

## **BACKGROUNDER: ACTIVE TRANSPORTATION IN THE CANADIAN CONTEXT**

### **INTRODUCTION**

Active Transportation refers to human powered (i.e., non-motorized) modes of transportation. It relies on the use of human energy – with or without some form of wheels or travel support. It is any trip made for the purposes of getting to a particular destination (to work, to school, to the store or to visit friends). Active transportation modes include walking, running, cycling, in-line skating, skateboarding, non-motorized wheelchairs, skating, skiing, and canoeing/kayaking. Walking and cycling are the most common forms. It can also involve combining modes such as walking/cycling with public transit.

Increasing the number of trips made by Canadians through non-motorized means has the potential to improve many aspects of Canadians' lives while at the same time achieving cost efficiencies for both the government and individuals. While active transportation still needs to be studied more thoroughly in Canada, existing domestic and international studies suggest that active transportation can bring benefits to the transportation system, the environment, health, the social sphere and the economy. A national effort to encourage active transportation could help to bring these benefits about.

### **STATE OF ACTIVE TRANSPORTATION IN CANADA**

Trends in transportation and health point to the need for increased efforts to both reduce the impact of transportation on the environment and improve human health through increased physical activity. Increasing active transportation can accomplish both these goals.

#### *Trends in Active Transportation*

According to the 2001 Census<sup>1</sup>, 6.6% of Canadians walk to work while 1.2% cycle<sup>2</sup>. A 2004 survey on active transportation found that 23% of Canadian children walk to school, but that few adults cycle or walk to work (with 76% not cycling to work once in the previous 12 months). The survey found that most adults travel to work by car most of the time (62%) or always (9%) and by public transit (11%) most of the time or always. It also found that the most common reason people walk or cycle for transportation is exercise and health, although practicality, convenience and pleasure were also popular reasons.<sup>3</sup> 84% of Canadians surveyed agree that they would like to walk more often, and 64% would like to cycle more often. In addition, 84% of Canadians surveyed indicated support for government spending for dedicated bicycle lanes and paths.

#### *Transportation and Environment*

Transportation is responsible for over 25% of Canada's greenhouse gas emissions and is a major factor responsible for poor air quality and human health. Passenger vehicles emit various air pollutants including volatile organic compounds, nitrogen oxides, particulate matter, carbon monoxide and sulphur oxides. Emissions can form ground-level ozone, which is a respiratory irritant and one of the major components of smog. Children are more vulnerable to air pollution because they breathe more per unit body weight than adults.

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<sup>1</sup> The 2006 Census data is scheduled to be released in March 2008.

<sup>2</sup> Statistics Canada, 2003. *2001 Analysis Series: Where Canadians work and how they get there.*

<sup>3</sup> Institute for Social Research, York University (on behalf of Go for Green and the Public Health Agency of Canada), 2004. *National Survey on Active Transportation.*

## **BACKGROUNDER: ACTIVE TRANSPORTATION IN THE CANADIAN CONTEXT**

Childhood asthma has increased four-fold in the last 20 years, causing it to be the most frequent chronic illness of childhood.<sup>4</sup> Respiratory illnesses affect all ages and are affected by poor air quality, especially smog. This suggests that efforts to reduce congestion and the number of cars on the streets will help decrease levels of asthma. However, it should also be noted that users of active transportation would be more exposed to existing levels of air pollution because of their aerobic intake.

### *Physical Inactivity and Health*

Lack of physical activity contributes to serious health problems, such as heart disease, some cancers and type 2 diabetes, that have significant personal and economic costs. It is estimated that physical inactivity contributes to at least 21,000 premature deaths each year, costs more than \$2.1 billion in direct health care costs annually for the treatment of chronic diseases that are largely preventable<sup>5</sup>, and carries an estimated annual economic burden of \$5.3 billion. The Conference Board of Canada estimates that the cost of physical inactivity to Canada's health-care system is over \$10 million per year for coronary heart disease alone, and this will continue to increase as the population ages. Workplace benefit costs are also increasing for the same reasons.<sup>6</sup>

Lack of physical activity is related to obesity and overweight. Statistics Canada data confirms that obesity rates in Canada have nearly doubled among adults and nearly tripled among children over the past 25 years. According to a 2004 survey, it was found that some 5.5 million Canadians are obese.<sup>7</sup> As with physical inactivity, serious health risks are associated with being overweight or obese including hyper-tension and stroke, diabetes, heart disease and certain forms of cancer. International studies have also shown a correlation between increasing distances traveled by car, decreasing distances traveled by foot and increasing levels of obesity.<sup>8</sup>

### **BENEFITS OF ACTIVE TRANSPORTATION**

Increasing travel by active modes can mitigate the negative impacts of motorized travel and lack of physical activity. The benefits of active transportation are many and can be categorized as follows:

- *Transportation and Environment:* Active transportation can contribute to a more efficient and sustainable transportation system. Increasing the number of people using active transportation can reduce road congestion benefiting all road users, especially during peak hours. Active transportation is non-polluting and is among the most environmentally friendly forms of transport. Substituting motorized transport with active transportation can therefore bring about reductions in greenhouse gas emissions, air pollution, water pollution, noise and land used for transport. The primary environmental benefit of active transportation is improved air quality.

