



# **City of Toronto**

# **Sustainable Transportation Directory**

The 2000 Essential Directory of Groups, Projects, Initiatives and more!



## Active & Safe Routes to School (A&SRTS)

It's a vicious cycle...concerned about dangerous traffic, more and more parents are driving their children even short distances to school. Active & Safe Routes to School encourages children, their families and caregivers to choose walking, cycling or other modes of active transportation to and from school, thereby contributing to personal health and the health of the neighbourhood environment. Active & Safe Routes to School finds its foundation in four interdependent pillars of social vitality - Health, Safety, Environment, and Community - all of which meet on the journey to school and are threatened by the current trends and configuration of our transportation habits.

Program components serve to help communities understand and respond to transportation problems collectively. Together, and with practical alternatives at the ready, we can begin to unravel the transportation knot which has our health, safety, environment and community in its miserable grip.

The A&SRTS project got its start in 1996 with just 3 schools actively promoting the program. There are now 20 active schools in Toronto alone, and the Regions of York and Durham are working with Greenest City to implement the program within schools in their domains. In 1997, Greenest City inspired and urged the development of a national A&SRTS program under the stewardship of Go for Green, and sits on the national steering committee for the national project. The project, which has been the model for other communities such as the Way to Go! program in British Columbia, fields requests for information and support from communities across North America and is developing an expansion strategy to meet this demand. Beginning with a social marketing research and evaluation project, A&SRTS will identify and develop suitable communication methods and messages and a resource kit to allow remote communities to undertake the program for themselves.

Project components include:

- *Walking School Buses* help parents and caregivers to organize amongst themselves to take turns escorting groups of children along their route to and from school.
- *Blazing Trails through the Urban Jungle*: complimentary curriculum mapping exercises which involves children in learning about their neighbourhood as well as getting valuable lessons in sustainable transportation, geography and safety.
- *Remember the Rule: No Idling at School*: a campaign to remind parents and other drivers who stop near schools to turn off their engines and reduce pollution in the school zone.
- *Neighbourhood Walkabouts* help communities to identify their transportation issues and the partnerships they need to engage to address them.
- *Walk a Child to School Day* is an annual special event offering an opportunity to celebrate active transportation and the joy of walking to school.

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Publications: A&SRTS resource kit (includes A&SRTS brochure, an 11 minute video); A&SRTS information package; Urban Trail Blazers Handbook for teachers (telephone 1-888-822-2848)

## Partners

Go for Green, Ottawa

Toronto District School Board

Toronto Catholic District School Board

Toronto Police Service

Toronto Public Health

Toronto Works and Emergency Services

York Region

Durham Region Health Department

## Funders

Toronto Atmospheric Fund

Toronto Community Foundation

Laidlaw Foundation

Health Canada



## Air Pollution Coalition of Ontario (APCO)

APCO's sustainable transportation project, "Sunday Bikeday", is currently under development. This project was initially implemented in Ottawa in 1971; it has been successful for the past 28 years. The City of Ottawa reserves 65 km from the downtown core throughout the city for cycling, walking, in-line skating and jogging. Its established lanes and pathways for cyclists extend to 150 km.

APCO is proposing to establish a similar program in Toronto from May 1<sup>st</sup> to Labour Day weekend every Sunday morning from 9 a.m. to 1 p.m. by closing off a section of a parkway to motorized traffic and reserving the space for families, sports enthusiasts and tourists to discover and enjoy this city. The proposed routes are:

- Route A - Lakeshore Blvd. West, the Eastbound section from Windermere Avenue to Strachan Avenue;
- Route B - Don Valley Parkway, Southbound section from Don Mills exit 1 to Bayview Southbound section leading to Cherry Street. Bayview would require both sections, south and northbound to be closed off at Rosedale Valley Road, as the road is very narrow from that point on to Cherry Street.

Both routes are accessible by bicycle, public transit, or automobiles; they connect with bicycle paths and trails accessible to joggers, pedestrians, and in-line skaters. Volunteers will be responsible for the logistics of the operation and they will ensure safety and guidance at start/end points and crossings. Sunday Bikeday could incorporate special events if participants do not exceed 1,000 ; otherwise special events organizers would be encouraged to coordinate their activity on a Saturday.

A conservative estimate of population participation would be expected to reach 150,000 people a year. Ottawa has experienced a growth of 10.89% from 1995 to 1998; it's annual user count is 107,750. There are an estimated 500,000 cyclists in Toronto.

The Sunday Bikeday project aims to promote public activities and events which enrich the city's cultural and social components and stimulate collaboration among sponsoring organizations with a stake in the city's development. Sponsors such as the sports industry, the media, and athletic organizations will contribute financially to offset operational costs, such as contracting out to provide barricades.

An additional important advantage to this project will be the brief, even though limited, interruption of air pollution from motorized vehicles. It may not alleviate the numerous health effects from air pollutants; it will improve air quality during Summer Smog periods. The implementation of Sunday Bikeday will make Toronto more enticing to tourists and residents as "the City to live in and vacation in". It will improve and conserve. It will be for the Public Good.

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## AIRTRAIN

A new system is coming, for faster transport of people and priority freight. AIRTRAIN operates in a travel space between surface rail and airplane travel zones; this new zone we call "Supra-Surface" (above the surface).

Travelling in the "Supra-Surface-Zone", AIRTRAIN will not face grade crossing problems. It will operate over roads, railways and other surface traffic and will not bisect communities and farmland. No more delays and fatalities at surface crossings. AIRTRAIN will not be delayed by snow, ice and water, which can slow or block surface traffic.

AIRTRAIN will not conflict with surface rail freight, as happens now when a freight train is sidelined to let a passenger train through. AIRTRAIN can carry passengers to a downtown terminal, even between office buildings, and can also provide feeder service to airline hubs.

AIRTRAIN will change intra-city travel from being a major undertaking to a casual convenience similar to boarding a bus. If a passenger misses an AIRTRAIN, the next one will arrive in a matter of minutes.

Savings in time and money will make AIRTRAIN an attractive way to travel in any nation faced with congestion in their metro-areas. AIRTRAIN's optimum market will be in distances between 3 to 35 miles apart. At 70+ miles per hour, AIRTRAIN can carry 72 passengers between the airport and Union Station in a matter of 10 to 12 minutes. The vehicle, weighing approximately 25,000 pounds can carry as many as 72 passengers at speeds exceeding 70 miles per hour at altitudes of 30 to 50 feet.

Support and guidance of the vehicle are performed by a specialized patented guide rail of an inverted "T" shape, which is hung from support arches spaced 100 feet apart. The guide rail is partially encircled by a sort of channel that is part of the top of the vehicle. When the vehicle is not moving, it is secured to the rail by this encircling channel which makes it impossible for the vehicle to fall from the rail during a possible loss of motor power.

The guide rail's patented elliptical surface allows each vehicle to constantly seek its center of gravity thereby creating less wear and friction on the guide rail itself which allows for a smoother ride especially around curves at higher speeds.

With the convenience and operational value AIRTRAIN brings to the market, we believe AIRTRAIN is indeed the new way to move people (freight) in the 21st century.

Movement of the vehicle is in two phases: (1) stopped, and at low speeds, the vehicle rolls on the guide rail with wheels (tracks) mounted in the channel, and; (2) at approximately 80 miles per hour, the vehicle becomes airborne and the tracks no longer touch the guide rail. Thus in flight, the only contact with the guide rail is the small face of a spring loaded electric pickup slide that transfers a three phase current from the guide rail to the vehicle's two ducted, fan electric motors. At this time the train becomes a high-speed train with wings to travel at higher speeds of up to 225 miles per hour and can be used for inter-city travel.

AIRTRAIN can be termed "the first electric airplane." It provides advantages over jet fuel engines: no fuel weight, no fuel storage or space needed; not a fire hazard because it doesn't carry fuel; faster acceleration from stopped position; no air pollution from exhaust fumes; no time or facilities are needed for refueling; and quieter operation.

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## Audible Pedestrian Signal Program

Audible pedestrian signals provide improved security and comfort for pedestrians who are blind or visually impaired by advising them when and in which direction they have the right-of-way to cross the intersection.

Audible pedestrian signals are linked with the existing visual signals. The audible signals make either a chirp or a cuckoo sound. The chirp sound signals you've got right-of-way in an east/west direction, and the cuckoo tells you it's okay to step out in a north/south direction. Silence signals stop - don't start crossing in any direction. At some of the intersections wired for the program, the audible signal operates automatically. At others, pedestrians push the demand button to activate the audible signals.

In 1994, former Toronto Councillor Kay Gardner received a letter from a Toronto resident requesting audible pedestrian signals at the intersection of Lawrence Avenue West and Chatsworth Drive to assist a blind pedestrian in crossing to a high school on the south-west corner. Since then the City has installed audible pedestrian signals at 28 intersections, and in 1999, the City planned to equip an additional eight intersections.

Audible pedestrian signals allow blind people to be more dependant on public transit rather than relying on less environmentally friendly modes of transportation.

Audible pedestrian signals allow blind people to be more mobile and improve their ability to travel to work and become productive members of society.

Current plans are to implement audible pedestrian signals at about eight intersections per year.

Audible pedestrian signals could be installed to assist the blind and visually impaired in any other major urban centre.

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## Sponsors/Partners

The City of Toronto's Transportation Services capital budget funds approximately eight installations per year. Funding has also come from private agencies, such as IBM and Rogers Cable that see the installations as an extension of their Access and Equal Opportunity programs. The program relies on the opinions of local organizations that represent the blind community (i.e. CNIB, Canada Council of the Blind, access and advocacy groups, mobility instructors, etc.) These comments are received by an Audible Pedestrian Signal Advisory Committee comprised of citizens and staff who set priorities for future installations.



## AutoShare - Car Sharing Network Inc.

Established in 1998, AutoShare has brought Ontario's first large-scale car sharing service to Toronto. AutoShare members have convenient 24-hour access to a fleet of vehicles stationed in their neighbourhoods and across the city - and pay only when they use them.

Car sharing is a timely answer to the high cost and hassles of owning a car experienced by people in a city like Toronto. Although newer in North America, car sharing has grown to become a vital part of integrated transportation systems in Europe, where car sharing fleets link with rail, transit and taxi systems.

**Evolving partnerships.** The Parking Authority of Toronto is now working with AutoShare to station cars in neighbourhood lots across the city, close to subway stops. AutoShare also has a car rental agency partner, providing cars for longer trips at favourable rates for members.

**Car use reduction.** Car sharing provides an economic incentive to alter patterns of car use. Car sharing converts the fixed costs of car ownership to variable costs which can be reduced by more frequent use of transit, cycling and walking. European studies of car sharing consistently report new users reducing their overall driving by over 50% without feeling any loss of mobility. Typically people living in dense neighbourhoods with easy access to transit and amenities quickly see the benefits of "sharing" over "owning".

Primary market groups which constitute the "early adopters" of car sharing are:

- the urban professional who does not wish to own a car or a second car
- the ecologically minded who generally avoid driving, but occasionally need a car
- the lower-income earner who could only afford an older car
- small or home-based businesses which can't afford, or don't wish to own a company car.

**Future directions.** Future directions for AutoShare include the addition of hybrids, alternative fuel and electric vehicles to its fleet. A car reservation system with telephone and internet access is currently in development. Eventually, smart cards and on-board computers will make AutoShare even more efficient.

For more information: [www.city.toronto.on.ca/mte](http://www.city.toronto.on.ca/mte); [www.autoshare.com](http://www.autoshare.com)

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## Sponsors/Partners

AutoShare - Car Sharing Network Inc., Kevin McLaughlin (Email: [kevin@autoshare.com](mailto:kevin@autoshare.com)), North Toronto Green Community, Green Investors, (City of) Toronto Atmospheric Fund



## **BikeShare (CBN member project)**

One of the Community Bicycle Network's (CBN) Special Projects, BikeShare combines the best attributes of our re-cycle clubs, Community Economic Development (CED) and skills projects. Based on successful programs in Europe and the U.S., BikeShare will have bicycles readily available for public use. Located at key locations throughout Toronto, BikeShare will be rolled out on a city-wide basis over the next two years and will play an integral part of a seamless transportation system by providing a clean and convenient alternative to the automobile.

For more information contact Todd Parsons or Martin Collier at the CBN office.

## **Contact**

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## **Sponsors/Partners**

Community Bicycle Network; other partners are in the process of being confirmed

## "Bicicletas Cruzando Fronteras" (BCF) - 'Bicycles Crossing Borders' (CBN member)

The growth of CBN to include a broader spectrum of people as part of its community building process has led to the founding of several clubs and the initiation of other projects. The inclusion of people with vast international experience and a strong environmental activist background as core members of the organization has given new scope to our projects. Our first international project is Bicicletas Cruzando Fronteras (BCF) in Cuba.

Sustainable transportation is of vital importance to underprivileged countries. Cuba is a prime example among them. Transportation in Cuba has suffered some impediments both due to financial and political reasons. The bicycle has resulted in being the main means of transportation for people both in urban and rural areas.

What is important to note is that in Cuba there is a strong interest from the political, scientific and administrative circles to promote cycling as a viable and healthy means of transportation. CBN's partners in Cuba, the Office of the Historian of Havana, have earned an international reputation for their innovative methodology of rejuvenating life in Old Havana. Their projects are so successful in terms of sustainability, job creation, gender politics etc. that international institutions are lining up to offer them help. The fact is that one has to be lucky to be able to work with them. CBN finds itself in a proud position of being one of their lucky partners.

The Office of the Historian has involved the local population in its decision making process. The group has been extremely successful in using tourism to support its programs of rebuilding a city, which has been recognized by the UN as the "Patrimony of Humanity". It trains the trades people necessary for these programs. Women are a majority in Old Havana. The Office of the Historian recognizes this and values their contribution. It has incorporated this principle in its planning of all aspects of women's programming from job creation, to social services and health services. Women also play a vital role in the administration of the Office's projects.

