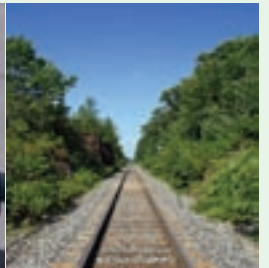




Ecology  
Action  
Centre

*green mobility strategy  
for Nova Scotia*





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*For the equivalent cost  
of one-quarter tank of gas  
per person per year, Nova  
Scotia's government can  
quadruple its contribution to  
sustainable transportation.*



## *green mobility strategy*

**This report is dedicated to the approximately 30 percent of Nova Scotians who do not drive or who rely on alternative means of transportation.**



*Lack of public transport is a significant barrier to employment in Nova Scotia communities.*

## About us

The Ecology Action Centre (EAC) has acted as a voice for Nova Scotia's environment for over 35 years. The EAC's mission is to encourage a society, which respects and protects Nova Scotia's environment and provides economically sustainable livelihoods. Since 1971, the EAC has been working to build a healthier and more sustainable Nova Scotia. The EAC's earliest projects included recycling and composting, now commonly practiced activities. Today the EAC has over 1400 members, 250 volunteers, 30 staff and 7 active committees. Our current areas of focus include transportation, built environment, marine, coastal, wilderness, food and energy issues.

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### Acknowledgements

The authors have received help on the development of the *Green Mobility Strategy* from a number of people. First and foremost, thank you to the 260 Nova Scotians who attended our public consultation sessions and stake-

holder meetings and shared their unique perspectives and insights on transportation with us. Thank you to volunteers Alex Dumeresq and Jesse Joice for their research and contributions. Thank you to our Citizen Advisory Committee - Jim Farrell, Ruth Mitchell, David Mooney, Catherine O'Brien, Judith Peach, John Pearce, Jennifer Powley, Claredon Robicheau and Bill Zimmerman – and our Community Partners – Dodie Goodwin, New Glasgow; Chris Milburn, Sydney; Dana Morin and Jim Outhouse, Brier Island; Claredon Robicheau, Clare; Carol Hill-Bojarski, Yarmouth; Stefan Sofer, Chester; Peter McCracken, Bridgewater; Jennifer Weisner, Kentville; Andrew Fry and Bill Zimmerman, Wolfville – for their time, commitment and enthusiasm. Thank you to our colleagues - Maggy Burns, Brendan Haley, Scott Gillard, Amanda O'Rourke, Susanna Fuller and Janet Barlow – for their support, contributions and edits to the document. Thanks to our TRAX Advisory Committee - Christene Almon, Wayne Barchard, Jody Conrad, Peggy Crawford, Hal Dobbelstyn, Marcus Garnet, David MacIssac, Nadine MacKay, Lisette Cormier

and Roxane McInnis - for being a sounding board throughout the development of the strategy.

### Funders

Thank you to Environment Canada, Conserve Nova Scotia and Nova Scotia Health Promotion and Protection for providing the Ecology Action Centre with the funding to enable this project!

### Design

Thank you to Aaron Harpell of Hammerhead Design for designing this document.

*Only 16% of children and youth in Nova Scotia walk or bike to school, compared to the majority of students a generation ago.*

## Executive Summary

Transportation, moving people and goods, is essential for our economic and social well-being. Currently, the majority of Nova Scotia's citizens use a private automobile as their main mode of transportation. But our dependence on the private automobile is no longer socially, economically or environmentally sustainable.

Climate change poses a serious threat to our economy, our livelihoods, our ecosystems and our health. The transportation sector, including passenger and freight movement, accounts for 27 percent of Nova Scotia's greenhouse gas emissions. Gas prices are the highest they have ever been in Atlantic Canada, and are predicted to continue rising. High gas prices are hurting individuals, auto manufacturers and trucking companies. Lack of transportation is increasingly a barrier to achieving employment and to accessing education, health care and social opportunities. Our dependence on the private automobile for transportation contributes to increasing rates of physical inactivity and chronic disease.

Transportation for sustainable prosperity must focus on reducing greenhouse gas emissions and air pollution, minimizing land use and improving citizen health, safety and access to amenities and services. A transportation strategy for Nova Scotia requires regional, urban, and rural solutions, including better land-use planning, more sustainable transportation options and vehicle efficiency. The purpose of the *Green Mobility Strategy* is to facilitate increased provincial investment in sustainable passenger transportation for Nova Scotia. The Ecology Action Centre recognizes that a sustainable freight transportation strategy is also required in Nova Scotia, but that is outside the scope of this document.

There are eight key recommendations in the *Green Mobility Strategy*. Each recommendation is accompanied by a series of suggested action steps. The process used to develop and prioritize the recommendations in the *Green Mobility Strategy* involved extensive research, convening and gathering

## Sustainable transportation...

- allows the basic access needs of individuals and societies to be met safely, in a manner consistent with human and ecosystem health, and with equity within and between generations;
- is affordable, operates efficiently and offers choice of transport mode;
- supports vibrant local, regional and national economies;
- identifies and accounts for the full costs of transportation systems in an equitable manner;
- limits emissions and waste to levels within the planet's ability to absorb them;
- uses renewable resources at or below their rates of generation and uses non-renewable resources at or below the rates of development of renewable substitutes;
- reuses and recycles its components; and
- maintains the integrity of ecosystems and minimizes land use and noise.

input from a citizen advisory committee, and public consultations in nine Nova Scotia communities: New Glasgow, Sydney, Clare, Long Island, Yarmouth, Chester, Bridgewater, Kentville and Wolfville.

## Recommendations

### 1. Create an annual, predictable source of sustainable transportation funding

One approach to determining an appropriate level of provincial investment in sustainable transportation is to calculate the average amount invested by other provinces and apply this formula to Nova Scotia. To ascertain an

appropriate level, all investments in sustainable transportation - transit, car pooling, rail, active transportation - should be considered. Canadian Urban Transit Association tracks provincial investment in public transit.

Currently, funding for transit by the province of Nova Scotia is significantly lower than that of other provinces. This comparison does not include municipal contributions. In 2008, funding from the Nova Scotia government for transit and community-based transportation, such as dial-a-ride, was \$3.79 per capita.<sup>1</sup> The average investment of Saskatchewan

and Manitoba, the two provinces with populations closest in size to Nova Scotia's, between 2003 and 2006 was \$10.95 per capita; the average investment of all provinces, excluding Nova Scotia, during the same period was \$19.87 per capita (Table 1).

There is a lack of data readily available on provincial investment in other sustainable transportation modes, such as active transportation. Therefore, for the purpose of establishing an estimate, The Ecology Action Centre recommends that Nova Scotia's government use the provincial average for transit investment in Canada

*Nova Scotia's  
urban density  
diminished by 36%  
between 1971  
and 1996  
– one of the  
sharpest declines  
in the country.*

**TABLE 1: Provincial transit investment**

Year	Area	Per Capita	NS Total <sup>2</sup>
2007	Nova Scotia	\$1.38	\$1,290,000
2008	Nova Scotia	\$3.79	\$3,550,000
2003-06	Saskatchewan and Manitoba	\$10.95	\$10,240,000
2003-06	All Provinces, excluding Nova Scotia	\$19.87	\$18,580,000

as a guide to determine the total sustainable transportation investment needed in Nova Scotia.

Based on the average per capita spending of other provinces, an annual investment of \$11 million to \$19 million in sustainable transportation would be appropriate in Nova Scotia. More investment may be needed to achieve greenhouse gas emission (GHG) reductions in the transportation sector and be consistent with the province's commitment to a 10 percent reduction below 1990 GHG levels by 2020.

**Action steps:**

- Increase funding for sustainable transportation
- Identify funding targets and schedule
- Identify funding sources

- Create municipal allocation guidelines

**2. Identify a provincial department to be the steward of sustainable transportation**

Currently no provincial department has the mandate to deliver public infrastructure and services for sustainable transportation, though nine departments have responsibilities related to transportation, including Transportation and Infrastructure Renewal, Service Nova Scotia and Municipal Relations, Energy/Conserve Nova Scotia, Health Promotion and Protection, Community Services, Education, Environment, Economic Development and Tourism, Culture and Heritage.

The lack of coordinated services often means the policies of one department are at odds with



another. Provincial leadership is required to ensure the province maintains best practices in the development, implementation and integration of sustainable transportation infrastructure and services. The Ecology Action Centre recommends that the province identify a department to be the steward of sustainable transportation and develop a comprehensive sustainable transportation strategy. Possible lead departments are Transportation and Infrastructure Renewal, Conserve Nova Scotia and Service Nova Scotia and Municipal Relations.

#### Action steps:

- Appoint one department to be the steward of sustainable transportation
- Designate at least one full-time sustainable transportation employee
- Convene an interdepartmental sustainable transportation committee
- Convene a non-governmental transportation stakeholders committee
- Conduct a policy review

### 3. Establish indicators for annually measuring progress toward sustainable transportation

The current indicator for sustainable transportation in Nova Scotia is commuting data from the Statistics Canada Census. In 2006, the majority of Nova Scotians drove alone to work (73 percent), while others carpooled (11 percent), used transit (6 percent), and walked or cycled (9 percent).<sup>3</sup> In 2007, Genuine Progress Index (GPI) Atlantic identified a series of economic, social and environmental indicators with which to measure the sustainability of Nova Scotia's transportation system. The indicators show a movement away from sustainability, with 13 of 20 measures declining.<sup>4</sup>

Presently, measurement of sustainable transportation progress in Nova Scotia is hindered by a lack of complete, reliable data. Neither Statistics Canada nor Transport Canada collect the information necessary to make annual comparisons. The Ecology Action Centre recommends that the province adopt and monitor a suite of environmental, social and economic indicators to measure

the sustainability of Nova Scotia's transportation system and assess targets and related policies; conduct annual reviews of the adopted indicators; assess targets and related policies every five years; and annually present all results to the public.

#### Action steps:

- Adopt and monitor a suite of environmental, social and economic indicators
- Establish indicator targets
- Support data collection

### 4. Create a sustainable transportation network

Currently, Nova Scotia has many transportation assets, including King's Transit, Cape Breton Transit and Metro Transit, Acadian Lines, private van shuttles, Via Rail and developed sections of the Trans Canada Trail. Despite these assets, much of the province is not served by mass transit or active transportation routes of any type, including large portions of Yarmouth, Digby, Guysborough, rural Halifax, Victoria and Inverness counties.

*Nova Scotia's  
Community  
Transportation  
Accessibility  
(CTAP)  
dial-a-ride-program  
has expanded  
to nine rural  
communities since  
2001 and logs  
over 2,000,000  
kilometres a year.*

The Ecology Action Centre recommends that the province develop and implement a vision for a sustainable transportation network within and between rural and urban communities. The network must enable the use of a mix of sustainable transportation modes – walking, cycling skateboarding, rollerblading, scootering, transit, ferry, community vans, carpooling, carsharing, carpooling and interurban bus and rail; facilitate intermodal connections; provide infrastructure and services that are integrated, safe, affordable, comfortable, attractive and convenient; provide increased accessibility and independence for all users, especially persons with physical challenges, seniors, children and youth; and encourage compact, multi-use development.

#### **Action steps:**

- Create a provincial bicycling network
- Complete provincial trail network
- Develop transit, rail and ferry network that connects various cities
- Invest in public transit, including dial-a-ride
- Provide incentives to municipalities for the development of active transportation
- Support pooling of existing public transportation services
- Facilitate integration of light freight and passenger transportation services
- Identify and change policies that inhibit the development and use of sustainable transportation
- Remove insurance barriers to all sustainable public transport operators
- Identify and promote synergy between sustainable transportation and rural economic development

#### **5. Integrate land-use planning into provincial policy to achieve transportation energy efficiency**

Urban density is a measure of how compact a community is. Generally, the more compact a community is, the more its citizens can live within walking distance of work and school and take advantage of transit services, the more working farmland and habitat that can be protected from urban sprawl and the more efficient the use of infrastructure such as roads and

sewers. Unfortunately, between 1971 and 1996, urban population density in Nova Scotia decreased by 36 percent.<sup>5</sup> This is a rate 13 percent higher than the Canadian average.<sup>6</sup>

Smart growth is an approach to community planning developed in the 1990s in reaction to urban sprawl. Applied in combination, smart growth principles, such as directing development toward existing communities and mixing land uses, result in communities with smaller environmental footprints, healthier citizens, and a vibrant local economy.<sup>7</sup>

The Ecology Action Centre recommends that the province collaborate with municipalities to identify, develop and maintain policies and practices that will achieve smart growth in Nova Scotia.

#### **Action steps:**

- Strengthen the current land use planning and transportation content of the Municipal Government Act
- Support municipalities in the incorporation of sustainable

transportation best practices in their Integrated Community Sustainability Plans

- Conduct a study to identify and prioritize financial (dis)incentives to promote smart growth at the municipal level
- Develop a farmland policy that prioritizes the use of farmland for food production over the production of plant matter for biofuels
- Legislate province-wide, purpose-specific, mandatory development charges

#### **6. Increase public awareness about sustainable transportation**

A number of education and outreach programs related to sustainable transportation exist in Nova Scotia; for example, Active and Safe Routes to School, Drive Wiser and the Select Nova Scotia Campaign. Still needed is education and publicity about transportation services and infrastructure that exist and social marketing campaigns to encourage the use of active transportation, transit, rail and carpooling. The Ecology Action Centre recommends the creation and promotion of a centralized transportation website,

which would include a province-wide ridematching service and information on all transportation services, routes, schedules and fares in Nova Scotia – public transit, intercity bus, rail and trail; the development and implementation of a share the road campaign to encourage increasing acceptance and use of active transportation; and the designation of a government employee to facilitate networking and capacity-building between various transportation organizations in the province.

#### **Action steps:**

- Create and promote a centralized transportation website
- Create and promote a province-wide carpool matching service
- Develop and implement a province-wide share the road campaign
- Designate a government employee to facilitate capacity-building
- Assist schoolboards to develop active transportation policies
- Support existing education programs

*Approximately 30% of Nova Scotians do not drive, including youth, seniors, individuals with low incomes and individuals with physical and mental challenges.*

### **7. Implement financial incentives to encourage sustainable transportation**

Many people are heavily reliant on the use of personal vehicles for transportation, even when other options exist. Incentives are one way to encourage people to use sustainable modes of transportation. Genuine Progress Index Atlantic's 2007 analysis of the full costs of transportation in Nova Scotia identified that,

...existing transportation market distortions result in economically excessive motor vehicle travel, which undermines sustainable development objectives. In a more optimal market, the evidence indicates that people would drive less, rely more on alternative transport modes, place a higher value on locating in multi-modal communities, and be better off overall as a result.<sup>8</sup>

The Ecology Action Centre recommends that the provincial government undertake a study to identify barriers to using sustainable transportation and assess the effectiveness of potential tax incentives, such as a provincial

transit tax credit, a provincial vehicle scrappage program, tax free active transportation equipment, hybrid rebates, location efficient mortgages and telecommuting equipment tax credits.

#### **Action steps:**

- Identify and assess the effectiveness of potential tax incentives
- Work with the insurance sector to offer the option of pay as you drive insurance in Nova Scotia.
- Introduce a vehicle feebate program,
- Explore potential for location efficient mortgages

### **8. Implement policy and education programs to improve vehicle efficiency**

Passenger vehicles account for two-thirds of the energy used by road vehicles in Nova Scotia. Though the efficiency of individual vehicles has improved, this has been offset by the greater number of SUVs, minivans and trucks on the road, an increase in the total number of vehicles on the road and a greater number of kilometres travelled. Therefore, the Ecology Action Centre recommends the following action steps.

### Action steps:

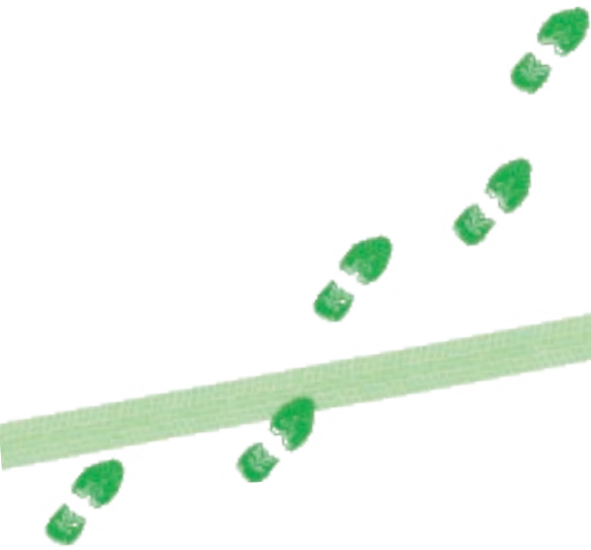
- Adopt California-like vehicle emissions standards by 2010
- Urge the federal government to adopt a Canadian vehicle fuel efficiency regulation that, at minimum, meets the California standard.
- Lower and enforce speed limits
- Support fuel efficient taxi fleets

To facilitate increased provincial investment in sustainable transportation, the Ecology Action Centre is undertaking a two-phase approach. The first phase culminated in the production of this strategy. The second phase will involve communicating and implementing the strategy. In 2008/2009, the Ecology Action Centre will:

- Write a series of articles, aimed at daily and weekly newspapers throughout the province, to inform the public about specific recommendations in the *Green Mobility Strategy*
- Distribute the strategy to all municipalities and provincial cabinet members
- Present the strategy to provincial decision-makers and key stakeholder groups

- Implement specific recommendations in the *Green Mobility Strategy*, such as support municipalities in the incorporation of sustainable transportation best practices in their Integrated Community Sustainability Plans
- Conduct further research on specific topics, such as the land use planning and transportation content of Municipal Government Acts in other provinces.





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


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## Introduction

**In Bill 146, the *Environmental Goals and Sustainable Prosperity Act*, Nova Scotia's objectives include "achieving international recognition for having one of the cleanest and most sustainable environments in the world by the year 2020" and reducing greenhouse gas emissions to at least ten per cent below 1990 levels by the year 2020.<sup>15</sup>**





To achieve these objectives, Nova Scotia has to rethink its approach to the movement of people and goods and increase its investment in and commitment to the development of sustainable transportation options.

The Ecology Action Centre developed the *Green Mobility Strategy* to facilitate increased provincial commitment to sustainable passenger transportation. A vision for green mobility in Nova Scotia might look like this:

People throughout Nova Scotia of all ages and abilities will have equitable access to a variety of safe, affordable, sustainable transportation options that are as convenient and comfortable as driving alone. All communities will have systems of bicycle lanes and walking paths that connect people's homes to their work, school, shopping centres, health care and recreation centres. There will be a network of pathways for children and youth to safely skateboard, scoot, rollerblade, bike and walk to school, friends' houses and social activities. All communities will be ser-

ved by fast and frequent public transit or van shuttles. Express rail, ferry or coach will connect major centres in Nova Scotia, like Yarmouth, Digby, Amherst, Truro, Halifax and Sydney. Transit hubs will facilitate intermodal connections for both residents and tourists. Tourists will be able to explore Nova Scotia without a car. Improved transportation options will

entice tourists and enable improved supply and distribution of local goods. Nova Scotia's citizens, ecosystems and economies will prosper with increased accessibility to local goods and services.

To achieve such a vision for green mobility, the Ecology Action Centre urges Nova Scotia's government to adopt the eight major recommendations of the *Green*

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### What is green mobility?

Green mobility is sustainable transportation. The following definition of sustainable transportation is used by governments and non-governmental organizations throughout the world.

