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# Sustainable transportation in small and rural communities

## Overview

Sustainable transportation is often considered a "big city" issue. But in order to maintain economic and environmental health, and ensure equitable access to key services such as employment, educational institutions and medical services, smaller and rural communities in Canada also need to find solutions to increase mobility options for their citizens.

This issue paper examines some of the most common barriers to implementing sustainable transportation programs in smaller communities, offers some solutions and reviews existing programs operating in small and rural communities across North America.

## Selected Resources

1. Canadian Rural Partnership, *Rural Transportation Series*
2. Victoria Transport Policy Institute, *Rural Transportation Management*
3. Transit Research Board (U.S.), *Guidebook for Change and Innovation at Rural and Small Urban Transit Systems*

**References are found at the end of this issue paper.**

## Context

Canada is a highly urbanized country—more than 80% of its population lives in urban areas—and, as such, the majority of citizens have access to some form of sustainable transportation, such as public transit. In fact, Statistics Canada reports that all but three of 49 urban centres with a population of 30,000 or more have public transit systems.

The same cannot be said for rural and small communities, many of which are not well served (if at all) by sustainable transportation options such as public transit, cycling and walking paths, or carpooling programs.

The Canadian Rural Partnership (CRS), a federal government initiative that helps coordinate programs, policies and activities that support rural communities, notes that, as car ownership in smaller communities has increased over the years, demand for public transit or other forms of sustainable transportation has decreased. This has resulted in the removal of these services that may have once existed in rural areas.

Furthermore, the CRS notes that there is an assumption by local governments, transit planners and other key decision makers that all rural and small community residents have access to a personal automobile. However, not all residents have such access; those living in single vehicle households may not have access to a car during certain times of the day or when the "breadwinner" is at work.

Adding to the situation is the fact that, as Canada continues to urbanize, many services—health and social services, employment, shopping areas and educational institutions—are often centralized to serve urban or higher density areas. This can result in less than equitable access to these services by residents in small or rural communities.

*An aging population*

By 2031, one-quarter of all Canadians will be 65 or older (Statistics Canada) and, according to Transport Canada, older Canadians tend to use transit more than any other age group. For those living in rural areas, lack of transportation is a top concern (Ontario Advisory Council on Senior Citizens).

In comparison, fewer young people, aged 20-44, are choosing to live in small and rural areas. Almost 36% of the population in larger metropolitan areas is between the ages of 20 and 44, compared to rural areas where the percentage is only about 28% (Statistics Canada, 2006).

If these trends continue, in only a few decades, there will be a much higher proportion of seniors living in small and rural communities. And, if even a portion of these older Canadians cannot or choose not to drive, communities will need to carefully rethink personal transportation options.

*Health Issues*

In recent years, several studies have been published that suggest a link between certain health issues, such as obesity, where a person lives and the transportation modes they use.

The 2004 Canadian Community Health Survey, for example, found that Canadian adults who lived in large cities—and thus had access to sustainable transportation options—were less likely to be obese than those who lived outside metropolitan areas (Statistics Canada, 2006). For additional information on this issue, see the UTSP issue paper, *The Links Between Public Health and Sustainable and Active Transportation.*

The Canadian Institute for Health Information (CIHI) also reports that, compared to urban areas, obesity and smoking levels were higher in rural parts of Canada, while healthy activities, such as dietary practices and physical activity, were lower (CIHI, 2006).

## Barriers & Solutions

This section outlines the primary barriers to implementing sustainable transportation options in small and rural communities. Where available, examples of solutions are also provided.

### Financing

No matter what size the community, funding sustainable transportation is always an issue. With costs ranging from staff and other human resources, replacement vehicles, fuel, insurance, etc., it can be cost-prohibitive for smaller communities to implement a full-time transit system.

Governments (federal, provincial and municipal) are often the principal bodies charged with financing sustainable transportation systems.

Infrastructure Canada's Public Transit Fund has supported new and expanded transit services in several small and rural communities including 16 communities in British Columbia, and several communities in Nova Scotia. The Gas Tax Fund, which can also be used by municipalities to fund transit (among other infrastructure needs), will deliver $8 billion to cities and communities over the next six years (2008-2014).