The Office of the Historian recognizes that in order to maintain the historical value of Old Havana, it has to also control environmental degradation. It has recognized six most important aspects of the infrastructure required to protect and maintain the historical value of Cuba's architecture and the health of the local people. In order to achieve this the organization foresees the need to implement the following six items:

1. Decrease or eliminate motorized traffic entirely in Old Havana
2. Limit vehicular traffic to 20km/hr inside the city and 30km/hr in peripheral areas
3. Widen side walks and establish pedestrian zones
4. Eliminate all street parking
5. Restructure the public transportation system
6. Promote non-motorized vehicles

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## Project Committee Members

Bartolo Alvarez, Peter Duckworth-Pilkington, Vivian Jimenez, Todd Parsons and Nani Reddy



However, what Cuba lacks is the resources to acquire good quality bicycles and the fact that there are absolutely no bicycle repair shops makes it hard for the Office of the Historian to achieve these goals. The model of rejuvenating Old Havana is already being followed elsewhere. In order to succeed and achieve the six points above, the organization needs to set up modern bicycle repair shops and make good quality bicycles accessible to all people. CBN is committed to help them start with a large scale Bicycle Repair Cooperative, which will be managed and run mainly by women. CBN aims to provide them with used and new bicycles as well as help set up the shop with modern tools and parts necessary for the shop. To achieve this CBN needs to secure funds and donation of bicycles, tools, and parts. We would like to launch the "Train the Trainer" project, where we would train a core number of 15 people to be totally self-sufficient. They would run the shop in a sustainable way by renting out bikes, tricycles and trailers to the tourists and by distributing the remaining bicycles among the public.

CBN is looking for warehouse space to store and sort the bicycles before they are shipped. We also need help in transporting them to the nearest port. We welcome any container shipping company that will donate containers and possibly help us ship them. We also welcome superstores like Canadian Tire, Zellers etc., to donate their scratched and dented bicycles. This project would not only help to protect Old Havana from further deterioration, but also improve living conditions and create employment. Better bicycles would promote more cycling. More cycling would not only improve the air quality, but also improve the people's health. There are still some hurdles to overcome, such as bureaucracy, which is slow everywhere in Cuba, and better means of communication. We are looking for people to get involved to promote this project. We also need a lot of office equipment. We need to translate many bicycle training manuals into Spanish. We also need help in billeting Cubans when they visit us. If this project succeeds, we would like to expand this to some other parts of Latin America, especially Guatemala, Belize etc. There has also been interest in doing similar projects in Africa. But to look elsewhere, we have to first succeed in Cuba. CBN would like to spread this all across Cuba in three years.

For more information please contact: Community Bicycle Network



## Canadian Pacific Railway's Iron Highway

Iron Highway is a high-tech train that gets truck trailers off crowded roads. The benefits are an improved ride and less chance of damaged freight. These light, fast freight carriers currently run on regular schedules, much like a passenger train, between Montreal and Toronto, with two departures and arrivals each day.

**Efficient service technologies.** Local drivers delivering the trailers to the Iron Highway spend no more than 15 minutes at the terminal because of a new information system which allows customers to book slots on the trains by Internet. While booking, customers also send their bill-of-lading information electronically, providing advance information to hand-held computer technology which drives all the processes within the terminal. These hand-held units register a record of the reservation, ID number and trailer number. When the driver arrives, the information is confirmed. The driver is then presented with a receipt, and after a final inspection of the trailer, contents are sealed and the driver is off. Information input in the hand-held units transmits immediately to the main computer and to hand-held units in the destination city, for an equally fast pick-up procedure.

**Easy intermodal transfer.** The Iron Highway's flexible, multi-wheeled platforms split in the middle to form dual ramps, enabling trailers to be driven directly on and off without the need for cranes, stub-end tracks and loading docks. Each 366 metre element can move as many as 40 trailers of varying lengths.

**Competitive.** The train averages 50 mph over the 350 mile Montreal-Toronto corridor. This speed is very comparable to truck transit. Market reaction to the Iron Highway has been positive, since costs are competitive with trucking. The service currently handles 16,600 trailers annually. An expanded service is projected to take 50,000 trailers a year off the highway.

**Future directions.** Capacity on the Toronto-Montreal corridor will triple by summer 1999 and service will extend from Toronto to Detroit later in the year. CPR expects to spend approximately CAN\$80 million over the next two years on new equipment, terminals in Montreal, Milton and Detroit and on dedicated information systems for truck-on-train technology and service.

For more information: [www.city.toronto.on.ca/mte](http://www.city.toronto.on.ca/mte); [www.cpr.ca](http://www.cpr.ca)

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## Sponsors/Partners

Canadian Pacific Railway



## CAN-BIKE

CAN-BIKE is a national education program co-ordinated by the Canadian Cycling Association. The Toronto Cycling Committee runs the largest CAN-BIKE program in Canada, and offers the following courses for different ages and skill levels, at a number of locations across the city:

- Adult Learn to Ride 1 (for beginners)
- Adult learn to Ride 2 (to introduce adults to street riding)
- Kids CAN-BIKE (all the basics for 9-13 year olds)
- CAN-BIKE I (to introduce cyclists to residential street riding)
- Cycling Freedom (taught for and by women)
- CAN-BIKE II (advanced course in defensive cycling)

All courses are taught by certified instructors and are designed to boost skills, safety, confidence, and cycling pleasure. Course costs range from \$40.00 to \$75.00.

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## Sponsors/Partners

City of Toronto, Canadian Cycling Association, Ontario Cycling Association, and the Toronto Police



## Clean Air and Green Watersheds

*Friends of the Rouge Watershed (FRW)* works with youth and community to improve environmental understanding and responsibility. By facilitating environmental education and action, we try to inspire volunteers with the knowledge that our attitudes and actions, individually and collectively, can make a difference to the health and beauty of our environment and communities.

With assistance from the Toronto Atmospheric Fund, Human Resources Development Canada, the City of Toronto, the Rouge Park and many other partners, FRW's "Clean Air and Green Watersheds" project is:

- Promoting youth awareness of climatic change, greenhouse gas and air quality issues while involving 10 schools, 20 teachers and 2,500 students in Rouge Park tree plantings and environmental projects;
- Reducing greenhouse gas emissions and air pollution by involving 10 schools, 20 teachers and 2,500 students in energy efficiency and alternative energy initiatives;
- Enhancing urban greenspace, increasing CO<sub>2</sub> absorption and removing air pollutants by planting and nurturing 25,000+ native trees at sites within the Rouge River watershed;
- Reaching out to Scarborough's diverse multi-cultural communities, facilitating community understanding of climatic change, and promoting actions which reduce greenhouse gas emissions, improve energy efficiency and increase renewable energy use.

In addition, FRW volunteers work with groups such as the Better Transportation Coalition, Transport 2000, Environmentalists Plan Transportation, the Toronto Environmental Alliance and many others to advocate for sustainable transportation.

FRW has participated in Toronto's Environmental Task Force and many other planning and policy initiatives. FRW has good community and school contacts in Scarborough and we are willing to share the expertise we have developed in tree and wildflower plantings, environmental education, nature interpretation and environmental advocacy.

FRW needs longer-term funding to hire young people to help plan, coordinate and follow through with our youth and community projects. We have community projects and events that are open to the public and we need volunteers and directors. Interested persons can call Jim Robb at 416-729-2834.

The environmental benefits of our projects are measured by:

- the number of students and community members participating in our projects;
- the feed-back from teachers and participants on improvements in environmental understanding, appreciation, attitudes and behavior;
- growth in demand for our environmental education programs and projects;

## Contact

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## Sponsors/Partners

Rouge Park Alliance; Canada Trust Friends of the Environment; Toronto & Region Conservation Authority; City of Toronto (Parks and Works); Toronto Atmospheric Fund; Town of Richmond Hill; Human Resources Development Canada



- numbers of trees and wildflowers planted and their survival and growth;
- increase in environmental beauty, health and diversity in areas planted (before and after records and pictures);
- participation of school and community partners in other programs and actions which will yield environmental benefits;



## **Community Bicycle Network Tool Co-op (CBN member project)**

The Tool Co-op is one of the Community Bicycle Network's (CBN) Community Economic Development (CED) Projects. It offers a low-cost alternative for bike repair by providing the CBN's bike tool cabinet to the public at a low hourly rental rate. For more information contact the CBN office.

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### **Sponsors/Partners**

Community Bicycle Network



## Community Transportation Action Program

The Community Transportation Action Program (CTAP) was launched in August 1996 as a joint venture of five Ontario ministries: Transportation, Education and Training, Citizenship, Culture and Recreation, Community and Social Services, and Health.

CTAP's mandate is to provide transitional support to communities interested in restructuring and coordinating their local transportation services. CTAP provides limited seed funding to encourage communities to develop local solutions for better utilizing existing transportation resources. To date, CTAP has funded 57 community initiatives.

**Transportation is a basic need.** Community transportation is the lifeline for individuals needing access to employment, education and training, healthcare, and social services. However, for many communities, reduced funding and increasing demands have stretched available resources. In the past, exclusive relationships existed between users and providers of transportation. For example, school boards would typically contract school bus operators to provide transportation; municipalities would provide or contract public transit services; social service agencies would use volunteers and/or agency vans; and health facilities would primarily use ambulances.

**Benefits of cooperation.** Cross-sector coordination of transportation resources results in less duplication, less inefficiency and fewer gaps in service. It also breaks down barriers between client groups, thus providing a much wider range of vehicles to meet users' needs in a more flexible and cost-effective manner. For example, in some communities, rather than sitting idle, school buses are being used between morning and afternoon student runs to transport seniors and persons with disabilities.

Through multi-sector coordination of transportation resources, unique partnerships have evolved. For example, in a remote northern Ontario community, the Board of Education has contracted with the local Meals on Wheels to transport disabled students to school in its van. This provides an economical solution for the school board and helps to offset the cost of the van for Meals on Wheels. Meeting the increasing demand for community transportation is possible through co-operation, collaboration and coordination.

For more information: [www.city.toronto.on.ca/mte](http://www.city.toronto.on.ca/mte); [www.ctap.gov.on](http://www.ctap.gov.on)

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Publications: CTAP Courier (newsletter), CTAP Guidelines

## Sponsors/Partners

Ontario Ministry of Transportation,  
Ontario Ministries of Transportation,  
Education and Training, Health,  
Community and Social Services, and  
Citizenship, Culture and Recreation.



## Community Ventures with Clean Air Cargo

Clean Air Cargo is a bike trailer and cargo bike rental and consulting service initiated by Toronto's non-profit Community Bicycle Network (CBN). The service rents trailers and cargo bikes, and promotes human powered delivery vehicles and services as a way for downtown businesses to increase their customer base and maximize profits.

**Development of a non-profit business.** With initial funding for a business development officer in 1997, CBN's Clean Air Cargo built up a regular customer base of recreational and microbusiness users, serving 150 new users and 20 repeat customers. Today, the business is run by volunteers, with revenues supporting CBN bike repair clubs and programs. Revenues, combined with CBN sales of rebuilt bikes, will soon reach levels to support a paid employee manager.

**Economic savings.** Clean Air Cargo's clients have lowered their delivery costs by as much as one sixth (and this does not take into consideration capital investments, which are also considerably lower). Some small businesses have increased their customer base (via an affordable way to service new clientele). Though start-up funding was driven by CO2 reduction goals, project marketing focused on economic benefits. This worked. The cost savings hook allowed businesses to realize that people have used bikes for over a century to deliver goods - and with good reason!

**CO2 impact calculations.** Clean Air Cargo calculated CO2 impacts after the first year through information from business clients, and vehicle rental records (these have a space to record distance travelled); odometers were also used on some vehicles to track distances. The calculations quantified the avoided CO2 impacts of an average commercial automobile, had it travelled the same distances for the same purposes.

A potential spin-off. Inspired by Clean Air Cargo, Toronto's 761 Community Development Corporation is developing a cargo-bike manufacturing business. Plans are to create a reliable source of locally built human powered vehicles for the Toronto area, employing and providing skills training for at-risk youth, and supplying RenoSource (a newly-opened recycled building materials depot business) with a fleet of cargo bikes for its operations.

**For more information:** [www.city.toronto.on.ca/mte](http://www.city.toronto.on.ca/mte); Community Bicycle Network

## Contact

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## Sponsors/Partners

Community Bicycle Network;  
Toronto Atmospheric Fund;  
Intersection manufacturers



## Count Me In!/Climate Change Workshop

Enviros-RIS has designed and is now delivering a two-hour workshop on climate change through a contribution from the Federal Government Climate Change Action Fund (CCAF). The CCAF sees workplace based training as an area of opportunity to increase Canadians' knowledge of the climate change issue.

The *Count Me In!* Program targets employees of Energy Innovator companies, provincial and municipal government offices and small to medium sized enterprises (SME's). The workshop is an interactive and informative two hour session that gives a brief introduction to the climate change issue and also provides ideas and motivation to participants to decrease their personal GHG (greenhouse gas) emissions by adopting feasible actions that reduce energy use. The workshop concludes by having participants record a few measures that they are willing to adopt into their lifestyle to limit their GHG contributions (e.g. drive more slowly, install low-flow showerheads, remove roof racks).

The pledge form used in the *Count Me In!* program is not only an individual commitment but signals that Canadians believe climate change is a serious issue. The form lists the actions which individuals have committed to do in an effort to limit climate change. *Count Me In!* is a national program. The CO<sub>2</sub> savings that participants commit to in each workshop are being entered into a database to generate a national total reduction in CO<sub>2</sub> emissions as a result of the program.

There is no cost to the first 30 locations where the workshop is delivered during the pilot phase (until end of 1999). Companies who get involved commit to providing a contact who will send out the invitation and organize all other logistics. *Count-Me-In!* will expand to a national program in the year 2000, with a contribution provided by CCAF for a train the trainer component to prepare more trainers and increase the number of participants involved.

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## Sponsors/Partners

The Climate Change Action Fund, City of Toronto, Toronto Atmospheric Fund, Dupont Canada, Interface Flooring



## City of Toronto - Discovery Walks

Discovery Walks is a new City of Toronto program consisting of a series of self-guided walking trails within the City that are accessible by public transit. These walks are designed to connect the city's outstanding natural, cultural and historic resources such as public parks, ravines, gardens, beaches and neighborhoods. On-site directional and interpretive signage is provided as well as brochures used to promote these walks to locals, workers and tourists alike. A Children's Discovery Walk Outdoor Education Program component has also been developed.