- Allows the basic access needs of individuals and societies to be met safely and in a manner consistent with human and ecosystem health, and with equity within and between generations.
  - Is affordable, operates efficiently, offers choice of transport mode, and supports a vibrant economy.
  - Limits emissions and waste within the planet's ability to absorb them, minimizes consumption of non-renewable resources, limits consumption of renewable resources to the sustainable yield level, reuses and recycles its components, and minimizes the use of land and the production of noise.<sup>16</sup>
-

*The average Nova Scotian spends about \$3,036 a year directly on costs such as vehicle ownership and operation, transit fares, and parking and incurs an additional \$4,562 in indirect economic and environmental costs.*

#### *Mobility Strategy:*

1. Create an annual, predictable source of sustainable transportation **funding**
2. Identify a provincial department to be the **steward** of sustainable transportation
3. Establish **indicators** for annually measuring progress toward sustainable transportation
4. Create a sustainable transportation **network**
5. Integrate **land-use planning** into provincial policy to achieve transportation energy efficiency
6. Increase public **awareness** about sustainable transportation
7. Implement financial **incentives** to encourage sustainable transportation
8. Implement policy and education programs to improve vehicle **efficiency**

The provincial government's current investment in sustainable transportation is inadequate. For example, Nova Scotia's 2008 investment of \$3.79 per capita in public transit is less than 20 percent of the national average - \$19.87 per capita - and only 1 percent of the province's highway spending budget for 2008. As people feel the squeeze of

rising gas prices, there is increasing demand for public and active transport that is affordable, convenient, comfortable and safe. The good news is that for the equivalent cost of one-quarter tank of gas per person per year, we can quadruple the province's contribution to sustainable transportation. In doing so, we can build upon our current assets and reap the benefits in our communities.

#### **How does green mobility benefit communities?**

The well-being of individuals is dependent on transportation to access friends, family, health care, and places of work, play and education. The well-being of businesses is dependent on transportation to distribute and supply goods and services to their customers. Increasing the viability of sustainable transportation options improves access to health care, education, employment and social opportunities, boosts tourism, encourages economic development and improves the health of individuals and our environment.

**Health Care:** An efficient, sustainable transportation network helps people to access timely

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### Building on our assets

Vibrant, active communities: Around Nova Scotia, from Pictou to Sydney to Bridgewater to Clare, citizens are gathering together to discuss plans for sustainable transportation options in their communities. Imagine if these citizens had provincial support to develop and carry out their plans.

Beautiful spaces: Acadian forests, rugged boulders, lakes for swimming, rolling hills and expanses of ocean - what if the way we travel took advantage of this natural beauty?

Sustainable transportation: Public transportation services like Kings Transit, private shuttle services like Green Rider, and community groups such as Velo Cape Breton are leading the way in the provision of sustainable transportation services and promotion. We can build on these successes!

---

and affordable health care. Many people lack affordable transportation access to health care. For example, many individuals require weekly dialysis but haven't access to public transit services or can't afford the services that exist. Kings Para-Transit takes people from the valley to and from Halifax for medical appointments and procedures such as dialysis. They recently raised their round-trip fees from \$95.00 to \$123.50<sup>17</sup>. The lack of an affordable public transportation network is not only inconvenient and inequitable but puts the health of individuals at risk.

**Employment:** Public transportation systems help both prospective employees and employers. Employers are able to access a wider spectrum of employees, thus increasing their chance of success. Prospective employees are able to access job opportunities, thus increasing their chance of employment. In Nova Scotia, lack of transportation poses a major barrier to employment – a 2004 study in Richmond County showed that three of the top four barriers to employment were transportation related.<sup>18</sup> Individuals who are

healthy, qualified and can make a significant contribution to the workforce are unavailable to work because they lack transportation.

**Economic Development:** Businesses rely on transportation systems to carry their employees, channel customers to a site and bring in tourists. Ron Mullins, general manager of Kings Transit notes, "When you talk about business retention and economic development, transit is a key component." Erin Beaudin, Executive Director of the Kings Community Economic Development Agency, states "from a socio-economic perspective, the Kings Transit service allows more people to be independent; it eliminates barriers to transportation and gives people more options when it comes to employment and daily activities."

**Education:** Students at all levels benefit from transportation services. Post secondary and adult learners often benefit most from transit services. The Ecology Action Centre spearheaded a University Transit Pass Program at St. Mary's University, which resulted in an additional 50,000 student rides per month. Elementary and

*Nova Scotia  
aims to "demonstrate  
international  
leadership by having  
one of the cleanest  
and most sustainable  
environments in the  
world by the year  
2020".*

*-Government  
of Nova Scotia*

junior high students benefit most from safe, active transportation routes to school. Unfortunately, only 16% of Nova Scotia's children and youth walk or bike to school, in large part because of a lack of safe, active routes to school.<sup>19</sup>

**Physical Activity:** Incorporating active transportation into one's daily routine is an excellent way to meet one's physical activity requirements. At present, only 50% of Nova Scotians consider themselves to be physically active. Chronic health problems related to physical inactivity are on the rise, including obesity and heart disease. Unhealthy weights cost the Nova Scotia health care system at least \$120 million a year or 6.8% of the provincial health budget.<sup>20</sup> Built environments that directly encourage walking, cycling and other forms of active transportation can help Nova Scotians get the physical activity they require and reduce costs to our health care system.

**Social Opportunities:** Public transit systems that carry people to work also carry students to extra curricular activities and seniors to bridge games. A lack of public

transportation options can result in social isolation and boredom. A grade ten student at École Secondaire de Clare describes her situation: "We are bound here. Doing activities involves rides and there are none." Healthy communities require inclusive transportation systems to connect people with each other and to social events and activities.

**Environment:** Traveling by public or active transportation is less carbon intensive than traveling alone in a vehicle. The transportation sector accounts for 27 percent of Nova Scotia's greenhouse gas emissions. Nova Scotia's coastline is particularly vulnerable to the impacts of climate change. Increasing the viability of sustainable transportation options will contribute to the reduction of greenhouse gas emissions and the prevention of dangerous (warming by 2 degrees Celsius above pre-industrial levels) climate change.

**Tourism:** Sustainable transportation networks enhance tourism and economic development. Many European and Asian tourists are amazed when they arrive



in Nova Scotia and learn that there is little or no public transportation service to rural communities which they would like to visit. Nova Scotia's dependence on the private vehicle for transportation sends the wrong message when we are trying to grow our eco-tourism sector. Cycle tourism has incredible potential in Nova Scotia. Quebec has become known as the top cycling destinations in the world. The province invested in the development of a 4000 kilometre cycling route, and is reaping the benefits - La Route Verte cyclists spent a total of \$95.4 million, corresponding to approximately 2,000 jobs, revenues of \$15.1 million for the Government of Québec and an annual return on investment for La Route Verte of 108%.<sup>21</sup>

### How to read this document

This strategy has been designed like a toolkit to assist both the Nova Scotia government and individuals in achieving sustainable transportation. Following this introduction, there are ten chapters and three appendices. Throughout the strategy, neat ideas, quotes and facts are

highlighted in colored boxes and sidebars. Chapters one to eight describe each of the eight recommendations in more detail. Each recommendation chapter is divided into four sections: current context, best practices, provincial actions and individual actions.

#### 1. Current context:

In this section, we describe the current situation in Nova Scotia. For example, for the recommendation on funding, we describe the amount of money that Nova Scotia has invested in sustainable transportation and how that compares to other provinces.

#### 2. Best practices:

The transportation challenges and opportunities facing Nova Scotia are unique but we do share commonalities with other places. In this section, we offer best practice policies and initiatives from other Canadian provinces and some American states and European regions.

#### 3. Provincial actions:

Actions that the provincial government can take to achieve each recommendation.

#### 4. Individual actions:

Actions, which individuals can take to support green mobility.

Chapter nine is a summary of the eight recommendations and the actions needed to achieve each recommendation. Chapter ten is the conclusion, which is followed by three appendices. Appendix A and B are case studies on transportation in Nova Scotia communities, one in Yarmouth County and the other in Kings County. These case studies provide examples of the impacts of transportation options, or lack thereof, on employment, business, health, independence, social activities and recreation. Appendix C is a summary of the process used to develop the Green Mobility Strategy and the key themes that arose from the Green Mobility Strategy public consultations.



# *Funding*

**Create an annual, predictable source of sustainable transportation funding**



## Current Context

### Investment

Nova Scotia invested \$3.55 million in sustainable transportation infrastructure in the 2008/2009 fiscal year. Of this amount, \$3 million was allocated to a new rural transit program, \$450,000 for the Community Transportation Accessibility Program (CTAP) and \$100,000 for the Accessible Transportation Assistance Program (ATAP). Past provincial investments in sustainable transportation have been successful. In rural areas, the CTAP dial-a-ride program, unique to the Atlantic region, has expanded into nine communities since 2001 and logs over two million kilometres annually.

Due to the 1998 service exchange, public transportation is a municipal rather than provincial responsibility. Contributions from the province have been aimed at increasing inclusion and providing equitable services across municipalities.

### Funding Sources

Funding for sustainable transportation projects is allocated

through several departmental budgets, but not through the Department of Transportation and Infrastructure Renewal. Service Nova Scotia and Municipal Relations funds CTAP and ATAP; Conserve Nova Scotia funds transit infrastructure; and Health Promotion and Protection funds trail development.

### Provincial gas tax and vehicle registration fees:

The main sources of highway and bridge funding in Nova Scotia are gas tax revenue and Registry of Motor Vehicles fees. Nova Scotia levies a 15¢ per litre tax on gas and diesel. In 2007/2008, \$252 million was raised through the gas tax.<sup>22</sup> The Nova Scotia Registry of Motor Vehicles collects fees for vehicle licensing and registration. In 2007, total revenue from the Registry of Motor Vehicles was \$95 million.<sup>23</sup> If combined, the gas tax and Registry of Motor Vehicles fees are the fifth largest source of provincial revenue, totaling \$347 million and accounting for 8 percent of total revenue.<sup>24</sup> The top four sources are individual income tax, harmonized sales tax, petroleum royalties and corporate income tax, respectively.

### Road and bridge tolls:

The Cobequid Pass, a 45 kilometre twinned highway between Masstown and Thomson Station, is the only toll road in Nova Scotia. The average daily traffic in 2003/2004 was 6,200 cars and 1,700 commercial vehicles. The toll for a car is \$2.00 with a pass and \$4.00 without a pass; the toll for trucks and buses ranges between \$5.00 and \$15.00 with a pass and \$6.00 and \$24.00 without a pass.<sup>25</sup> Toll revenue in 2006/07 was \$17 million and net earnings were \$3 million.<sup>26</sup> These funds are returned to the project to pay for operations, maintenance, other administrative fees and financing requirements.

The Halifax-Dartmouth Bridge Commission is a provincial body with a mandate to construct and maintain crossings for the Halifax Harbour and Northwest Arm. The toll for a car to cross the Macdonald or MacKay bridges is 60¢ with a pass and 75¢ without a pass. As reported in its annual report, in 2007, the total tolls collected for vehicles crossing the harbour by way of the bridges amounted to \$23,426,000. The net income of the Bridge

*In 2008, British Columbia's carbon tax will generate \$600 million in revenue. The tax will increase costs for driving fuel efficient cars, such as the Toyota Prius, by an average of \$21 per year, and will increase costs for driving inefficient vehicles, such as the Dodge Ram, by an average of \$68 per year.*

Commission was \$6,505,000.<sup>27</sup> These return tolls are less than a one way transit fare. In 2008, the Commission released a study recommending the creation of a third crossing in the form of a tunnel or bridge by 2026.

### **Federal Gas Tax**

The federal gas tax transfer to municipalities was made permanent in 2008. This funding source is intended for infrastructure investment, including public transit, active transportation, water, sewers, solid waste disposal, community energy systems, and local roads and bridges. Between 2005 and 2010, the total federal gas tax transfer to Nova Scotia will be \$145 million, an average of \$29 million per year. In its transfer of funds to the provinces, the federal government has tried to “ensur[e] that the inter-provincial allocation is as close as possible to a per-capita basis while respecting the need to have an adjustment for the smallest jurisdictions.”<sup>28</sup>

### **Determining Future Investment**

One approach to determining an appropriate level of provin-

cial investment in sustainable transportation is to calculate the average amount invested by other provinces and apply this formula to Nova Scotia. To ascertain an appropriate level, all provincial investments in sustainable transportation - transit, car pooling, rail, active transportation - should be considered. Canadian Urban Transit Association tracks provincial investment in public transit.

Currently, provincial funding for transit in Nova Scotia is significantly lower than in other provinces. In 2008, funding from the provincial government for transit and community-based transportation, such as dial-a-ride, was \$3.79 per capita.<sup>29</sup> The average investment of Saskatchewan and Manitoba, the two provinces with populations closest in size to Nova Scotia's, between 2003 and 2006 was \$10.95 per capita; the average investment of all provinces, excluding Nova Scotia, during the same period was \$19.87 per capita (Table 1). Municipal-level funding is not included in the calculations.

There is a lack of data readily available on provincial investment in



other sustainable transportation modes, such as active transportation. Therefore, for the purpose of establishing an estimate, it is recommended that Nova Scotia’s government use the provincial average for transit investment in Canada as a guide.

Based on the average per capita spending of other provinces, an annual investment of \$11 million to \$19 million in sustainable transportation may be appropriate in Nova Scotia. More investment may be needed to achieve greenhouse gas emission (GHG) reductions in the transportation sector and be consistent with the province’s commitment to a 10 percent reduction below 1990 GHG levels by 2020.

An annual investment of \$11 million to \$19 million would mean a commitment of \$110 to \$190 million over 10 years. This figure could be compared to the amount the province will spend on repair and maintenance of its primary and secondary highways. *The Primary and Secondary Highway Systems: 10-Year Needs* report states that “over the next 10 years Nova Scotia’s primary and

**TABLE 1: Provincial transit investment**

Year	Area	Per Capita	NS Total <sup>30</sup>
2007	Nova Scotia	\$1.38	\$1,290,000
2008	Nova Scotia	\$3.79	\$3,550,000
2003-06	Saskatchewan and Manitoba	\$10.95	\$10,240,000
2003-06	All Provinces, excluding Nova Scotia	\$19.87	\$18,580,000

secondary highway system will need a \$3.4 billion investment.”<sup>31</sup> Investing in sustainable transportation will not eliminate the province’s need to make some investment in the highway system, but by reducing the number of vehicles traveling on highways the required investment can be reduced.

### Best Practices

#### Carbon Tax

A carbon tax aims to put a price on pollution so that its environmental, social, and economic impacts can be accounted for and built into decision-making. Quebec, British Columbia and Manitoba recently introduced carbon taxes ranging from \$3 to \$15 per tonne

of carbon pollution. The Intergovernmental Panel on Climate Change suggests that prices ranging between \$20 and \$50 per tonne, “sustained or increased over decades,” are needed to adequately reduce emissions.<sup>32</sup>

In 2007, Quebec identified that it needed \$200 million per year for five years to meet its short-term transportation efficiency goals and consequently created a carbon tax to ensure this revenue would be raised. In Quebec, a levy is collected from petroleum companies on the fuel they sell to retailers. The industry is charged 8¢ per litre for gas sold and 9¢ per litre for diesel fuel sold.<sup>34</sup> This is equivalent to a price of \$3 per tonne of carbon emissions.<sup>35</sup> The

*In 2007, Quebec identified that it needed \$200 million per year for five years to meet its short-term transportation efficiency goals and consequently created a carbon tax to ensure this revenue would be raised.*

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### Carbon tax ensures prices accurately reflect costs of making goods

The benefits of a carbon tax and tax shifting were outlined by 70 academic economists from the University of British Columbia, Simon Fraser University and the University of Northern British Columbia in a letter to British Columbia's premier:

Right now the prices of the goods we buy don't fully capture the costs to the environment of making those goods. A carbon tax will make the prices more accurately reflect all the costs of making a good. The carbon tax could be made revenue neutral by offsetting increased carbon taxes with cuts in other taxes (e.g., the income tax). As a result, the average British Columbian family would see no change in its after-tax income. Families would still, however, have incentives to change their consumption patterns to make them more environmentally friendly. Even with the same income, if gas prices increase, families will choose to drive less, for example.<sup>33</sup>

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price of energy in Quebec is regulated by the Régie de l'énergie. This body sets the price of energy based on costs to the distributor and can prevent unfair pricing.<sup>36</sup>

Approximately 50 companies are affected by the tax. It is estimated that these oil companies will pay an annual total of \$69 million per year for gas, \$36 million for diesel and \$43 million for heating oil. Natural gas distributors will pay \$39 million per year and Hydro-Québec will pay \$4.5 million.<sup>37</sup>

In 2008, British Columbia introduced a carbon tax of 3¢ per litre for all fossil fuel products. This tax will increase to 7¢ per litre by 2012. The 2008 and 2012 carbon tax rates are based on \$10 and \$30 per tonne of carbon emission charges respectively.<sup>38</sup> In 2008, the tax will generate \$600 million in revenue. It is estimated the tax will increase costs for driving fuel efficient cars, such as the Toyota Prius, by an average of \$21 per year, and will increase costs for driving inefficient vehicles, such

as the Dodge Ram, by an average of \$68 per year.<sup>39</sup>

Unlike Quebec's tax, British Columbia's tax is revenue neutral; the introduction of the carbon tax was paired with reductions in corporate and income taxes. This revenue neutral approach to taxation is politically attractive because it simply shifts the source of revenue. Positive activities like employment are rewarded with lower tax rates, while harmful activities such as burning fossil fuels are penalized with a higher tax rate. This approach provides "economic benefits because higher fuel prices encourage energy efficiency and technological innovation, reduce the economic costs of imported petroleum, and encourage employment and invest-



## Rural subsidy

Knowing that transit service is only available in certain parts of the province, it may be necessary to offer assistance to individuals who must rely on privately owned vehicles in order to interact with the wider community. Having consideration for the special demands of a rural population may make a carbon tax more palatable. The recently released *Green Shift* plan of the Liberal party of Canada demonstrates how this might be achieved. The report emphasizes that "Energy requirements are simply higher in rural Canada and in the North."<sup>40</sup>

The goal of any program implemented by government must focus on sustainability but also must consider current infrastructure realities. Though the *Green Mobility Strategy* emphasizes active transportation and transit, it recognizes that in certain situations more efficient vehicle use is the only reasonable option.

ment, which stimulates economic development."<sup>41</sup>

## Gas Tax

British Columbia, Alberta, Ontario and Quebec fund transit through provincial gas tax revenue. The amount leveraged is 12¢, 5¢, 2¢ and 1.5¢ per litre respectively. In addition to these provinces, the city of Victoria collects 2.5¢ per litre, which in 2005/06 covered 12 percent of its total transit costs.<sup>42</sup>

## Licensing Fees

In each municipality served by

transit, the government of Quebec collects a \$30 surcharge for each vehicle registered in order to help offset the costs of the service.<sup>43</sup>

## Road Pricing

The Express Toll Route, known as the ETR407, is a 69 kilometre private highway in the Greater Toronto Area. Fees range from 4¢ to 10¢ per kilometre depending on time of day. Drivers pay for the toll using electronic cards that deduct charges from a pre-paid account or a license plate billing system.<sup>44</sup> Road pricing raises

*A provincial report states that "over the next 10 years Nova Scotia's primary and secondary highway system will need a \$3.4 billion investment."*

*Investments in sustainable transportation can reduce the required investment by reducing the number of vehicles and wear and tear on the highways.*

*-Nova Scotia  
Transportation  
and Public Works*

revenue to cover construction and maintenance costs, allowing government funds to be allocated to more sustainable modes.

#### **User Fees**

In the Halifax Regional Municipality, the MetroLink rapid transit service costs more than regular transit service; monthly MetroLink passes cost \$75 versus \$60 for a regular pass. For the passengers of this service, the increased cost is not a barrier to transit use. Citizens are willing to pay more for a service that offers travel times and comfort comparable to driving alone. Surveys found that 95 percent of users consider the fares to be reasonable and that 30 percent of users formerly drove alone to work.<sup>45</sup>



#### **Provincial Actions**

##### **F1. Increase funding for sustainable transportation**

Increase funding for sustainable transportation including public transit, community-based transportation, carpooling, van shuttles, walking, cycling, skateboarding, rollerblading and intercity bus and rail.

**TABLE 2: Recommended Provincial Transit Investment**

<b>Year</b>	<b>Per Capita<sup>46</sup></b>	<b>Total</b>
2008/09	\$3.79	\$3,550,000
2009/10	\$6.52	\$6,097,000
2010/11	\$9.25	\$8,650,000
2011/12	\$10.95	\$11,240,000

## **F2. Identify funding targets and schedule**

Identify a funding target that, at least, matches the average level of investment of Saskatchewan and Manitoba, the two provinces with population sizes closest to Nova Scotia's. This amounts to \$10.95 per capita between 2003 and 2006. In a potential schedule, the government could use Nova Scotia's 2008/09 per capita investment as a base, and invest an additional one-quarter of the \$10.95 target per year until reaching the target (Table 2).