Public transit systems in most Canadian communities are funded through a partnership between the municipality and other levels of government. In some cases, local governments are also able to partner with other organizations, such as service agencies or employers, to develop transportation options for specific populations or specific needs.

A good example comes from Rabbit Transit in York, Pennsylvania. Working in partnership with area employers, the transit company offers special all-day routes that serve



the community's largest employer (a regional hospital) and shuttle services at specific times of the day to support smaller employers. Employers pick up the bulk of the costs for these routes, but the routes are also available to the general public. As a result, Rabbit Transit has a more diversified, and sustainable, revenue base.

The U.S.-based Transit Cooperative Research Program (TCRP) found that diversity of funding is critical to implementing and maintaining rural and small community transit systems.

In its 2004 report, *Embracing Change in a Changing World*, the TCRP states that: "Merely running buses up and down streets is no longer sufficient for generating funds—in fact, in many cases (empty buses), it can destroy the credibility of a system. Transit systems must do more and tailor service to address specific needs." The TCRP advocates that communities diversify funding sources through such things as advertising, maintaining other organizations' vehicles or operating services such as street-sweeping or shuttle services.

### Population density

In general, small and rural communities cover a larger geographic area than urban centres do and, as such, have lower population densities. (According to the Atlas of Canada, Canada has one of the lowest population densities of any country in the world, averaging 3.3 persons per square kilometre.)

With fewer citizens, smaller communities may not be able to reach the economies of scale necessary for certain types of sustainable transportation infrastructure, such as public transit. In addition, the need to travel over a large geographic area may prohibit the use of active commuting options such as pedestrian pathways or cycling lanes. Carpooling initiatives can also be hampered because there are fewer people to make the system work.

A small or rural community that is located on the edge of a larger urban centre may be able to "piggyback" on urban transit services. For example, once 11 municipal governments were amalgamated into the new City of Ottawa in 2001, Ottawa's transit authority, OC Transpo, began offering rural transit service to several smaller communities in and around the city boundaries.

### Access to technology

Increasing access to computer technology and broadband (high-speed Internet) services in rural and small communities can be a powerful tool to reduce the need for people to travel to jobs or training facilities, while simultaneously increasing the opportunities for employment and education via telework or "e-learning."

Statistics Canada estimated that, in 2005, approximately 68% of the population had accessed the Internet within

the past year, up from 55% in 2000. However, only 58% of residents living in small towns or rural areas accessed the Internet in 2005 (up from 45% in 2000), well below the national average.

Of the estimated 2.7 million individual home users that did not use a high-speed connection to access the Internet in 2005, Statistics Canada noted that just over one-third reported that high-speed service was not available in their area. Of these, almost 70% lived in smaller towns and rural areas (Statistics Canada, 2006).

## Sustainable Transportation Initiatives

### Public transit

As noted above, all but three of 49 urban centres with a population of 30,000 or more have public transit systems. The same cannot be said for communities with populations of less than 30,000. Generally speaking, this is because public transit is expensive to operate if there is not a sufficient population to support the service.

Some public transit systems, however, have been successfully implemented in small communities in both Canada and the United States.

*Charlottetown Transit*

Charlottetown, with a population of about 32,000, implemented its public transit system in 2005.

The city partnered with a private bus operator to offer service on five routes, six days a week. In keeping with the city's heritage values, the system uses heritage style diesel trolleys, pictured below.



Monthly ridership grew from 6,000 riders a month at the start of the service in October 2005 to more than 12,000 monthly riders by January 2007. Annual ridership is projected to grow to over 20,000 per month or 250,000 annually by 2010.

The city currently pays the private bus operator a subsidy of $600,000 (about 1.8% of the city's budget), which will

be gradually lowered to $375,000 by 2010. The city estimates that, by 2010, 65% of system costs will be covered by transit fares (UTSP).

*Ottawa's Rural Routes*

OC Transpo began offering service to rural communities in 2002, one year after 11 municipalities were amalgamated in to the new City of Ottawa.

Today, eight routes serve 12 smaller communities that have a total population of about 84,500. The routes operate in peak rush hour times, with some routes averaging only 35 riders per day while others serve more than 230 riders daily.