**Economic benefits.** Economic benefits come from the revenue generated for the public transit system and neighbourhood retailers along the walks. By partnering with the City's Public Health Department, the economic benefits from a healthy and active lifestyle are promoted by people using the Discovery Walks. These walks also help to meet the growing desire of tourists to the City who want to experience soft "green tourism" within the urban context. Future user surveys conducted by summer staff will assist in quantifying economic impacts. Hiring summer staff to complete these surveys also adds to the overall economy by providing student jobs.

**Environmental benefits.** Environmental benefits accrue from the public obtaining a greater understanding and appreciation of the City's natural, cultural and historic resources and the role that these resources play in linking their neighbourhoods and communities. Safety in the City's parks and open spaces is also enhanced with the subsequent increase of users that these walks encourage throughout the City.

The City is currently expanding the program through the initiation of various interest and community groups who want the program extended to include their neighbourhood. The City is encouraging volunteers prepared to follow the already successful format, under the direction of City staff, to research and plan for Discovery Walks.

For more information: [www.city.toronto.on.ca/mte](http://www.city.toronto.on.ca/mte); Jerry Belan or [www.city.toronto.on.ca/discovery/index.htm](http://www.city.toronto.on.ca/discovery/index.htm)

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## Sponsors/Partners

City of Toronto, Economic Development, Culture & Tourism, Parks & Recreation Division. Also, various City departments, various Ontario Institutions and community groups.



## Doing It From Anywhere

Virtual travel is an exponentially growing form of travel which reduces costs, stress, air pollution and lost time.

**Virtual modes.** There are various forms: SOHO (small office, home office) workers (in Canada, approximately two million self-employed people work at home); distance education (about 5 million); telemedicine; e-commerce; virtual banking (expected to grow as fast as ATMs); electronic recruitment; electronic job boards; virtual meetings; and electronic democracy. Then there is Telework. Canada has one million people who telework, growing to 1.5 million by the year 2001. Telework, also known as telecommuting, occurs where employees work from remote locations, usually from home.

**Telework savings.** If Canada's one million teleworkers teleworked one day per week, in a year they would save approximately:

- 200,000 tonnes of air pollutants
- CAN\$34 million worth of fuel costs
- 1 billion kilometres of mileage
- the gridlock value of one million cars, etc.
- 50 million hours, which they could spend with their families, or on their non-work lives
- \$5 billion in extra productivity
- \$2 billion per year in real office costs

In addition, teleworkers help mitigate business disruption during snow, ice and flood; and help reduce the number of traffic fatalities and accidents.

**Benefits for business.** Studies by the Canadian Telework Association have documented increases in work productivity by up to 40%, absenteeism reduced by 20%, and estimated office space savings of \$6000 per block of three-four workers. Ninety percent of employees surveyed in Ottawa and Calgary said they would share an office if telework were available to them. According to a recent EKOS study, 30% of employees surveyed would prefer telework to a pay raise.

To find out more about telework (including in Toronto) and see how Canada is a world leader in this field, visit the Canadian Telework Association's website. While not specific solely to Toronto, telework applications do exist in Toronto.

**For more information:** [www.city.toronto.on.ca/mte](http://www.city.toronto.on.ca/mte); [www.ivc.ca](http://www.ivc.ca)

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## Sponsors/Partners

Canadian Telework Association;  
governments; InnoVisions Canada

## The Ecological Footprint of Food Transportation

Mainstream economic models measure only the immediate costs of vehicles, fuels, labour, etc. They tend to treat as externalities the costs of embodied energy in infrastructures, subsidization by public tax policy, and environmental effects like increases in greenhouse gases.

**Calculating ecological impacts.** In order to measure and demonstrate the true costs of food transportation, a single measure - an ecological equivalent of the dollar - must be employed. Such a measure is the ecological footprint.

**How it works.** This measure is based on the insight that economic activity involves the use of energy, usually fossil fuel, which results in the emission of CO<sub>2</sub>. It is possible to establish how many hectares of land, as an ecosystem service, are needed to sequester any given amount of CO<sub>2</sub> (e.g., one hectare is needed for every 100 gigajoules of fossil fuel consumed or one hectare is required per 1.8 tonne of carbon emitted per year). From these calculations, one can evaluate how many hectares are needed to transport to Toronto a leg of lamb from New Zealand, and compare that with a leg of lamb from a local Ontario farmer.

Eric Krause and Alex Murray calculated that, while the price difference is very small, the ecological footprint of New Zealand lamb is 411 times that of an Ontario lamb. Similarly, tomatoes imported during the winter from several points in North America have 2.85 times the ecological footprint of local greenhouse tomatoes. This takes into consideration the embodied energy in greenhouses and their operation.

**Implications.** Purchasers of food could be informed of these differences in ecological footprints through a program similar to the ENERGUIDE labelling attached to electrical appliances; or a sliding surcharge based on the size of the ecological footprint could be established to encourage the purchase of less ecologically damaging produce.

For more information: [www.city.toronto.on.ca/mte](http://www.city.toronto.on.ca/mte); Alex Murray

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## Sponsors/Partners

Toronto Food Policy Council;  
Greenest City



## The Ecorail Alternative

Ecorail is a federally chartered railroad and wholly owned subsidiary of Canadian National Railway, using Bi-Modal technology. Ecorail's business is in the short- and medium-haul markets (100 to 500 miles), offering customers, fleet owners and trucking companies a cost-effective alternative to over-the-road transport. Current service runs daily between Toronto and Montreal, with nightly departure and morning arrival. Additional corridors are currently being explored.

**A cost-effective option.** Ecorail provides a truck-like service where conventional intermodal is not competitive on service or price. Ecorail achieves its cost effectiveness through controlling equipment and terminal operating costs, negotiating a favourable labour agreement, and contracting out to local trucking, terminal operations and equipment repair businesses.

**The driving forces behind Ecorail are several.** Social driving forces include: NAFTA's affect on cross-border goods flow, traffic volumes increasing at double the rate of Gross Domestic Product, and over-the-road carriers running at capacity with a shortage of drivers. Technological forces include a railroad renaissance in the United States and Canada, and the appearance of three new methods of bi-modal intermodal: Ecorail; Conrail/NS RoadRailer (Triple Crown); and CP Rail/Iron Highway. Economic forces include the fact that manufacturing costs have declined further than transportation costs. Political forces include: public pressure regarding unsafe trucks on highways, public concern that tax dollars are spent on roads for trucks, whereas railroads (while underutilised) pay their own right of way, and environmental commitments to lower emissions at various levels of government.

**Benefits.** Ecorail's vision of trailer convoys (trains) operating in high volume corridors will generate safer highways for driving, a cleaner environment, and reduced highway infrastructure expenses. With Ecorail, atmospheric emissions are reduced to one fifth the amounts from trucking. Meanwhile, customers benefit from competitive rates, a single source supplier, quality service, and zero road infractions in three years of operation.

For more information: [www.city.toronto.on.ca/mte](http://www.city.toronto.on.ca/mte); [www.cn.ca](http://www.cn.ca)

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## Sponsors/Partners

Canadian National Railway



## Energy Council of Canada/ABC (Action By Canadians)/Climate Change Workshop

Through a contribution from the Federal Government Climate Change Action Fund (CCAF), the Energy Council of Canada is delivering the Action By Canadians (ABC) program to 3 to 5 Canadian communities. A core component of the program consists of employee based training through the delivery of a two-hour workshop on climate change by the Enviros-RIS Training division. The CCAF sees workplace-based training as an area of opportunity to increase Canadians' knowledge of the climate change issue.

The ABC Program targets employees of Energy Council Member companies to receive the training. The workshop is an interactive and informative two hour session that gives a brief introduction to the climate change issue and also provides ideas and motivation to participants to decrease their personal GHG (greenhouse gas) emissions by adopting feasible actions that reduce energy use. The workshop concludes by having participants record measures that they are willing to adopt into their lifestyle to limit their GHG contributions (e.g. drive more slowly, install low-flow showerheads, remove roof racks, etc.).

The pledge form used in the ABC program is not only an individual commitment but signals that Canadians believe climate change is a serious issue. The form lists the actions which individuals have committed to do in an effort to limit climate change. The CO<sub>2</sub> savings that participants commit to in each workshop are being entered into a database to generate a national total reduction in CO<sub>2</sub> emissions as a result of the program.

Companies who get involved commit to providing a contact who will send out the invitation and coordinate a few hundred participants to receive the workshop, organize all other logistics including the follow-up package and set up other community activities around climate change.

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### Sponsors/Partners

Energy Council of Canada, Climate Change Action Fund, Energy Council Member Companies



## Fare Collection and Transit Integration

Public transit fare collection is changing world wide. Changes include: a movement toward electronic fare collection and away from paper and cash; regional partnerships among public agencies to create seamless fare systems; market driven fare strategies; partnerships with institutions and private sector businesses; and procurement strategies for new fare systems that involve continuing participation by the private sector.

**Fare collection technology.** The next main wave for fare collection is based on smart card technology. Smart cards are credit card sized plastic cards with an embedded microprocessor chip. Contactless smart cards do not even have to be removed from a purse or wallet when passed near the reader. Direct economic benefits include: reduced costs for the processing of prepaid paper and cash fares; increased fare revenues from the ability to offer market segment pricing attractive to a wider range of customers; and reduced equipment maintenance costs, since equipment is solid state with no moving parts.

**Lessons for the Greater Toronto Area (GTA).** New electronic fare systems could play a key role in transit integration to support economic development for Toronto's GTA, although a coordinated fare collection system is only one component of GTA transit integration.

For more information: [www.city.toronto.on.ca/mte](http://www.city.toronto.on.ca/mte); Doug Parker, Associate, IBI Group.

See MTE On-Line for success stories worldwide.

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## FIBA Canning Clean Air Recycling Trucks and Buses

Since 1979, FIBA Canning has been engaged in developing clean air vehicles. The project goals were:

- to produce the cleanest viable urban refuse collection vehicle and bus in revenue service in the world today.
- to demonstrate that this technology is not only viable, but economically superior to that of the existing "standard", i.e., diesel power.

A recycling truck was created in 1993 and a bus in 1996. Both models currently operate in the Town of Markham. These clean air vehicles were developed using two principle technologies. First, FIBA chose CNG as a fuel, since it has been proven superior in emissions and price (in Ontario) to diesel. In addition, FIBA installed the Cumulo Brake Regenerative Energy System, which increased mileage by approximately 50%. The brake regenerative energy system captures energy created by the application of brakes, uses hydraulics to store that energy, and then uses stored energy as required to propel the vehicle.

**Emissions reduction.** Use of these clean air vehicles will: virtually eliminate particulate matter; reduce carbon dioxide emissions by more than 50%; and reduce emissions of non-methane hydrocarbons (NMHC), nitrogen oxides (NOx), and carbon monoxide (CO) by more than 90%.

**Economic benefits.** Operators can generate significant savings since the vehicles reduce energy costs by at least 60%. In addition, the cost of lubricants drops by 90%. Brake maintenance costs are at least 80% lower, and engine maintenance costs are at least 75% lower. Vehicles can be equipped with the technology for a 10% premium, with a payback period of 18-24 months.

**Job creation.** Most of the components used in the vehicles are produced in Canada, including the natural gas cylinders made by Dynetek of Calgary, Alberta. Job creation projections are 110 new jobs, based on revenues of CAN\$60 million annually.

The next steps for this technology are to introduce it on a larger scale in the marketplace.

For more information:

[www.city.toronto.on.ca/mte](http://www.city.toronto.on.ca/mte); [www.fibacanning.com/hybrid.htm](http://www.fibacanning.com/hybrid.htm)

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## Sponsors/Partners

FIBA Canning; Natural Resources Canada; Transport Canada (Transportation Development Centre); Ontario Ministry of Environment



## Garrison Creek Linkage Plan

The Garrison Creek once flowed from north of St. Clair Avenue to Fort York. Like many other streams in Toronto it was buried in a sewer around 1880. We want to reconnect the many parks that trace the course of the creek into a single linked park system that allows people to bicycle or walk from St. Clair to the shore of Lake Ontario. In addition to continuous foot and bicycle paths the Garrison Linkage project also wants to restore natural features of the Garrison ravine, and to reintroduce ponds and flowing water into the Garrison parks. A project to use storm water for this purpose is currently being studied at Dufferin Grove.

The Garrison Linkage Project was started in 1994 by residents along the Garrison route. City Council approved the Garrison Linkage Plan in 1998. The project is now directed by a citizen board which works with Parks and Recreation, Urban Planning, and Public Works to implement a variety of improvements to streets and parks between Bathurst, Dufferin and St. Clair. Board meetings are open to anyone; there is no fixed membership.

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## Sponsors/Partners

Canada Trust; Friends of the Environment; City departments; Councillor Pantalone (Project Chair).



## Greenhouse Gas Database

The Air Quality Improvement Branch (AQIB) of the Technical Services Division in the Works and Emergency Services Department will implement a database on the City of Toronto's Greenhouse Gas (GHG) emissions (primarily CO<sub>2</sub> + Methane) with resource support from the Toronto Atmospheric Fund (TAF).

The former City of Toronto and Metropolitan Toronto collected data on CO<sub>2</sub> and Methane emissions in their jurisdictions going back to the early nineties. This project will consolidate existing data and expand the database City-wide. The software package being used was developed by Torrie Smith Associates for the Partners for Climate Change administered jointly by the Federation of Canadian Municipalities (FCM) and the International Council for Local Environmental Initiatives (ICLEI).

A completed and comprehensive database will facilitate the quantification of environmental and economic benefits.

Potential barriers to be faced will be the availability and release of energy/fuel consumption data for private properties by the utility companies.

This project's vision for the future is the consolidation of the GHG database with that of other air pollutants and emission sources in a relational database with spatial connectivity.

AQIB will provide the main staff while TAF will provide financial support for training and software upgrades and additional staff support as required.

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## Sponsors/Partners

TAF's financial support and co-operation will advance this project.



## Historical Lessons from a Transit Success Story

The Toronto Transit Commission (TTC) has traditionally carried more riders per capita than most other transit systems in North America. It also operates with one of the lowest levels of government subsidy in the world.

**Policy moves.** The roots of the TTC's operating and financial success go back to 1919, when the City of Toronto purchased a private company and created a public corporation to run its transit system.