## **F3. Identify funding sources**

Introduce a \$3 per tonne revenue-generating carbon levy to leverage sustainable transportation funding. This levy is not significant enough to send price signals that will significantly change behaviour but it would raise revenue for sustainable transportation, all cost-effective non-electric energy efficiency and low-income energy efficiency programs. Placed strictly on emissions from coal-fired plants, a carbon tax of \$3 per tonne would generate approximately \$28 million<sup>47</sup>. Revenue collected from a Nova Scotia carbon levy

should remain in an energy efficiency fund. It should not become part of general revenue for the province.

There are several other potential sources for funding sustainable transportation, such as: revenue-neutral carbon tax, expanding road pricing initiatives, increasing and/or reallocating gas taxes, increasing and/or reallocating registration fees and licensing fees, and increasing user fees and freight rates. As well, existing funds could be reallocated. For example, a portion of the money allocated to road projects, such as highway twinning, could be reallocated to sustainable transportation initiatives.

## **F4. Create municipal allocation guidelines**

Create sustainable transportation funding allocation formulas that adequately reflect municipal contexts and needs. For example, the Community Transportation Assistance Program currently allocates funds based on population. However, given that many municipalities have low populations and large geographic areas, a formula based on area may be

more appropriate. Alternately, case-specific formulas may be appropriate given the range of municipal populations and densities.

## **Individual Actions**

Contact your Member of the Legislative Assembly to explain your sustainable transportation desires and voice your support for provincial tax or fee increases (where revenue is invested in sustainable transportation):

<http://www.gov.ns.ca/legislature/members/directory/constituencies.html>



# *Steward*

**Identify a provincial department to be the steward of sustainable transportation**



**Current Context**

**Departments**

Currently no provincial department has the mandate to deliver public infrastructure and services for sustainable transportation, though many departments have responsibilities related to trans-

portation in general (Table 3):

Despite many departments having transportation-related responsibilities, there is currently a lack of coordination among departments in the development of sustainable transportation infrastructure and services. For ex-

ample, while Health Promotion and Protection promotes active transportation, Transportation and Infrastructure Renewal does not construct active transportation infrastructure, such as paved shoulders for bicyclists.

**TABLE 3: Provincial departments with transportation-related responsibilities**

Department	Transportation-related Responsibility
Transportation and Infrastructure Renewal	Maintains 23,000km of roads and 4,100 bridges Operates and maintains seven ferries Maintains carpool parking lots at major highway exits
Service Nova Scotia and Municipal Relations	Funds programs supporting accessible rural transport
Health Promotion and Protection	Promotes active transportation and supports trail development
Community Services	Reimburses citizens for transportation to essential services
Education	Operates and maintains school buses Identifies locations for new schools
Energy/Conserve NS	Promotes vehicle efficiency Supports the development of renewable fuels and energy
Environment	Sets policy and regulations for reduction of greenhouse gas emissions and air pollutants
Economic Development	Promotes development of transportation infrastructure that stimulates economic activity
Tourism, Culture and Heritage	Promotes Nova Scotia as a travel destination and develops marketing partnerships with transportation carriers such as ferries and airlines

*While Health Promotion and Protection promotes active transportation, Transportation and Infrastructure Renewal does not construct active transportation infrastructure, such as paved shoulders for bicyclists.*

### Strategies

A comprehensive provincial strategy on sustainable transportation does not exist. However, transportation is addressed in several strategies related to the environment, public health and economic development (Table 4):

Each strategy provides some foundation for the development of sustainable transportation, but the lack of a comprehensive

sustainable transportation strategy limits their potential. For example, the Department of Education's effort to consolidate smaller school populations has resulted in the construction of new, larger schools which are often located on the outskirts of communities where it is difficult and/or unsafe for children to walk. This contradicts the Department of Health Promotion and Protection's Active Kids, Healthy Kids

### Internal Government Practices

#### Vehicle Purchasing Policy

In 2007, the government introduced an in-house vehicle policy for vehicle purchase, maintenance and operation specifications intended to maximize fuel efficiency and minimize pollution. Vehicles purchased by the government must be in the top 20 percent of their class for fuel efficiency. All government employees who drive a government vehicle must be trained in fuel efficiency techniques, including driving behaviour and vehicle maintenance.<sup>48</sup>

#### Employee Transit Pass

The Nova Scotia Department of Energy, Conserve Nova Scotia and the Nova Scotia Utility and Review Board provide employees with the option of an employer transit pass (E-PASS). Employees who wish to purchase an annual pass receive a 15 percent discount and a permanent transit pass. The pass is paid for through automatic payroll deduction or by post-dated cheque.



**TABLE 4: Provincial strategies relevant to transportation**

Document	Department	Transportation Related Goal
<b>Environment</b>		
Energy Strategy <sup>49</sup>	Energy	Increase transportation energy efficiency
Climate Change Action Plan <sup>50</sup>	Environment	Reduce greenhouse gas emissions
Environmental Goals and Sustainable Prosperity Act <sup>51</sup>	Environment	Reduce greenhouse gas emissions to at least ten per cent below 1990 levels by 2020 Adopt emissions standards for greenhouse gases and air pollutants from new motor vehicles
<b>Public Health</b>		
Active Kids, Healthy Kids Strategy <sup>52</sup>	Health Promotion and Protection	Create communities that facilitate access to safe and convenient natural and built environments
Injury Prevention Strategy <sup>53</sup>	Health Promotion and Protection	Reduce the incidence and severity of motor vehicle collisions and transportation-related injuries
Pathways for People <sup>54</sup>	Health Promotion and Protection	Outline of current active transportation initiatives and possible future actions
Healthy Eating Nova Scotia <sup>55</sup>	Health Promotion and Protection	Develop local food systems and alternative transportation strategies to make food more accessible in rural areas
Strategy for Positive Aging <sup>56</sup>	Seniors' Secretariat	Provide affordable, safe and accessible transportation options for seniors
<b>Economic Development</b>		
Opportunities for Sustainable Prosperity <sup>57</sup>	Economic Development	Develop transportation infrastructure to facilitate international trade and economic growth
Route to Prosperity: Nova Scotia's Infrastructure <sup>58</sup>	Transportation and Infrastructure Renewal	Develop transportation infrastructure to facilitate trade, access to education, employment, amenities and services
The Way Ahead <sup>59</sup>	Partnership of industry and government	Develop transportation infrastructure such as competitive rail access to support regional economic development

*Provincial leadership is needed to develop a sustainable transportation strategy and to coordinate the efforts of all departments in implementing the strategy.*

Strategy, which aims to increase the number of children walking to school. In addition, due to safety and liability concerns, some schools do not permit children and youth to bring bikes, skateboards or in-line skates onto school property.

Provincial leadership is needed to develop a sustainable transportation strategy and to coordinate the efforts of all departments in implementing the strategy. All government policies and projects must support sustainable transportation. Some first steps have been made. The Department of Infrastructure and Renewal has hired an active transportation engineer and Conserve Nova Scotia has hired a transportation coordinator.

### **Best Practices**

#### **Provincial Stewardship**

Seven provinces within Canada have sustainable transportation plans or comprehensive transportation sections within provincial climate change plans. The most common goals in these plans are reducing greenhouse gas emissions, expanding transit service

and reducing traffic congestion. The most popular strategies for achieving these goals are investment in urban rapid transit, rural transit, intermodal integration and alternative fuels.

Of the seven provincial plans that relate to sustainable transportation, Quebec's plan is the most substantial.<sup>60</sup> In 1992, Transport Quebec introduced an environmental policy, including a primary objective to "reduce energy consumption and related negative environmental effects." To this end, Transport Quebec promotes the use of energy efficient transportation modes, including public transit and rail for moving people, and rail and ship for moving goods. Transport Quebec serves all road network users, including cyclists, pedestrians and users of urban and intercity transit, school buses, paratransit, taxis and rail.

Transport Quebec's central office develops sustainable transportation policies, such as Quebec's Public Transit Policy. The central aim of this policy is to increase transit ridership 8 percent by 2012 in order to reduce green-

**TABLE 5: Goals & strategies** <sup>151</sup>BC (2007) <sup>152</sup>MB (2005) <sup>153</sup>NB (2007) <sup>154</sup>NL (2005) <sup>155</sup>ON (2007) <sup>156</sup>QC (2006) <sup>157</sup>SK (2007)

	<sup>151</sup> BC (2007)	<sup>152</sup> MB (2005)	<sup>153</sup> NB (2007)	<sup>154</sup> NL (2005)	<sup>155</sup> ON (2007)	<sup>156</sup> QC (2006)	<sup>157</sup> SK (2007)
Reduce costs of congestion	X				X	X	
Increase ridership				X	X	X	
Expansion in service				X	X	X	
Reduction in GHG's		X	X		X	X	
Focus on energy efficiency	X	X		X		X	
Focus on alternative fuels	X	X				X	X
Increase capacity, quality, speed of services	X				X	X	
Focus on rapid transit for urban centres	X	X			X	X	
Partnerships with institutions to stimulate higher transit usage	X	X				X	
Focus on rural transit and accessibility	X	X		X		X	
Focus on planning		X				X	
Intermodal integration		X				X	

*Some first steps  
have been made.  
The Department  
of Infrastructure  
and Renewal has  
hired an active  
transportation  
engineer and  
Conserve Nova  
Scotia has hired  
a transportation  
coordinator.*

house gas emissions, air pollution and congestion. The province is investing \$130 million (\$17.23 per capita) a year to improve public transit services.<sup>61</sup>

Transport Quebec's regional transportation offices are responsible for integrating the different modes of travel. For example, Transport Quebec employs 16 regional bicycle coordinators to oversee the design, implementation and maintenance of the provincial bicycling network, La Route Verte, and provide technical advice on bicycle infrastructure to other staff and municipalities. Quebec has invested approximately \$100 million over the past ten years into La Route Verte.<sup>62</sup>

## **Provincial Actions**

### **S1. Identify a department steward**

Identify one department to be the steward of sustainable transportation and develop a sustainable transportation strategy for Nova Scotia. Possible lead departments are Transportation and Infrastructure Renewal (TIR), Conserve Nova Scotia (CNS) or Service Nova Scotia and Municipal

Relations (SNSMR). The Ecology Action Centre recommends that Transportation and Infrastructure Renewal take the lead on sustainable transportation because their mission is to “deliver quality public infrastructure for Nova Scotia” and their mandate is to “provide a transportation network for the safe and efficient movement of people and goods.”<sup>60</sup> Conserve Nova Scotia, with its role in the promotion of transportation efficiency, and SNSMR, with its role in supporting accessible community transportation in rural areas, should work closely with TIR.

### **S2. Designate an employee**

Designate a full-time employee to the department steward to aid in the formation of a sustainable transportation strategy, facilitate communication between the interdepartmental and non-governmental team and ensure timely progress in the development of the strategy and policy review.

### **S3. Form an interdepartmental team**

Convene an interdepartmental sustainable transportation team to provide advice and support to the departmental steward in

the development, implementation and ongoing evaluation of the strategy.

#### **S4. Form a non-governmental team**

Convene a team of non-governmental stakeholders, including citizens who utilize sustainable transportation, transit and dial-a-ride service providers, bicycle tour operators, active living coordinators, representatives of sustainable transportation advocacy groups (such as Transport 2000 Atlantic) and municipal planners to advise and communicate with the interdepartmental team in the development, implementation and evaluation of the strategy.

#### **S5. Conduct a policy review**

Conduct a policy review to identify provincial policies that impact sustainable transportation to ensure that these policies support rather than contradict one another and enable the development and use of sustainable transportation infrastructure and services.

### **Individual Actions**

Join a group or initiative that promotes sustainable transportation.

- Velo Cape Breton  
<http://www.velocapebreton.com/>
- Association of Doctors for the Advancement of Physically-active Transportation  
<http://www.ecologyaction.ca/trax>
- Children's Clean Air Network  
<http://www.childrenca.ca/>
- Nova Scotia Community Based Transportation Association  
[http://www.gov.ns.ca/snsmr/dialaride/join\\_nscbta.asp](http://www.gov.ns.ca/snsmr/dialaride/join_nscbta.asp)
- Ecology Action Centre's Transportation Issues Committee  
[http://www.ecologyaction.ca/transportation\\_issues/transportation.shtm](http://www.ecologyaction.ca/transportation_issues/transportation.shtm)
- Transport 2000 Atlantic  
<http://www.transport2000.ca/atlantic>



# *Indicators*

**Establish indicators for measuring progress toward sustainable transportation**



## Current Context

### Modal Split

Modal split is a term used to describe the percentage of travellers using a particular type of transportation. Modal split data on how people travel to work is available for Nova Scotia from the Statistics Canada Census. In 2006, 73 percent of Nova Scotia employees drove alone to work, 11 percent carpoolled, 6 percent

used transit and 9 percent walked or cycled (Figure 1).

These numbers show modest but positive improvement from 2001. The increase in percentage of persons who carpoolled, walked and cycled may be attributed to rising gas prices, while the increase in transit is likely due to the introduction of transit programs in the Halifax Regional Municipality such as the university transit

pass and the MetroLink.

### Genuine Progress Index

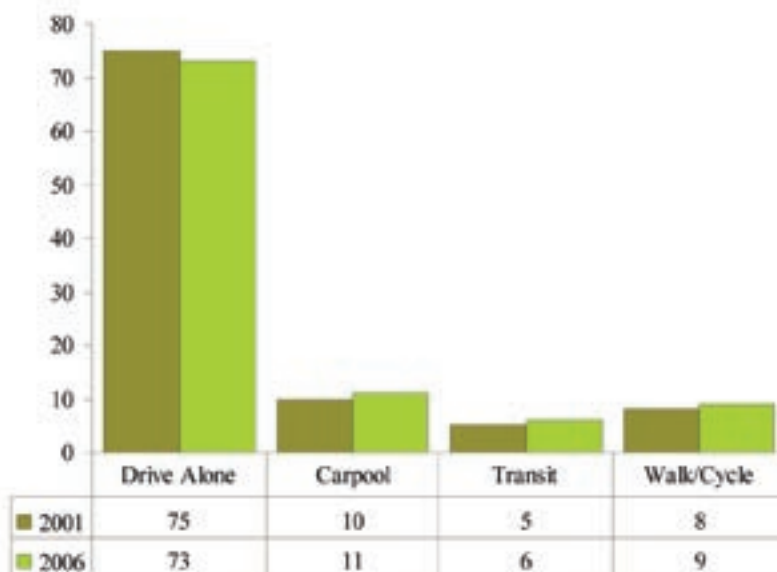
Modal split is one of the most common sustainable transportation indicators; however it is only one of many factors that should be considered when measuring progress towards sustainable transportation. In 2007, Genuine Progress Index (GPI) Atlantic published a report about Nova Scotia's transportation system. The report researchers used 20 indicators to measure the sustainability of Nova Scotia's transportation system. They found a movement away from sustainability; the trends for 13 of 20 indicators demonstrated a greater reliance on single occupancy vehicle trips (Table 6):

Genuine Progress Index Atlantic concludes, "the evidence clearly indicates that the current transportation system is fundamentally unsustainable, and that many trends are actually showing further movement away from sustainability." <sup>66</sup>

### Data Availability

One barrier to using indicators as a tool for measuring transporta-

**FIGURE 1: Nova Scotia's Commuter Mode Split** <sup>64</sup>



*Quebec has established a specific goal to increase mass transit ridership 8 percent by 2012. It is estimated that the target will result in a net reduction of 28 million litres of fuel and 80,000 tonnes of greenhouse gas emissions; this is equivalent to removing 14,000 vehicles from the road.*

tion sustainability is the lack of data available. For example Statistics Canada has ceased collecting data on urban density.

According to Genuine Progress Index Atlantic,

Canada and Nova Scotia currently lack standardized, comprehensive, and comparable time series data on vehicle travel, crashes, transportation program expenditures, energy consumption, travel patterns, transit ridership, and other transportation activities, collected at regular time intervals and suitable for evaluating conditions, tracking trends, comparing geographic areas, and other types of analysis.<sup>67</sup>

Such data is needed to assess the effectiveness of policies in creating progress toward sustainable transportation.

### **Best Practices**

#### **Modal Share Targets**

Quebec has established a general goal to increase public transit use in both urban and rural areas and a specific goal to increase mass

transit ridership 8 percent by 2012. Quebec has allocated \$130 million over five years to realize this target.<sup>68</sup> At the end of this period, results of Quebec's modal split data will be analyzed and a new target will be set for the following five years.<sup>69</sup>

An 8 percent increase in transit use is expected to reduce greenhouse gas emissions, road congestion, air pollution and dependence on imported fuel.<sup>70</sup> It is estimated that the target will result in a net reduction of 28 million litres of fuel and 80,000 tonnes of greenhouse gas emissions; this is equivalent to removing 14,000 vehicles from the road.<sup>71</sup>

#### **Data Collection**

The United Kingdom's Department of Transport collects a wide range of data on an annual basis. The data is published annually in *Transport Trends*, which provides an overview and analysis of transport and travel trends. The report is accompanied by data tables, which allows academics and policy analysts to easily manipulate and analyze the data. Themes addressed in-



**TABLE 6: Genuine Progress Index - Sustainable Transportation Indicators and Trends** <sup>65</sup>

<b>Economic Indicators</b>		<b>Trend</b>	
1	Government expenditures	Portion of government expenditures for transit	↓
2	Household expenditures	Percentage of household transportation spending devoted to public transit	↓
3	Personal mobility expenditures	Percentage household expenditures dedicated to transportation for those in lowest income quintile	↑
<b>Transport Patterns</b>			
4	Motorized mobility	Per capita annual vehicle kilometres	↓
5	Transport mode split	Portion of passenger travel by automobile	↓
6	Truck freight	Truck tonne-km per capita	↓
7	Transport productivity	Passenger-kilometre per unit of Gross Domestic Product	↑
<b>Environmental Indicators</b>			
8	Energy efficiency	Per capita transportation energy consumption	↓
9	Greenhouse gas emissions	Transportation-related greenhouse gas emissions	↓
10	Land consumption	Total amount of land paved for transportation facilities	↓
11	Salt pollution	Tonnes of road salt	↓
12	Air pollution	Per capita transportation air pollution emissions (based on index)	↑
13	Recycling rates	Portion of motor vehicle tires, batteries and hulks recycled	↑
<b>Social Indicators</b>			
14	Commute mode split	Percentage of commuters who walk, bicycle, or use public transit	↓
15	School transport accessibility	Portion of children driven to school	↓
16	Transit accessibility	Percentage of population who live within 500 metres of transit station	↓
17	Commuter distance	Average commuting distance	↑
18	Telework access	Percentage of households with Internet service	↑
19	Transportation accidents	Transport injuries and fatalities by mode	↑
20	Hazardous crashes	Number of accidents involving dangerous goods	↑

Note: A red down arrow indicates a movement away from sustainability; a green up arrow indicates a movement towards sustainability.

*Measure your  
transportation carbon  
footprint:*

*<http://www.sustain.ubc.ca/eco-survey/>*

*Calculate your cost  
of car ownership:*

*[http://www.caa.ca/documents/2007-04-27\\_Driving\\_Costs\\_Brochure\\_2007.pdf](http://www.caa.ca/documents/2007-04-27_Driving_Costs_Brochure_2007.pdf)*

clude: attitudes towards transport, freight, maritime, personal travel, public transport, roads and traffic, accidents and casualties, and vehicles.<sup>72</sup>

## Provincial Actions

### 11. Monitor transportation indicators

Adopt and monitor a suite of environmental, social and economic indicators, such as those proposed by Genuine Progress Index Atlantic, to measure the sustainability of Nova Scotia's transportation system and assess targets and related policies. In addition to collecting provincial data, data should also be collected for specific urban and rural areas. Annual reviews of the indicators, five-year assessments of targets and related policies, and public presentation of all results is recommended.

