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Carpooling trends in Canada and abroad

Overview

As carpooling makes a come back as a popular form of commuting, this issue paper reviews the most recent trends in ridesharing, including social networking sites that match up riders, new marketing trends, flexible carpool arrangements and the new technologies that are helping to meet the needs of today's drivers.

This issue paper also examines some of the most important considerations when creating a successful carpool and looks to the future of ridesharing in Canada.

Selected Resources

Carpool.ca, www.carpool.ca

RideShark, www.rideshark.com

Victoria Transport Policy Institute, *Ridesharing: Carpooling and Vanpooling* www.vtpi.org/tdm/tdm34.htm

Full references and resources can be found at the end of this issue paper.

Context

Carpooling hit its hey-day in the 1970s, when the oil crises of 1973 and 1979 first spurred many North American drivers to find cheaper ways to commute. As fuel prices stabilized throughout the 1980s and 1990s, however, the incidence of carpooling ebbed.

Today, carpooling appears to be enjoying a renaissance. Driven once again by high gasoline costs (the average nation-wide cost of a litre of gasoline in July 2008 was $1.40 [Natural Resources Canada]), the trend towards more carpooling has been helped along by a heightened public awareness of the impacts of air pollution on health and the climate, an increase in the number of high-occupancy vehicle (HOV) lanes across the country, and the prospect of new provincial or federal carbon taxes.

Statistics bear out this trend. While the car continues to be the most frequently used mode of transportation for commuting, there has been a decrease in the proportion of single-occupant drivers in the past five years, from 73.8% of workers in 2001 to 72.3% in 2006. People getting to work as a passenger in a car represented 7.7% of all commuters in 2006, compared to 6.9% in 2001, an increase of 22.6%, or 209,200 people (Statistics Canada, 2008).

A survey of 22,000 U.S. drivers, conducted by GasBuddy.com in the summer of 2008 found that about 10% of drivers were carpooling or using public transit more.

In September 2008, several members of the U.S. Association of Commuter Transportation also reported increases in carpool and vanpool applications as a result of higher gas prices. The Greater Mercer Transportation Management Association in Princeton, New Jersey reported a 300% increase in carpool applications and registered carpools, while The Better City Transportation Association in Boston reported a 50% increase in businesses promoting commuter programs.

Dozens of Canadian-based ridesharing websites have emerged since the early 2000s. Carpool.ca, one of Canada's largest ridematching websites, recently welcomed its 10,000th registered participant and, since 2001, more than 36,000 Canadians have used the site's services (Carpool.ca, Summer 2008).

Other types of online carpooling services, which cater to a specific employer, university or muncipality, have also emerged. The City of Calgary, for example, partnered with Carpool.ca to develop a web page dedicated to Calgary commuters. Beginning with fewer than 500 registered users in 2003, Calgary now boasts more than 3,000 registered carpoolers.

New technologies are also playing a big role in carpooling's growing popularity. While most carpooling sites use some type of ridematching software, many others are combining geographic information systems (GIS), geographic positioning systems (GPS), telecommunication devices and electronic mapping to make it easier for people to find a carpool that works for them.

This issue paper reviews the most notable trends in carpooling, the barriers that remain and how organizations can overcome them, and the programs that are helping to spur the "carpool comeback." The paper concludes with a list of considerations for carpool organizers and offers a glimpse into the future of carpooling.

Trends

Carpooling used to be synonymous with the daily commute—a group of employees would share the same car to the same destination.

The need for weekly commuting choices is still the core service provided by many ridesharing systems, but today's carpooler wants much more than simply a ride to work. Software applications, technologies and websites are springing up to fill all sorts of travel needs.

Social Networking

Some advocates believe that carpools can provide new social connections in an increasingly disconnected society. Online carpooling services, such as those offered through social networking sites, are offering new ways to make social connections through discussion sites and custom ridesharing services.

Facebook is one of many social networking sites that offer links to several different ridematching websites. Its own ridematching system was launched in 2007. The system allows users to post their trip requirements within their own network of "friends" and space is provided so that users can customize the request (e.g., preferences for smokers/non-smokers, musical taste, etc.).

The software application allows users to provide feedback on how to improve the system directly to the application's authors. This increases the likelihood that the application meets the needs of users and not just the designers and engineers.

Other sites devoted solely to carpooling, such as PickUpPal (15,000 registered users in Ontario) or GoLoco, use similar systems, allowing people to post their travel requirements (and in some cases travel requirements for pets or goods, such as furniture). PickUpPal also offers a ridematching service for arts, sports or cultural groups to transport people to festivals, conferences or sporting events.