Under its contract with the city, the TTC had more financial and operating freedom than did heavily-taxed and regulated private companies operating in other North American cities. It used that freedom conservatively, adding services only after new districts had enough population to make transit viable. City politicians respected TTC advice because the city would have to pay back the debt of purchase if the TTC defaulted. As it turned out, the TTC not only paid off that debt, but also replaced its aging streetcar fleet in the 1930s, helped pay for improvements to city streets, and put CAN\$25 million into a subway line after World War II. The latter became the backbone of a fully-integrated metropolitan transit system after Metropolitan Toronto took over the TTC in 1953.

**Lessons for success.** The TTC's history implies that effective public transit requires a close working relationship between the transit agency and the government or governments that help fund it. That relationship should encourage the agency to provide high quality service while yielding financial benefits (e.g., lesser need for subsidies) to government sponsors. It should allow the agency enough operating and financial freedom to reinvest in the system to improve its effectiveness as a means of transportation. It should also provide government sponsors with compelling incentives to adopt community development strategies that help make transit service both possible and viable.

For more information: [www.city.toronto.on.ca/mte](http://www.city.toronto.on.ca/mte)

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## Human Resource Development with a Twist

The Skills Development Programme for Sustainable Transportation (SDPST) is a partnership program led by community-based sustainable transportation groups with support from the City of Toronto. SDPST's goals are to promote more environmentally sound equitable transportation and healthier communities through capacity building programmes for volunteers and NGO staff active in these sectors.

To date, the partnership has sponsored:

- Skills training conferences. Two weekend events brought together over 100 people. Approximately one third were sustainable transportation advocates and two thirds were active in related areas of community organizing and development. Topics were skills-focussed (e.g., conflict resolution, project development, fundraising) using sustainable transportation initiatives as examples.
- Thematic workshop series. One series focussed on bike-related business development. Another covered various advocacy skills.
- Tools for action. This project recruited and trained a group of fifteen volunteers from diverse sectors in education skills and sustainable transportation issues. The group collectively developed new and old resources, including a roster of speakers, a slide bank of over 500 images, board games, a video library and a quick and accessible reference centre.

**Methodology.** SDPST's approach to capacity building emphasizes the bringing together of people who have been active on different issues and in different sectors. Sustainable transportation advocates benefit by learning how their issues relate to other social concerns. Advocates from related sectors (e.g., health, social equity) gain a deeper sense of how transportation issues impact their work. Everyone benefits by developing broader networks.

**Impacts.** The Latin American Environment Group identified SDPST's first skills training event as pivotal to their organizational development. At the second conference, Advocacy for Respect for Cyclists organized its members to collectively cover all concurrent workshops, thus maximizing capacity development for their group. Dundas EAST - a residents' group working for bike lanes and traffic calming - used SDPST slides, videos and other Tools for Action resources in their efforts.

For more information: [www.city.toronto.on.ca/mte](http://www.city.toronto.on.ca/mte); [www.web.net/~detour](http://www.web.net/~detour)

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## Sponsors/Partners

Advocacy for Respect for Cyclists, Community Bicycle Network, Detour Publications, Latin American Environment Group, Multi-Racial Network for Environmental Justice, Transportation Options, City of Toronto (Bicycle Commuter Programme & Healthy City Office)



## Idling Control Bylaw

The Idling Control Bylaw is intended to reduce unnecessary idling in the City of Toronto. The goal of this strategy is to improve air quality and respiratory health.

The Idling Control Bylaw limits idling to no more than 3 minutes in a given 60 minute period. The bylaw allows transit vehicles to idle when picking up or discharging passengers and also allows limited idling when transit vehicles are waiting for passengers. The bylaw provides for idling during extreme outdoor temperatures to ensure heating or cooling inside a vehicle.

The City's intention is to achieve compliance with the bylaw through voluntary measures. If these measures are not successful, the bylaw provides for a fine for infractions. Toronto Works and Emergency Services staff persons are responsible for enforcement.

The bylaw contributes to the reduction of emissions from motor vehicles. Motor vehicles and related activities are the major sources of carbon monoxide, nitrogen oxides, suspended particles and volatile organic compounds in the City. Nitrogen oxides and volatile organic compounds are the two main substances involved in the formation of ozone, a component of smog. Ozone and suspended particles are included in the group of chemicals associated with significant respiratory health effects and hospital admissions. An estimated 3% of Ontario's fuel is wasted by idling. An idling diesel engine will burn about 2.5 litres per hour. An idling gasoline engine will burn about 3.5 litres per hour. Ten seconds of idling uses more fuel than restarting the engine.

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Publications:

Available from Toronto Public Health  
at 416-392-6788:

- Idling Control (All Wards in the former City of Toronto) (1996 Toronto Public Health report);
- Supplementary Report: Idling Control By-law - Public Education and Implementation Plan (1996 Toronto Public Health report);
- An Idling Control Bylaw fact sheet, and a set of four 11 x 17 Curb Pollution posters.

## Sponsors/Partners

City of Toronto (Public Health, Works  
and Emergency Services)



## Innovations in Low Emission Bus Transportation

Orion Bus Industries is a manufacturer of heavy duty transit buses. The plant, located in Mississauga, Ontario, employs nearly 600 people. Orion's finishing plant in Oriskany, New York employs a further 600.

**The emissions challenge.** Clean air is a major concern for everybody. Some states have passed laws governing emissions and set deadlines for meeting standards. Various industries have been targeted as contributing to the pollution factor, with transportation seen as a significant player.

**Compressed natural gas (CNG).** Orion has addressed the emissions issue for years. As early as 1988, Orion's first CNG buses were placed in service in Ontario. At present, Orion manufactures 3 heavy duty transit bus models, each available with CNG power. The Orion-II is a low-floor short wheelbase bus ideally designed for the transportation of people with mobility challenges. The Orion-V is a conventional full size transit bus, while the Orion-VI is a full size low-floor transit bus.

**Hybrid electric buses.** Recently, in partnership with Lockheed Martin, Orion was the first North American bus manufacturer to develop and successfully market a Diesel-Electric Hybrid bus. The Orion-VI model bus has outstanding performance. Preliminary emission testing results conducted at Ottawa's Environment Testing Centre surpassed the manufacturers' expectations and goals.

New York City Transit currently operates five Orion Hybrid buses in regular service. Additional buses will be deployed in New York City and Boston in early 1999.

**The marketing challenge.** Market penetration has been the most significant hurdle to overcome. With a high cost on the manufacturing side and budget restraints on the user side, creative means have changed to get the buses in service. Next steps for this venture are to increase market penetration in the field and further refine the technology.

For more information: [www.city.toronto.on.ca/mte](http://www.city.toronto.on.ca/mte); [www.transit-center.com/Orion](http://www.transit-center.com/Orion)

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## Sponsors/Partners

Orion Bus Industries, Lockheed Martin



## Labour Initiatives in Greening Transportation

Often green strategies have led to job loss by closing of facilities or by the contracting out of union jobs - a negative experience for union members. Labour's concern is that all members of the community should equitably benefit from the development of a sustainable economy. In the area of sustainable transportation, unions in Canada have participated in the development of various strategies and initiatives.

**Green fleets.** Many unions have supported the development of greener fleets (increased use of non-polluting vehicles) through campaigns for "right-sizing" vehicles, improving vehicle inspection, driver education, route optimization and the use of vehicles with alternative fuels.

**Green commutes.** The Amalgamated Transit Union has a national campaign to develop tax-exempt status for employer-provided transit passes. This would support the use of transit by more urban commuters, and provide an incentive for unions to negotiate transit passes for all of their members at bargaining. Other options that unions have encouraged is the increased use of flex-time for employees (to eliminate traffic congestion and decrease the amount of car idling) and car pools.

**Telework.** The voluntary introduction of telework schemes to reduce the amount of commuting has been supported by unions. Still, labour has raised concerns that telework can lead to an increase of both the isolation of workers and the stress of workers, as telework has increased work pressure on workers and their families.

**Waste management.** Unions support and have been involved in the development of recycling and reuse strategies to decrease the transportation of waste that is both costly and negative to the environment. For example, the City of Guelph developed a wet/dry waste recycling system that recycles an estimated 50% of Guelph's domestic waste. The Ontario Liquor Board Employees' Union was involved in the development of a "return to point of origin" campaign so that consumers return bottles to the liquor store.

For more information: [www.city.toronto.on.ca/mte](http://www.city.toronto.on.ca/mte); David Kidd

## Contact

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## Lake Ontario Waterfront Trail

Coordinated by the Waterfront Regeneration Trust, a charitable not-for-profit organization chaired by the Honourable David Crombie, the Lake Ontario Waterfront Trail stretches for 350 kilometres along the shore of Lake Ontario from Niagara-on-the-Lake to Trenton. The Waterfront Trail project was initiated in 1992 in response to the recommendations of the Royal Commission on the Future of the Toronto Waterfront.

The Waterfront Trail is as diverse as the 28 cities, towns and villages that it passes through. The Trail links as many as 177 natural areas, 143 parks, promenades and trails, 80 marinas and yacht clubs, and hundreds of historic places, fairs, museums, art galleries and festivals along Lake Ontario's waterfront.

The Waterfront Trail provides a highly valued recreation and tourism resource, as well as a practical means of commuter transportation. It also acts as a catalyst for the revitalization of parks and harbours, habitat restoration and heritage conservation.

Nine principles are used to guide the implementation of the Waterfront Trail and the Lake Ontario Greenway Strategy the waterfront should be clean, green, accessible, diverse, connected, affordable, open, attractive and useable.

Much has been accomplished in the past seven years, but there is more to do. For example, gaps exist in the Niagara Peninsula, Etobicoke and Scarborough portions of Toronto, and Hope Township. Work is also underway to extend the Trail through Quinte Country to Kingston and Gananoque.

## Contact

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Web Site: [www.waterfronttrail.org](http://www.waterfronttrail.org)

Publications: The Waterfront Trail Guidebook; The Waterfront Trail Mapbook; Trail Design, Signage and Maintenance Guidelines; plus many others

## Sponsors/Partners

Waterfront municipalities; conservation authorities, all levels of government, the private sector and community groups are participating in the Lake Ontario Waterfront Trail.



## Lamson Transit Inc. Green City Commuters

Lamson Transit Inc. was established on November 4, 1994. Being a victim of NAFTA, Steven Lam used his savings and the assistance of the Federal SAE Program and the Ontario New Venture Loan to realize his passion for Ultralight Green personal Commuters. Lamson Transit Inc. focuses on market research, product research and development and the commercialization of Human Powered Vehicles (HPVs) and electric-assisted Green Ultralights in association with like-minded Canadian and foreign parts and component suppliers.

Lamson uses simple power tools, hand tools and a welder for R&D work and making prototype Human Powered Vehicles. They could do some contract work of a confidential nature for others. The company needs innovative parts and components and seeks to discuss this with developers/suppliers. Lamson wishes to contact advocacy groups to learn more about the development of Green Ultralights and the legislation governing their use on public roads in and around cities in North America.

Green Ultralights could provide sustainable personal transport and at the same time help to redirect most of the resources now consumed by the present day transportation system to meet other more essential social needs like unemployment, education, health care, housing, old age security and natural disasters.

The main forces preventing and delaying the development of Sustainable Transportation are the immensely powerful oil and auto barons and their successful lobbies which have influenced automobile legislation and safety standards to exclude Light and Ultralight vehicles as well as brainwashed buyers to choose the automobile as the preferred means of transportation. We need long term positive education both at home and in school to unlearn these prejudices planted by the oil and auto barons and convince people to accept Sustainable Transportation's and Green Ultralights' lasting benefit to current and future generations.

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## Management of Technology Services

Ron Neville is an independent consultant specializing in the field of sustainable transportation. His current projects include:

- Study of Tax-Exempt Employer-Provided Transit Benefits, in collaboration with IBI Group for the Transportation Table of the National Climate Change Action Process
- Consulting support, in collaboration with LURA Group, to establish the Sustainable Transportation Sector Development Strategy for the Moving the Economy initiative of Transportation Options and the City of Toronto.

Ron Neville is co-author of the following publications:

- Backgrounder on Reducing Greenhouse Gas Emissions from Urban Transportation for the National Round Table on the Environment and the Economy (NRTREE), November 1998
- State of the Debate: The Road to Sustainable Transportation in Canada for NRTEE, 1997
- A Policy Instruments Working Paper on Reducing CO2 Emissions From the Transportation Sector in Ontario, for Ontario Transportation and Climate Change Collaborative (OTCCC), 1995
- Reducing Greenhouse Gas Emissions from the Ontario Automotive Sector, for OTCCC, 1995

He is also a member of the Toronto Board of Trade's Transportation Committee.

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## National Climate Change Program - Transportation Table

### Background/Status

Transportation represents the single largest source of Canada's greenhouse gas emissions, accounting for about 25% of the total in 1997. Emissions from transportation are growing more rapidly than the average for all emissions, and are forecast to exceed 1990 levels by 32% in 2010 and 53% in 2020. On June 17, 1998, provincial, federal and territorial transportation officials reached a consensus on membership and co-chairs for the Transportation Table. The Table is composed of 25 individuals representing specific modes of the transportation industry, environmental, consumer and other interest groups, as well as municipal, provincial and federal governments. Additional technical expertise has been provided through the use of sub-groups on key issues or modes. These sub-groups provided another opportunity for participation by other stakeholders.

### Outputs/Deliverables

The Transportation Table has been established to identify specific measures to reduce greenhouse gases in transportation, including costs, benefits and impacts.

- In December 1998, the Table produced a background paper, entitled Foundation Paper on Climate Change - Transportation Sector. It provides an overview of transportation emissions and a summary of existing transportation climate change initiatives in Canada and other countries, as well as existing analysis on various options to reduce emissions.
- The Table created four subgroups to engage additional stakeholders and undertake the analysis required: 1) Consultations; 2) Road Vehicle Technology and Fuels; 3) Freight Transportation; and, 4) Passenger Transportation. The subgroups commissioned a number of studies to identify and analyze potential measures to reduce GHG emissions. In all, 24 analytical studies were commissioned by the Transportation Table.
- The Table has prepared an Options Paper, the purpose of which is to summarize the analysis undertaken and present options to reduce GHG emissions from the transportation sector. The Options Paper has been submitted to the National Climate Change Secretariat for consideration in the development of a national implementation strategy on climate change.

Consultations will be important to the work of the Table, as transportation has a direct impact on all aspects of Canada's economy. The Table will be holding regional consultations to survey and capture the views of a broad range of transportation stakeholders on the work of the Transportation Table, as reflected in the final Options Paper. For more information on this strategy, or to view the Options Paper, visit [www.nccp.ca](http://www.nccp.ca) or contact the National Climate Change Secretariat.