A rural express pass does cost more--$114/month for adults compared to $73 for a regular OC Transpo adult bus pass. Rural passes currently make up about 0.2% of OC Transpo's ridership, but represent 0.4% of the passenger fare revenue.

OC Transpo also partners with several local bus companies and other area municipalities to offer 17 "rural partner routes." These routes either connect passengers to regular OC Transpo routes or transport passengers directly to their destinations (e.g., the downtown area). Scheduling information for each route is posted on OC Transpo's main Web site.

*Roaring Fork Transportation Authority*

The Roaring Fork Transportation Authority (RFTA) was Colorado's first rural transportation authority. It began as a transit agency that offered local bus service for several small communities, including several of Colorado's resort communities.

Today, the RFTA operates a fleet of 82 vehicles, offers bus service from Aspen to Rifle (a distance of about 112 kilometres) and serves almost four million riders annually



(TCRP).

*RFTA has several hybrid diesel-electric buses as part of its fleet.*

The RFTA is currently working to implement a bus rapid transit project, which will include purchasing new buses, adding new park and ride facilities, adding bypass lanes on selected roads and constructing dedicated bus lanes (RFTA).

### Charter programs

Chartering buses or vans is an ideal way for smaller or rural communities to offer a daily commuting service to residents. In some communities where there are only a few large employers, the employers (or their employees) can arrange for charter bus services.

In one southern Alabama county, for example, the existing rural transit provider sells bus seats to employers in a nearby coastal resort area. Employers purchase a seat for their employees at a cost of $100 per seat per month. The program is also used as an "perk" to attract new employees to the area (TCRP, 2001).

Green Rider Ltd. operates on weekdays and organizes groups of commuters who live along a common route in rural Nova Scotia and have similar work or school hours within the nearby Halifax Regional Municipality (HRM). Green Rider's routes travel to all of HRM's campuses and the company also offers transportation service to those needing to attend medical appointments.

**Ride sharing/Car sharing**

With the advent of several online matching services, carpooling or "ride sharing" has become a common practice in all types and sizes of communities.

Car sharing cooperatives have also sprung up across the country. In a car sharing program, people join a co-op to jointly own vehicles with others. Members pay a small administration fee to cover some of the fixed costs and then pay fees when they use a car, based on time used or distance traveled.

Even though the majority of ride sharing and car sharing programs tend to serve large urban areas, some evidence suggests that, were these services available in small and rural communities, residents would use them.

For example, of the 435 people who responded to the Sunshine Coast (BC) Transportation Survey conducted in 2006-2007, approximately 45% said that they would ride share if a service was available and approximately 35% would car share.

*Ride sharing*

Ride matching services have become relatively common across Canada. The software used is low-cost and, because drivers and passengers can search for matches themselves, can often run with little support from program staff.

Two of the most popular Canadian ride sharing Web sites are Carpool.ca and eRideshare.com.

Carpool.ca is supported financially by eight western cities. Other partners, such as provincial governments, universities and colleges and private businesses, also provide financial and promotional resources.

Currently, Carpool.ca has 33 Canadian communities registered where people can find potential matches for their carpooling needs. About 1/3 of these are small communities with populations of less than 20,000.

eRideshare.com includes cities from around the world, with a concentration in Canada and the United States.

Two other online matching systems that specifically serve small and rural communities are the Nelson & Area Rideshare and Vertigogogo.

 Nelson & Area Rideshare is a free program that serves a population of less than 10,000 people. Its carpooling database is separated into two distinct groups: one for daily commuter rides and one for long-distance trips. This allows drivers and passengers to immediately search for the right type of rideshare and alleviates the need for any program staff assistance.

The cost to operate the Web site is offset by the Nelson Carshare Co-Op, which has cars available to those living in Nelson, Revelstoke and Kaslo.

In Ville-de-Morin, Quebec (north of Montreal), Vertigogogo began as a pilot project to  test the suitability of a Web-based ride matching service.

A management consultant company, working in cooperation with the municipality of Val-Morin, worked to develop the service primarily for cycle tourists coming to the region.

During the pilot project about 200 cycle tourists used the automated ridesharing software and about one-fifth found a ride share match.

Vertigogogo's rideshare software is now offered as a permanent service for tourists and residents alike. The software was developed using mapping technology and has about 600 destinations in both urban and rural centres.

