AT should not be the full responsibility of provincial and municipal governments. Nonprofit organizations, advocacy groups, schools, and businesses have been identified as players that should be involved in integrated coordination.

6.3.4 Funding

Most municipalities, particularly smaller centers, face funding challenges. Active transportation can be perceived as a "luxury" item or as a less important budget item that can be the first cut in tough times[24]. Despite the successes that many stakeholders in the non-profit or municipal government have achieved in developing AT projects, underinvestment is commonly cited as a limit to AT progress. Informants explained that AT projects are often financed through multiple partners. Budgets dedicated to AT are often nominal or do not exist. Funding challenges can frustrate or discourage AT stakeholders from future efforts. There is a general consensus that if the province is committed to encouraging physical activity, they should contribute significant cost-share infrastructure dollars for AT.

For municipalities with smaller populations, funding is a major challenge. Typically these municipalities have a smaller tax base and therefore smaller budget for capital works. It can be difficult for municipal planners or decision-makers to justify investment in AT if the municipality is struggling to finance the most basic infrastructure such as sewer and water. Unless there are strong local champions of AT, municipal councils tend not to prioritize AT projects or plans. In municipalities where AT projects are proposed to council by staff or AT proponents, there can sometimes be an unwillingness to fund first phases of such projects due to concern about the need to commit to future investment. Respondents explained that unfunded project proposals or stunted implementation of AT plans due to lack of funding resources makes it challenging to sustain momentum. In some cases, these challenges have discouraged municipal staff who may be AT champions from maintaining AT priorities. Another issue among respondents was clarity around using federal or municipal dollars, particularly the gas tax, on roads or land under the jurisdiction of the province.

Informants pointed to the support of to the NS Moves Funding program from the Department of Energy as having played a key role in stimulating action on AT. This funding has enabled projects to move forward that may have otherwise sat on the backburner. These projects have leveraged significant additional private and municipal funding for AT in Nova Scotia. This demonstrates the importance of provincial funding programs in stimulating and supporting momentum for AT in Nova Scotia. Although this initiative received considerable praise from some respondents, the lack of a specific AT fund from the province was repeatedly noted as a major concern for the development of AT in Nova Scotia. Respondents explained that a dedicated fund for AT would be more consistent with provincial priorities in Thrive! and the Sustainable Transportation Strategies.

6.4 Information and Evaluation

The AT Background Paper explains that information and data on AT is critical so that evidence-based decisions can be made. The Background Paper notes that there is a significant gap in basic information on users' habits, trip purposes, route choices, injuries and other personal motivators related to AT. This lack of data also contributes to difficulties in measuring outcomes and progress that could help future projects[25]. Informants identified a number

[24] Active Transportation in Canada: a resource and planning guide - Canada, 2008.
[25] Active Transportation Background Paper - PATT, 2013.

information and evaluation gaps, raising a number of questions including: What are the best ways and indicators for municipalities or the province to measure where we are now and where we need to go? What are baseline measures for AT usage? Where do we want to be in 5 years? 10? Informants also indicated that available injury and fatality rates, and measures of perceptions and attitudes are criteria which could aid in decision making. Other provinces and states which are comparable in size, resources, geography, and weather have demonstrated that investment in AT information can yield significant increases in AT mode shares. To make better informed decisions, informants identified the opportunity for the province to launch initiatives to count bicyclists and pedestrians. A growing body of research documents practical approaches to counting AT users, and use these counts for transportation modeling. Many methods and technologies for counting bicyclists and pedestrians are available, and technologies are improving rapidly.

7.0 Conclusion and Considerations

This paper presents the findings of a targeted consultation which helps to understand the issues affecting the advancement of active transportation in Nova Scotia. There are many important empirical findings. The findings generally confirm those from previous research but offer some interesting insights into the specifics of the details. The analysis reveals that standards and guidelines, infrastructure, regulations, human resources, and legislation are real issues for advancing AT in Nova Scotia. Additionally, safety, education, and promotion have been identified as areas where more interventions are needed. Finally, planning, coordination, and funding are found to be significant in suppressing the development of AT. Informants identified the following components as critical to the advancement of AT in Nova Scotia:

1. Action to ensure all relevant municipal staff/department and provincial government departments work in integrated ways on AT.

2. Leadership from within government (municipal and provincial staff members, elected officials) and outside (local advocates, business executives).

3. Clarity on on-road bicycle infrastructure measures, pedestrian facilities, policy statements, and funding for AT.

4. Reprioritization of transportation priorities so that active and sustainable modes of transportation are given full consideration in infrastructure planning, funding, road-safety auditing and partnerships.

5. Capacity building of human resources at the municipal or regional level to integrate provincial road–building priorities with municipal AT plans and objectives.