### 12. Establish modal split targets

Establish a modal split target that will adequately reduce Nova Scotia's greenhouse gas emissions in the transportation sector; to a level at least 10 percent below 1990 levels by 2020. A potential modal split target is driving alone

(50 percent), carpooling (15 percent), transit (10 percent), walking and cycling (13 percent), rail (4 percent) and telecommuting (8 percent) (Figure 2). Separate targets should be set for urban and rural areas.

In this scenario, between 2006 and 2021, the percentage of commuters who drive alone should decrease 23 percent, while the percentage of commuters who carpool (4 percent), use transit (4 percent), walk and cycle (4 percent), use rail (4 percent) and telecommute (8 percent) should increase. These targets are provincial averages.

The actual modal split achieved will depend on the public's willingness to use sustainable transportation modes. The public's willingness to use sustainable modes will depend on their convenience, comfort and cost. These three factors will be determined, in large part, by the province's investment in and promotion of sustainable transportation.

### 13. Support data collection

To address the several gaps in transportation data identified by

Genuine Progress Index Atlantic, work with other provinces to encourage the federal government to collect necessary data for measuring progress towards sustainable transportation.

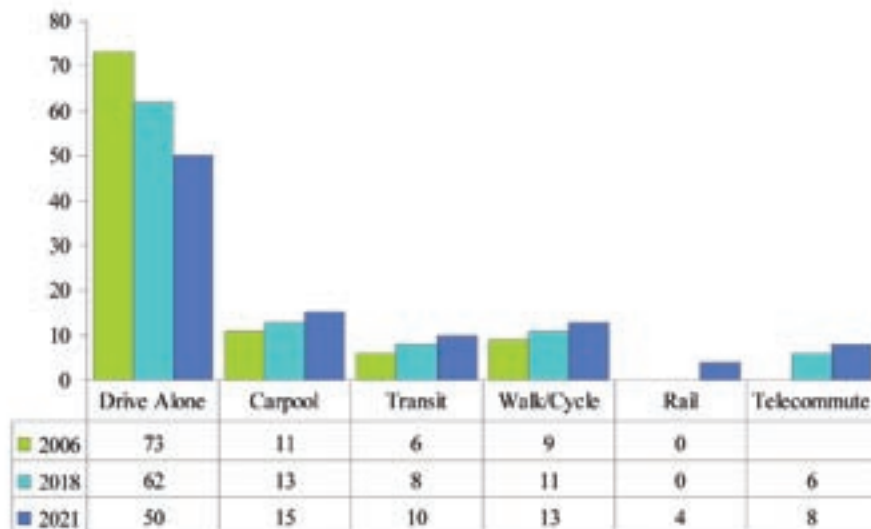
Calculate your cost of car ownership:  
[http://www.caa.ca/documents/2007-04-27\\_Driving-CostsBrochure2007.pdf](http://www.caa.ca/documents/2007-04-27_Driving-CostsBrochure2007.pdf)

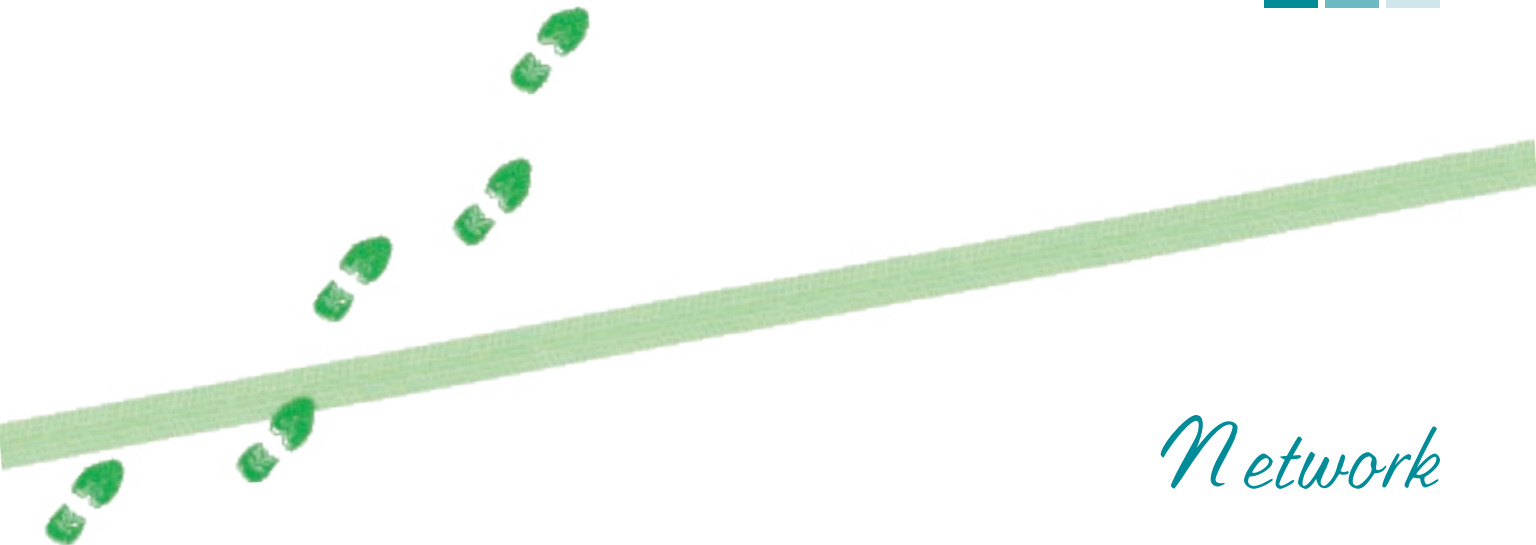
### Individual Actions

Measure your transportation carbon footprint:  
<http://www.sustain.ubc.ca/eco-survey/>

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**FIGURE 2: Potential Nova Scotia Modal Split Targets**





# Network

**Create a sustainable transportation network**





## Current Context

Nova Scotia has many transportation assets. For example, Nova Scotia was one of the earlier provinces to recognize that railways serve the public interest as a transportation link, by exempting rail lines from property tax, by exempting rail from fuel tax and by stepping in to save the Cape Breton rail line through strategic funding assistance.

However, much of the province is not served by mass transit of any type, including large portions of Yarmouth, Digby, Guysborough, Cumberland, Colchester, Halifax, Victoria and Inverness counties. In addition, the mass transit options that are available are Halifax-centric, while links between other communities, such as Yarmouth and Digby or Truro and Pictou, are lacking. A significant investment of both human and financial resources is needed to create a comprehensive sustainable transportation network.

### Travel between Nova Scotia Communities

Nova Scotia has routes for public transit, van shuttles, rail and trail:

- Kings Transit, Cape Breton Transit and Metro Transit are Nova Scotia's three public transit authorities;
- Acadian Lines provides bus service to Digby, Sydney and Halifax, Amherst and on to Moncton and beyond;
- Trius Tours provides bus service between Yarmouth and Halifax via the South Shore;
- Green Rider van shuttle offers a commuter service into Halifax from Kentville and Truro;
- Private van shuttles run between Sydney, Yarmouth, Halifax and the Halifax Stanfield International Airport;
- Via Rail provides service between Halifax and Amherst with stops in Truro and Springhill Junction. This train also provides service to Moncton, Campbellton and Montreal with transcontinental connections beyond;
- Community-based transportation<sup>74</sup> services operate in twelve communities/counties – Annapolis County, Antigonish, Cape Breton, Colchester County, Digby-Clare County, Halifax, Hants County, Kings County, Pictou County, Truro, Windsor, Yarmouth County;<sup>75</sup>
- The Department of Transporta-

tion and Infrastructure Renewal maintains carpool parking sites at major highway exits;

- Provincially operated ferries connect Digby Neck to Long and Brier Islands and Chester to Tancook Island;
- Four cable ferries operate in Country Harbour, Little Narrows, Englishtown and LaHave;
- Municipally funded ferries run between Halifax and Dartmouth;
- Approximately 400 kilometres of Trans Canada Trail connect communities with extensive sections in Lunenburg, Halifax, Cumberland, Colchester, Pictou, Guysborough and Inverness Counties; and
- Inter-provincial/international ferries connect Caribou to Wood Island, PEI, Digby to Saint John, New Brunswick and Yarmouth to Bar Harbour and Portland, Maine.

### Travel within Nova Scotia Communities

Transit: In addition to Kings Transit, Cape Breton Transit and Metro Transit, the Strait Area Transit Cooperative is developing a new public service for Inverness, Richmond, Guysborough and Antigonish counties. Some

*Much of the province is not served by mass transit of any type, including large portions of Yarmouth, Digby, Guysborough, Cumberland, Colchester, Halifax, Victoria and Inverness counties.*

services also exist in Yarmouth and Truro. Citizens for Public Transit in Lunenburg County, Pictou County Unites and other groups throughout the province are also working on transit plans for their communities.

### Turning priority for buses

On November 30th, 2007, Nova Scotia NDP Member of the Legislative Assembly, Leonard Preyra, introduced a Bill that if passed would “require vehicles to yield to a transit bus re-entering traffic if the bus has signaled its intention to proceed.”<sup>76</sup> Preyra identified two reasons for tabling the legislation, the first being pedestrian safety and the second being a reduction in transit trip times. As of June 2008 the Bill had not yet been passed but remains active.

### Active transportation:

Active transportation routes within Nova Scotia communities are not as easily identified, but a number of communities in Nova Scotia have completed or

are in the process of completing active transportation plans. Cape Breton Regional Municipality, the Town of Bridgewater and Halifax Regional Municipality have completed comprehensive active transportation plans and Pictou County has completed a Bikeways Plan.

Some people choose to use other forms of active transportation, such as canoeing or cross-country skiing. Skateboarding and rollerblading are popular modes of transportation, particularly with youth, however these modes are generally only permitted on multi-use trails with hard surfaces, and are illegal on both roads and sidewalks.

### Ridematching:

In May 2008, Halifax Regional Municipality launched HRMSmartrip.ca, a ridematching service that enables individuals to create an online commuting profile and be matched with potential carpool partners. Yarmouth also has an online carpool service that is run by volunteers and not by the municipality. Their website can be found at <http://carpoolyarmouth.freeforums.org>.

## Skateboarding permitted

On May 14, 2008, Lee Breen of Fredericton, New Brunswick surrendered to police after repeatedly violating a municipal bylaw that prohibits the use of skateboards on city streets and sidewalks. Breen refused to pay his fines saying, “I won’t pay because I believe I’m following the Fredericton Green Matters Campaign in finding alternative transportation with my skateboard.”<sup>77</sup>

The type of ban imposed by the city of Fredericton is common among Canadian municipalities. Most cities prohibit sliding and gliding on both streets and sidewalks. However, in the Town of Wolfville, Nova Scotia, the use of skateboards is only restricted in the downtown core. Chapter 70 of the town’s bylaws and regulations that were passed January 1, 2001 states:

(a) It shall be an offence to use or operate a skateboard, or scooter, on the section of Main Street identified as “Prohibited Area 1”.

(b) It shall also be an offence to use or operate a skateboard, or scooter, on the section of Elm Avenue identified as “Prohibited Area 2”.

Skateboarding is permitted at all other locations in the town.<sup>78</sup>

The use of skateboards on busy streets could be hazardous to both vehicle drivers and skateboarders but sliding and gliding could be permitted on secondary streets without hassle to either party.

Chapter 293 of Nova Scotia’s Motor Vehicle Act gives the power to municipalities to allow scooters, skateboards, in-line skates and roller skates on municipal or town roadways that are not a highway:

172 (1) Subject to subsection (2), it shall be an offence for a person upon a scooter, a skate board, in-line skates, roller skates or a device prescribed by the regulations to go on a roadway except while crossing on a crosswalk or unless on a roadway authorized by the Minister.

172 (2) The council of a city or an incorporated town may exempt from subsection (1) any roadway within that city or town that is not a highway to which the Public Highways Act applies.<sup>79</sup>

Informal ridesharing networks exist throughout the province.

### Carsharing:

Car Share HFX/ Car Share Atlantic is launching its service in Halifax in the summer of 2008. Car sharing is an alternative to car ownership. Rather than owning a car and being responsible for its maintenance, by joining a car share program, members can have access to a vehicle without the cost of ownership. In the long term Car Share HFX/Car Share Atlantic hopes to launch satellite operations in communities like Wolfville, Antigonish and Truro. For more information, see [www.carsharehfx.ca](http://www.carsharehfx.ca)

### Taxi:

Cape Breton, Queens and Halifax regional municipalities and approximately two-thirds of incorporated towns have some form of taxi service. The licensing scheme varies allowing from one vehicle in smaller towns to 1000 vehicles in Halifax Regional Municipality (610 in Halifax, 200 in Dartmouth, and 190 in the former County). Rural municipalities, with the exception of Kings County, do not license taxi operations. Therefore,

*Skateboarding and rollerblading are popular modes of transportation, particularly with youth, however these modes are generally only permitted on multi-use trails with hard surfaces, and are illegal on both roads and sidewalks.*

residents must rely on taxi service from nearby towns, leaving large rural sections of the province without consistent taxi service. Many of the smaller town operations do not provide evening service on weekdays or weekends.

Only Halifax Regional Municipality and the Town of Stewiacke provide for wheelchair accessible taxi registration. Halifax Regional Municipality currently has two accessible taxis. There is demand for more accessible taxis and if a driver is willing to give priority to passengers with physical disabilities, licenses are available. However, because accessible taxis are not restricted to a certain area, drivers feel obligated to pick up passengers with disabilities even if it means traveling long distances without a passenger on board. The financial costs of fuel consumed and wear and tear on the vehicle do not outweigh the driver's desire to make life easier for a client with a disability. There is no clear answer on how to deal with this problem. Municipalities across Canada struggle with assuring that accessible service is provided. In the city of Edmonton, Alberta, the province's human

rights tribunal mandated that each service provider maintain a certain number of accessible cabs on the road 24 hours a day.

## Best Practices

### Walking and bicycling

Adopted in 1995, Quebec has the most advanced cycling policy, *Politiques sur le Velo*, and has the highest investment in bicycle transportation infrastructure among the Canadian provinces. The province's coordinated effort has resulted in the development of a comprehensive 4,000 kilometre provincial cycling network, including bike paths and designated shared roadways. La Route Verte is now recognized by National Geographic Society as the top cycling destination in the world. In 2000, La Route Verte cyclists spent a total of \$95.4 million, corresponding to approximately 2,000 jobs, revenues of \$15.1 million for the Government of Québec<sup>80</sup> and an annual return on investment for La Route Verte of 108 percent.<sup>81</sup>

More recently, Transport Quebec committed to investments in walking and cycling in the *Quebec*



*Public Transit Policy:*

Walking and cycling must be treated as a component of a Quebec policy on public transit ... walking and cycling are the only clean modes of transportation that do not

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## Public Bicycles

Public bike programs exist all over the world, primarily in Europe and the United States, and are considered the public transit of bicycles. The central concept is free or low-cost access to bicycles for transportation in the city.<sup>84</sup> The city of Paris, France developed Velib (short for *vélo liberté*, meaning bicycle freedom), a self-service “bicycle transit system” that allows members to pick up a bicycle at (and return it to) any one of 1450 stations throughout the city. There are 20,000 Velib bikes in total. For the privilege of access to one of the well-maintained Velib bikes, users purchase a daily, weekly or annual card, after which the first half hour of riding is free. Additional time costs 1 to 4 euros.<sup>85</sup>

harm the environment. In this regard, the government intends to favour these forms of travel and encourage as many people as possible to adopt them.<sup>82</sup>

Funding will go to urban cities and small towns for the development of safe and efficient bicycle and pedestrian networks and improved intermodal connections, including bicycle-bus, bicycle-taxi, bicycles aboard commuter trains and ferries and bicycle racks in stations.<sup>83</sup>

## Intercity Passenger and Parcel Service

The Saskatchewan Transportation Company (STC) is a crown corporation that was founded in 1946. It has 28 routes, serves 275 communities and carries approximately 275,000 passengers annually.<sup>86</sup> Busier routes serve to balance out the costs incurred by routes serving more isolated and smaller locations. STC passenger vehicles also provide a parcel delivery service which helps to offset costs of routes with lower ridership. The province provides STC with capital and operating grants. For example, in 2006 the province invested \$4.2 million for capital

expenditures and \$4.0 million for operating costs.<sup>87</sup>

## Carsharing

The Nelson Carshare Co-op in British Columbia, serves Nelson (population 9,258), Revelstoke (population 7,500) and Kaslo (population 1,072) with a total of 11 vehicles. Founded in 2000, the cooperative has 100 members and plans to expand to Fernie, Golden and Kimberley, B.C.<sup>88</sup>

## Rural Transport Service

To better serve rural areas with sparse populations, Quebec invests in the pooling of existing transportation services at the regional level, including paratransit vehicles, school buses, medical transport, taxis, carpooling and volunteer drivers. Through this approach, Quebec aims to provide “regions with tools that will allow them to identify their public transit needs more clearly and focus efforts in the context of a broader vision.”<sup>89</sup> Rimouski’s taxi-bus is an example of a service that has benefited from the province’s support. Liability issues are not a factor because of Quebec’s no-fault vehicle insurance program.

*Chapter 293 of  
Nova Scotia's  
Motor Vehicle  
Act gives the power  
to municipalities to  
allow scooters, skate-  
boards, in-line skates  
and roller skates on  
municipal or town  
roadways* <sup>162</sup>

## Rails with Trails

Rail transport is far more fuel-efficient than road transport and a revival of rail transportation for freight and passenger service will be necessary to help reduce the production of greenhouse gas emissions. Currently, there are active volunteer trail organizations throughout the province converting rail corridors to trails. Unfortunately, and ironically, this could pit rail and active transportation against each other. Combining rails with trails is one solution for facilitating both active and rail transportation within a rail corridor. An example of a successful rail with trail corridor exists in Dartmouth, Nova Scotia. Other successful examples exist in Ontario and Quebec. The combination of rail with trails is ideal because it combines two sustainable modes of transportation in one corridor.

### Rail

In partnership with the federal government, Quebec invests in the rehabilitation of secondary freight and passenger railway lines. Transport Quebec will cost share with shortline rail companies for amounts up to \$5,600 per kilometre for improvements to rail infrastructure, such as replacing rail ties or constructing sidings. Funding from Transport Quebec supports over a dozen shortline railways, including the Ottawa Central Railway. In 2008, Quebec announced a \$6 million investment in a project to restore the St. Lawrence and Atlantic (SL&A) railroad and the Mon-

treau, Maine and Atlantic (MMA) railroad shortlines.<sup>90</sup>

### Provincial Actions

#### **N1. Create a provincial bicycling network**

Develop and maintain a province-wide bikeways network that includes on-road bicycle routes and off-road bicycle paths. Wide shoulders on all roads carrying more than 2000 cars per day should be integrated into road paving plans. The bicycle network should include intermodal links, such as bicycle racks on public and private transit as well as bicycle facilities on trains and

ferries. The bikeways network should be well marked with directional signage, share the road signs and route delineation and should become an integral part of the transportation system in Nova Scotia. Bikeways linkages to other Atlantic Provinces and New England States should also be established. Roadway paving or repaving projects should include the incorporation a bike lane.

## **N2. Complete provincial trail network**

Complete a provincial trail network, which provides connectivity within and between communities, and is accessible for bicyclists, walkers, horseback riders and cross-country skiers. Sections of a provincial trail network, especially those which pass through towns and cities, should be paved for skateboarding, rollerblading, scootering and wheelchair use. To reconcile conflict between motorized and non-motorized users, separate trails should be developed for motorized users, especially for sections of the trail, which pass through communities.

## **N3. Develop intercity transit, rail and ferry network**

Invest in an intercity public transportation network, that includes passenger rail service between major communities such as New Glasgow, Truro and Halifax, ferry systems with frequent connections across Nova Scotia harbours, frequent, express inter-regional transit service, and shuttle services connecting rural residents on secondary roads to ferry, coach and rail terminals.