These types of ridematching services are known as "casual carpools" and are typically one-time, one-way trips or intercity trips, making them ideal for college and university students traveling between home and school during holidays or school breaks, for travelers who need to get around a city when on vacation, or anyone looking for a less expensive way to get from city to city.

Technological advances

Perhaps one of the biggest trends is how new technologies are being applied to ridematching services.

A study published in 2004 in *Computers and Operations Research* suggested that employers could use GIS to promote the benefits of carpooling. For example, GIS can help individual employees identify optimal routes, potential ridematches, update road restrictions and note any road construction that could result in delays.

The study also found that the information collected and processed by GIS and other technologies can help develop organizational and communication skills between workers that use the carpool.

As a side benefit, employers could also use GIS to identify potential problem areas of pollution buildup within and surrounding the workplace.

The study concluded that employers that support carpool programs enjoy greater productivity gains, while workers enjoy the reduced stress and cost of driving to work (Calvo, et al.).

One of the latest products is Avego, which combines GPS and GIS with existing telecommunications systems to match drivers with passengers. A GPS-enabled iPhone, which sits on a car's dashboard, runs the Avego application.

Commuters who don't want to drive that day check the availability of drivers on the Internet, through an iPhone or through any regular cell phone; drivers who want to advertise an available seat turn on the Avego system in their cars. If someone on their route wants a drive, the system works out a match and notifies them.

Similar to a taxi meter, the Avego device tracks the cost of the journey, based on the distance traveled.

Children's needs

The age of the "soccer mom" takes on a new meaning with the U.S.-based Divide the Ride website. This free site allows parents to develop carpools to transport their children to and from school or to after-school sporting events or other activities.

Parents first choose families they know to join their carpool. Once carpool members have agreed to participate, the parents then enter their driving availability and their children's transportation requirements. Divide The Ride creates a schedule for all of the people in the carpool, which is then emailed to everyone in the group along with text messages and email reminders.

Carpools and carpool incentives for employees

Employees looking for a regular weekly rideshare still make up the largest segment of carpoolers.

Many municipalities, universities and employers are turning to existing carpooling sites such as Carpool.ca, Smart Commute's Carpool Zone[1] or RideShark to help set up dedicated carpool databases for their employees.

RideShark, used by such diverse organizations as the municipalities of Ottawa, Saint John and Halifax, the University of Ottawa and Nortel Networks, divides its carpooling services by organization type: regional (geographic area), campus (post-secondary institutions), corporate (employers) and cluster (TMAs or a specified group of employers).

Many employers are also recognizing the need to offer incentives to employees in order to make their carpool programs more effective.

McMaster University in Hamilton, for example, offers a guaranteed place to park for carpoolers, while the city of Calgary's parking authority reserves 50% of all new monthly parking contracts for carpools.

Marketing carpools

New marketing trends, based on people's travel needs are making carpooling more attractive to a wider audience.

For example, the carpool applications on many of the social networking websites are aimed at a younger audience looking for one-time, one-way or intercity transportation.

In the case of GoLoco, users can register different types of carpools, including a "worship commute," allowing users to carpool to church services and church events.

Meanwhile, the "one size fits all" type of ridematching website is becoming a thing of the past. Instead, organizations like RideShark customize ridematching services using secure websites dedicated to different types of clients. In turn, many of these clients use their unique rideshare websites as jumping off points to promote their other sustainable transportation programs.

In the next section, more detail about these and other programs will show how these new trends are helping to overcome the most common barriers to carpooling.

Barriers & Actions

A 2007 survey conducted jointly by Goodyear Tires and Smart Commute found that three most common barriers to carpooling are:

- Personal safety concerns
- Lack of flexibility or control
- Effort required to organize a carpool

Personal safety

Most ridesharing systems address personal safety concerns in some form.

Although the casual carpool is a great idea, there is always a concern about personal safety because passengers and drivers do not know each other, or the passenger does not known the driver's driving ability. Checking the ratings of passengers and drivers is, ultimately, up to the individual.

Most one-time ridematching sites, such as Facebook and PickUpPal, provide a mechanism for users to rate each other. Facebook, for example, encourages users to find ride matches within their own network, or check the profile of a driver offering a ride. Passengers can then review the offers for rides they receive and choose a driver, based on price and the driver's rating (a driver's rating can include such things as driving habits or the roadworthiness of the vehicle).