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<sup>4</sup> O'Brien, Catherine, 2002. "Fresh Perspective on Children's Health and Sustainable Transportation." *Canadian Institute of Child Health*.

<sup>5</sup> FCM, 2002. *The Case for Active Transportation: Health and Social Benefits*.

<sup>6</sup> Public Health Agency of Canada, 2004. *The Business Case for Active Living at Work*.

<sup>7</sup> Statistics Canada, 2005. *Canadian Community Health Survey: Obesity among children and adults, 2004*.

<sup>8</sup> Insall, Philip, 2005. "Active Travel: An integrated approach to promoting walking across policy sectors"

## **BACKGROUNDER: ACTIVE TRANSPORTATION IN THE CANADIAN CONTEXT**

- *Health:* Depending on motorized vehicles for everyday transport reduces physical activity and can damage Canadians' health. Active transportation also supports public health objectives of reduced air pollution. Improving physical activity can help to prevent certain diseases including heart disease, colon cancer and type 2 diabetes. Increasing the use of active transport modes will help to build a healthier population.
- *Social:* Increasing the use of active transportation can create more livable cities and increase Canadians' mobility in an equitable fashion. When people use active transportation they are more likely to have personal contact with others, leading to a greater sense of community. Active modes of transportation are also inexpensive compared to personal vehicles and even public transport. Since not everyone can afford a car, making investments to accommodate active transportation can increase the population's mobility as well as the overall equity of the transportation system.<sup>9</sup>
- *Economic:* Many of the economic benefits of active transportation accrue to the individual since significant cost savings are possible when using active transportation instead of a car for short trips. Reduced health care costs, however, benefit society as a whole through a less costly medical system and fewer sick days taken from work.

### **BARRIERS TO ACTIVE TRANSPORTATION**

The principal barriers to active transportation are distance, time, weather, inconvenience, lack of infrastructure and facilities, traffic safety and road conditions, personal safety, health and disability, and a car culture.<sup>10</sup>

- *Distance and time:* For many people, a barrier to using active transportation, especially for commuting, is distance. The longer the trip takes, the less likely it is that the average person will choose to use active transportation. Canadians also tend to value their time and if physical activity is not a priority or is accommodated in some other way, many will choose to drive to get to their destination in order to have more time for their set priorities.
- *Weather:* The Canadian climate varies from coast to coast and from season to season, bringing very cold and hot temperatures, snow, rain, humidity and other challenging conditions. Different weather conditions will be a factor for different people, with their impact depending on the form of active transportation.
- *Inconvenience:* Many people enjoy the convenience that personal vehicles offer and may feel that using active transportation would not suit them due to their chosen lifestyle. Active transportation may also not be convenient for different types of jobs (i.e. some require the use of personal vehicles to do the job).

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<sup>9</sup> FCM, 2002. *The Case for Active Transportation: Health and Social Benefits*.

<sup>10</sup> Go for Green and BEST, 2004. *The Business Case for Active Transportation*.; Institute for Social Research, York University (on behalf of Go for Green and the Public Health Agency of Canada), 2004. *National Survey on Active Transportation*.; Allium Consulting Group, 2005. "Active Transportation in Four Canadian Cities"; Transport Canada, 2005. Draft paper: Active Transportation and Children's Health.

## **BACKGROUNDER: ACTIVE TRANSPORTATION IN THE CANADIAN CONTEXT**

- *Lack of infrastructure and facilities:* Many people choose not to use active transportation because of a lack of infrastructure such as bike lanes, off-road paths and trails, sidewalks and ramps. Another factor is whether appropriate facilities such as on-site sidewalks or pathways, bike parking, showers and change rooms are available at the destination.
- *Traffic safety and road conditions:* Active transportation often involves sharing the road with motorized vehicles. A major concern for cyclists is safety in traffic, and other forms of active transportation have similar concerns (e.g. pedestrian safety at road crossings or on roads without sidewalks). Driver, cyclist and pedestrian education is also a major factor. On top of the traffic safety concerns, road conditions including rain, snow, ice and potholes can be a deterrent to certain forms of active transportation. This includes conditions for sidewalks and paths, which need to be maintained during winter months in order to make active transportation feasible.
- *Personal safety:* Personal safety as a barrier to active transportation includes fear of crime, such as bicycle theft, child abductions, and muggings, among others.
- *Health and disability:* Another barrier to active transportation is health. Some people cannot use active transportation for health reasons. On smog days in particular, people who are vulnerable to asthma or other respiratory disorders are advised to be cautious when it comes to physical activity and outdoor activities. In addition, persons with disabilities may not be able to use active transportation for long distances and some cannot use it at all.
- *Car Culture:* Other barriers to active transportation stem from what has been referred to as a “car culture”. Active transportation lacks credibility and respect as a form of transport since our present urban design evolved with personal motor vehicle use as the norm. For many, using a personal vehicle to run errands or go to work is simply second nature. In addition, a car can also be seen as a status symbol, which dissuades the substitution of other forms of transportation.