## **N4. Invest in public transit**

Support urban, suburban and rural municipalities in the provision of frequent, reliable, accessible public transit service within and between communities, including dial-a-ride, taxibuses and carsharing services.<sup>91</sup>

## **N5. Provide incentives for active and innovative transportation**

Provide incentives to municipalities for the development of active transportation, including the construction and maintenance of sidewalks, bicycle lanes, neighbourhood footpaths, pathways for kids to skateboard, scooter, rollerblade and bike and

the installation of supporting infrastructure, such as bike racks, “Share the Road” and directional signs, rest stops with benches, washrooms and lighting. As well, provide incentives for innovative transportation options, such as carsharing.

## **N6. Support pooling of services**

Support rural municipalities and regions in optimizing and integrating existing public transportation services, such as empty seats on community-based transportation vehicles, seniors’ buses and school buses. This may require changes to current insurance and liability policies.

## **N7. Facilitate multi-purpose services**

Identify and support opportunities



*Only Halifax Regional Municipality and the Town of Stewiacke provide for wheelchair accessible taxi registration. Halifax Regional Municipality currently has two accessible taxis.*

to integrate services such as using courier and mail vehicles to carry passengers, adding passenger cars to fast freight trains and using passenger buses for parcel delivery.

#### **N8. Identify and change policy barriers**

Identify and change policies that inhibit the development and use

of sustainable transportation. For example, under the Motor Vehicle Act, it is illegal to skateboard on roads and streets.

#### **N9. Remove insurance barriers**

Eliminate insurance barriers to all sustainable public transport operators, including rail, ferry and bus as well as active transportation

### **Air travel: myth and reality**

A report by Climate Action Network Europe debunks some commonly held beliefs about air travel. One myth is that per passenger kilometre, air travel is more climate-friendly than travel by vehicle. In reality, the carbon emissions from air travel are two to ten times greater than that of ground transport.<sup>92</sup> The David Suzuki Foundation adds, “Burning jet fuel also releases water vapour, nitrous oxides, sulphate, and soot. Aircraft emissions trigger the formation of contrails (condensation trails), and contribute to the formation of cirrus clouds.”<sup>93</sup> These clouds affect the amount of heat that is trapped within the lower atmosphere. This makes night-time flights worse for the environment than daytime trips because during the day contrails also reflect sunlight away from the earth.<sup>94</sup>

Short-haul flights are worse offenders per passenger kilometre than transatlantic because the most polluting portions of the trip are in takeoff and landing. The most climate friendly means of transportation are travel by coach and passenger rail.<sup>95</sup>

Other myths of air travel are that the aviation industry continues to increase its fuel efficiency and that the economic contribution of aviation exceeds its impact on climate change.<sup>96</sup>

groups, by extending provincial insurance coverage include general liability, carrier liability, luggage liability and directors' liability.

### **N10. Promote rural economic development**

Identify and promote synergy between sustainable transportation

and rural economic development. Initiatives may include rail station rehabilitation for multiple uses as a catalyst to town-centre revitalization, re-establishment of bus stops in small town centres, ecotourism development where trailheads intersect with rail and bus service, local testing of environmental

technologies like ultralight rail and promotional partnerships with Business Improvement Commissions, Boards of Trade and Chambers of Commerce.

### **Individual Actions**

Use intercity coach, rail and shuttle services to travel within Nova Scotia:

- Via Rail  
<http://www.viarail.ca/>
- Acadian Lines  
<http://www.smtbus.com/>
- Trius Tours  
<http://www.peisland.com/trius-tours/>  
Brag about your experience to your friends and colleagues!  
Encourage visiting friends and family to use available coach, rail and shuttle services by purchasing their tickets instead of driving to pick them up.  
Plan a cycling trip to Quebec to experience La Route Verte <http://www.routeverte.com/rv/ang/index.lasso>

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## **Freight**

The Ecology Action Centre's *Green Mobility Strategy* focuses on the movement of people. However, we recognize that the movement of freight also contributes to the production of greenhouse gases and exacerbation of climate change. If the province is to meet its climate change targets, as outlined in the *Environmental Goals and Sustainable Prosperity Act* it will have to examine the freight hauling practices within its boundaries and make appropriate modifications and regulation changes.

The U.S. Department of Energy reports that trucks hauling goods use up to eleven times the fuel of rail. A single freight train can take up to 280 trucks or 1,100 cars off of the highway. Without rail as an option, freight shippers would have to put 50 million additional trucks on the roadways.<sup>97</sup> These additional trips would damage Nova Scotia's publicly funded highway system. Although the cost of constructing one kilometre of rail and one kilometre of truckway are approximately equal, the public bears the cost of maintaining highways, so the trucking industry essentially receives a public subsidy. On the other hand, the rail industry is responsible for the maintenance of the railways, and receives no subsidy from public money. This imbalance needs to be addressed to facilitate increased use of rail for freight movement and to enable Nova Scotia to achieve its climate change commitments.

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# *Land Use*

**Integrate land-use planning into municipal and provincial policy to achieve transportation energy efficiency**



## Current Context

In its 2007 analysis of the full costs of transportation in Nova Scotia, Genuine Progress Index Atlantic identified a series of indicators with which to measure the sustainability of Nova Scotia’s transportation system. Four of these indicators relate particularly to land-use and transportation energy efficiency (Table 7):

Three of the four indicators show a movement away from sustainability. The space taken by transport facilities, measured as road density, is increasing, resulting in further fragmentation of habitat and declining large vertebrate populations, such as

the endangered mainland moose. Urban density (people per square kilometer) is decreasing. Between 1971 and 1996 Canada’s average urban density decreased by 23 percent. During the same period Nova Scotia’s urban density diminished by 36 percent, one of the sharpest declines in the country.<sup>99</sup> This led to a decline in the number of people who have convenient access to public transit. Although average commuting distance declined from 8.3 to 7.8 kilometres, Nova Scotia still has “the second longest commute distance of any Canadian province or territory.”<sup>100</sup>

## Smart Growth

Smart growth is an approach to community planning developed

in the 1990s in reaction to urban sprawl. Applied in combination, smart growth principles, such as mixed land use and compact building design, result in communities with smaller ecological footprints, healthier citizens, vibrant local economies and reduced infrastructure costs. Halifax Regional Municipality incorporated smart growth into its Regional Planning Strategy which will guide development until 2020. A nodal approach to development is central to the plan; nodal development is compact, intentional development, in contrast to sprawling, dispersed development. Over the life of the plan, it is estimated that this approach will save the municipality \$250 million in



**TABLE 7: GPI Atlantic’s Land-Use Sustainability Objectives and Indicators**<sup>98</sup>

Objective	Indicator	Trend
Decrease space taken by transport facilities	- Space taken by transport facilities by mode - Urban density	↓ ↓
Increase access to basic services	- Average commuting distance	↑
Increase access to public transportation	- percentage of population who live within 500m of transit station	↓



*Between 1971 and 1996 Canada's average urban density decreased by 23 percent. During the same period Nova Scotia's urban density diminished by 36 percent, one of the sharpest declines in the country.<sup>163</sup>*

direct costs such as road construction, water and sewer services and waste management.<sup>101</sup>

### Health and Land-Use

The structure of our built environments is a factor in our health and well-being. Specifically, “the built environment can impact the risks for heart disease and stroke and affects how we travel, how physically active we are, levels of air pollution and rates of obesity among Canadians.”<sup>107</sup> Communities where walking, cycling,

rollerblading, skateboarding and scootering are safe, enjoyable and convenient foster a healthier population.

Investments in active transportation modes, particularly walking and cycling infrastructure, yield savings for the health care system. Obesity costs the provincial health care system \$120 million per year, equivalent to 7 percent of the provincial health budget.<sup>108</sup> The rate of obesity is increasing. As of 2000, 38 percent

### Smart Growth Principles

The major principles of smart growth include:<sup>102</sup>

- Directing development toward existing communities
- Mixing land uses
- Creating a range of housing opportunities and choices
- Taking advantage of compact building design
- Creating walkable neighborhoods
- Providing a variety of transportation choices
- Preserving farmland, open space, natural beauty and critical environmental areas
- Making development decisions predictable, fair and cost effective
- Fostering distinctive, attractive communities with a strong sense of place
- Encouraging community and other stakeholder collaboration



## Complete Streets

Complete streets are inclusive streets designed for a variety of users that include more than just vehicles. The Complete Streets Organization writes: “[Complete streets] ensure streets don’t create barriers for children, disabled users, older persons, or those who do not drive. They make sure that roads are designed and updated to allow everyone to travel safely.”<sup>103</sup>

In the United States, more than 50 jurisdictions have already adopted complete streets policies. Now there is a movement to make complete streets a national policy. In March of 2008, the Complete Streets Act of 2008 was put before the U.S. Senate. In May it was put before the U.S. House. If passed, the bill “would make sure that roads built and improved with federal funds safely serve everyone using the roadway - including pedestrians, people on bicycles or those catching the bus, as well as those with disabilities.”<sup>104</sup> Creating pedestrian-friendly streets, which includes sidewalks, raised medians, better bus stop placement, traffic-calming measures, and treatments for disabled travelers, has many benefits, including:

- Creating opportunities for non-drivers, including children and seniors, to be a part of the community
- Reducing the risk of fatality and injury to pedestrians by up to 28 per cent.<sup>105</sup>
- Encouraging healthy lifestyles. Nearly 43 per cent of people with safe places to walk within 10 minutes of home meet recommended activity levels. Only 27 per cent of those without safe options meet that same standard.<sup>106</sup>

of Nova Scotian adults were overweight compared to 18 percent in 1985 – an increase of 20 percent over 15 years.<sup>109</sup> This trend may be worsening: between 2001 and 2005 physical activity levels of grade 11 boys decreased from 13 percent to 10 percent and for girls from 7 percent to 0.6 percent.<sup>110</sup>

### Sustainable Prosperity Act

Nova Scotia’s *Environmental Goals and Sustainable Prosper-*

*ity Act*, passed in 2007, regulates greenhouse gas emissions. The stated goal is to reduce emissions 10 percent below 1990 levels by 2020. This target is in accordance with the target established by the New England Governors and Eastern Canadian Premiers Climate Change Plan.<sup>111</sup>

While the Act includes specific reference to the implementation of California vehicle emission

standards, there is no reference to sustainable transportation or land use planning. Movement towards sustainability requires the close integration of land use and transportation planning. Predominant land use practices encourage dispersed development which increases the distance between destinations, encourages vehicle ownership and operation and limits transportation options. The way cities and towns

*Obesity costs the provincial health care system \$120 million per year, equivalent to 7 percent of the provincial health budget.<sup>164</sup>*

are designed directly impacts how much energy is used. In communities where opportunities to work, shop, and play are within walking or bussing distance citizens use cars less often. As stated by Smart Growth America, “land use comes first, then transportation. You build the transportation network to serve the kind of development pattern you want. You don’t just build roads and watch what happens.”<sup>112</sup>

### **Municipal Government Act**

The Nova Scotia Municipal Government Act (MGA) guides municipal operations, including land use planning. The Municipal Government Act gives authority to municipalities to plan land use within municipal boundaries. The MGA, passed in 1999, falls under the mandate of Service Nova Scotia and Municipal Relations. The MGA details the required content for municipal plans, but does not require municipalities to create plans or planning departments. Therefore, some municipalities have plans that only address small geographic areas or specific issues, such as in Pictou and Clare, rather than having a comprehensive land-use strategy.<sup>113</sup>

There are two main references to transportation in the MGA. The first is clause 54, which states, “Every regional transit authority is dissolved and its assets and liabilities are vested in the municipality that established it.”<sup>114</sup> This clause reflects a service exchange that occurred in 1998, which gave responsibility for social services to the province and responsibility for transit to municipalities. As a result of this service transfer, transit systems in Pictou County and Yarmouth stopped operations, due to a lack of funding and a lack of coordination among municipalities. These communities are still suffering from the consequences of the service transfer.

The second reference to transportation in the MGA is clause 55, which states: “a municipality may provide a public transportation service.”<sup>115</sup> This means that if a municipality wants to finance transit it may; however, it is under no obligation to do so. The current deficit in municipal transportation services should encourage the province to fund and support municipal public transportation initiatives.

Though the MGA includes some statements of provincial interest related to land-use planning, these may need to be strengthened in order to reflect a firmer commitment to smart growth planning principles (Table 8).

**TABLE 8: Municipal Government Act: Selected Statements of Provincial Interest <sup>116</sup>**

### **Agricultural Land**

#### **Goal**

- To protect agricultural land for the development of a viable and sustainable agriculture and food industry

#### **Smart Growth**

- Aims to protect farmland by limiting and focusing development

#### **Basis**

- The preservation of agricultural land is important to the future of Nova Scotians
- Agricultural land is being lost to non-agricultural development
- There are land-use conflicts between agricultural and non-agricultural land uses

### **Infrastructure**

#### **Goal**

- To make efficient use of municipal water supply and municipal wastewater disposal systems

#### **Smart Growth**

- Encourages compact implementation of expensive infrastructure

#### **Basis**

- All levels of government have made significant investments in providing municipal water supply and municipal wastewater disposal infrastructure systems
- Unplanned and uncoordinated development increases the demand for costly conventional infrastructure

### **Housing**

#### **Goal**

- To provide housing opportunities to meet the needs of all Nova Scotians

#### **Smart Growth**

- Encourages a range of housing options which is an important component of community resiliency and vibrancy

#### **Basis**

- Adequate shelter is a fundamental requirement for all Nova Scotians
- A wide range of housing types is necessary to meet the needs of Nova Scotians

*For the equivalent cost of one-quarter tank of gas per person per year, Nova Scotia's government can quadruple its contribution to sustainable transportation.*

Municipalities must consider these statements when developing their plans and indicate how their plan is consistent with the statements or justify why they have not complied with the statement. However, these statements only apply if a municipality has opted to develop a plan.<sup>117</sup>

### **Integrated Community Sustainability Plans**

In 2005, the federal government allocated gas tax revenue to municipalities for infrastructure investment, such as public transit, roads and community energy systems.<sup>118</sup> The federal government chose to distribute this funding through the province. In order to receive funding the province requires that municipalities complete Integrated Community Sustainability Plans (ICSPs) by 2010. The ICSPs must include a 20 to 30 year vision for the community that addresses environmental, social, cultural and economic issues. The ICSPs provide an ideal opportunity to incorporate sustainable transportation into long-term municipal plans.

### **Farmland**

One smart growth principle is to

preserve farmland, open space, natural beauty and critical environmental areas.<sup>119</sup> Nova Scotia has approximately 1.1 million hectares of class 2 and class 3 soil. This does not account for lands which may already be lost due to development. A draft document by Genuine Progress Index Atlantic reports “since the mid-1970’s total land in crops and pasture in Nova Scotia has declined by about 10 percent.”<sup>120</sup> 40,000 hectares or approximately 13 percent of cropland are underutilized in Nova Scotia. In a 2008 discussion paper, The Department of Energy suggested that this underutilized land may provide an opportunity for growing plant matter to be used as biofuel.<sup>121</sup>

The demand for farmland for biofuels is increasing as the need to find alternatives to fossil fuels is recognized. Simultaneously, pressure for urban development on working farmland may increase as population increases and people continue to desire to live in a rural setting. However, as Nova Scotians’ currently obtain only 7.2 per cent of their food from local sources (down from 10 per cent in 1991)<sup>122</sup>, it is recom-

mended that underused farmland is allocated to local food production not for development or bio-fuel production.<sup>123</sup> By allocating underused farmland to local food production, government can contribute to reducing emissions caused by importing food and to improving the local farming economy in Nova Scotia.

## Best Practices

### Places to Grow Act

In 2006, Ontario created the Places to Grow Act, marking the first time that province has taken a long-term approach to growth and development. The goal of the act is to prevent urban sprawl and create complete communities, where a range of services, such as housing, schools, shops and employment are located in one neighbourhood.<sup>124</sup>

Transportation, intensification and conservation are three focus areas of the Places to Grow Act.

1. Transportation: In 2006, \$838 million was invested in transit projects in the Greater Toronto Area by the provincial government. This investment was through the *MoveOntario*

2020 plan, which commits to a \$17.5 billion investment in rapid transit systems for the Greater Toronto Area over 12 years.<sup>125</sup> Municipalities will also be expected to integrate walking and cycling into their transportation planning.

2. Intensification: Municipalities are required to accommodate at least 40 per cent of new residential units in existing built-up areas. Increasing density will result in faster, more frequent transit service; therefore, transit will be more attractive to current and potential users. In addition, Ontario is introducing a financial incentive, on a pilot project basis, that will assist in the development of former industrial lands and infrastructure in effort to increase community density.<sup>126</sup>

3. Conservation: The Greenbelt, 1.8 million acres of environmentally sensitive heritage and farmland, will be protected by focusing population growth in cities and towns outside of this Greenbelt area.

### Child and Youth Friendly Land Use and Transport Planning Guidelines

The Centre for Sustainable Transportation has developed Guidelines that can be implemented to create healthier communities for children and youth – thus contributing to healthier communities for all. The Guidelines have been endorsed by the Ontario Professional Planning Institute and are being incorporated into many Ontario municipal plans. Similar guidelines have been developed for Nova Scotia. The document outlines the adverse health impacts of motorized transportation on this vulnerable sector of the population and details planning guidelines that fall within the jurisdiction of provincial and municipal government, as well as school boards. The Guidelines are available at <http://cst.uwinnipeg.ca/completed.html>

### Mandatory Development Charges

In Portland, Oregon, the city imposes a charge to all new property development for “capacity increases for parks and recreation facilities.”<sup>128</sup> It is not a tax, rather a charge that supports a specific

*As of 2000, 38 percent of Nova Scotian adults were overweight compared to 18 percent in 1985 – an increase of 20 percent over 15 years. This trend may be worsening: between 2001 and 2005 physical activity levels of grade 11 boys decreased from 13 percent to 10 percent and for girls from 7 percent to 0.6 percent.*

## Brownfield Redevelopment Incentives

Ontario's Community Improvement Plan (CIP) supports municipalities in providing direct incentives to developers for tackling development on brownfield sites:

Financial incentives may include grants and/or loans to assist with feasibility studies, municipal fees and eligible costs. A CIP also permits a municipality to provide a tax increment equivalent grant, which is equivalent to all or part of the incremental increase in the municipal portion of the property taxes resulting from improvements, rehabilitation, remediation and redevelopment of a property.<sup>127</sup>

funding purpose. This type of charge could be applied in Nova Scotia to support a fund for municipal active transportation infrastructure, or protection of greenbelts surrounding municipalities. While imposed mandatory development charges may impact municipalities' abilities to attract business, a system of consistent, purpose-specific development levies could be a good source of funding to help municipalities improve sustainable transportation infrastructure and service and help the province reach its sustainability goals.

### School Siting

A number of American states have adopted policies, which work to

concentrate school development in areas close to population centres and provide more opportunities for children and youth to walk, bicycle, skateboard, scoot or rollerblade to school.<sup>129</sup>

- Maryland eliminated minimum acreage requirements for schools and focuses on investing in existing schools rather than constructing new ones.
- Maine instituted a maximum site size. The state will not fund construction for schools that exceed the maximum size; further, the state requires that new school sites be located in designated growth areas.
- California offers grants and tax incentives to encourage the lo-

cation of schools in places that are consistent with efficient growth principles, such as schools built on redeveloped industrial sites.

- New Jersey recommends that school siting be integrated into the municipal planning process.

## Provincial Actions

### P1. Strengthen the Municipal Government Act

In collaboration with municipalities, strengthen the current land use planning and transportation content of the Municipal Government Act to encourage more compact, multi-use communities which in turn will help Nova Scotia realize its greenhouse gas reduction commitments in the Sustainable Prosperity Act. Components of a strengthened Municipal Government Act could include:

- Incorporating a provincial statement of interest requiring municipalities with planning strategies to maximize energy efficiency through the integration of land use and transportation planning. The Nova Scotia Department of Energy included this recommendation in its 2001 strategy;<sup>130</sup>
- Creating density target guidelines and requesting municipi-

palities to identify current density levels and define targets;

- Requiring completion of municipal plans that include comprehensive land use planning and transportation components in order to receive related provincial funding. This may require a commitment from the provincial government in order to fund the development of these plans; and,
- Developing a policy, that requires the province to abide by municipal plans. The province should work closely with municipal officials to ensure that its plans, for example, with respect to highway off/on ramp construction and school siting, complement and reinforce municipal plans for land use and transportation energy efficiency.

