Transportation Association of Canada

Effective Strategies to Influence Travel Behaviour: Practical Guide

November 2012

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Effective Strategies to Influence Travel Behaviour: Practical Guide

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Abstract

Various governments and organizations across Canada are investigating strategies to motivate sustainable travel habits among Canadians. Social marketing is one of the tools that can be used to shift long-term consumer behaviour. It emphasizes the need for a thorough understanding of target markets, motivators and barriers to desirable behaviours. Users of this Guide will understand the need for holistic, market-based social marketing approaches to influence travel behaviour. Public and private sector organizations will also learn which transportation demand management tools are effective in their jurisdictional, community and strategic contexts.

Keywords

Traffic and Transport Planning
- Behaviour
- Journey to Work
- Legislation
- Marketing
- Policy
- Publicity
- Road User
- Selection
- Textbook
- Traffic Control
- Transport Mode

Supplementary Information

The supporting *Effective Strategies to Influence Travel Behaviour Knowledge Base Technical Report* is available from the TAC library at www.tac-atc.ca

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The consultant team for this project included Geoff Noxon (Noxon Associates Limited), Jay Kassirer (Cullbridge Marketing and Communications) and François Lagarde.

Glossary of Terms

ACTIVE TRANSPORTATION. Human-powered travel, primarily walking and cycling but also in-line skating, skateboarding, wheelchairing and other methods.

BIKE SHARING. Programs that offer free or low-cost bike rentals, intended for short periods of use and a large number of daily users per bicycle. Public bike sharing initiatives are open to all users, while private bike sharing initiatives are restricted to employees or clients of a particular business or institution.

BRANDING. Marketing and communications activities that establish a program or service identity, and strengthen the values associated with that identity in the minds of the public.

CARSHARING. Services that offer short-term pay-per-use car rentals, typically open to the public and sometimes also to businesses as a complement or replacement to corporate fleet ownership.

COMMUNITY TRANSPORTATION SERVICES. Transportation services operated by public or non-profit organizations (e.g. public health units, school boards, seniors' homes), particularly in small and rural communities where they may be the only form of public (shared) transportation.

CYCLING SKILLS TRAINING. Training for individuals about safe bicycle operation, addressing subjects such as riding in traffic, darkness and inclement weather, and roadside bike repair. The Canadian Cycling Association's CAN-BIKE program includes courses for children, learner adults, women, rural cyclists and urban commuters.

EMERGENCY RIDE HOME. A service offered by an employer or third party that helps non-driving commuters get home quickly and conveniently in case of family emergency, unexpected overtime or other unforeseen event. Transportation is typically by free or reimbursable taxi or car rental. Also referred to as guaranteed ride home (GRH).

EMPLOYER-PROVIDED TRANSPORTATION BENEFITS. Non-salary compensation in the form of free or subsidized workplace parking and transit passes, or reimbursed expenses for commuting by foot, bike, carpool or vanpool.

EMPLOYER TRANSIT PASS PROGRAM. The sale of transit passes to commuters at their workplace, with the employer either acting as a reseller, or forwarding payroll deductions to the transit operator. Programs may require a minimum one-year subscription.

END-OF-TRIP FACILITIES. Bicycle parking, shower and change facilities in workplaces for use by cycling or walking commuters.

INDIVIDUALIZED MARKETING. Initiatives that use targeted, customized communication and incentives to motivate sustainable transportation choices by individuals who self-identify as being interested in adopting new behaviours. Individualized marketing is most commonly applied at a household level, but can also be used in workplaces.

MARKET SEGMENTATION. Division of a larger market into groups that possess common characteristics, as the basis for marketing activities that differ among groups.

PARK-AND-RIDE. Transit travel that involves driving in a private automobile to and from the transit transfer point, where the vehicle is parked.

PAY-AS-YOU-DRIVE INSURANCE. Payment of vehicle insurance premiums as a function of kilometres travelled, rather than as a fixed fee.

PUBLIC TRANSIT PASS PROGRAM. Sale of discounted transit passes to the general public by subscription, typically for a minimum term of one year.

RIDEMATCHING. A service to help commuters find partners for carpooling, typically through automated Internet-based services.

RIDESHARING. Travel in a private automobile by two or more people who typically share the same trip origin and/or destination. Carpooling and vanpooling are forms of ridesharing.