Other systems ask users to provide identification. Once two people meet through the Avego system, for example, the passenger asks the driver to provide a one-time pin code that authorizes the transaction and proves his or her identity.

HOVER (High Occupancy Vehicles in Express Routes) is a relatively new type of carpooling system that operates in Canada in Vancouver, Barrie, Markham, Toronto and Montreal.

Each HOVER participant must fill out a membership application and, if approved, is issued a photo identification membership card. HOVER users are

[1] Smart Commute is a transportation management association (TMA) serving the Greater Toronto Area. Its "Carpool Zone" is a ridematching service available to member employers/employees and to the general public.

encouraged to make a habit of showing their ID card to each person before they get into the car.

Since RideShark customizes its services for each individual city or organization, carpoolers tend to know each other already, or work at the same company or location where identity can be more easily established.

RideShark's corporate edition provides a good example. Employees of one company—either at one building location or multiple locations—can search for a ride match, confident that only other employees of the same employer are allowed into the database.

Flexibility, control and punctuality concerns

Many would-be carpoolers feel as though they have no flexibility with timing or scheduling, or that the driver they are relying on will be late.

Most casual carpool services allow users to specify exact locations and dates. For example, someone wishing to travel from Ottawa to Toronto on New Year's Eve can make a request to be dropped at Union Station in the heart of downtown Toronto before midnight. Other ridematching sites allow users to specify their origin and destination using postal codes.

The City of Ottawa is using RideShark to power its OttawaRideMatch.com system. The system is flexible, allowing users to search for both casual and regular carpools, for matches along a specified route, and for matches within a person's work group.

Another common barrier cited by would-be carpoolers is that, should an emergency arise during the day and they must leave work, they would miss their regular carpool. Many employer-sponsored ridesharing systems, therefore, provide emergency or guaranteed ride home programs.

TMAs like Smart Commute, for example, which help employers implement sustainable transportation programs, also help them implement emergency ride home programs.

Most ridematching sites offer tips on maintaining a good relationship between passengers and drivers, tips that can alleviate concerns about flexibility and punctuality. Carpool.ca's "carpool etiquette" provides a list of questions passengers and drivers should ask each other including what behaviours will and won't be tolerated (e.g., radio use, smoking, perfume/cologne use, etc.).

Effort to organize

Before the advent of telecommunications technologies, carpools were typically set up by word-of-mouth by a group of people who knew one another, lived near each other and worked at or near the same location.

Setting up a carpool today, however, can often be done with just a few clicks of the computer mouse or a phone call and can even involve people living in different cities.

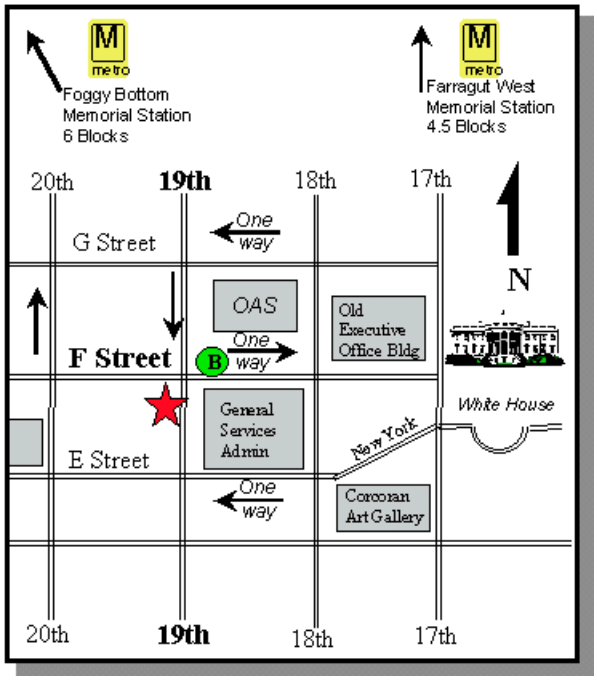
"Slugging" is a new type of carpooling system that requires no organizational effort at all. The slugging concept allows people commuting into the city to stop and pick up other passengers, even though they are total strangers.

A Washington, D.C. "slug line" at the corner of 19th and F Street. Graphic courtesy of Slug-Lines.com.

In Washington, D.C., for example, a driver who needs additional passengers to meet the required three-person HOV-lane minimum pulls up to a known "slug line." The driver either displays a sign with the destination or simply lowers the passenger window, to call out the destination, such as "Pentagon," or "14th & New York." The "slugs," or passengers, first in line for that particular destination hop into the car, confirm the destination, and off they go. Many slug users in the Washington, D.C. system come from the many smaller urban centres that surround the city, such as Springfield, Woodbridge and Stafford, Virginia.