### Contact

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Secretariat

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Web Site: [www.nccp.ca](http://www.nccp.ca)



## Ontario's Drive Clean (program)

Ontario's Drive Clean is a mandatory vehicle emission testing program to reduce smog and its harmful effects on the air we breathe. Under the program, designated vehicles in areas with serious smog problems must pass a clean air test. Those vehicles failing the test must be repaired and retested.

Cars, trucks and buses are the single largest, local source of smog-causing pollutants in Ontario. They release nitrogen oxides (NO<sub>x</sub>), volatile organic compounds (VOCs) and microscopic dust particles that react together in the presence of sunlight to create smog.

There are mandatory testing and repair programs like Drive Clean across North America. They help ensure that vehicles are maintained according to each vehicle's emission standard. Even though most vehicles being built today have cleaner technologies and tighter emission standards, they can become heavy polluters if they are not properly maintained.

Drive Clean will make a difference. When fully implemented, Ontario's Drive Clean program will cut smog-causing pollutants by up to 22 percent in the program area (check brochure or web site for map - Phase 1, 1999 - GTA: Durham, Halton, Peel, Toronto, York and Hamilton-Wentworth).

Ontario's Drive Clean program is concerned with helping us make smart choices about the way we maintain and drive our vehicles. Driving clean can save you up to 10 percent in annual fuel consumption and prolong the life of your vehicle. But more importantly, you will be doing the right thing for the air we breathe.

For more information call 1-888-758-2999 or visit [www.driveclean.com](http://www.driveclean.com)

## Contact

Ontario's Drive Clean (program)

Phone: 1-888-758-2999

Web Site: [www.driveclean.com](http://www.driveclean.com)



## **OPEN ROADS (CBN member project)**

An offspring of the Women's Bike Works (CBN member group), this project was established in 1995 to provide women at-risk with bike recycling and riding skills workshops in safe shelters throughout the city.

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Community Bicycle Network

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Web Site: <http://www.web.net/~detour/cbn>

### **Sponsors/Partners**

Community Bicycle Network; City of Toronto Community Services, various women's shelters



## **Parkdale Intercultural Association (PIA) CED Project**

Parkdale Intercultural Association's CED (Community Economic Development) project invites applications from entrepreneurs for assistance in the start-up of a new business in bike repair.

Parkdale Intercultural Association, since 1977, has been a non-profit, charitable, community-based organization providing settlement programs and services to newcomers to Canada and engages in community development processes to nurture a healthy, equitable and sustainable community. As part of a variety of services to community residents, PIA encourages new business start-ups, including assisting projects in community economic development to become viable businesses. At this time our bike project needs someone to develop it to the stage of an independent business with assistance in that process in terms of mentorship and financing. The direction of the business is largely up to the entrepreneur(s) though it is expected that it will serve Parkdale residents and possibly employ people in Parkdale.

For more information please call our CED Project Coordinator, Dell McKay at 416-536-4420 or fax 416-538-3931.

## **Contact**

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## Policies and Infrastructure for Intensification

Toronto has several examples of how design and policies for streetscape, public art and open space improvements which support intensification can encourage business and boost the economy, quality of life and pride of a city.

**Supportive policies.** City Patterns, an inventory and analysis of Toronto's physical form and structure, describes the City through a series of 44 maps. This work has promoted a common understanding of the form of the city, useful for both policy and capital planning. Toronto's official City Plan has a strong focus on the physical form of the city. It assumes that new development will build upon and reinforce Toronto's current strengths in this regard. Street Hierarchy is a classification system developed to facilitate decision making for street-scape improvements. This hierarchy is unique in North America because it is not based on transportation capacity but rather on the cultural and civic role of streets. Finally, the City's Streetscape Manual is a guide for the development and implementation of both public and private sector streetscape improvements based on the street hierarchy, including detailed drawings and specifications on paving, lighting, tree planting and street furniture by street and by district.

**Supportive infrastructure.** Toronto benefits from joint private/public, public and private capital improvement projects. Joint sector initiatives include area revitalization, route reconstruction, and the creation of 'places'. Public sector initiatives have positioned the City to lead by example, and added leverage to negotiating with the private sector for similar improvements. Privately funded improvements result from rezoning and site plan approval requirements which prescribe sidewalk and open space improvements as a part of a private sector development. Some striking examples of developer funded public art are a result of the City's 1% developer program for public art. Between 1988 and 1996, CAN\$28 million was spent on capital improvements, \$14 million of which was provided by the City. This expenditure in turn generated approximately \$70 million in privately funded street improvements, public art and open space projects.

For more information: [www.city.toronto.on.ca/mte](http://www.city.toronto.on.ca/mte); [www.city.toronto.on.ca](http://www.city.toronto.on.ca)

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## Sponsors/Partners

City of Toronto and private sector  
developers

## Potential Business Opportunities from Bike Trails Situated on Hydro and Rail Corridors

**Bike trails attract tourists.** Rail trails in North America have resulted in a significant effect on the economy of the areas that these trails pass through. Cyclists spend money to fuel their bodies and to buy cycling related equipment and gear.

**Abandoned and operational hydro and rail corridors can provide a network of bike trails.** The Toronto Cycling Committee has approached Toronto City Council for their support in creating a network of bike trails on corridors throughout Toronto. Of Toronto's 400 km of hydro and rail corridors, about 220 km show potential for bike trails. Such a network would be conducive to intermodal or direct commuting to work, and to recreational cycling and drawing tourists to the City. The issues involved in shifting motorists to intermodal transportation appear to be trip time, perceived personal convenience (e.g., protection from weather), perceived dependability and perceived commuting costs. Fortunately, many rapid transit stations are situated close to this proposed network.

The marketplace potential that these trails would open up include food, beverage and equipment businesses, rental and repair services, and trailside attractions. It is estimated that the local economy would benefit by CAN\$50 million. It is expected that entrepreneurs will consider commercial ventures in association with this program.

**Economic benefits.** It is anticipated that this trail system would result in 60,000 commuters, 90,000 recreational cyclists and 50,000 tourists daily, for a total of 7.7 million trips per year. It is estimated that these trips will generate and support 400 permanent, local jobs and 330 temporary jobs (to build the system). Average daily spending of bike trail users is estimated at \$0.50 to \$2.50 for commuter cyclists (plus \$200-\$500 per year in bicycle related expenditures), \$13.00 for local tourists, \$70.50 for weekend tourists, \$122.50 for cycling tourist visitors and \$239.50 for business traveller tourists. These expenditures would be for food, snacks, lodging, bicycle related costs, souvenirs, trip and miscellaneous items.

For more information: [www.city.toronto.on.ca/mte](http://www.city.toronto.on.ca/mte);  
[www.city.toronto.on.ca/cycling/committee\\_terms.htm](http://www.city.toronto.on.ca/cycling/committee_terms.htm)

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## Sponsors/Partners

Toronto Cycling Committee; City of Toronto



## Promoting Employer-Provided Tax-Exempt Transit Passes

In Canada, income tax exemptions permit most employees to receive parking spaces tax-free. In contrast, employer-provided transit passes are designated as a taxable benefit, and few employers offer them. In the U.S. they are not taxable. A growing number of U.S. employers offer them and transit spending among recipients has increased by 23%. In the San Francisco Bay area, recipients increased transit use by 31%, with an estimated 17 million vehicle-miles being removed from their roads, 61 million tons of pollutants avoided, and US\$1.6 million of new transit revenue generated.

**The economic benefits.** Many American employers have found that providing their employees with transit subsidies makes business sense:

- **Cuts Parking Costs:** Employers who lease parking for employees find transit subsidies to be a cheaper alternative. Employers with limited parking are also pleased to offer these spots to customers
- **Reduces Payroll Costs:** Offering a tax-exempt transit pass is less expensive than an equivalent raise. It costs \$1200 to give an employee a \$1000 annual raise (assuming 20% payroll taxes), and they only receive \$720 (assuming a 28% tax bracket). Offering an employee transit passes worth \$720 would save the employer \$480

**Building a National Task Force in Canada.** The National Task Force to Promote Employer-Provided Tax-Exempt Transit Passes was established to convince the Canadian government to make employer-provided transit passes a tax exempt benefit. It includes representatives from health, environment, business, labour, municipal government and transit sectors. Many organizations were initially reluctant to work with non-traditional partners. This was because of different mandates and methods of conducting business, fear of being associated with another organization's activities, and fear of losing autonomy. We work in a way that all participants retain their autonomy and develop their own action plan. As a Task Force, we monitor progress, network and share information. We lobby the federal government and work at a national and community level to find new supporters. While not specific solely to Toronto, efforts towards this goal are underway in Toronto.

For more information: [www.city.toronto.on.ca/mte](http://www.city.toronto.on.ca/mte)

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## Sponsors/Partners

Canadian Labour Congress,  
Canadian Urban Transit  
Association, Federation of  
Canadian Municipalities,  
Amalgamated Transit Union,  
Pollution Probe, Ontario Lung  
Association

## Protecting the Rights of Teleworkers

For teleworkers to enjoy all the benefits - economic and otherwise - of working from home or a satellite location, they need to have a clear and strong contract with their employers.

**Making telework work for employees.** The Public Service Alliance of Canada, a union of federal government employees, developed a set of policy and collective agreement clauses on telework. Not many teleworkers are lucky enough to have unions. However, as a case study, this policy points out key elements for a win-win telework situation:

- telework must be voluntary
- telework arrangements must not contravene existing Collective Agreements and teleworkers must remain members of their respective bargaining unit
- offering telework must not replace the employers' legal and social obligations to promote employment equity within the workplace
- with few exceptions, telework must not be done on a full-time basis (acceptable as a short-term solution for workers with disabilities and workers with chemical sensibilities)
- telework must not be used by management as a long-term solution to health and safety problems, or to avoid its responsibility to provide and maintain a quality, safe and healthy workplace
- telework arrangements must not result in piece rates being introduced as a method of payment
- productivity increases must not be a condition for teleworkers
- training for teleworkers must be provided to clarify the implications of working away from the central office. Training for managers must be provided from the point of view of learning how to supervise teleworkers
- hours of work for teleworkers must follow a consistent pattern that maintains similarity with those expected of non-teleworking colleagues
- all overtime must be authorized in advance, and appropriately remunerated

The City of Toronto's Workers' Information and Action Centre believes that, in terms of urban development and environmental objectives, it matters whether people are made poor by the work that they do or whether they earn enough to live in and contribute to the city. More information on the hazards and opportunities for teleworkers' rights is available from the centre.

For more information: [www.city.toronto.on.ca/mte/WIAC](http://www.city.toronto.on.ca/mte/WIAC) (see above); Public Service Alliance of Canada [www.psac.com](http://www.psac.com)

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## Provincial Cycling Route Network (PCRN)

OCA is the governing body of cycling in Ontario and works to support cycling in competitive and non-competitive sectors of cycling. The PCRN will be a designated network of routes that will allow cyclists to gain access by bike to all regions of the province. By designating routes, the OCA, working with local partners can lobby for improvements to roadways, such as paved shoulders. It also provides some rationale for road departments to invest in cycling.

The PCRN is in its early stages of development. We are currently drafting the routes and have started to consult on their appropriateness. In some regions, such as the Near North, routes have been worked out in consultation with the Ministry of Transportation.

The PCRN project has been going for a little over a year and a half. It started because the OCA office received many calls from cycling advocates and road department staff seeking some direction on how to make the planning for cycling more orderly and understandable.

This project is currently being run by volunteers. We are seeking volunteer consultants who would be willing to undertake an inventory of particular routes.

The presence of an identified route network makes Ontario accessible by bike for many cyclists, enabling them to feel confident that a bike trip is possible. Our hope is that the network will encourage cycle-touring. We are not able to measure the environmental benefits at this time. The economic benefits are clear and the barriers we face are few. Once we got started with the concept, many players were looking for this. Our challenges will be to finance the signage and gain permission to post.

Our hopes for the future is to get routes signed and recognized by all responsible road administrations. We are playing catch up to a trend in other North American jurisdictions.

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Publications: Cycling in Ontario



## ReinCARnate Vehicle Recycling Program

The ReinCARnate Vehicle Recycling Program (RVRP) is an environmental initiative, administered by the Recycling Council of Ontario (RCO). It has dramatically increased the awareness of car recycling, and by doing so, decreased automotive impacts on the environment.

Since ReinCARnate's debut on July 24, 1996, 3,300 cars have been recycled. Since 76% of a vehicle's content by weight is recycled, these vehicles represent over 3000 tonnes of recycled steel, cast iron and aluminum and 66,000 litres of reused or re-refined automotive operating fluids. The energy saved by recycling these materials rather than extracting and manufacturing brand new materials means substantial environmental and economic savings. An added bonus is that 90% of the cars recycled were purchased more than 11 years ago.

Endorsed by the Ontario Ministry of Environment and sponsored by the Canadian Petroleum Products Institute, Safety-Kleen Canada, the Shell Environmental Fund, Ontario Power Generation and the Ontario Automotive Recyclers Association, the ReinCARnate Program guarantees motorists that their automobiles (working or not) are dismantled correctly by a certified recycler located in their community. When a car is donated, its value is issued to the donor in the form of a charitable tax receipt. Donors also receive a free tow.

Car owners wishing to 'reinCARnate' their old autos can call 416-960-1025 (ext. 23) or 1-888-CAR-DIED (227-3433), or visit the ReinCARnate web site: [www.rco.on.ca/reincarnate.html](http://www.rco.on.ca/reincarnate.html). Information is also available at most LCBO Stores, Beer Stores, and Ministry of Transportation licensing centres throughout the year.

The RCO, a not-for-profit registered charity, was established in 1978 to promote recycling and waste reduction programs in Ontario. The RCO's mandate includes public education, research, policy development and advocacy. In 1989, the RCO was recognized by the United Nations for its role in establishing Ontario's highly successful Blue Box curbside recycling program.