ROAD PRICING. A system of direct charges to a vehicle for the use of a specific road or access to a road network.

SCHOOL TRAVEL PLAN. A process involving school community stakeholders in the identification of barriers to active transportation for school travel, and in the development and implementation of a written action plan. May involve education, training, promotion, safety improvements, and incentives. Similar to Active and Safe Routes to School programs.

SOCIAL MARKETING. The systematic application of marketing principles and tools, with other concepts and techniques, to influence individual behaviours for the benefit of society.

SOCIAL MEDIA. Internet-based tools (e.g. Facebook, YouTube and Twitter) that allow users to create and exchange content with ease.

TELEWORK. An arrangement allowing workers to commute less by performing some or all of their work away from their normal workplace. Also known as telecommuting or mobile working.

TRANSPORTATION DEMAND MANAGEMENT (TDM). The use of policies, programs, services and products to influence whether, why, when, where and how people travel. TDM measures help shape the economic and social factors behind personal travel decisions.

TRANSPORTATION MANAGEMENT ASSOCIATION (TMA). An organization that promotes and supports workplace travel plans among employers; may offer services such as commuter surveys, analysis, consultation, special events and carpool ridematching.

TRIP PLANNING. Internet-based, phone-based or face-to-face help for individuals to plan optimal routes for trips, usually by transit but also by cycling or walking.

UNIVERSAL TRANSIT PASS (U-PASS). Initiative at post-secondary institutions whereby all students or members of a sub-group (e.g. full-time undergraduates) pay a fee giving them unlimited access to transit for the entire semester, school year or calendar year. UPass fees are lower than the cost of paying regular fares because the total transit cost is distributed among a much larger group.

VANPOOLING. Shared use (by multiple commuters) of a van that is typically owned by a third party such as a non-profit organization, private business or employer.

VEHICLE SCRAPPAGE. Programs that offer incentives to the public, encouraging individuals to retire older vehicles and either manage with one less vehicle or purchase a more fuel-efficient, less polluting one.

WAYFINDING. Information systems to help travellers navigate from origin to destination, typically including route and destination signage.

WORKPLACE TRAVEL PLAN. A package of coordinated initiatives to encourage efficient and sustainable commuting among employees.

Additional Resources

Many helpful resources on specific topics are identified in **Chapter 2** of this guide. The additional resources listed below are more general, and are very likely to be relevant and useful to Canadian governments and practitioners as they pursue strategies to influence travel behaviour.

■ ■ ■

Active Transportation: Making it Work in Canadian Communities, IBI Group for the Transportation Association of Canada (2010, available for purchase at www.tac-atc.ca)

This report uncovers success stories throughout Canada with the aim of helping Canadian governments to understand and act on the critical factors for successful active transportation strategies. It is based on interviews and focus group discussions with practitioners in the field, as well as a survey of TAC member municipalities. It articulates 11 principles for consideration by those working to improve active transportation in Canadian cities.

■ ■ ■

Canadian Guidelines for the Measurement of Transportation Demand Management Initiatives—User's Guide, HDR|iTRANS for Transport Canada (2009, available at www.tc.gc.ca/urban)

Performance measurement for TDM is key to demonstrating success and building buy-in, but it can be very challenging. These guidelines are applicable to a range of TDM initiatives and offer a step-by-step framework for practitioners to choose impact measurement techniques that suit their application and local context.

■ ■ ■

The Case for TDM in Canada: Transportation Demand Management Initiatives and Their Benefits, Noxon Associates for ACT Canada (2008, available at www.actcanada.com)

A guide to help practitioners understand their key audiences and build support for TDM initiatives. A reliable source for readers seeking a compilation of measured TDM impacts in a variety of areas.

■ ■ ■

Changing Transportation Behaviours: A Social Marketing Planning Guide, Cullbridge Marketing and Communications and François Lagarde for Transport Canada (2010, available at www.tc.gc.ca/urban)

Provides detailed advice on planning and implementing individual initiatives to change transportation behaviours.

■ ■ ■

Compendium of Canadian Survey Research on Consumer Attitudes and Behavioural Influences Affecting Sustainable Transportation Options, Cullbridge Marketing and Communications for Transport Canada (2010, available at www.tc.gc.ca/urban)

Lists findings about key travel-related attitudes, perceptions and misperceptions of various segments of the Canadian population.