### P2. Provide transportation support for the Integrated Community Sustainability Plans

Support municipalities in the incorporation of sustainable transportation best practices in their Integrated Community Sustainability Plans. Given the relationship between transportation-related energy use and land-use planning it is critical for the province to work closely with municipalities

to fully incorporate transportation efficiency into land-use planning. The Integrated Community Sustainability Plans, due by 2010, are an ideal opportunity for the province to achieve this.

### P3. Study financial incentives and (dis)incentives

In collaboration with the Union of Nova Scotia Municipalities, the Nova Scotia Planning Directors Association, and/or the Atlantic Planning Institute, conduct a study to identify and prioritize a range of financial incentives and/or disincentives that the provincial government could implement to promote smart growth at the municipal level. The study should focus on how effective these financial means will be to encourage smart growth and consequently make sustainable transportation more viable. Potential tools include a fee for development of land that is not already built up and tax incentives for the development of vacant land in town and city centres.<sup>131</sup> The province could reimburse municipalities for tax revenue lost due to such incentives.

*"Land use comes first, then transportation. You build the transportation network to serve the kind of development pattern you want. You don't just build roads and watch what happens."*

*- Smart Growth  
America*

#### **P4. Develop a farmland policy**

Develop a farmland policy that prioritizes the use of farmland for food production over the production of plant matter for biofuels.

#### **P5. Legislate mandatory development charges**

Legislate province-wide, purpose-specific, mandatory development charges. Development charges can be levied by municipalities on developers, and revenues directed towards projects that contribute to the community, such as sustainable transportation, affordable housing, parks and public art. However, if only one municipality levies such charges there is a risk that developers will move to a neighbouring municipality where there are no development fees. Therefore, provincial legislation is needed to help create an even playing field between municipalities.

#### **Individual Actions**

Read the Canadian Mortgage and Housing Corporation pamphlet on criteria to consider when choosing where to buy a house:  
<http://www.cmhc-schl.gc.ca/en/co/buho/sune/index.cfm>

Learn how land use planning impacts your health:

[http://www.heartandstroke.com/site/c.ikIQLcMWJtE/b.3820627/k.DB5D/The\\_built\\_environment\\_physical\\_activiy\\_heart\\_disease\\_and\\_stroke.htm](http://www.heartandstroke.com/site/c.ikIQLcMWJtE/b.3820627/k.DB5D/The_built_environment_physical_activiy_heart_disease_and_stroke.htm)

Calculate the walkability of your neighbourhood:

<http://www.walkscore.com/>





# *Awareness*

**Increase public awareness about sustainable transportation**



*To promote Charlottetown's new transit system, the transit authority offered a free transit ride to grade 7 and 8 students. The students learned how to board the bus, read the schedule and appropriate etiquette.*

## Current Context

There are a number of education and outreach programs in Nova Scotia that focus on various aspects of sustainable transportation, including active transportation, vehicle efficiency and food miles – the distance food travels from the time of its production until it reaches the consumer (Table 9).

Still lacking however, is adequate publicity and communication about sustainable transportation services and infrastructure that already exist and province-wide safety education for both motorists and non-motorists on sharing the road.

## Best Practices

### Centralized Transportation Website

Centralized transportation websites provide a one-stop information resource for an individual who is interested in traveling in an area. These websites are useful for both residents and tourists. The sites include information on all transportation services, routes, schedules and fares. Sophisticated trip planning websites allow a user to enter their origin and destination and automatically generate travel options.

### Carpool Matching

Carpool matching services allow individuals to securely create an

## Publicity of existing services needed

When the Ecology Action Centre's (EAC) sustainable transportation project booked a trip to Mahone Bay, the Bed and Breakfast operator was surprised to learn that Trius Tours offers bus service from Halifax to Mahone Bay, "I'm in the tourism industry and I don't know," she exclaimed. When confirming EAC's participation at a biofuel conference at the Nova Scotia Agricultural College in Truro, the organizer was surprised to hear that staff would be arriving by train, "There's a train service to Truro?" she asked.

**TABLE 9: Education and outreach programs related to sustainable transportation**

<b>Program</b>	<b>Activity</b>	<b>Organization</b>
<b>Active Transportation</b> Active & Safe Routes to School (ASRTS)	Coordinates Walk to School Month and Neighbourhood Pace Car program; conducts school travel planning; and publishes <i>Walking and Wheeling Quarterly</i> . <a href="http://www.ecologyaction.ca/asrts/">http://www.ecologyaction.ca/asrts/</a>	Ecology Action Centre
The Bike Hub	Refurbishes old bikes and gives them away. Provides bike maintenance instruction.	Ecology Action Centre
CAN-BIKE	Courses on all aspects of cycling safely on the road; for recreational and utilitarian cyclists.	Bicycle Nova Scotia
Pathways for People	A public resource website dedicated to active transportation. <a href="http://www.pathwaysforpeople.ca/">http://www.pathwaysforpeople.ca/</a>	Nova Scotia Health Promotion and Protection Recreation Nova Scotia
Access Awareness Week	Brings accessibility issues to the public through press conferences, forums, concerts and roundtables.	Nova Scotia League for Equal Opportunities
Commuter Challenge	A national program that encourages Canadians to walk, cycle, use transit or carpool instead of driving alone to work. <a href="http://www.commuterchallenge.ca/">http://www.commuterchallenge.ca/</a>	Better Environmentally Sound Transportation
Heart and Stroke Walkabout	A provincial campaign to create a culture of walking in Nova Scotia. <a href="http://www.walkaboutns.ca/about.aspx">http://www.walkaboutns.ca/about.aspx</a>	Heart and Stroke Foundation
Heart and Stroke Make a Move! Move More!	An eight week program designed to encourage participants to lead healthier, more active lifestyles. <a href="http://www.heartandstroke.ns.ca/">http://www.heartandstroke.ns.ca/</a>	Heart and Stroke Foundation
<b>Vehicle Efficiency</b> Children's Clean Air Network	An anti-idling campaign. <a href="http://www.childrencan.ca/">http://www.childrencan.ca/</a>	Volunteer initiative
Drive Wiser	Provides information to help Nova Scotians buy, maintain and drive their cars to increase fuel efficiency. <a href="http://www.drivewiser.ca/">http://www.drivewiser.ca/</a>	Conserve Nova Scotia

continued...

*Take a CAN-  
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course. Contact  
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Scotia to find out  
about CAN-  
BIKE courses  
being offered in your  
area:  
[www.bicycle.ns.ca](http://www.bicycle.ns.ca)*

online commuting profile and then be matched with potential carpool partners. The success of ridematch services depends on effective promotion and a large pool of participants to facilitate more matches. HRM launched an online ridematching service in 2008 called HRM Smartrip. Features of the service include ridematching as well as transit, bicycle and walking buddy-matching.

In Maine, the Department of Transportation and Turnpike Authority fund a statewide commuter services program called GoMaineCommuter Connections. The program offers carpool and vanpool ridematching, information on transit, intercitybus, ferry and rail service, park and ride lots, walking and bicycling routes and emergency ride home guarantees – free taxi ride or rental car home in the event of an emergency. Commuters can register and get information on the website (<http://www.gomaine.org/index.html>) or through the GoMaine toll free telephone service. The database uses a person's

home address, work address and work hours to find others who live and work near them and who have similar schedules. The program is operated by the regional planning association of Cumberland County, and has been running since 1994.

### **School programs**

To promote Charlottetown's new transit system, the transit authority offered a free transit ride to grade 7 and 8 students. The students learned how to board the bus, read the schedule and appropriate etiquette. Also, Charlottetown Transit partnered with Queen Charlotte Junior High School and Staples Business Depot to develop a program that encourages students to use Charlottetown Transit for extra-curricular travel:

For every student who uses the transit system for school related extra-curricular activities, Charlottetown Transit donates \$0.50 of the \$2.00 bus fare to the school. The school uses \$.25 to help enhance extracurricular programs and to establish a green courtyard at the

**TABLE 9: Education and outreach programs related to sustainable transportation (continued)**

Program	Activity	Organization
<b>Public Transportation</b>		
Rural Transit Toolkit	Examples and best practices for obtaining funding for rural public transportation services	Transport 2000 Atlantic
Rural Transit Planning Guidelines	Information and worksheets to help rural communities plan for local and feeder transit/paratransit services.	Halifax Regional Municipality
<b>Food</b>		
Food Miles	Public education on the impacts of our food choices, particularly the “food miles” traveled. <a href="http://www.ecologyaction.ca/food_action">http://www.ecologyaction.ca/food_action</a>	Ecology Action Centre
Select Nova Scotia Campaign	Campaign to promote the purchase of local food, in order to reduce “food miles” traveled. <a href="http://www.selectnovascotia.ca/">http://www.selectnovascotia.ca/</a>	Department of Agriculture

school and donates \$.25 to the local food bank. Students also receive a ballot from the driver every time they ride the Charlottetown Transit for extra-curricular travel for a monthly prize draw of \$20 worth of school supplies.<sup>132</sup>

### Individualized Trip Planning

Run by Translink, the transit authority of the Lower Mainland in British Columbia, the TravelSmart program is a social marketing program, which aims to reduce car travel. TravelSmart targets individual households to

address all trips originating from each home, not just the work commute trip, and provides information to meet a household’s specific travel needs. The initial pilot project involved approximately 600 people and resulted in an increase in walking (9 percent) and public transit use (12 percent) and a reduction (8 percent) in car trips. Translink’s program is based on similar programs that have been successful in Europe, Australia and the United States.

### Share the Road Campaigns

Share the road campaigns aim to increase awareness of and respect for cyclists’ rights on the part of motorists, and to educate cyclists on road rules. With support from the Maine Bureau of Highway Safety, the Bicycle Coalition of Maine has implemented a bicycle safety question on the Maine Driver Exam, developed a training session for Driver Education Instructors on teaching new drivers to share the road, and developed share the road television advertisements and radio public service announcements.

*Not only does buying from local food sources reduce one's carbon footprint, it can also have a positive effect on the local economy.*

### Provincial Actions

#### **A1. Create and promote a centralized transportation website**

Develop, maintain and market a transportation services website, including information on all transportation services, routes, schedules and fares in Nova Scotia- public transit, intercity bus and rail, carpooling, carsharing and active transportation. Data could be collected from user-searches to assess demand for trip routes and times.

#### **A2. Create and promote a carpool matching service**

Subscribe to and promote an online carpool matching service for the province. Possibilities to build on the existing Halifax Regional Municipality carpool website should be explored in order to minimize confusion and duplication. Support the carpool matching service by improving existing carpool parking lots maintained by the Department of Transportation and Infrastructure Renewal. For example, install safety features such as lighting and emergency phones and provide timely snow removal.

#### **A3. Create a share the road campaign**

Develop and implement a province-wide share the road campaign to encourage increasing acceptance and use of active transportation. Use various media and messages to inform both motorists and active transportation users about safety protocol and etiquette for sharing the road.

#### **A4. Support existing education programs**

Promote and invest in existing education and outreach programs to encourage a transition to sustainable transportation modes and to increase driver awareness of fuel efficiency.

#### **A5. Designate an employee to build capacity**

Designate a government employee to facilitate networking and capacity-building between various transportation organizations in the province.

#### **A6. Assist school boards to develop active transportation policies**

Promote and facilitate active transportation by encouraging school boards to develop policies



that enable active travel modes. This would involve educating school board staff and members.

### Individual Actions

Learn about existing education and outreach programs by visiting the websites listed in Table 1. Take a CAN-BIKE course. Contact Bicycle Nova Scotia to find out about CAN-BIKE courses being offered in your area:  
[www.bicycle.ns.ca](http://www.bicycle.ns.ca)



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### Buy local

Buying local does not simply mean supporting the corner grocery store; it means choosing local produce and foregoing some of the exotic fruit that is now commonplace in the supermarket. Though mangoes and cumquats, or even oranges and bananas, have become staples of the North American food experience the consequences of having these foods on our plates are detrimental to the environment.

The Sierra Club of Canada states that, “the long-range transport of food has a significant impact on climate change and the amount of air pollutants released into the atmosphere. In Canada alone, the transportation sector accounts for one quarter of Canada’s greenhouse gas emissions.”<sup>133</sup> The food miles project of the Ecology Action Centre is currently working to calculate the carbon footprint of a typical Nova Scotian diet.

Not only does buying from local food sources reduce one’s carbon footprint, it can also have a positive effect on the local economy.

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# *Incentives*

**Implement financial incentives to encourage sustainable transportation**





## Current Context

Genuine Progress Index Atlantic's 2007 analysis of the full costs of transportation in Nova Scotia identified that

...existing transportation market distortions result in economically excessive motor vehicle travel, which undermines sustainable development objectives. In a more optimal market, the evidence indicates that people would drive less, rely more on alternative transport modes, place a higher value on locating in multi-modal communities, and be better off overall as a result.<sup>134</sup>

As fuel prices rise, the market will become more optimal for encouraging reliance on alternative modes of transportation. In the meantime incentives may be needed to initiate and reward changes in transportation habits.

The federal government offers two incentives to encourage sustainable transportation use: the federal transit tax credit and the ecoAUTO rebate.

## Transit Tax Credit

The 15 percent tax credit was introduced in June 2006 and is applied to the cost of monthly or annual transit passes.<sup>135</sup> The tax credit on a regular monthly Metro Transit pass is \$9 (\$110 for 12 months). The program was expanded in 2007 to include weekly passes. The program does not apply to passes purchased from private companies, such as Green Rider, a local commuter van company. In its 2008 budget, the provincial government announced that they will introduce a transit tax credit in 2009, with a \$1.5 million budget. The details of the program are not yet available.

## ecoAUTO

The federal government introduced an ecoAUTO feebate program in 2007. The program consisted of a schedule of fees and rebates; fees were levied on "gas guzzlers" and rebates of up to \$2,000 were provided for the purchase of vehicles that meet fuel efficiency criteria set by the federal government. The program was criticized for offering rebates on minivans and SUVs while not offering rebates on other more fuel efficient vehicles. For exam-

ple, an SUV that consumes 8.3 litres per 100km qualified while a smaller car that consumes 7.3 litres per 100km did not. The rebate portion of the program was cancelled in 2008, although applications are still accepted for eligible vehicles from the 2007 and 2008 model years.

## Steer Clean

Nova Scotia's vehicle retirement program offers incentives that promote sustainable transportation alternatives and increased vehicle efficiency in exchange for retiring older, heavier polluting vehicles. According to Environment Canada, cars that were manufactured in 1995 or earlier produce "19 times more smog forming air pollution than newer vehicles."<sup>136</sup> As of 2007, 40 percent of Steer Clean participants chose to reduce the number of vehicles owned by their family or switch to sustainable transportation options like transit or bicycling.

## Best Practices

### Variable Rate Insurance

The purchase of a car and insurance represent fixed costs. A typical motorist spends almost

*According to Environment Canada, cars that were manufactured in 1995 or earlier produce "19 times more smog forming air pollution than newer vehicles."*

as much on insurance as on fuel. It is the largest vehicle cost for many low-income motorists.<sup>137</sup> Fixed cost insurance is an incentive to drive more because the further one drives, the lower the per kilometre fixed cost. Variable rate or pay-as-you-drive (PAYD) insurance is an incentive to drive less. With variable rate insurance, motorists who continue to drive the same number of kilometres would not pay extra; but those who reduce the number of kilometers they drive would save money.<sup>138</sup>

Several insurance agencies are piloting or implementing PAYD pricing. For example, Norwich Union in the UK has run a PAYD pilot project.<sup>139</sup> Under this scheme, PAYD is sold as an inexpensive way to maintain a second or third vehicle, therefore encouraging people to keep a second or third car, rather than get rid of it and rely on alternative transportation options. However, this 'loophole' could be addressed by allowing PAYD insurance to be applied only to a family's primary vehicle.

In the United States, General Motors Insurance and OnStar

offer a Low-Mileage Discount program, which uses an electronic monitor to track driving patterns. The electronic system automatically reports vehicle odometer readings at the beginning and end of the policy insurance term to verify vehicle mileage. The following is the discount schedule used by General Motors/On-Star:<sup>140</sup>

<b>Miles</b>	<b>Discount</b>
1-2,500	40 percent
2,501-5,000	33 percent
5,001- 7,500	28 percent
7,501-10,000	20 percent
10,001-12,500	11 percent
12,501-15,000	5 percent
15,001-99,999	0 percent

In 2003, Oregon passed a bill that provides a \$100 per policy tax credit to insurers that offer PAYD pricing.<sup>141</sup>

#### **Early vehicle retirement**

The Government of Quebec has entered into an agreement with *Association québécoise de lutte contre la pollution atmosphérique* (AQLPA) to offer a provincial vehicle scrappage program supported by Environment Canada's national program. In an effort to encourage the use of transit and

active transportation, Quebec's program does not offer vehicle purchase incentives.

### **Tax Free Bikes**

In 2007, Ontario exempted the purchase of bikes, bike helmets and safety equipment from the 8 percent provincial sales tax.<sup>142</sup> The initiative was launched by the Department of Health Promotion to "encourage people to become more active...and perhaps even try commuting to work." The initiative is estimated to cost \$25 million. Given Ontario's population of 12 million, the tax exemption has a value of about \$2 per capita. Applied in Nova Scotia, such a tax exemption would cost approximately \$2 million.

### **Hybrid Rebate**

Prince Edward Island, Quebec, Ontario, Manitoba and British Columbia offer vehicle incentive programs. Prince Edward Island offers a partial rebate, of up to \$3,000, of the provincial sales tax with the purchase or lease of a hybrid vehicle.<sup>143</sup>

### **Location Efficient Mortgages United States**

Location efficient mortgages are

available in Seattle, San Francisco, Los Angeles and Chicago. They encourage people to buy homes in location efficient communities, communities where residents are within walking distance of stores, schools, recreation, employment and public transit services. Location efficient mortgages offer low down payments (3 percent), competitive interest rates and more flexible criteria for financial qualification than standard mortgages.<sup>144</sup>

### **Provincial Actions**

#### **11. Identify and implement appropriate incentives**

Undertake a study to identify barriers to using sustainable transportation and assess the effectiveness



of potential tax incentives, such as workplace-sponsored transit pass programs, a provincial vehicle retirement program, tax free active transportation equipment, hybrid rebates, location efficient mortgages and telecommuting equipment tax credits.

#### **12. Enable variable rate insurance**

Work with the insurance sector to offer the option of variable rate insurance in Nova Scotia.

#### **13. Introduce green vehicle purchase incentive**

In response to the cancellation of the federal ecoAUTO program, offer a feebate program, including levies on fuel inefficient vehicles and rebates on fuel efficient vehicles.

#### **14. Explore potential for location efficient mortgages**

Explore potential for location efficient mortgages, including lower down payments and higher mortgage approval amounts in locations well served by public transit or within walking distance of amenities, services and employment.



*Variable rate or pay-as-you-drive (PAYD) insurance is an incentive to drive less. With variable rate insurance, motorists who continue to drive the same number of kilometres would not pay extra; but those who reduce the number of kilometers they drive would save money.*

### Individual Actions

Apply for the Federal Transit Tax Credit

<http://www.cra-arc.gc.ca/whatsnew/items/transite.html#expanded>

Apply for the ecoAUTO rebate

<http://www.tc.gc.ca/programs/environment/ecotransport/ecoauto.htm>

# *Efficiency*

**Implement policy and education programs to improve vehicle efficiency**



*Between 1990 and 2002, total energy use and greenhouse gas emissions from road vehicles increased steadily. Even though the efficiency of individual vehicles improved, the number of cars on the road and the total number of kilometres traveled by Nova Scotians increased.*

### Current Context

Passenger travel accounts for two-thirds of the energy used by road vehicles in Nova Scotia. Between 1990 and 2002, total energy use and greenhouse gas emissions from road vehicles increased steadily. Even though the efficiency of individual vehicles improved, the number of cars on the road and the total number of kilometres traveled by Nova Scotians increased.<sup>145</sup> The growth in road transport-related greenhouse gas emissions particularly reflects increased vehicle travel by more fuel-intensive vehicles - SUVs, minivans, and light trucks - during the 1990s.<sup>146</sup>

Motor vehicle fuel efficiency in Nova Scotia is currently being promoted by Clean Nova Scotia through Conserve Nova Scotia's Drive Wiser Program. This education campaign encourages drivers to maximize fuel efficiency through proper vehicle maintenance and driving habits, and to purchase fuel-efficient vehicles. In the *Environmental Goals and Sustainable Prosperity Act*, Nova Scotia committed to the adoption of California-like

vehicle emission standards for greenhouse gases and air pollutants by 2010.<sup>147</sup> The provincial government has already lobbied the federal government to adopt standards as stringent as those in place in California.