### **OVERCOMING BARRIERS**

Although there are many barriers to the use of active transportation, it is often a combination of factors that either contribute to or alleviate the barriers to active transportation. Analysis of 1998 and 2004 surveys on barriers, indicates that many people would be very receptive to the promotion of active transportation as part of a healthy lifestyle since it promotes both fitness and pollution reduction. Results also show that the vast majority of Canadians are not only able but also willing to take up active transportation for some of their trips.<sup>11</sup>

Barriers such as distance and weather may be immovable (although combining active transportation with transit can address the distance issue). Low-density land uses and long distances between many destinations characterize Canadian cities. Even if cities begin to increase their density, this change is slow and results would not be seen for many years. The Canadian climate is also severe and during several months of the year, many forms of active

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<sup>11</sup> Environics and Go for Green, 1998. *National Survey on Active Transportation.*; Institute for Social Research, York University (on behalf of Go for Green and the Public Health Agency of Canada), 2004. *National Survey on Active Transportation.*

## **BACKGROUNDER: ACTIVE TRANSPORTATION IN THE CANADIAN CONTEXT**

transportation are not practical in a good part of the country. Walking is potentially a year-round activity although cycling is a possibility as well.

Despite adverse weather conditions, the modal split of workers cycling to work according to the 2001 Census was greater than average for both the Yukon (2.0%) and Northwest Territories (1.6%). Whitehorse proclaims itself to be an active living community and benefits from having a smaller development area. Residents tend to enjoy both summer and winter activities, which lends itself to increased use of active transportation during the winter months. Longer days during the summer may also offer more opportunities for use of active transportation modes, with additional safety benefits for users.<sup>12</sup>

It has also been suggested that higher levels of cycling in British Columbia are due to better weather, more compact development and greater inclination towards physical activity. Cycling infrastructure is also a factor. Major cities in Ontario and Quebec experience average or greater than average cycling levels for differing reason. Cycling infrastructure, links with transit, public education and outreach seem to be contributing factors for Ottawa, Toronto, Montreal and Quebec. However, it has been found for larger cities, the levels of cycling are greater in the downtown core suggesting that trip lengths are a major limiting factor.<sup>13</sup> All of this suggests that there are a number of factors that facilitate active transportation and conditions for success will vary by region.

Several options exist for overcoming the barriers of inconvenience, safety, lack of facilities and infrastructure and active transportation's perceived lack of credibility as a form of transport. A Transportation and Climate Change Options Report found that measures to support and promote active transportation (mainly cycling and walking) provide important signals to reinforce changing public behaviour. Measures can vary from hard to soft. Active transportation infrastructure such as expanded cycling and walking lanes and routes, bike racks, and improved security would make urban centres friendlier for travel by active modes. Together with education this could significantly improve the safety of active transportation. This would include, among other things, education on sharing the road (e.g. teaching drivers that cyclists have a rightful place on the road, and teaching cyclists how to ride defensively). Increasing the number of people using active transportation could itself improve personal safety, as having more people on the street acts as a deterrent to crime. Also, policies that increase the number of people walking and bicycling appear to be an effective route to improving the safety of pedestrians and cyclists from an injury perspective<sup>14</sup>. Communication, information, awareness and leadership can also help to raise active transportation's image so that it is considered a legitimate mode of transport and not simply for leisure.<sup>15</sup>

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<sup>12</sup> City of Whitehorse, 2005.

<sup>13</sup> Pucher, John and Buehler, Ralph, 2004. *Cycling Trends and Policies in Canadian Cities*. Victoria Transport Policy Institute.

<sup>14</sup> Jacobson, P.L., 2003. *Safety in numbers: more walkers and bicyclists, safer walking and bicycling*. IP Online, BMJ Publishing Group.

<sup>15</sup> Hagler Bailly, 1999. *Strategies to Reduce GHG Emissions from Passenger Transportation in Urban Canada*, Appendix C - Active Transportation Strategies.