■ ■ ■

Improving Travel Options in Small and Rural Communities, Noxon Associates for Transport Canada (2009, available at www.tc.gc.ca/urban)

This guide can help practitioners—engineers, planners, health professionals, economic development officials and others—to improve travel options for residents of small and rural communities. This includes a range of actions that make personal transportation activities more sustainable—encouraging drivers to operate their cars more efficiently, or to leave their cars at home and walk, cycle, take transit or carpool instead.

■ ■ ■

Improving Travel Options with Transportation Demand Management (TDM), Noxon Associates for the Federation of Canadian Municipalities (2008, available at www.gmf.fcm.ca)

A brochure and customizable PowerPoint presentation to build understanding of TDM among key audiences in a range of communities. These resources were designed to address the questions and concerns of elected officials and other municipal decision makers.

■ ■ ■

National TDM and Telework Clearinghouse and TDM Listserv (www.nctr.usf.edu/clearinghouse)

This website, and its interactive listserv with 1,800 members, have an American focus but can be valuable tools for Canadian practitioners. They are hosted by the Center for Urban Transportation Research at the University of South Florida.

■ ■ ■

School Travel Planning Tools, Green Communities Canada (various years, available at www.saferoutestoschool.ca)

Green Communities Canada's Active and Safe Routes to School program has developed a comprehensive set of tools to help with the development and implementation of school travel plans.

■ ■ ■

TDM Supportive Guidelines for Development Approvals, BA Group for ACT Canada (2008, available at www.actcanada.com)

This guide addresses the use of development applications, site plan reviews and contact with developers, landowners and facility managers to enforce and implement TDM principles.

■ ■ ■

Transportation Demand Management: A Small and Mid-Sized Communities Toolkit, Fraser Basin Council (2009, available at www.fraserbasin.bc.ca)

This guide focuses on how local government in communities of less than 150,000 people can use TDM strategies and techniques to encourage individuals to change their travel behaviour.

■ ■ ■

Transportation Demand Management for Canadian Communities: A Guide to Understanding, Planning and Delivering TDM Programs, Noxon Associates for Transport Canada (2011, available at www.tc.gc.ca/urban)

Over the last decade, communities have been integrating TDM into transportation plans and operations. This guide draws on their collective experience to summarize lessons learned and provide a step-by-step overview of TDM program planning and delivery.

■ ■ ■

Workplace Travel Plans: Guidance for Canadian Employers, Noxon Associates and ACT Canada for Transport Canada (2010, available at www.tc.gc.ca/urban)

This guide is written for employers interested in helping their employees find more efficient and sustainable ways of commuting to work. It helps employers to define their own goals and objectives, then to develop a tailored travel plan that will give them a positive return on their investment.

1. Introduction

1.1 About This Guide

For two decades, governments and other organizations across Canada have worked to motivate more sustainable personal travel habits among Canadians. Many see a dramatic long-term shift in individual travel behaviours as essential to addressing concerns about congestion, climate change, air pollution, infrastructure deficits and economic competitiveness.

To this end, the willingness of governments to invest in supply-side solutions such as cycling facilities and rapid transit infrastructure has been apparent. However, the effective use of demand-side strategies (a discipline known as transportation demand management, or TDM) has been less consistent due to gaps in technical knowledge, resources and political will. Despite these challenges, TDM remains a core interest of many elected officials, transportation planners, policy makers and other practitioners.

Even with the creation of several helpful resources for Canadian practitioners, organizations interested in TDM have faced a knowledge gap in two areas—namely, which TDM strategies are most appropriate for a given context, and how governments and their partners can use their resources most effectively.

By answering these questions, this guide aims to accelerate the use of innovative and effective strategies to influence personal travel at a local or regional scale. It uses the discipline of social marketing as a lens to examine key issues, and to ensure that consideration of TDM is integrated with important complementary approaches to sustainable transportation, such as infrastructure and land use planning.