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Web Site:

[www.rco.on.ca/reincarnate.html](http://www.rco.on.ca/reincarnate.html)

## 1999 Sponsors

Canadian Petroleum Products Institute; Safety-Kleen Canada ; Shell Environmental Fund; Ontario Power Generation

## Reviving Underutilized Railways: The Brampton Shuttle

The proposed Brampton rail feeder service is patterned after successful rail feeder services in Philadelphia, Pennsylvania, and a trial service in Calgary, Alberta. These services use single unit vehicles with 100-500 passenger capacity on underutilized railways. In the Calgary and proposed Brampton cases, one vehicle makes multiple trips in each peak period to meet the commuter rail trunk service to the urban area central business district.

The passenger train proposed for the Brampton Shuttle is a self propelled rail diesel car. At the Brampton commuter rail station, a short connecting track would allow scheduled arrival of the shuttle directly across the platform from the commuter trains to/from Toronto, permitting convenient passenger transfers while both trains are stopped at the station.

**Capturing a diverse market.** Forecasts for ridership on the Brampton service are at 2,100 passenger trips per day. This market includes 1,200 daily rides by current commuter rail customers in the region (estimating that 50% of these would switch to using stations on the more locally accessible shuttle service). With new market penetration by the shuttle, the service could attract 600 new daily riders each way. In addition, Brampton residents who also work in the region could be attracted to the local service, generating 300 passenger trips per day. With reduction in demand for parking facilities at the Brampton commuter rail station, additional trips will be attracted to use this service. The growth in ridership on the main commuter line as a result of this shift of parking capacity from the new shuttle service is estimated at 250 additional trips per day.

**Financial prospects.** With the Brampton Shuttle acting as an extension route for both the commuter rail service and the local Brampton internal transit (at current fares), preliminary estimates of costs and revenues indicate that a net operating subsidy similar to the current Brampton Transit operating subsidy (CAN\$0.22 per customer) coupled by appropriate revenue sharing with the commuter rail server, will be sufficient to cover both the capital and operating costs of providing the service. Surplus of revenue over operating costs is estimated at \$0.07 per passenger.

For more information: [www.city.toronto.on.ca/mte](http://www.city.toronto.on.ca/mte); Douglas Thwaites

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## City of Toronto Road and Trail Safety Ambassadors

The Road and Trail Safety Ambassadors are a team of 22 safety experts who organize and attend community events as a medium to educate cyclists, in-line skaters, pedestrians, and motor vehicle drivers on safe use of the roads and on how to respect other road users' space. Their goals are to:

- reduce the number and severity of cycling injuries
- increase compliance with traffic laws by all road users
- promote safe and responsible trail use in parks and protect environmentally sensitive areas
- reduce conflict and facilitate communication and co-operation between all road users

They have a number of programs to reach these goals, including CAN-BIKE bicycle safety courses, O.A.S.I.S. (Off-road Awareness Safety Information Stop) events, S.P.A.C.E. (Safety Prevention Awareness Courtesy Education) events, the Wheel Smart in-line skating safety program, "How are you breathing today?" air quality awareness campaign, and "Stepping Out Safely" pedestrian safety program. The Ambassadors provide these services for free. If you would like them to come to an event in your community, or you have questions or require further information, contact Sean Wheldrake, Coordinator, Phone: 416-392-1143; Fax: 416-392-0071.

## Contact

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[www.city.toronto.on.ca/cycling/committee\\_terms.htm](http://www.city.toronto.on.ca/cycling/committee_terms.htm)

## Sponsors/Partners

Human Resources Development Canada, the Canadian Automobile Association, Mountain Equipment Co-op, 3M Scotchlite, Bell Mobility, Rack Attack, the Parking Authority of Toronto, the Toronto Police, Seniors' Secretariat - Ministry of Health (International Year of the Older Person Project), and Osprey Beverages



## Safety and Cost/Benefit Implications of Streetscape Design

A 1998 study of retail friendly design examined how communities develop a positive relationship with a shopping district based on a sense of safety. Community mnemonics, the memory of neighbourhood events, are described as a significant factor in the way people identify with a particular place, and can have a strong impact on repeated use of a retail establishment. Traffic accidents are powerful negative events on a neighbourhood street. With this in mind, the relationship between accident rates and streetscapes are explored on two streets in Toronto. These two case studies indicate that streetscape can potentially decrease accident rates and severity.

**Case studies.** Two streets in Toronto were examined to illustrate what impacts streetscaping might have on a community's sense of safety. The installations, on Yonge Street and on Overlea Boulevard, were implemented to specifically attract economic investment. In both cases, accident frequency and severity pre- and post-construction were analysed. Results of the analysis indicate increased safety through a reduction in vehicular accidents. Accidents in the Yonge Street case reduced by 5%; accidents in the Overlea Boulevard case reduced by 27%. These accident decreases occurred at the midblock condition only.

**Cost benefits.** The case studies then calculated combined direct and social cost savings following Ontario Ministry of Transportation guidelines in 1990 dollars. On Overlea Boulevard, where nearly CAN\$400,000 was invested, savings from the reduced accidents over three years was \$231,000. On Yonge Street, with improvements worth \$800,000 (including the cost of constructing a new median), savings were \$100,000 over three years.

**Payback keeps coming.** If retail district streetscaping reduces accidents, over time the community experiences the streetscaping as not only beautiful, but also safer. This attracts shoppers and investment, benefiting retail prosperity and the municipal tax base. Notably, these investments pay for their own maintenance in perpetuity.

For more information: [www.city.toronto.on.ca/mte](http://www.city.toronto.on.ca/mte); Jody Rosenblatt

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## The Shape of the Information City

**Drivers of change.** A comprehensive analytical model has been developed to realistically assess the impacts of the information revolution on city form, travel demand, and travel patterns. The model identifies seven key "drivers of change" in the information city.

These are:

- economic restructuring
- automation and disintermediation
- new geo-organizational options
- IT in management
- new work and occupational structures
- new workspaces
- uneven information infrastructure diffusion.

Together, these drivers will have key implications for urban form and transportation. All of the key drivers must be kept in mind when assessing the impacts of the information revolution, not just a few often-cited factors such as telework.

**Reduced travel is not a given.** It becomes clear, when we apply this model, that the information revolution will not automatically reduce travel demand. In fact, in some cases the key drivers suggest increased travel. For example, increased travel may result as commutersheds expand as a result of telecommuting, or as work moves into non-mixed use, purely residential environments.

**Planning impacts.** If the information revolution is to make a positive contribution toward urban environmental and transportation goals, a clear understanding of the nature of change and strong supporting measures will be required. Consideration of the potential impacts of information and communications technologies must be integrated into physical and transportation planning. For example, we must rethink how residential environments can be made to support home-based work in order to moderate travel demand as work continues to move to the home.

For more information: [www.city.toronto.on.ca/mte](http://www.city.toronto.on.ca/mte); Pamela Blais

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## Smartcards for Fare Payment in Urban Transit

A smartcard is almost a micro-computer in a card. Smartcards for fare payment allow transit systems to handle all fare categories and process different kinds of fares (single-trip fares, period passes, special fares) in an automated, user-friendly and cost efficient way.

The Ajax and Burlington Transit systems in the Toronto area were the first in North America (1991 and 1995 respectively) to implement contactless/proximity smartcards in this way. Both systems were designed, produced, and installed by Precursor Ltd. of Toronto.

**Convenient and flexible fare payment.** In Ajax and Burlington, transit users have the flexible choice of using the smartcard's reloadable value to pay individual fares, to activate different types of period passes, and/or to pay for accompanying multiple fares. Within the period pass options, users can activate a 31-day pass at any time (instead of being restricted to a monthly pass). This flexibility not only assists users to make better payment choices, but also overcomes congestion and staff overloading for the transit system at the end of each month.

**Smartcards track valuable data.** An important by-product of smartcards are the detailed data they can produce on ridership and use patterns. This is a great resource for transit management, previously available only from expensive manual surveys. The data can support greater operational efficiencies and enhanced marketing strategies, giving transit management a new edge.

**Smartcard technology is flexible and cost-attractive.** Its future possibilities include seamless multi-modal journeys across multiple transit systems with a common card, which can be readily expanded to also pay for parking, bicycle rentals and other conveniences not yet explored.

For more information: [www.city.toronto.on.ca/mte](http://www.city.toronto.on.ca/mte); Michael Blurton

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## Smart Cards Help Transit Authorities Close the Subsidy Gap

A smart card is a credit card sized "passive computer" that becomes operational when connected to a power source either directly (contacted) or through a radio frequency inductive field (contactless). Smart cards used as transit fare instruments can be configured to hold stored rides, period passes or stored value (money) as well as other non transit applications like loyalty programs or electronic cash.

**Increased revenues and reduced expenses.** Smart cards can help transit authorities increase transit revenues in a variety of ways. Being virtually impossible to counterfeit, they dramatically reduce most forms of fare evasion. Transit authorities can optimize their fare/service balance through more flexible and marginal fare pricing (e.g. by zone, distance, or time of day). Smart cards can be part of creative promotions and co-marketing strategies to increase total ridership. Operators can earn interest from money deposited on fare smart cards and transit authorities can charge transaction fees for other uses of the card (e.g., taxis, highway tolling, retail), making the card itself, a revenue generator.

Smart cards enable transit operators to reduce operating costs tied to the handling and potential loss of cash, as well as many maintenance and staffing costs for fare collection systems.

**Hong Kong's Smart Card System.** Of the 10 million transit journeys in Hong Kong each day, 74% are by public transport and approximately 50% are completed using fares paid with smart cards. The introduction of contactless smart cards into Hong Kong transit systems was coordinated by Creative Star, a consortium of major Hong Kong transit operators including MTRC (Mass Transit Railway Corporation), KCRC heavy and light rail (Kowloon-Canton Railway Corporation), KMB (Kowloon Motor Bus), Citybus, and HKF (Hongkong and Yaumati Ferry). Beginning revenue service in September 1997, the system now handles over four million smart card transactions daily with almost five million smart cards in circulation.

**Benefits.** Smart cards have increased system reliability. Failures dropped from 1 in every 3,200 uses for the previous magnetic system to better than 1 in every 700,000 uses for the new smart card system. Passenger throughput has increased over 20%. Creative Star earns both an important interest on prepaid amounts deposited on the cards and added transaction fee revenue from other uses of the card. For more information: [www.city.toronto.on.ca/mte](http://www.city.toronto.on.ca/mte); [www.erg.com.au](http://www.erg.com.au)

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## Sponsors/Partners

Creative Star; ERG Transit Systems (Perth, Australia)

## Smog Alert Response Plan

The Smog Alert Response Plan was created in 1998, with Council approval, to notify City employees and the general public about smog alerts and to raise public awareness of smog and air quality. Toronto Public Health has developed a notification process, including universal Email, fax and telephone notification to inform all City managers and employees of a smog alert. Employees can also check the Internet home page for Smog Alert messages. Departments, such as Works, Parks and Recreation and Solid Waste, have developed and implemented Smog Alert Response plans.

Toronto Public Health expanded their notification efforts this year to include the public.

- The Toronto Star and The Toronto Sun added smog to their weather information page.
- TTC intermittently scrolls smog alerts along with route information on the front of buses.
- Several Community Health Centres are also notified of smog alerts.
- Our City home page will carry the smog alert message and symbol on smog alert days. The [www.toronto.com](http://www.toronto.com) web site will also inform the public about smog alerts.
- Signs on major Toronto highways will feature smog alert messages.

Initiatives taken to increase public awareness of smog and air quality include:

- Residents can call 392-0808 to hear an automated message which provides air quality readings, smog alerts and information on how to protect one's health during smog alerts.
- Smog Alert brochures are distributed to walk-in clinics and Pharma Plus Drugstores.
- Highway signs run generic smog and air quality messages.
- An article on smog was sent to several community newspapers for publication.
- A Smog Alert display board that will be put up at various environmental events and Environment Days hosted by the City.

Our vision is to not only heighten awareness of the issue, but to affect public behaviour around air quality so that people will shift to non-polluting activities. Everyone has a share in protecting our air. Be it taking public transit, car pooling instead of driving alone, or stopping the use of pesticides, it all adds up to cleaner and fresher air. We hope to share our program with other municipalities so that their residents can be a part of this unified vision for smog-free air.

To obtain more information or make suggestions or comments on smog, please call the Health Promotion and Environmental Protection office at 392-6788.

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Publications: Smog Alert brochure, fact sheets and poster



## Smog Prevention and Reduction Strategy

In May 1998, a Smog Prevention and Reduction Strategy was adopted by City Council for the newly amalgamated City of Toronto. The Strategy builds on the anti-smog actions that had been previously adopted by the Councils of the former City of Toronto and the Municipality of Metropolitan Toronto. The Strategy deals with seven issue areas:

- Smog Alert
- Smog Prevention and Reduction
- Public Education and Communications
- Green Fleets
- Employee Trip Reduction
- Targets, Measuring and Monitoring
- Inter-governmental Relations

The Chief Administrative Officer reported on the status of the Strategy in the report *Smog Prevention and Reduction: Status Report and Work Plan* (May 18, 1999). The report provides a summary and status of each of the adopted recommendations.

In March 1999, a Smog Reduction Work Group was convened by the Healthy City Office to work on the implementation of the Smog Strategy. The Smog Reduction Work Group is a multi-sectoral group composed of City staff, community and environmental groups, and other stakeholders in the smog issue.

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[www.city.toronto.on.ca/healthycity](http://www.city.toronto.on.ca/healthycity)

Related Publications: SMOG:  
MAKE IT OR BREAK IT, Toronto  
Healthy City Office: City of  
Toronto, 1998



## The St. George Street Revitalization

The St. George Street revitalization was a partnership between the City, the University and a private benefactor. This complete revitalization with roadway improvements and landscaping to City and University property created a new balance between pedestrians, bicycles, and cars in a functional and attractive street. It has resulted in a friendly, well-used space, shared by all and enhanced the quality of life on campus.

**How it happened.** Many options were discussed by the University community and adjacent neighbourhood groups, including possible closure to vehicles. The final decision was to reduce traffic, increase pedestrian use, and enlarge green open space. Community and University approval led the University to undertake an IDEAS competition, open to professionals and community members, where winners were guaranteed a place in the short list of consultants to be considered. The early community discussions, as well as participation on the competition jury by City planning staff, members of the University community, and community leaders permitted speedy implementation once funding was secured.

**How does it pay off?** First impressions are lasting impressions, and this is important for a University which wants to attract students to enroll and researchers to do work. The University believes that by creating the appropriate environment they can create the kind of welcoming atmosphere which will inspire people to come.