To reduce motor-vehicle collisions and transportation-related injuries, the department of Health Promotion and Protection aims to establish "a plan to enforce and/or reduce current speed limits."<sup>148</sup>

### Best Practices

#### California Vehicle Emissions Standards

California vehicle emission standards require fleet average fuel economy of 35 miles per gallon or 6.72 litres per 100 kilometres by 2016. In Canada, Quebec spearheaded the introduction of vehicle emission standards in its 2006 Climate Change Plan. Manitoba and British Columbia have also adopted the standard. The implementation of such regulations is a cost effective and comprehensive method for achieving fleet vehicle emission reductions.

### Hybrid Taxis

British Columbia and Alberta have programs to promote reduced emissions from the taxi industry. Alberta offers a \$5,000 rebate to taxi operators who purchase hybrid vehicles. British Columbia requested that the Passenger Transportation Board only approve applications for taxis in Vancouver and Victoria that are hybrid or highly energy efficient. A \$2,000 tax deduction is available for the purchase of hybrid or other fuel efficient vehicles. Fuel efficient vehicles are defined as cars that require less than 6.5 litres of gasoline per 100 kilometres and trucks that require less than 8.3 litres per 100 kilometres. BC aims to have a complete fleet of hybrid taxi industries in Vancouver and Victoria by 2010.

### ZENN Vehicles

ZENN stands for zero emission, no noise. ZENN vehicles are two-seat battery operated electric vehicles designed for use in neighbourhoods and communities. They do not exceed 50 kilometres per hour. These cars are manufactured in Quebec and are approved for use in British Columbia and Quebec.<sup>151</sup> As Nova Scotia's electricity source

### Vehicle specifications for taxis

Traditionally, taxis have been viewed as a luxury and vehicles used for taxis have been required to be large. However, with society's focus on reducing greenhouse gas emissions the taxi industry is also "going green" by adopting vehicle emissions standards and permitting Smart Cars to serve as taxis. For example, after October 1, 2008, New York City's Clean Air Taxi program will require all taxi vehicles to have a fuel efficiency of at least 25 miles per gallon.<sup>149</sup>

In another example, Kevin McCarthy, a taxi owner in Ely, England successfully lobbied his town counsel to allow Smart Cars to be used as vehicles-for-hire. The licensing committee of the town of Ely voted unanimously in 2006 to allow Kevin McCarthy to operate a single passenger vehicle as a taxi<sup>150</sup>. McCarthy contends that most trips he makes are for lone individuals and if a customer wants a car for more than one individual, there are other taxis available for that purpose.

is predominantly coal, the ZENN vehicle is currently not an efficient option. However, when Nova Scotia develops reliable renewable energy sources, the province should consider approving the use of ZENN vehicles.

### Provincial Actions

#### E1. Adopt vehicle emissions standards

Adopt California-like vehicle emissions standards by 2010, as stated in the *Environmental Goals and Sustainable Prosperity Act*.

The regulations adopted should include both the Low Emission Vehicle I/II and AB1493 components of the California Clean Cars regulation. The province should continue to push the federal government to adopt Canadian vehicle fuel efficiency regulation that, at minimum, meets the California standard.

#### E2. Develop awareness campaign

Develop an awareness campaign to address citizen concerns regarding California vehicle emis-

*In the Environmental Goals and Sustainable Prosperity Act, Nova Scotia committed to the adoption of California-like vehicle emission standards for greenhouse gases and air pollutants by 2010.*

sion standards. For example, the adoption of these standards does not mean citizens can no longer drive their current older model cars; only people buying new cars will be directly impacted.

### **E3. Lower and enforce speed limits**

Work with Nova Scotia Health Promotion and Protection's Injury Prevention Committee, Royal Canadian Mounted Police and municipal police to lower and enforce speed limits, thereby increasing safety and decreasing emissions. Many trucking companies across Canada have taken it upon themselves to initiate programs to lower driving speeds amongst their own employees.

### **E4. Support fuel efficient taxi fleets**

Support municipalities in achieving taxi fleets comprised of vehicles that are either hybrid, accessible, or smart cars.

### **Individual Actions**

Sign the Clean Cars Canada petition:  
<http://www.cleancarscanada.ca/>  
 Watch Rick Mercer video on

ZENN cars:

<http://www.youtube.com/watch?v=8M88k6Ipp3c>

Follow efficient driving tips, such as driving 90 kilometres per hour on the highway:

<http://www.drivewiser.ca/>

If you have a vehicle manufactured before 1995, trade it in for an incentive:

<http://www.steerclean.ca/>

Be a Pace Car driver in your community:

<http://www.ecologyaction.ca/arts/school/safety.php>





# Summary of Recommendations

Table 10 is a summary of the eight recommendations in the Green Mobility Strategy and the actions needed to achieve each recommendation.

**Table 10: Green Mobility Strategy recommendations and actions**  
**Recommendation and Actions**

**Create an annual, predictable source of sustainable transportation funding**

- F1. Increase sustainable transportation funding
- F2. Identify funding targets and schedule
- F3. Identify funding sources
- F4. Create allocation guidelines

**Identify a provincial department to be the steward of sustainable transportation**

- S1. Identify and appoint a department steward
- S2. Designate an employee
- S3. Form an interdepartmental team
- S4. Form a non-governmental team
- S5. Conduct a policy review

**Establish indicators for annually measuring progress toward sustainable transportation**

- I1. Adopt and monitor transportation indicators
- I2. Establish modal split targets
- I3. Support data collection

**Create a sustainable transportation network**

- N1. Create a provincial bicycling network
- N2. Complete provincial trail network
- N3. Develop intercity transit, rail and ferry network
- N4. Invest in public transit
- N5. Provide incentives for active and innovative transportation
- N6. Support pooling of services
- N7. Facilitate multi-purpose services
- N8. Identify and change policy barriers
- N9. Remove insurance barriers
- N10. Promote rural economic development

**Integrate land-use planning into provincial policy to achieve transportation energy efficiency**

- P1. Strengthen the Municipal Government Act
- P2. Provide transportation support for the Integrated Community Sustainability Plans
- P3. Study financial incentives and (dis)incentives
- P4. Develop a farmland policy
- P5. Legislate mandatory development charges

**Increase public awareness about sustainable transportation**

- A1. Create and promote a centralized transportation website
- A2. Create and promote a carpool matching service
- A3. Create a share the road campaign
- A4. Support existing education programs
- A5. Designate an employee to build capacity
- A6. Assist school boards to develop active transportation policies

**Implement financial incentives to encourage sustainable transportation**

- I1. Identify and implement appropriate incentives
- I2. Enable variable rate insurance
- I3. Introduce green vehicle purchase incentive
- I4. Increase support for accelerated vehicle retirement
- I5. Explore potential for location efficient mortgages

**Implement policy and education programs to improve vehicle efficiency**

- E1. Adopt vehicle emissions standards
- E2. Develop awareness campaign
- E3. Lower and enforce speed limits
- E4. Support fuel-efficient taxi-fleet



## *Conclusion*

According to historians, humankind has been tinkering with the idea of the internal combustion engine since the late 1600s. The invention of the modern gasoline-powered engine is credited to Gottlieb Daimler in 1885. A year later he followed this with the creation of “the world’s first four-wheeled motor vehicle”.<sup>152</sup>



When Henry Ford introduced mass production of the Model T in the early 20th century the foundation for a new way of living and interacting was laid. Unfortunately Ford could not predict the negative consequences the automobile would eventually have on our health, our communities and our environment.

Our communities have been designed around the automobile. Sprawling communities and drive-thru cultures make car travel the fastest, most convenient and sometimes only way to get around. Increasing road capacity for travel by private automobile has taken priority over improvements to public transit and cycling and walking routes as is often demonstrated by municipal, provincial and federal budgets. Our dependency on the automobile has contributed to an epidemic of physical inactivity, obesity and chronic disease, to air and water pollution, to the climate change crisis and to the destruction of wetland and forest habitat.

Society is now at a turning point. We can choose to continue on the road of automobile and fossil

fuel dependency, recognizing that this road will have devastating effects on the environment and on human health. Or we can choose to shift our habits away from automobile dependency towards a more sustainable future. The Government of Nova Scotia has chosen the latter option. Passed in 2007, the *Environmental Goals and Sustainable Prosperity Act* set an exciting precedent for Nova Scotia. In this Act, Nova Scotia committed to being “one of the cleanest and most sustainable environments in the world by 2020”.<sup>153</sup> With this commitment, Nova Scotia’s government has laid a challenge before itself and its citizens.

The *Green Mobility Strategy* is a tool to help decision-makers reach the province’s goal. Rather than investing solely in new highways, the Green Mobility Strategy directs decision-makers to funding more sustainable means of moving people from place to place. Active transportation, carpooling and public transit all have roles to play, as well as encouraging people to live in higher density communities, where centres of employment, education and shop-

ping are within walking distance of home. The Ecology Action Centre believes that the province can reach its goal but reaching this goal will require the genuine dedication and commitment of government decision-makers and the support and motivation of Nova Scotia’s citizens.



# Yarmouth County Case Study

*Appendix A*

Area: 2,122.68 km<sup>2</sup>

County Population: 26,843

Population Density: 12.6 people/km<sup>2</sup>

NS Average Population Density: 17.49 people/km<sup>2</sup>



## The Town of Yarmouth

The town of Yarmouth, population of 7,162, is considered the regional centre of south western Nova Scotia. It is a hub for retail, employment, education, government services and healthcare.

The concentration of resources in the town stands in contrast to those available in the surrounding county. As such, the ability to travel around the area is vital for residents in the county.

## Changing Transportation Landscape

In spite of the crucial importance of transportation to the area, Yarmouth County has experienced deterioration in local and regional public passenger services over the past 40 years. Rail services to Halifax via the South Shore were terminated in the 1970s and the rail tracks were subsequently lifted. In 1990, rail traffic to Halifax via the Annapolis Valley was cancelled.

Bus services fared equally poorly. During the 1990s, bus transportation along the South

Shore faced significant cutbacks and changed hands frequently. Similarly, the Annapolis Valley Halifax to Yarmouth service that provided service between Digby and Yarmouth was discontinued in 2003. Currently, the only scheduled, year-round service out of Yarmouth is the daily Trius Tours service, traveling to Halifax in the morning and returning to Yarmouth in the evening. Three private shuttles also operate between Yarmouth and Halifax, returning to Yarmouth earlier in the afternoon.

The ferry linkage to Bar Harbor, Maine led to the characterization of Yarmouth as an international gateway to the province. In recent years, however, ferry services have been drastically cutback. Similarly, the airport, which formerly offered a stop on the Boston-Halifax route, now has no regular service.

In the 1990s the province and municipalities entered into a service transfer where the province took responsibility for social services and policing and municipalities were given responsibility for transit. The local bus service in Yarmouth County, operated in

collaboration between the three municipal bodies in the region, was terminated in 1995.

## Local Service – The Picture Today

Recognizing the clear need that the county bus service met, private citizen Gary Hudson stepped into the breach. Hudson developed a business plan for a private venture, operating with the assistance of a subsidy from the town. Hut's Transit has been operating since 1996, and has found particular success in serving the needs of seniors. However, an unintended downside to this success has been that much of the local population believes that the Hut's service is purely for seniors, serving to limit its patronage outside of this demographic.<sup>146</sup> Furthermore, in contrast to the prior county-wide service, Hut's is restricted to serving the town of Yarmouth, and as a privately-owned and operated service, although it presently receives a \$40,000 subsidy annually from the Town, it is ineligible for most forms of government support.

Beyond Hut's Transit, two Community Transportation Assis-

*In spite of the crucial importance of transportation to the area, Yarmouth County has experienced deterioration in local and regional public passenger services over the past 40 years.*

tance Program (CTAP) services operate in Yarmouth and the nearby area. These services are funded in part by the province. These dial-a-ride operations focus particularly in transporting seniors and those with disabilities, and provide an invaluable service in this capacity.

### Limited Mobility

Significant difficulties are created by the absence of broader Yarmouth-centred, county-wide and provincial services. The town-county divide in transportation exacerbates existing rural-urban disparities; Nova Scotia currently has the largest rural-urban income disparity in Canada.<sup>147</sup>

Within this context, local residents, particularly those living outside of the town, become dependent upon their cars. Those that cannot drive or do not have access to a car become dependent on friends and family or, if they can afford it, take taxis. The worst case scenario is that some residents become stranded in their own homes. This has severe repercussions for the lives of much of the local population.

### Employment

The Black Employment Resource Centre serves clients around Yarmouth County. Randal Fells expressed how a lack of access to transportation acts as a significant barrier preventing many of the centre's clients from gaining and maintaining employment: "Many of those that we serve have a hard time getting to and from work and interviews."<sup>148</sup>

The two dial-a-ride services have expressed interest in serving employment needs by taking on passengers during the morning and evening work run. However, Claredon Robicheau of the *Transport de Clare* service stated that they do not have the capacity to extend their hours to cover this need on present resources.

### Business

Yarmouth County must compete both on the provincial and national level to attract investment. The local Chamber of Commerce (CoC) is concerned about the ramifications of the existing transportation infrastructure for businesses in the area. It is pri-

marily focused on national and international connections to the area, but Jim Greig, executive director of the Yarmouth and Area CoC recognized that local connections are crucial to success in the county, stating that “there is a great need for local transportation here in Yarmouth”.

Tourism is vital to the local economy. Yarmouth continues to be a popular destination due to the ferry connections with Maine. However, once tourists reach the town connections to the rest of the province are severely limited.

## Health

The local community health board considers transportation a key issue in the Yarmouth area. At the most basic level, travel to and from medical appointments becomes a significant obstacle to those without access to a drive.

This is particularly problematic for those with persistent health complaints. Nova Scotians in general have particularly high rates of chronic illness such as cancer, cardiovascular disease and diabetes. The last of these is

a large and growing health problem in Nova Scotia. South West Nova Scotia displays a higher than average prevalence rate in the general population<sup>149</sup>, and for those that suffer with diabetes, mobility is crucial.

Yarmouth possesses one of three dialysis units in the province.<sup>150</sup> Individuals requiring dialysis often travel three times a week for treatment, and for those living outside of the town this means frequent long trips to get to appointments. Trips for dialysis put a large strain on the capacities of the local dial-a-ride services, as well as imposing costs for taxi trips and commitments in time from friends and family.

The CTAP services are particularly active in transporting people to and from medical appointments, and have been very successful in this regard. Nevertheless, Eleanor Cottreau of the Yarmouth-based HOPE dial-a-ride stated that, although they work to make their service as affordable as possible, it remains out of the reach of many in the area.

## Independence and Isolation

The prevalence of diabetes, like many other health issues, increases with age. Nova Scotia has the second highest proportion of the population in the over 65 category in Canada. Yarmouth, like the rest of the province, is faced with an aging population.

Lauren Devine of VON Community Support and Volunteer Services expressed how many seniors face isolation due to a lack of access to transportation: “We have a strong focus on trying to prevent people from entering long-term institutions, and a lack of transportation is a factor in this, as it significantly limits independence. The VON (Victoria Order of Nurses) here recommends that seniors use HOPE or Hut’s if at all possible”

Limited transportation options limit independence and foster isolation for a broad swathe of the population. Carole Hill-Bojarski of the Yarmouth Community Health Board noted that things as routine as shopping trips become problematic and rural families in the county become cut off.

*Currently, the only scheduled, year-round service out of Yarmouth is the daily Trius Tours service, travelling to Halifax in the morning and returning to Yarmouth in the evening.*

## Recreation

The ability to participate in recreation and leisure opportunities is impacted by access to transportation. David Mooney, chair of the Nova Scotia Community-Based Transportation Association referenced the example that access to after-school activities is restricted for many school-age children due to transportation limitations.

## The Future for Yarmouth

The population of Yarmouth, like that of Nova Scotia more generally, is aging. Furthermore, current trends indicate that the local population is decreasing. There is a pressing need to maintain the existing population and attract long-term immigration to maintain the viability of the community.

It is clear that a lack of adequate transportation options imposes significant social, economic and health costs in the Yarmouth area, and increases the contribution to the provinces greenhouse gas emissions from private vehicles. Increased transportation options serve to boost the viability and liveability of the area.

The low population density of the area presents significant hurdles to the development of transportation services in the area, but creative solutions must be sought. Increased transportation options can provide a significant spur to the future viability of the community.



# *Kings County Case Study*

## *Appendix B*

Area: 2,122.21km<sup>2</sup>

Population: 58,866

Population Density: 27.7 people/km<sup>2</sup>

NS Average Population Density: 17.49 people/km<sup>2</sup>



*"One of the greatest challenges in the recruitment and retention of employees is their access to adequate transportation.*

*Kings Transit performs an invaluable service for On-Line Support in this regard." Director of On-Line Support Inc., call centre and major employer in Kentville.*

### **Kentville**

Kentville, the largest town in the Annapolis Valley with a population of 5,815 is also viewed as the County's business and service centre. There is a concentration of government, legal and financial services in the town, along with the Valley Regional Hospital.

### **Kings Transit**

Kings Transit runs services along the Fundy Shore of Nova Scotia from Weymouth to Hants County. It is one of only three transit systems in Nova Scotia and has been frequently recognized as an excellent example of a small-scale transit service. In 2005 the service was awarded the National Transit Corporate Innovation Award.

Kings Transit was incorporated in 1981, initially running services between Wolfville and Kentville. In recent years, routes have been added and the service now runs down the Annapolis Valley to Weymouth, serving Digby and Annapolis Counties in addition to Kings County. In September 2007 route additions extended

the service further, down to Windsor in Hants County.

Services operate Monday to Friday from 6am to 9pm, with reduced hours on Saturday. Fares are \$3 with concessions for seniors and children, and further discounts are available with purchases of books of tickets and monthly passes. Transfers allow passengers to travel the length of the Valley for \$3 or less.

A key performance target for the service is the number of passengers per hour. Historically, the service has run with an average of 15 to 16 passengers per hour, and it has a target of 17 per hour over the medium term.

The linearity of development and the number of key destinations along the route have been crucial to the viability of the operation. Nevertheless, the financial success of Kings Transit is notable. Historically, it has registered revenue/cost ratios in the mid to high 70 percent range, which the 2007 Kings Transit Strategic Plan points out, is "higher than any system of similar size, and higher than many much larger systems".

Kings Transit Authority is jointly owned, operated and funded by the Municipality of Kings, and the towns of Berwick, Wolfville and Kentville. The services provided outside of Kings County in Annapolis and Digby Counties are fully funded by those counties on a 100 percent cost recovery basis.

### Survey

In August 2007, the Ecology Action Centre carried out conducted a survey of Kings Transit riders. The survey was conducted between August 1st and 10th. Paper copies of the survey were provided on the buses. In total, 73 surveys were completed. The response rate was 60 percent.

### Environment

Of the survey respondents, 51 percent indicated that they had a driver's license, 50 percent had access to a car at least some of the time, and 16 percent had access to a car all of the time. Motivations for taking the bus stretch beyond lack of access to other forms of transportation.

In reducing the number of cars on the road along the Valley

Kings Transit serves to improve the greenhouse gas emissions profile of the area. The low price of Kings Transit in comparison to driving acts as an incentive to take the more environmentally sound form of transportation. Furthermore, when asked to choose the top three positive aspects of taking transit, 48 percent of respondents considered benefit to the environment amongst them. Erin Beaudin, Executive Director of the Kings Community Economic Development Agency, stated that: "environmentally speaking, we are trying to promote a green sustainable region, and Kings Transit is a means for people to travel throughout the Valley region and reduce greenhouse gas emissions at the same time."