*Car sharing*

Co-Operative Auto Network (CAN) offers car sharing services to about 19 communities in B.C. that range in population from less than 2,000 (Tofino) to 2,000,000 (Greater Vancouver Regional District).

As of January 2007, the 19 CAN members represented close to 2,000 people sharing 100 cars. According to CAN statistics, up to 50% of people who joined the network subsequently sold or donated their car, removing about 1,350 cars from the roads.

## Active transportation

Active transportation, such as cycling, walking and inline skating, is part of a healthy and sustainable transportation system that can encourage people to become more active. Although active transportation in small and rural communities is more often used for recreational purposes, it can also be used in conjunction with other transportation modes for commuting.

### Saanich

The District of Saanich, BC is a good example of a community that has improved its active transportation infrastructure. Approximately half of its 110,000 population is classified as rural.

Since 1993, the district has constructed more than 50 kilometres of on-road cycling infrastructure and pedestrian linkages have been improved by constructing new sidewalks and a multi-use trail system. As a result, bicycle commuting increased from 4% in 1999 to 11% in 2004 (UTSP).

### Whitehorse

Despite its extreme climate, Whitehorse, Yukon has one of the highest year-round cycling populations. The city decided to capitalize on this by introducing *Wheel 2 Work*, a campaign that encourages people to commute by bicycle during the summer season.

In order to support active transportation in its community, the city spent approximately $2 million improving its cycling infrastructure. Improvements included upgrading multi-use paths, installing new lighting along selected pathways, and constructing a new bicycle/pedestrian bridge and new bicycle lanes.



*Painted bike lanes and signage in Whitehorse.*

In early 2006, the city partnered with the Recreation Parks Association of the Yukon to create an incentive-based program to help encourage more people to cycle to work between May and September.

Participants signed up to track the number of kilometres they cycled over the five-month period and prizes were offered as incentives. In its first summer, 210 people participated in the program, logging almost 40,000 kilometres (UTSP).

### Roaring Fork Transportation Authority

The RFTA (mentioned above under *Public transit*) has purchased several defunct rail lines and transformed them into recreational trails. Its Rio Grande Trail, for example, is a 33-mile (about 53 km) long continuous multi-use trail that is completely protected from vehicular traffic.

## Transportation management associations

Transportation management associations (TMAs) bring several partners together to offer transportation services. Using a TMA approach is an excellent starting point to assess a community's needs, review available resources and identify where new resources may be found.

The Ride-On TMA, for example, serves the rural county of San Luis Obispo, California. Formed in 1993, the TMA owns and leases vehicles. Fuel, maintenance, insurance, and registration costs for leased vehicles are paid by the TMA.

Ride-On offers a diverse range of services including, vanpooling for commuters, guaranteed rides home, special events and airport shuttles, a senior shuttle (door-to-door transportation for those 55 and older), a lunchtime express bus (in partnership with local restaurants) and a kids shuttle (in partnership with the local recreation department and child care facilities in the region).

The TMA is funded, in part, by U.S. federal funding, with all administration costs covered by revenues generated by the various programs (PATH, 2006).

## Telework programs

Telework refers to the use of computer technology to allow people to work outside a traditional office environment. Employers and employees have found this flexible arrangement can be used for a variety of jobs on either a part-time or full-time basis.

In its research, Transport Canada found that employers who offer telework programs benefit from reduced costs due to fewer sick days and the need for less parking and office space, and enhanced productivity and employee retention. Employees also benefit from a better work-life balance, time saving and employment opportunities for those with disabilities.

Communities—be they large, small, urban or rural—also benefit from telework because it reduces vehicular traffic and its associated greenhouse gas emissions. In addition, telework can also help to preserve the economic viability of rural or satellite communities (UTSP).

The Canby Telecommunication Center operates in the rural community of Canby Oregon, just outside of Portland. Founded in 2000, it offers telework opportunities to business by renting out work space equipped with high-speed internet access, computer work stations and meeting rooms. The Center has become a hub for numerous

business and educational services such as labs and colleges and a small business development centre.

Unlike traditional telework programs, employees work from the Center, rather than from a home office. Employers say that this has alleviated the concern that employees may be distracted by personal activities at home (Washington State University).