The Avego system promises to make it easier for passengers and drivers to organize both regular and causal carpools.

A commuter checks the availability of services and the system alerts the passenger through email or phone when a driver is just a few minutes away. The system is currently being tested as a pilot program in Ireland (Dublin and Cork) and the manufacturers believe that, once



membership reaches a reasonable scale, members could request a ride at 7:30 a.m. and be picked up two minutes later. As an incentive to join, Avego also plans to make the device available as a free download for individuals at the iPhone Appstore.

In HOVER, people already registered with the system drive, walk or cycle to the nearest HOVER port, a place where people not driving the carpool that day can safely leave their cars or bicycles. Once carpoolers have matched up, they drive to a HOVER port, an agreed upon location close to each carpooler's destination. At the end of the day, the carpoolers meet at the HOVER port and return together to the HOVER park.

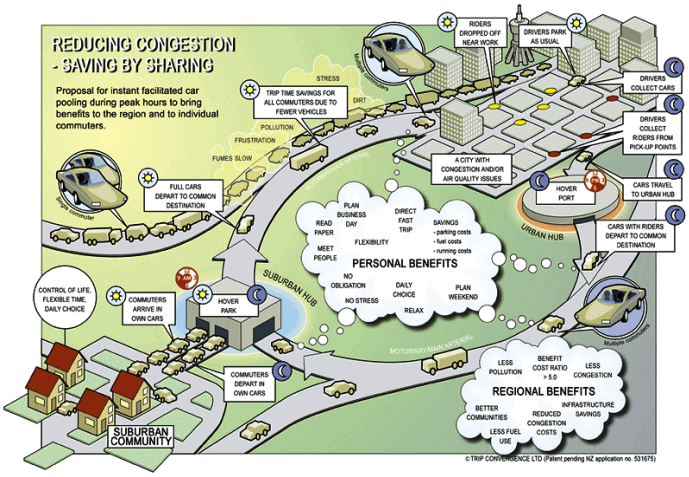
The HOVER concept reduces congestion by encouraging people to carpool. Graphic courtesy of HOVERPort.org.

Benefits

There are a host of benefits that accrue to the individual carpooler as well as to society and employers.

The benefits to carpoolers include:

- *Cost savings.* The Canadian Automobile Association estimated that, in 2007, the average vehicle owner spends between $8,500 and $11,000 annually on ownership and operating costs, depending on the number of kilometres driven and the type of vehicle owned. Carpooling splits those costs among drivers, if it is a regular commuting carpool where drivers rotate, or reduces driving costs by sharing vehicle space.



Carpool.ca offers free communication resources, such as public service announcements, toolkits and posters to help encourage carpooling. Graphic courtesy of Carpool.ca.

- *Time savings.* According to a 2005 Statistics Canada study, commuters spend an average of 63 minutes a day getting to and from work. With more HOV lanes being developed across most provinces, carpoolers can reduce their commute times by taking advantage of faster highway and arterial road lanes.

  Monitoring conducted in 2005 by the Ontario Ministry of Transportation found that drivers using the 11-kilometre HOV lane along Highway 404 (Ontario's third busiest highway) reduced their travel time from 26 minutes to nine minutes. The new HOV lane also spurred an increase in carpooling from 16% to 37%.

- *Health benefits.* Carpooling reduces the number of vehicles on the road, which reduces GHG emissions and promotes better air quality. But aside from cleaner air, there are also additional health benefits for carpoolers. Anecdotal evidence suggests that carpooling can promote a feeling of community by having companions in the car.

  In addition, one 1993 U.S. study found that commuting stress was higher with the distance and duration of the commute. Full-time carpoolers, on the other hand, were less bothered by traffic congestion and more satisfied with their commutes than solo drivers (Novaco, et al).

- *Preferential, cheaper or free parking.* Employers, universities and municipalities that offer carpooling and other sustainable transportation programs often offer some form of preferential parking.

  McMaster University, for examples, not only provides guaranteed parking spaces for carpoolers, but the carpooling lot is right next to the university's first shuttle bus stop that operates around the campus, giving carpoolers the first seats on the bus.

- *Additional perks.* Employer-sponsored rideshare programs sometimes offer additional incentives or perks to employees who carpool, such as prize drawings or other recognition events, or allow employees to use fleet vehicles during the day for meetings for personal use.