**What's next?** The work on St. George Street has focussed attention on the importance of green open space improvements to quality of life on campus. This has resulted in the preparation of an open space plan for the entire campus linking gardens, playing fields, places for ceremony, and residual space. The plan addresses public and private precincts, and will be a cooperative effort between the province, municipality, University and private sector.

For more information: [www.city.toronto.on.ca/mte](http://www.city.toronto.on.ca/mte); Elizabeth Sisam, [elizabeth.sisam@utoronto.ca](mailto:elizabeth.sisam@utoronto.ca)

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## Sponsors/Partners

City of Toronto, University of Toronto,  
Judy Notthans private benefactor



## Stuart's Hydrogen Fuel Appliance Programs

Hydrogen, the most abundant element in the universe is also a clean renewable source of energy, seen by many as the fuel of the 21st century. Stuart develops and manufactures hydrogen-producing equipment, called the Hydrogen Fuel Appliance, which uses Stuart's water electrolysis and system integration technology. Water is one of the core consumable materials in the Hydrogen Fuel Appliance, the other is electricity (which can be produced from renewable sources such as solar panels, windmills, hydroelectric power etc.). Stuart's Hydrogen Fuel Appliance uses electricity to separate water into its basic elements, hydrogen and oxygen. The oxygen can be vented into the atmosphere while the hydrogen is stored in the tank of a vehicle or stationary storage tank.

The use of hydrogen as a fuel is an excellent method of reducing and eventually eliminating ground level ozone (smog), regional acid rain and global effects of climate change due to greenhouse gases. When hydrogen is consumed to power a car using a fuel cell or an internal combustion engine, the resulting emissions can be nothing more than water. Stuart's Hydrogen Fuel Appliances are safe and convenient and can be located virtually anywhere. They are extremely flexible and economical and come in a variety of sizes. Currently we have two main Programs. The Fleet Fuel Appliance Program (FFA) is focused on development and deployment of prototypes sized to provide hydrogen to fleets of cars, buses and trucks including the every day car. Such an appliance could sit anywhere including at the corner lot and will further enhance the convenience of the hydrogen infrastructure. The Personal Fuel Appliance Program is focused on the development and deployment of much smaller appliances sized to provide hydrogen to one-three cars, truly enabling hydrogen everywhere.

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## Sponsors/Partners

The Fleet Fuel Appliance Program is supported by: Technology Partnerships Canada - Government of Canada; Climate Change Action Fund - Government of Canada.

The Personal Fuel Appliance Program is supported by: Climate Change Action Fund - Government of Canada; Natural Resources Canada - Government of Canada;

Natural Resources Quebec - Government of Quebec.



## Studio Innova Inc. Bicycle Trailers

Studio Innova is an award-winning Toronto industrial design firm headed by partners Dianne Croteau and Richard Brault. The studio invests much of its energy in entrepreneurial and community-based projects. In 1997, they started gathering information on bicycle trailers, as a possible means of moving people and goods in Toronto. Immediately following the Moving the Economy Conference (July 1998), the studio initiated the research and development efforts and a design student from Humber College joined the firm as an intern to assist with the project. Staff members participated in the City of Toronto's Sustainable Transportation Work Group sessions.

In September 1999, the studio completed a research document that looked into:

- (a) the history and role of the bicycle vs. the car in modern day society;
- (b) the growing momentum for sustainable transportation options in Toronto;
- (c) a vision for Toronto that outlines the economic, environmental, health and community building benefits of using bicycle trailers for the movement of people and goods; and
- (d) a design criteria for bicycle trailers that are functional, fun, multi-purpose, and capable of being made locally using environmentally informed materials and finishes.

The report was published for internal use as a reference document during the design development phases.

Design concepts and prototypes are under development. An exhibition of concepts and prototypes is planned and will be followed by a formal product launch and party sometime in the third millennium!

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## Sponsors/Partners

The project is funded by Studio Innova Inc. A small hourly subsidy was provided by Youth Employment Services during the summer of 1999 toward the employ of a summer student.

## Toronto's Green Fleets and Route Optimization

The Solid Waste Management Division of the City of Toronto's Works Department, in collaboration with its Green Fleets Committee, has launched an exciting initiative for route optimization. The project's goals are: to obtain a flexible planning tool where numbers can be adjusted quickly; to develop balanced routes; to better evaluate worker performance; to distribute work more fairly; and to enhance environmental performance. The department has been working on the project for approximately three years, beginning with garbage routes. They will later apply the system to optimize recycling routes. Other applications of route optimization include snow removal, salting, sweeping, street flushing and litter can collection.

**How it works.** Since waste generation varies significantly throughout the calendar year, the key is to match the labour force, trucks, and equipment to waste generation, and to expand and contract routes based on changes. To calculate the shortest routes, the City's system draws on databases and historical information about streets, collection attributes, service days and waste generation variances. By generating tabular information, such as where each collection vehicle should be at different times of the day, the system also provides greater capability for supervision and management.

**Environmental benefits.** The City estimates that its garbage and recycling collection vehicles travel approximately four million km per year. Based on outcomes so far, route optimization will generate travel reductions of approximately 20%, or 800,000 km per year. Given that these vehicles are heavy and constantly stopping/starting, annual fuel savings will be in the area of 530,000 litres. This represents a 1500 tonne reduction of CO<sub>2</sub> emissions, as well as other emissions reductions. Fuel savings of 530,000 litres will save CAN\$265,000. A drop in fleet requirements by approximately 40 trucks will save \$1 million per year. Other efficiencies will result from reallocating staff to other activities.

Established in 1997, the Green Fleets Committee's accomplishments to date include: conversion to alternate fuel vehicles and equipment; installing idle timers on 300 vehicles; using bicycles for building and public works inspectors, police, ambulance staff; looking at ways to reduce size of fleet; ongoing driver education; and emissions testing on gasoline powered vehicles. For more information: [www.city.toronto.on.ca/mte](http://www.city.toronto.on.ca/mte); Paul Walker.

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## Sponsors/Partners

City of Toronto



## Traffic Calming

According to the Institute of Transportation Engineers, "traffic calming is the combination of mainly physical measures that reduce the negative effects of motor vehicle use, alter driver behavior and improve conditions for non-motorized street users".

Traffic calming helps restore a balance on local and collector residential streets between motor vehicle traffic and non-motorised street users, including pedestrians, cyclists and residents. By reducing motor vehicle speeds, traffic safety is improved and other modes of travel (including transit, walking and cycling) become more competitive with the automobile.

The former City of Toronto's Department of Public Works and the Environment developed a traffic calming policy which was adopted by the former Toronto City Council in 1994. The policy describes physical techniques and devices for calming traffic and can be viewed on the former City's web site (see contact info). A number of the other municipalities which have since been amalgamated into the new City of Toronto (beginning January 1998) subsequently developed traffic calming policies.

In 1997, the former City of Toronto developed a speed hump policy (also available on the web site) and began installing speed humps as another method of traffic calming. The traffic calming and speed hump policies adopted by the former municipalities still apply in their respective jurisdictions. Staff are now working on a harmonised traffic calming policy for the amalgamated City.

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## Towards a Transportation Management Association (TMA) Pilot in Toronto

In 1998, the Federation of Canadian Municipalities (FCM) issued a nation-wide call for pilot projects to promote active and sustainable modes of transportation such as transit, ridesharing, flex time, telecommuting, cycling and walking. The FCM program was made possible by a grant from Health Canada in conjunction with the Federal government's ongoing consultation related to the Kyoto Accord. The Urban Development Services Department proposal, the *Formation of Employer Transportation Management Association*, was selected in this national competition.

Transportation Management Associations (TMAs) can be seen as a mechanism to help implement Travel Demand Management (TDM) measures which seek to improve air quality and congestion by focusing on reducing auto demand. TMAs are generally formed when the public and private sectors cooperate to address employee transportation issues and air quality concerns. Although government policy encouraging TMAs as part of air quality management efforts and the development review process often contributes to the formations of TMAs, TMAs have also been set up by employers to address issues such as traffic congestion, parking costs and insufficient employee parking supply. By pooling resources, the TMA is able to avoid duplication of efforts in supporting sustainable/active transportation policies and programs and delivering cost-effective services to members. TMAs, which can be used in a variety of situations and locations, ranging from well established urban areas to suburban locations or actual development projects, lend themselves to public or private efforts and public/private partnerships.

TMAs can be a useful tool for employers and employees. Benefits for employers can include the following: reduced parking costs, reduced travel between work locations, reduced need for office work space and reduced employee travel emissions. A TMA can also be a vehicle for providing a unified voice from employers on transportation policy. At a time when all levels of government are reviewing transportation policy and assessing ways to improve air quality and reduce greenhouse gases, a TMA could provide the business community and employers a forum to provide input on possible solutions being considered for emissions from home to workplace trips.

Benefits for employees can include: improved flexibility in coordinating work and personal schedules, improvements in the quality of commute and potential savings on commuting. Employee benefits also accrue to the employer. When employees are able to improve the quality of their commute and the coordination of their work and personal schedules, this is likely to have a positive impact on employee productivity at work.

TMAs can provide a wide range of services. Some of the services which could be considered for a Toronto TMA(s) could include supporting alternatives to driving to work alone through encouraging transit, ridesharing and walking/cycling. Other possible services include arranging for emergency ride home, on-line transportation information, internet links, bike programs, commuter club and a newsletter. The TMA(s) could also provide employers technical transportation planning services such as workplace evaluations, customized transportation plans and information and referral services. It should be noted that successful TMAs frequently share certain characteristics. These include support from top management, public sector support and a match between employer/employee needs and interests and services provided by the TMA.

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## Sponsor/Partners

City of Toronto, Health Canada,  
and Federal government's ongoing  
consultation related to the Kyoto  
Accord.



TMAs are commonly used in the United States, but there is limited experience with TMAs in Canada. Therefore, this TMA pilot project in Toronto will provide a model for implementation in the GTA and other metropolitan areas in Canada, by demonstrating specific steps in the process of setting up and operating a TMA. This TMA demonstration will also complement the City of Toronto's employee trip reduction program, which is currently being developed. TMAs can be a valuable resource to both the public and private sector and this TMA pilot will demonstrate that both the public and private sectors will benefit by voluntarily cooperating to address employee tripmaking.



## **Trailblazers Bike Club (CBN member project)**

Affiliated with the Community Bicycle Network (CBN), Trailblazers provides people who are blind, or who have limited vision, with the opportunity to go cycling with sighted volunteers on tandem bikes (bicycles built for two). Riders must be 18 years of age or older.

For more information contact Roger St. Louis, 416-499-0123.

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### **Sponsors/Partners**

Community Bicycle Network



## Transit and School Bus Partnerships - the Ontario Experience

Municipalities and school boards in York Region, north of Toronto, are working to develop transit and school bus integration initiatives. The overall objective of integrating transit with school busing is to make better use of existing resources. This usually follows two models:

- by utilizing available transit capacity to carry students along the same or similar routes
- by using school bus resources to enhance transit services.

There appears ample potential, although to date, studies and initiatives in this regard in Ontario have been limited.

**Carrying students on municipal transit.** York Region is performing detailed analysis of student travel movements, transit ridership and capacity patterns, with the intention of implementing a service plan in the fall of 1999, where certain students will be allocated to designated transit routes. The economic benefit is a reduction in the overall cost of providing transportation services for students. The environmental benefit results from improving transit services, access and appeal for students.

**Using school buses to enhance transit.** The Town of Markham (also in York Region) has used taxis for over a decade, and now contracts school buses, to enhance its transit service. Since May 1997, small school buses provide urban transit services in low density residential areas during low demand periods (like evenings and summer months). This experience has been very successful. Its economic benefit is a 50% reduction in the cost of providing transit during these times. By contracting school bus drivers, the Town also avoids the direct driver training and bus maintenance costs they incur with their own conventional transit vehicles. With this service, ridership levels have remained steady, while taxpayers costs were cut by more than half.

For more information: [www.city.toronto.on.ca/mte](http://www.city.toronto.on.ca/mte); Irene McNeil, Town of Markham, 101 Town Centre Boulevard, Markham, ON L3R 9W3, Phone: 905-477-7000 ext. 4600, Fax: 905- 475-4888,

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## Sponsors/Partners

Town of Markham, Town of Vaughan,  
Town of Richmond Hill, York School  
Boards, Student Express Inc.



## Transit Priority Project

Transit priority minimizes delays to streetcars and buses at traffic signals by extending the green time for the main street and/or truncating the green time for the side street.

Sensors installed in the roadway let the traffic signal controller know that a streetcar or bus equipped for transit priority is approaching. At certain intervals in the traffic signal cycle, the controller checks to see if a transit vehicle is approaching. If a transit vehicle is approaching, the green time will be extended by two-second intervals, to a maximum of 30 seconds, or until the transit vehicle has passed through the intersection.

Feasibility studies were initiated in the mid-1980's. A demonstration study for streetcars was conducted in the early-1990's and a similar study for buses was conducted in the mid-1990's. To date, transit priority has been installed at approximately 110 intersections along the King, Queen, St.Clair and Carleton streetcar routes and 35 intersections along the Dufferin bus route. In 1999, 20 intersections along the Dundas streetcar route were added.

Transit priority can improve service levels to TTC riders, which can lead to increased transit ridership. Increased ridership is a result of fewer people driving cars which in turn results in less fuel consumed and fewer vehicle emissions released into the atmosphere.

Travel time reductions due to transit priority allow the TTC to operate routes with fewer vehicles while maintaining or improving service levels to riders. This results in lower labour costs for vehicle operators and repair personnel as well as lower capital costs for maintaining fleet requirements. In addition, improved transit service tends to increase ridership and revenue.

Current plans are to implement transit priority along one transit route per year. This method of transit priority could be applied in any other major urban centre.

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## Sponsors/Partners

Funding for the installation of transit priority is provided through the Toronto Transit Commission's Capital Budget. The Ministry of Transportation, Ontario, provided funding for the two demonstration projects. Staff from the City of Toronto's Transportation Services Division and the TTC's Service Planning Department are responsible for project implementation.



## TTC Fare Hike Project

Over the last year the Rocket Riders Transit User Group has principally focused on the TTC fare hike. We were aware before labour negotiations that the Mayor of Toronto had proposed a ten-cent fare increase. This became our focus for many months, during which time a TTC strike ensued, the chief general manager completed his term and the chair of the TTC was threatened with removal.