### Affordable Mobility

In providing mobility at an affordable level, Kings Transit presents a crucial service for many of the residents of the Annapolis Valley. Of the respondents, 78 percent answered that Kings Transit was the mode of transportation they used most often. Of the respondents, 96 percent answered that transit was important or very important to their everyday

lives. Over 90 percent of survey respondents considered the low cost of the service one of the top three features of the service.

The Kings Transit service provides opportunities for its riders to get to work and medical appointments, shop, socialize and maintain their independence.

### Employment and Business

The Kings Transit service provides an invaluable means for many local residents to get to work at locations all along the serviced route. Furthermore, it plays a role in bringing investment to the area.

On-Line Support Inc. (OLS), a call centre provider based in Kentville, is a major employer in the area. Michelle Richard, Director of the Kentville site, stated that when OLS is assessing a potential new location one of the key considerations in the selection process is ensuring that there is viable transit system access available for its employees: "One of the greatest challenges in the recruitment and retention of employees is their access to

*"You get to know the bus drivers, I know all their names and they know mine, they know where I'm going to get off, I've lived in cities with transit systems before and this wouldn't happen there." Kings Transit user*

adequate transportation. Kings Transit performs an invaluable service for OLS in this regard."

Erin Beaudin, Executive Director of the Kings Community Economic Development Agency, stated that: "from a business perspective, we are facing labour shortages, therefore, we are trying to maximize the number of people in our labour pool. We recognize that some people have limitations to transportation that impact in their ability to have jobs. Therefore, there is a great need for Kings Transit, as it is a viable means for people to participate in the workforce".

Roger Tatlock, Executive Director of the Flower Cart, a vocational service for people with intellectual disabilities expressed how Kings Transit had been highly valuable for their clients. "The Flower Cart conducted a study in 2006, and found that, of the 157 people it served, 61.8 percent used Kings Transit as their primary or secondary means of transportation". The value of this for a population which faces huge barriers to functioning within society cannot be understated.

Tatlock had significant praise for the Kings Transit drivers: "They have a strong relationship with our clients. Their awareness and support of our population has been phenomenal".

## Health

All six sites of Annapolis Valley Health are served by Kings Transit, and, according to Jan MacKinnon of the Annapolis Valley District Health Authority, the availability of transit is always a factor in the development of new services, even down to the planning of outdoor lighting.

The survey indicated that Kings Transit serves a function in terms of healthcare. Over half of respondents answered that they used the service for medical trips. The buses which are on the road daily are all low floor accessible buses with wheelchair ramps. Their accessibility allows them to serve passengers that would otherwise use the local dial-a-ride services, thus relieving some strain on these vital services.

The Annapolis Valley Community Health Boards, which con-

sider health issues from a holistic perspective stress the important service that Kings Transit provides in helping people to get to hospital appointments, and helping to maintain their independence. Since 2005, Kings Transit has also equipped its fleet of buses with bike racks to encourage active transportation.

A number of survey respondents who answered that they either had access to a car, or a driver's license, indicated that they had medical reasons for not driving. Kings Transit allows this demographic to maintain their independence when otherwise it may be restricted.

## Independence

Erin Beaudin, Executive Director of the Kings Community Economic Development Agency, stated that: "from a socio-economic perspective, the Kings Transit service allows more people to be independent; it eliminates barriers to transportation and gives people more options when it comes to employment and daily activities".

The service also adds to the economic viability of the towns along the Kings Transit route, bringing in customers from up and down the Valley. The existence of the service adds to the attractiveness of living in the area. One survey respondent stated that they had moved to the town of Cornwallis because it was on the bus route.

When asked whether they would move to a community that was not served by transit, 85 percent of survey respondents answered no, and 85 percent answered that if they were to move to a community that was not served by transit that it would affect their lives significantly.

When asked to expand upon this, survey respondents largely cited that their mobility would be severely restricted in such a scenario, particularly in the winter. They stated they would have to be reliant on friends and family, or incur much greater financial costs through taking taxis or having to maintain a personal vehicle. At worst they would lose their independence and many provided comments to the effect that, without a transit service "I

would not move", one even stating that: "I would be a prisoner in my own house".

## Social

The importance of Kings Transit to the local area stretches beyond simply getting people from A to B. Kings Transit provides a service to the community in terms of combating isolation. The survey indicates that Kings has a significant impact on the quality of life of its riders, many of whom answered that 'leisure' and 'visiting' were amongst the purposes for which they took the service. Kings plays a part in strengthening local communities. A respondent from Wolfville commented that "Kings Transit is an intricate part of the infrastructure of a community", and another that "Kings Transit is a valuable asset to the communities it serves".

Furthermore, communities are created on the buses. Kings Transit lives up to its name: "The Friendly Bus Service." Unsolicited compliments for the drivers were common in the survey, praising their kindness, friendliness and courtesy and often mentioning

*Kings Transit runs services along the Fundy Shore of Nova Scotia from Weymouth to Hants County. In 2005 the service was awarded the National Transit Corporate Innovation Award.*

them by name. Respondents also mentioned that many of the drivers knew passengers by name and referenced the development of friendships between the drivers and passengers. There is a friendly atmosphere on the buses, and there is a forum for people to socialize and meet new people. One respondent stated that “I have made some good friends I never would have met if not for the bus”.

### **The Future for Kings Transit**

Kings Transit has a busy future. The operation will be moving into a new space which will locate in-house maintenance with daily operations. September 2007 also sees the extension of the service with a trial route running into Hants County. Kings is also looking at introducing feeder routes to link communities outside of the corridor into the main service.

### **Kings as a Model**

Kings Transit is highly regarded across the province and beyond, and has provided an inspirational model for other communities looking to extend their transportation options. A group of citizens

on the South Shore was inspired by the work of Kings and invited then general manager Brian Hackett to make a presentation. Consequently the Citizens for Public Transit were formed and to date the group has developed a proposal for transit in their area. Kings is working in close harmony with this group and it is hoped that, in the near future, Kings will run a route on the South Shore, the first route not connected to its traditional valley locus.

The successes of the Kings Transit service are also in counties and councils working together to the benefit of their citizens. It provides a model of intra- and inter-county cooperation.

### **Lillian**

Lillian has been using the Kings Transit service since 2004. She works at a call-centre in Kentville and has no drivers license or car. Kings Transit has been vital in allowing her to keep her position and maintain her residence in Greenwood. “I would have to move house to be closer to work if this service didn’t exist”. She also commented on the friendly nature of the service. “You get to

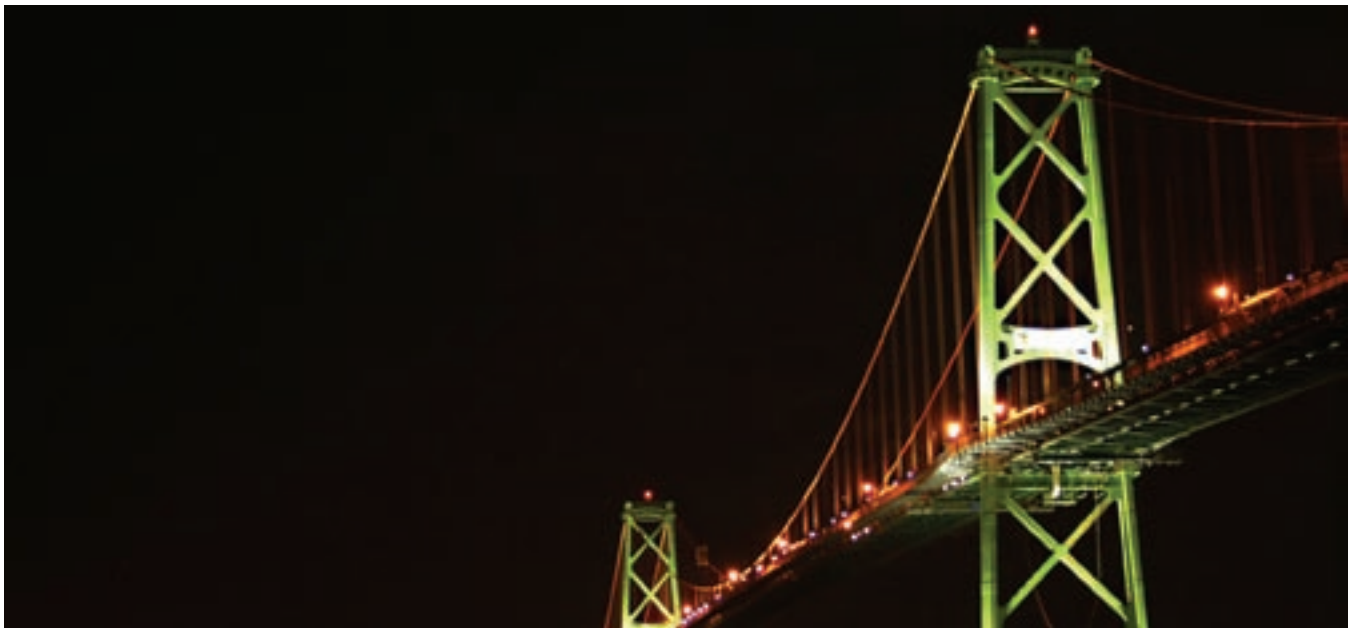
know the bus drivers, I know all their names and they know mine, they know where I'm going to get off, I've lived in cities with transit systems before and this wouldn't happen there."



# *Public Consultation*

*Appendix C*

## **Public Consultation Results**





## Process used to develop the *Green Mobility Strategy*

Developing the *Green Mobility Strategy* involved the following key steps:

- + Conducting extensive research;
- + Writing a literature review, which became the first draft of the *Green Mobility Strategy*;
- + Convening a Citizen Advisory Committee;
- + Establishing community partners to assist in the organization of public consultations;
- + Holding two meetings with Citizen Advisory Committee for feedback on the *Green Mobility Strategy* and public consultation framework;
- + Holding public consultation sessions in: New Glasgow, Sydney, Clare, Yarmouth, Long/Brier Island, Chester, Bridgewater, Kentville and Wolfville;
- + Incorporating feedback from public consultations and Citizen Advisory Committee into the *Green Mobility Strategy*;
- + Developing a second, third, fourth, fifth, etc... draft of the *Green Mobility Strategy*;
- + Circulating final draft of the *Green Mobility Strategy* to key stakeholders for feedback; and
- + Designing, printing and publicly releasing the *Green Mobility Strategy*.

The Ecology Action Centre visited nine communities throughout Nova Scotia to obtain public input on the *Green Mobility Strategy*. These communities were New Glasgow, Sydney, Clare, Yarmouth, Long/Brier Island, Chester, Bridgewater, Kentville and Wolfville. The following is a summary of the input the Ecology Action Centre received during the public consultations.

### Public consultation results

**EAC:** What is sustainable transportation?

**Participants:** It is transportation that works for your community. It is community based and economically stable. It is safe, accessible, equitable and affordable. It leads to a healthier, more active society. It enables mobility with or without a car. It has minimal impact on the environment.

**EAC:** What is your vision for sustainable transportation in Nova Scotia?

**Participants:** Infrastructure, support facilities and services that are safe, affordable, attractive and convenient; that provide increased accessibility for all users, and especially persons with disabilities, seniors, children and youth; and that provide connectivity within and between communities.

1. Pedestrian infrastructure: Sidewalks (clear of ice and snow in the winter), footpaths between neighbourhoods, crosswalks, streets for pedestrians only, pathways for kids to use skateboards, scooters, rollerblades, bikes and trikes, rest stops with benches and washrooms, fuller lighting and showers and change rooms at workplaces.
2. Bicycle infrastructure: Paved bicycle paths or shoulders on highways and major routes, bike racks at all major locations, bike racks on buses, bike route signage and share the road promotion.
3. Trails: For non-motorized users connecting Nova Scotia towns and communities, for example, a corridor along old railroad lines.
4. Public transit: Frequent, reliable, accessible service within and between communities, small feeder routes for people living on back roads, more bus shelters and benches.
5. Shuttles and coaches: Commuter buses or regional transportation from rural villages and towns to larger centres, shuttle services for residents on secondary roads.
6. Ferries: Ferry systems with frequent connections between all NS harbours.
7. Passenger rail service: Between major communities like Yarmouth, Wolfville, Halifax and Sydney.
8. Carpool matching service: Province wide web-based service, community bulletin board services, carpool parking.
9. Freight traffic: Attention to reducing freight traffic in downtown areas, transfer stations near exit ramps.
10. Energy efficient vehicles.

There is not one cookie-cutter solution for sustainable transportation that can be applied to all communities. All communities have different needs and circumstances. For example, participants in Clare said “we do not expect transit coming to our door on an hourly basis ... much of our public transit needs would be met by a three times a day transit route on highway #1, complemented by two outreach vans doing door-to-door service on the side roads; while a community like Sydney would benefit greatly from more frequent transit service, especially between Sydney and Cape Breton University, and communities in Brier and Long Island might benefit more from a focus on local economic development, bringing jobs, amenities and services to people, rather than a focus on a public transit system.

**EAC:** What assets do you already have to help you achieve this vision?

**Participants:** While specific assets differed between communities, all communities have local champions, citizens who are engaged and aware, strong community values, and beautiful physical assets and features.

In terms of infrastructure and services, some communities have more options than others. For example, Kings Transit is a major asset to the Annapolis Valley and Le Transport de Clare is a major asset to Yarmouth County. Access to amenities and services also differs. Some participants noted that an asset is that most of the services they need are in town and within walking distance, whereas others noted that they have to drive longer distances to access what they need.

**EAC:** What are the main barriers to achieving this vision?

**Participants:** Public attitudes and behaviours, a lack of funding, infrastructure and services, lack of political leadership and poor land-use planning.

1. **Public attitudes and behaviours:** An automobile addicted society and a lack of public willingness to invest in public transport as we do public health and public education. Many people are resistant to change and lack motivation to change personal transportation practices.
2. **Funding:** There is a lack of financial support for sustainable transportation.
3. **Infrastructure and services:** A lack of public transportation service in outlying areas: no public funded transit, no carpooling, torn up railroad tracks, lack of safe routes for biking or walking.
4. **Government leadership:** There is a lack of political leadership. The provincial government has no coordinated strategy or policy for sustainable transportation and supports highway development to the virtual exclusion of public transport.
5. **Land-use planning:** Poor planning of communities has led to a geographic spread of residences, amenities, employment and education resulting in longer distances to destinations, a lack of neighbourhood connectivity, increased sprawl and centralized big box stores.

**EAC:** What support do you need from the provincial government to achieve your vision?

**Participants:** Provincial leadership; the government to take a personal interest and stand on sustainable transportation, to assist municipalities in providing sustainable transportation routes that connect communities and to set an example on sustainable transportation in its own actions and policies.

1. **Infrastructure and services:** One group said, “100 years from now we would like public transportation connecting every town in Nova Scotia by rail, bus or boat.” Another group said, “every community in Nova Scotia should also be connected to each other in a system of safe bicycle and pedestrian trails.”
2. **Funding:** Provincial investment in sustainable transportation for our communities; treat this funding the same way as health, education and road building - an investment not a subsidy.
3. **Policies:** Provincial reorientation of policies and budget to facilitate movement of people by sustainable transportation; a broad land use and transportation strategy that includes directions for municipalities; and specific policies such as legislation of higher fuel efficiency standards or legislation to encourage housing and business developments in rural and small town centres.
4. **Incentives:** Provincial implementation of financial incentives that encourage the use of sustainable transportation, such as tax credits for transit passes, the removal of taxes from bicycles, skateboards, rollerblades and running shoes, and rewards for carpooling.
5. **Education and awareness:** Provincial social marketing campaigns and education strategies aimed at changing the cultural norm and publicity and promotion of sustainable transportation options.
6. **Economic development:** Support local economic development - local food, entertainment, banks, health services and energy production. Promote local produce and services as alternatives to movement of goods. Support sustainable transportation, e.g. biking, walking and public transit facilities, to promote tourism and increase income for local economies. We want people to come here and spend money! Destination marketing.

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 Proportion of workers using public transit to get to work and age groups, Canada, provinces and territories, 1996, 2001 and 2006  
<http://www12.statcan.ca/english/census06/analysis/POW/tables/table3b.htm>; and Table 3c  
 Proportion of workers walking, cycling or using another mode of transportation to get to work and age groups, Canada,  
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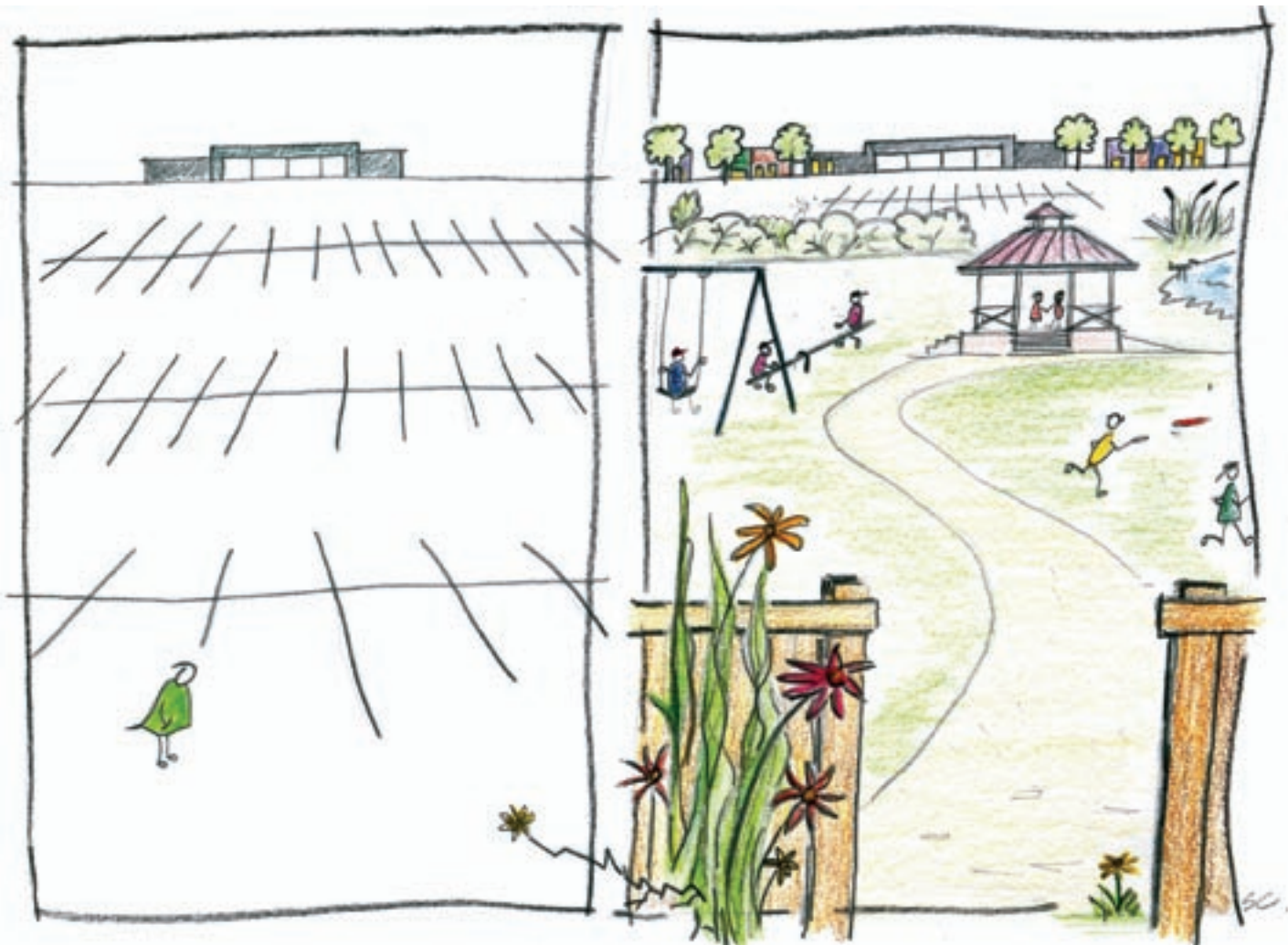


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