A provincial AT policy should provide clear direction on these components. When actions are identified, informants explained a need to be aware and fully understand any levels of engagement that they will be responsible for; clarity is essential. The following recommendations are drawn primarily from the consultation process, but are also informed by previous research on AT in Nova Scotia:

1. The province should undertake a comprehensive examination of the current transportation legislation and regulation (including the Municipal Services Exchange and the Motor Vehicle Act), and propose changes to support the development of and remove impediments to active transportation.
2. The province should publish AT standards and guidelines for municipalities.
3. The province should support the development of AT and AT supportive policies in municipalities.
4. The province should develop internal criteria to ensure provincial funding, leasing and building siting are aligned with smart growth principles.
5. The province should mandate that new school sites must have sidewalks with a 2km radius or connection to walking trails.
6. The province should institutionalize school travel planning projects.
7. A plan for institutionalizing collaborative work on AT among departments should be developed. An accountability framework at center of government could support this and biannual updates could be expected.
8. The province should establish dedicated funding for AT that is consistent with provincial priorities in Thrive! and the Sustainable Transportation Strategies.
9. Government should review provincial costing and spending on transportation and address expenditures which are counterproductive towards active transportation.

There are many people and organizations passionate about improving AT conditions and promoting behavioral changes in Nova Scotia. Informants demonstrated dedication to moving forward and explained the importance of a stronger commitment from the provincial government in the development of AT in Nova Scotia.

This study should provide useful information to municipal and provincial policy-makers with details on the enabling and restrictive factors for active transportation development in Nova Scotia. The contributions of this research are timely given the increased awareness and emphasis on the use of AT in recent years and the demands for provincial leadership in the area. The findings of this paper will be valuable to municipal and provincial policy-makers for charting out appropriate policy interventions to support active transportation development in Nova Scotia. In terms of future work, an analysis of Municipal Planning Strategies, Municipal Physical Activity Leadership Strategies, Integrated Community Sustainability Plans and Municipal Strategic Plans for active transportation priorities should be conducted to determine the level of political and institutional commitment to AT. Such analysis could help in measuring advances in AT planning and policy development. Case-study analysis of effective AT interventions in Nova Scotia, would provide locally relevant information on best approaches for advancing AT. Further research is required in comparing these results with other jurisdictions and analyzing the policies which have enabled other regions to move forward on AT. An approach to measuring the impact of improvements in AT Policy and Planning through changes in participation in AT is also necessary.

8.0 References

Active Kids Healthy Kids Canada. (2013). Report Card.

BC Recreation and Parks Association. (2010). Built Environment & Active Transportation Community Planning and Grant Program. BC Recreation and Parks Association.

Canadian Fitness and Lifestyle Research Institute. (2009). Making the Case for Active Transportation.

Data Management Group. (2008). Transportation Tomorrow Survey Data Retrieval System.

IndEco. (2013). Active transportation and community health in CBRM. ACAP - Cape Breton.

Pedestrian and Bicycle Information Center. (2010). Case Study Compendium. Pedestrian and Bicycle Information Center.

Province of Nova Scotia. (2012). Thrive! A plan for a healthier Nova Scotia. Province of Nova Scotia.

Province of Nova Scotia. (2013). Choose how you move: Sustainable Transportation Strategy. Province of Nova Scotia.

Provincial Active Transportation Task Team. (2013). Active Transportation Background Paper.

Rietveld, P., & Daniel, V. (2004). Determinants of bicycle use: do municipal policies matter? Transportation Research Part A.

Rifaat, & MacDonald. (2010). A Review of Active Transportation Plans in Atlantic Canadian Communities.

Statistics Canada. (2006). Census of Population. Ottawa: Government of Canada.

Transport Canada. (2008). Active Transportation in Canada: a resource and planning guide. Ottawa: Government of Canada.

Transportation Association of Canada. (2012). Primer on Active Transportation. Transport Association of Canada.

Victoria Transportation Policy Institute. (2003). Active Transportation Policy Issues. Victoria Transportation Policy Institute.

9.0 Appendix

Question List Produced:

General:

1.1 Climate

a) What do you know about AT in your community?
b) What does AT in Municipality of Chester look like?
c) Is AT a luxury or necessity?
d) What are your community's best AT resources (existing infrastructure, people, compact neighbourhoods, etc.)?
e) With support, promotion, or investment, what resources could become stronger enablers of AT?
f) What role, currently, do you feel the municipality is playing in making AT a priority for residents?
g) What additional role could you play, if any?

1.2 Municipal Plans

a) Does your municipality have an AT plan?
b) If yes, what were the challenges to implementation of the plan?
c) If no, does your municipality have a plan or strategy that provides direction on AT (MPAL, ISCP)? What is restricting you from doing so?
d) To what extent do residents value AT efforts and future plans?
e) To what extent does your council value AT efforts and future plans?