  Carpoolers at McMaster University, for example, receive a welcome kit including free parking vouchers for days when carpooling is not feasible, a taxi coupon to cover a ride home in case of an emergency and a coupon for $15 in free gas.

  The Town of Newmarket also gives 1.25 times more for mileage reimbursement for those employees who carpool to external business meetings.

The benefits to society/employers include:

- *Better air quality*. Fewer cars on the road reduce greenhouse gas emissions and improve local air quality.

Results from a 2003 review of the city of Calgary's carpooling initiative, for example, found that the 143 carpools that were formed that year reduced annual GHG emissions by 854 tonnes.

- *Less traffic congestion*. More HOV lanes are being constructed on Canada's highways and arterial roads each year. HOV lanes move more people in fewer cars, leading to less traffic congestion.

  The Ontario Ministry of Transportation supports building more HOV lanes across the province, saying that: "It is not possible to build our way out of congestion. We can, however, make better use of our highways by managing how they are used. Giving people better alternatives to driving alone is one of the most effective ways to tackle congestion."

  The Ontario Ministry of Transport supports constructing more HOV lanes. Photo and graphic courtesy of the Ontario Ministry of Transport.

- *Cost savings*. Several studies have found that employers who offer sustainable transportation programs, including ridematching services, report that their employees tend to be less stressed, which can, in turn, lead to greater productivity and better morale. (For more in-depth information on the cost savings to employers as a result of sustainable transportation programs see *The Links between Public Health and Sustainable and Active Transportation*, available on the UTSP website.)

  In addition, constructing one parking space can cost between $1,500 and $22,000, depending on the type of parking facility. Average annual operating costs can run from $500 to $800 per space (VTPI).

  Enbridge, a member of Smart Commute, implemented a vanpool program for its employees using Carpool Zone, saving them $19,000 annually in parking lease costs.

Creating a Successful Carpool Program

Encouraging weekly or semi-weekly commuting carpools—rather than casual carpools—makes the biggest difference in terms of reducing GHG emissions and the number of vehicles on Canada's roads.

In general, regular commuting carpools are most successful when people:

- Live near each other.
- Travel a sufficient distance to work so that the time required for pick up and drop off doesn't add to the total commute time.
- Work together or near each other.
- Have agreeable work hours.
- Get along.
- Are consistent in their use of the carpool.

Employers make the difference

Sharon Lewinson, President of the Association for Commuter Transportation of Canada believes that employers make the biggest difference in whether or not people will carpool.

Since TMAs work with a number of employers in the same geographic region, they also have an enormous impact on the popularity of carpooling.

Many of Smart Commute's members have reported a sharp increase in the use of sustainable transportation modes, including a rise in the number of carpools as a result of their partnership with Smart Commute.

Peel Region has formed about 50 carpools, which spurred participating Peel Region companies to include preferential parking for carpoolers.

Ms. Lewinson reports that most of today's ridematching websites can be set up and operated for less than $20,000—unlike a few years ago when costs could be as much as four or five times higher—leaving employers with more money to market the benefits of carpooling.

The Future of Carpooling

The two most important factors that will encourage more carpooling in future will be the active participation of employers and the application of technology.

Many employers are already realizing that by offering sustainable transportation options to their employees, they stand to gain benefits of their own, such as cost savings and increased worker productivity. This is one factor promoting the participation of more employers.

In addition, the various carpool and ridematching services discussed in this issue paper will play an increasingly important role in encouraging more employers to implement sustainable transportation programs.

Carpool services and programs will also come to rely more on new technological solutions—some of which are included in this issue paper—such as GPS and GIS systems that are connected to telecommunication devices. One in every two Canadians (16 million) already use cell phones and wireless technology on a regular basis (Industry Canada, 2008).

One new concept coming to the attention of carpool advocates is "dynamic ridesharing," a system that lets drivers and passengers make one-time ride matches close to their departure time, with sufficient convenience and flexibility to be used on a daily basis. Avego, described above, is an example of a technological solution enabling dynamic ridesharing.

By contrast, casual carpool applications, such as Facebook or PickUpPal, will not provide a long-term solution, mainly because daily commuters do not want to spend more than a few minutes arranging their commute, nor do they wish to be constantly checking profiles of potential carpool partners.

With all of this evidence in mind—higher gas prices, access to more HOV lanes, a growing awareness of the environmental impact of vehicles, the application of new technology and the strong participation of employers—the stars appear to be aligned to create a long-term carpool culture in Canada.

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