We maintained our focus on the fare hike by handing out flyers enjoining riders to contact the mayor to oppose it. We joined with the Metro Network for Social Justice and Advocacy for Respect for Cyclists who did excellent work researching and presenting issues to the public and media related to funding, health and the City budget. When the issue came to the TTC for approval, we distributed 4000 flyers with the names of the councillors who had not clearly stated disapproval of a fare increase. We understand that they received many calls and the TTC again voted against raising fares.

Eventually City Council approved the fare hike after much well-covered debate. Rocket Riders spokesperson, Gord Perks, did a tremendous job of expressing the issues through the media and directly to councillors. Though the fare hike went through, we focused serious rider, media and council attention on TTC finances and issues around the modal split and ridership.

We believe that the mayor will now put his efforts behind a fare freeze and coordinate a committee to seek long-term stable funding for transit, hopefully involving the provincial and federal governments.

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## Two Tales of Parking and Bicycle Infrastructure

The City of Toronto has spent two decades investing in bicycle infrastructure. From an economic viewpoint, Toronto's experiences provide two interesting examples. The first illustrates the potential of bicycle parking to generate economic development. The second emphasizes the importance of protecting car parking when installing on-street bike lanes, to support the vibrancy of mainstreet retail.

**Example #1: Bicycle parking.** The City of Toronto began installing bike racks in the early 1980s at key public and commercial locations. However, its Cycling Committee was not happy with the design of these racks. So in 1984 they developed their own design - known as the post and ring. The post and ring program was divided into two separate contracts: one for manufacturing the ring, and a second for supplying posts, assembly and installation. The program started small, with work contracted out through the Planning Department. Once the racks proved extremely popular and became standard street furniture, the Department of Works and the Environment took over the program, which operates today at CAN\$50,000 per year.

**Economic benefits.** In an immediate way, the post and ring program provides regular work for contractors and makes mainstreet shopping more attractive to cyclists. Indirectly, its success spurred other businesses to design and manufacture similar racks, capturing market demand for private property installations. This market was further encouraged by a 1993 by law requiring bike parking as part of all new developments.

**Example #2: Car parking.** Toronto's experience installing on-street bike lanes indicates that retailers only object if changes reduce car parking. The City discovered that a 12.8m four lane street (usually with restricted parking during rush hours) at traffic volumes of less than 20,000 motor vehicles per day, can accommodate those same motor vehicles in 2 traffic lanes. This allows remaining space for 24-hour parking on one side and two bicycle lanes. Thus, Toronto's strategy has evolved to reallocate space on four lane roads without commercial activity on both sides of the street. Any City's first venture in this regard becomes a model for others. Its success is key to building support for future initiatives, which ultimately have a range of economic benefits.

For more information: [www.city.toronto.on.ca/mte](http://www.city.toronto.on.ca/mte); [www.city.toronto.on.ca](http://www.city.toronto.on.ca)

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## Sponsors/Partners

City of Toronto



## United Parcel Service's Alternate Fuels Program

United Parcel Service (UPS) Canada Ltd. began testing propane as an alternate fuel source as early as 1985. A major commitment to propane was made in 1989 and a conversion was completed in conjunction with an engine replacement undertaken during the same time frame.

Propane conversions were implemented as UPS Canada converted its fleet from 292 CID carbureted engines to 4.3 litre electronically controlled engines. This not only reduced the cost of conversion, but allowed for implementation at a much faster rate.

**Eighteen month payback on propane conversions.** The conversion cost a total of CAN\$1 million, for both the purchase and installation of the engines and the propane conversion. All work was done by in-house mechanics to control quality and cost. Savings have been \$1.3 million per year. This reflects savings in operating costs based on the lower cost of propane versus gasoline. Operating efficiency has not been affected as the engines and vehicles operate as they did with gasoline engines. Payback on the project was less than 18 months.

**Newer alternate fuel technologies.** UPS Canada continues to explore and test other alternate fuels. The company currently operates 912 Compressed Natural Gas and Liquid Natural Gas vehicles in 17 locations in the United States, with planned to add more sites and vehicles in 1999. UPS has also implemented a test Hybrid Vehicle in the United States. This is a diesel/electric vehicle and testing is in cooperation with Navistar/Lockheed Martin who designed and built the vehicle. This car uses a diesel engine to power an electric generator and can also run solely on electric power. It also uses deceleration regeneration technology to supply the batteries with fresh power.

**Other cost saving environmental measures.** UPS Canada continues to improve upon its preventative maintenance program, to ensure all vehicles operate at their peak efficiencies, by using the latest in exhaust gas analyzers to guarantee the best engine performance possible. The company also examines driver area and route trace to reduce miles traveled, and employs technology such as Global Positioning Systems to verify that proper route trace is being applied.

For more information: [www.city.toronto.on.ca/mte](http://www.city.toronto.on.ca/mte); [www.ups.com](http://www.ups.com)

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## Sponsors/Partners

United Parcel Service Canada Ltd.;  
David MacInnes, Automotive  
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## Urban Oasis/Economic Catalyst: The Village of Yorkville Park

The Village of Yorkville Park, one of the most imaginative Canadian public parks, has no grass or benches. It's a new kind of public space, reflecting the many natural Canadian landscapes. Built over the subway, it celebrates Victorian rowhouses which were torn down to build the subway.

The concept of landscape as art won Oleson Worland Architects (in collaboration with Schwartz Smith Meyer Landscape Architects) the international design competition in 1991. Local residents and business people wanted an oasis which would attract shoppers and tourists to the upscale Yorkville neighbourhood, but did not want to attract drug users and pan handlers. In creating the park, the objectives were: to reflect, reinforce and extend the Victorian scale and character of the original village of Yorkville; to provide unique, inner-city ecological opportunities for the introduction of and display of native plant species and communities; to provide a variety of spacial and sensory experiences, landscape qualities and park functions; and to link the park to existing pedestrian walkways and adjacent areas.

To achieve these objectives the park was designed as a series of gardens, symbolic of the lot lines of the houses that had stood on the site, and reflecting the Victorian style of collecting - in this case forest (pine, birch and alder), prairie meadow, marsh, orchard and rock outcropping (a 650 ton rock, coaxed out of the Canadian Shield and reassembled in the park), between which are architectural elements.

**Economic benefits.** The park has become a landmark and part of daily life in Yorkville, drawing visitors and tourists. Workers eat lunch at the bistro tables and chairs scattered throughout the park and crowds attend special events like jazz festivals. Some stores have changed their names to reflect location on the park.

The park has won six awards, including the prestigious President's Award of Excellence - American Society of Landscape Architects, and the Award of Excellence - City of Toronto's Urban Design Awards.

For more information: [www.city.toronto.on.ca/mte](http://www.city.toronto.on.ca/mte); City of Toronto, Economic Development, Culture & Tourism Department

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### Sponsors/Partners

City of Toronto, Economic Development, Culture & Tourism Department, Bloor/Yorkville Business Improvement Area (BIA)



## Walking School Bus

*Walking School Buses* are organized by volunteer parents who live on the same block or in the same apartment building. They take turns escorting groups of children along their route to and from school.

### Benefits:

- Reduced traffic around the school and in your neighbourhood
- No parking hassles
- Less chance of children being involved in a collision with a vehicle
- Clean, healthy air for growing lungs
- Regular physical activity for children and parents/caregivers
- More 'eyes on the street' leads to safer communities
- Busy Moms (and Dads) get 'time off' by sharing walking responsibilities
- Children develop street smart skills and learn about their neighbourhood

"Walking gives us fresh air and a little bit of exercise" says Patti Chatterton, one of the parent walkers from Orono Public School. "There's less pollution from cars being brought into the school area and the kids are safe all walking together."

Please also refer to the Active & Safe Routes To School listing in the Projects section of this directory.

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Publications: A&SRTS resource kit (includes A&SRTS brochure, an 11 minute video); A&SRTS information package; Urban Trail Blazers Handbook for teachers (available from Go for Green at [www.goforgreen.ca/asrs/resources.html](http://www.goforgreen.ca/asrs/resources.html) or telephone 1-888-822-2848)



## **Wheel Excitement Inc. Commuter Bicycle and In-Line Programs**

Wheel Excitement Inc. is an in-line skate and bicycle rental company. As an addition to our rental activities, we provide instructional courses on in-line skating and bicycle skills. It is our goal to provide commuter bicycle programs to groups and organizations looking to become leaders in this area. We will provide basic instruction in the best practices of commuting through to providing customized programs to best introduce alternative commuting methods to our clients. We have been operating basic courses for seven years and are now moving to provide more advanced services.

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## **Women's Bike Works (CBN member project)**

Established in 1994, this project has involved women-focused and women-led basic bike repair workshops held at Intersection and various locations throughout Toronto. Women's Bike Works also participates in the Community Bicycle Network's Open Roads project involving bicycle recycling and riding skills workshops at women's shelters.

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Web Site: <http://www.web.net/~detour/cbn>

### **Sponsors/Partners**

Community Bicycle Network; Open Roads



## **Workshop on Wheels (CBN member project)**

In 1993, Community Bicycle Network volunteers developed, built, painted, equipped and launched the Workshop on Wheels a mobile bike repair workshop which hitches behind a bike. Since then, the Workshop on Wheels has appeared at hundreds of community events, where volunteers and staff help groups run short term bicycle repair and recycling workshops. For more information call the CBN office.

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## **Sponsors/Partners**

Community Bicycle Network

## "Your Local Beat!" Interactive Neighbourhood Tours Project

### Objectives of the Neighbourhood Tours Project

**Share** information with and inspire action among tour participants around their local social, economic and environmental issues. In particular CO<sub>2</sub> reduction strategies and global climate change, through bicycle and walking tours.

**Mobilize** people around these community issues to bring about positive and long term change in their neighbourhood.

**Outreach** to multiracial and marginalized communities, including youth groups, to provide information and resources on:

- access to low cost, sustainable transportation
- global climate change
- local health centres
- community gardens
- community kitchens
- local support services
- networking opportunities for participants

**Encourage** partnerships between local groups and help link local communities to local resources.

**Provide** youth an opportunity to gain experience and skills in managing and designing a project that will affect change in their community through direct action.

In this age of global markets and concerns, there is a growing need to foster and strengthen local communities to respect diversity, to appreciate cultural plurality, and to empower individuals to make changes in their lives. "Your Local Beat!" highlights the connection between environment, social justice and community. For example, when people shop locally and use the resources available in their community they can walk or ride their bikes. This helps create a healthy environment by reducing car use, stress, expenses, and CO<sub>2</sub> emissions while making more time available for leisure activities. This project adheres to the philosophy that reducing car use, together with increasing green spaces in our communities makes our cities healthier places in which to live. If you are interested in finding out more about the tours project, taking a tour, or doing a self-guided tour please call 416-760-2120.

### Contact

"Your Local Beat!" Interactive Neighbourhood Tours Project

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### Sponsors/Partners

The Ontario Trillium Foundation; Toronto Atmospheric Fund; International Environmental Youth Corp; Human Resources Development Canada; Hispanic Development Council; Community Bicycle Network; DEC Bookroom; Christie-Ossington Neighbourhood Services; Working Women Community Centre; Bloor-Gladstone Library; Dufferin Grove Park; Parkdale Intercultural Association; Parkdale Community Health Centre; Parkdale Project Read; Parkdale Library; Parkdale Community Legal Services; Parkdale Youth Referral Services; Masaryk-Cowan Community Centre



## Yugo-Tech Conversion Gas Systems

Yugo-Tech is a Canadian designer, manufacturer, supplier and installer of alternate fuel conversion equipment. Yugo-Tech has developed a closed-loop conversion system for the taxi industry. The system/s are for use with both of the main alternate fuels, being natural gas (CNG) and propane (LPG). Yugo-Tech has a full development lab complete with emission testing equipment and electronics development and testing equipment.

Yugo-Tech has recently designed and developed a sequential alternate fuel injection conversion system for use on all OBD II equipped vehicles. The new vehicles being built in North America are all now equipped with OBD II (On-board Diagnostics Second Generation). These vehicles require a computer controlled fuel injection conversion system to operate properly and to maximum efficiency. A computer-controlled fuel injection system is the only way vehicles will be able to be converted in the future, as the vehicle manufactures refine the fueling strategies further to meet the imposed government emission requirements. It is also the only engineering approach that will allow vehicles to be converted to alternate fuels to meet the Federal Alternate Fuels Act, formerly know as Bill S7.

The Yugo-Tech sequential injection system is fully developed and at present is in the pre-production stage and will be ramped up into full production. As in any new product the main requirement after development has been the financing for production. This system as mentioned will be completely compatible with the OBD II requirements, unlike the present "fumigation" systems which are basically at the end of their design life on modern computer controlled engines.

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## Zero Air Pollution Electric Power Assist Bikes

The ZAP electric motor is a technically advanced engine that power assists everyday bicycles up to 35km/hr.

The ZAP battery pack can be recharged into any standard outlet or the ZAP solar panel. Using little more energy than a light bulb, ZAP electric motors are 99% less polluting than gasoline cars. In a matter of minutes, you can turn your bicycle into a powerful human-electric hybrid. Fast, yet nearly silent, the ZAP power system is a model of efficiency. The ZAP system can double as an electricity-producing generator sending power back to the battery pack.

**Better police bikes.** Approximately 50 police departments in the United States are putting the ZAP system to work. Upgrading police bicycles with power assist, pursuit lights and a 115-decibel siren brings the bicycles up to code for stopping a vehicle.

Zap motors are manufactured in California. Conversion kits start at US\$450; bikes start at \$850. With over 15,000 ZAPs already in use around the globe, these vehicles are positioned as the next evolution in transportation: a hybrid of electricity, human pedal power and fun.

**Convenient and affordable.** The ZAP bike makes perfect sense in any city with steep grade streets. The ZAP motor virtually flattens all hills and allows riders to arrive at work without being drenched in sweat, and knowing they can use the motor to get home at the end of the day. No parking fees, no insurance, no gas, no pollution, a lot of strange looks and a lot of fun.

**For more information:** [www.city.toronto.on.ca/mte](http://www.city.toronto.on.ca/mte); Power Pedlars

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## Sponsors/Partners

Power Pedlars