## Other Considerations

*Transit-oriented development*

Land use policies such as transit-oriented development (TOD) can improve transportation options in all types of communities—regardless of population or geographic area. Clustering housing developments around transit systems and essential services, such as schools, shops, health care centres, etc., makes it easier for people to walk, cycle or take transit.

TOD can also help smaller communities reduce the costs associated with providing sustainable transportation. The Air Pollution Coalition of Ontario (APCO), for example, reports that the cost of infrastructure in low-density development can be as much as 25% higher than for a high-density development, with a corresponding increase in household transportation expenditures of between 17% and 22%.

One example of transit-oriented development is the Village de Gare in Mont-Sainte-Hillaire (40 km from Montreal), a town of about 16,000.

When a commuter train line was reintroduced into the area in 2000, the town adopted transit-oriented development as a way to preserve its quality of life. When complete in 2012, the village will have more than 1,000 residential housing units all within a 750-metre radius of the rail station. Commercial and institutional uses are also clustered near the rail station. More than 100 housing units have already been built and, since the reintroduction of the commuter line, ridership has increased by 30,000 (UTSP).

*The age of Canada's population*

As noted earlier, by 2031, the number of people aged 65 and over will account for about 25% of Canada's population (Statistics Canada).

The elderly are among the top transit users of any age group. Furthermore, Transport Canada reports that public transit use as a percentage share of total trips increases dramatically with age.

Compared to urban areas, rural areas have a higher percentage of people aged 65 and over and that proportion is growing. Between 2001 and 2006, the proportion of seniors increased by 1.1 percentage points to 15.5% in rural areas, compared with an increase of only 0.7 percentage points to 13.3% in metropolitan areas (Statistics Canada, 2006).

The Canadian Urban Transit Association (CUTA) believes that a rising senior population will increase the demand for "community bus" type services to connect residential areas to shopping, health care facilities and community centres.

Some initiatives, such as Halifax's Green Rider and San Luis Obispo's Ride-On TMA, are anticipating this increase by offering specialized services for older residents.

Providing efficient transportation services for seniors can also have added benefits to the wider community. By providing seniors with more transportation alternatives, seniors may be able to stay in their homes for longer periods of time, which could in turn decrease the demand for long-term care residences (CRS).

*Tourist/vacation transport*

Tourist travel has predictable patterns and needs. By improving options for tourists, automobile traffic can be reduced. This is especially important in areas that have environmental features (e.g., resort municipalities such as Banff, Jasper and Whistler) that may be sensitive to excessive automobile traffic and emissions (VTPI, 2007).

The Whistler and Valley Express (WAVE), for example, is the local transit system that provides free shuttle services throughout Whistler Village including the marketplace and the Whistler Blackcomb Mountain base lodge (BC Transit).

## Stakeholders

Developing sustainable transportation options in small and rural communities often requires a broader range of stakeholders than in large, urban communities. This is because in larger communities, transit authorities are usually already established and have high-density populations that make it cost-effective to deliver sustainable transportation options. In addition, the local municipality—with other levels of government—typically funds these systems (public transit systems, cycling and pedestrian infrastructure, etc.) and is not as reliant on outside partners, such as employers, retailers, or other organizations, for support.

Aside from local governments, stakeholders can include private transportation companies, schools, hospitals, health and social service organizations, employers, churches, chambers of commerce, hotels and other tourism industries and private citizens.

## Conclusion

As more and more Canadians move into larger urban centres, the need for sustainable transportation options will become even more vital to the health of small and rural communities.

Although small and rural communities face many transportation challenges unique to their population size or geographic area, a smaller population can sometimes be an advantage.

The Federation of Canadian Municipalities notes that, generally speaking, larger municipalities have more formal organizational structures and, therefore, require more bureaucracy and more stakeholders to build consensus and support action (FCM, 2003).

Municipalities with smaller populations may, therefore, be more agile when it comes to decision-making, creating partnerships and implementing actions.

Offering a range of transportation options is one way in which small and rural communities can help retain employers and residents, maintain the local economy, ensure equal access to services, jobs and educational opportunities, address the needs of an aging population and improve the health of residents.

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