1.3 Stakeholder Engagement

a) Are AT stakeholders engaged by the municipality? How are stakeholders engaged (standing committees, working groups, advisory committee)?
a) If yes, what has been the benefit? What are the challenges to engaging AT stakeholders?
b) If no, what has limited stakeholder engagement?
c) What opportunities exist to increase stakeholder engagement?

Built environment and implementation tools

2.1 Standards and Guidelines

a) Does the municipality follow standards and guidelines related to AT development (technical design guidelines)?
b) If yes, which ones are being used? Through your work, what do you think is missing?
c) If no, why not?
d) Can you suggest standards and guidelines to further advance AT development?

2.2 Infrastructure

a) What is the first consideration when designing roadways?
b) What considerations/criteria need to be applied when designing for cyclists and pedestrians?
c) What do you need to know (training/awareness/PD) to increase your ability to design for pedestrians and cyclists?
d) What infrastructure within your municipality supports AT?
e) Are there any additions that could be made to infrastructure to encourage AT?

2.3 Regulations and legislation

a) Does the municipality have regulations and legislation that support AT?
b) How have planning regulations constrained/enabled AT development in your municipality
c) What opportunities exist for improvement?

Human environment

3.1 Safety

a) Are AT options in your community safe?
    a. If yes, what makes them safe?
    b. If no, why not? What needs to be done to make AT safer?

b) How is year-round AT encouraged or supported in your community (ex. winter routes, season events, and end-of-trip facilities)?
    a. What programs, policies or strategies could help and encourage AT year-round?
c) Is there a need to educate residents on safety regarding AT? (i.e.: bicycle safety, safe routes to school)

3.2 Active transportation education

a) Are children and youth being educated about AT?
    a. If yes, what is being done? Is it successful?
    b. If no, why? What's limiting child and youth involvement in AT?
b) Are adults and seniors being educated about AT?
    a. If yes, what is being done? Is it successful?
    b. If no, why? What's limiting adult and senior involvement in AT?

3.3 Promoting active transportation

a) Is AT promoted in the municipality?
    a. If yes, what is being done? What are your community's biggest challenges or weaknesses in promoting AT?
    b. If no, why not? What opportunities exist for promotion?
b) Does your community use promotional or education materials, workshops, or training that support AT?
        a. If yes, what is being used? Has it helped?
        b. If no, why not? What is limiting use?
        c. What opportunities exist for improvement?

Funding and implementation

4.1 Community Development

a) Do other community development objectives and priorities support AT? (ex. downtown revitalization, improved transportation)?
b) What opportunities exist to integrate AT options with other community development objectives and priorities?
c) Is AT incorporated with existing land use patterns and roadway space allocations (ex. Smart growth policies, incentives to direct development to mixed-use, supporting inter-modal AT opportunities?
    a. If yes, what are the biggest challenges to including AT with existing land use patterns and space allocations?
    b. What opportunities exist for integrating AT?

4.2 Coordination

a) Does your municipality have staff with time dedicated to AT?
    a) If yes, in which department(s) do they work (e.g. recreation, planning, engineering, public works, or police)? What are the challenges to coordination?
        a. If no, why?
        b. What opportunities exist to increase staff time dedicated to AT?
    b) Do you have any groups, programs, or individuals which play a significant role(s) in advancing AT in your community? Please give us details.
        a. What opportunities exist for improvement?

4.3 Funding

a) Has your municipality received any funding for AT initiatives?
    a) If yes, what were the sources of funding? What have you been able to achieve that you otherwise would not have been able to?
    b) If no, why not? Are there challenges to applying for and receiving funding for AT initiatives?
b) What opportunities or ideas exist for funding AT initiatives?

Information and evaluation

5.1 Research

a) Are you aware of any research being done that could enhance knowledge or information of AT in your community?
    a. If yes, what is the focus of the research? Has research enabled your work in AT?
    b. If no, what research would help enable AT development? What are the challenges to undertaking research?

5.2 Monitoring and evaluation

a) Are the impacts of AT tracked in your municipality?
    a. If yes, how are they being tracked? How is the data being used?
    b. If no, would tracking impacts of AT help? What supports are needed?
    c. What opportunities exist for improvement?

Concluding Questions:

a) In your opinion, what are the three greatest challenges for AT development in your municipality?
b) What are/would be your main priorities and goals for AT in your community?
c) What could threaten the work that has been identified to enhance AT?
d) What steps should be taken to immediately increase AT development in your municipality?
e) What, if any, provincial AT policy(ies) and/or regional actions would you like to see that would support AT development in the municipality?