This guide is intended for governments (federal, provincial, territorial, regional or local) and their non-governmental and private-sector partners. It will help readers understand the need for holistic, market-based approaches to influencing personal travel behaviour, and the importance of demand-side (i.e. TDM) strategies. It will also help them understand what TDM tools are likely to be most appropriate and effective in their own jurisdictional, community and strategic contexts. Finally, it provides insights on implementation that are based on Canadian research and experience wherever possible. Readers wishing additional research and analysis can consult the accompanying *Knowledge Base Technical Report* that assesses key opportunities and challenges related to travel behaviour trends, levels, barriers and motivators (available at www.tac-atc.ca).

Effective TDM strategies need to be integrated into transportation plans and programs at all levels, and this guide can play a role at many different points in the transportation planning cycle. It offers guidance that is equally relevant to policy frameworks, long-term transportation master plans, midterm program development strategies, and short-term action plans to meet operational challenges.

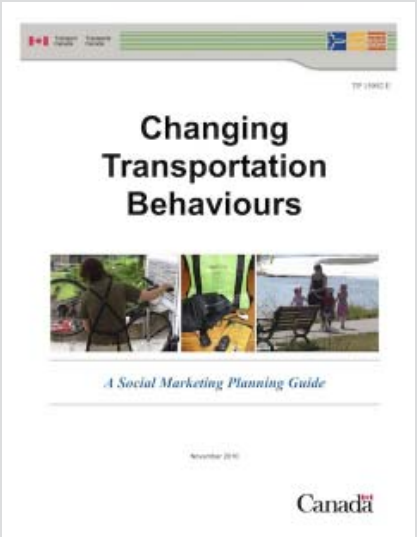
The rest of this guide includes three main elements:

- **Section 1.2 – Influencing Travel Behaviour** is a primer on the discipline of social marketing, the role of TDM in the pursuit of travel behaviour change, and the keys to success in influencing travel behaviour by individuals.
- **Chapter 2 – Tools to Influence Travel Behaviour** offers advice on the use of 35 different TDM tools that are referenced in **Chapter 3**.
- **Chapter 3 – Identifying Effective Strategies to Influence Travel Behaviour** helps readers use their own context and objectives to identify the behaviour change tools that are most likely to work for them.

Readers are also advised to consult two very helpful documents that may be downloaded at no cost from Transport Canada's website at www.tc.gc.ca/urban.

Transportation Demand Management for Canadian Communities: A Guide to Understanding, Planning and Delivering TDM Programs (Noxon Associates, 2011) provides a step-by-step overview of TDM program planning and delivery based on Canadian experience.

Changing Transportation Behaviours: A Social Marketing Planning Guide (Cullbridge Marketing and Communications and François Lagarde, 2010) provides detailed advice on planning and implementing individual initiatives to change travel behaviour.



Other valuable sources of information are identified in the **Additional Resources** section near the beginning of this guide.

1.2 Influencing Travel Behaviour

1.2.1 Understanding Behaviour Change

In the last few decades, governments have explored the potential of commercial marketing techniques to influence consumer behaviours and support social objectives including disease prevention, smoking cessation, safe driving, energy conservation, water quality protection and waste reduction. **Social marketing** has emerged as a powerful discipline to shift long-term consumer behaviour in many of these areas.[1] While it is based on the same principles as commercial marketing, social marketing reflects a more comprehensive consideration of the environmental determinants of behaviour—addressing not only the specifics of consumer transactions but also the "upstream" conditions that shape the contexts in which individuals make decisions.

Social marketing emphasizes the need for a thorough understanding of target markets, and the motivators and barriers to desirable behaviours, as the basis of effective solutions. **Figure 1** illustrates this understanding.

Social marketing is based on a realistic appraisal of why someone might voluntarily choose a new behaviour instead of an older one. It views that choice through the eyes of an individual, and considers his or her preconceptions, biases and other irrationalities; in other words, it understands that a person's *perception* of a situation can be just as influential – if not more so – than objective reality.

[1] The UK's National Social Marketing Centre defines it as "The systematic application of marketing, alongside other concepts and techniques, to achieve specific behavioural goals, for a social good." See www.thensmc.com for more information.

Figure 1 – Social marketing thought process

Given the importance of personal perception, it is possible to influence behaviour in a number of ways. A person is more likely to choose a new behaviour if their perception of it as being more **advantageous, practical, popular** and/or **congruent** than current behaviours can be increased.[2] Four types of strategies can help bring about this shift in perception:

- **Incentives and disincentives** such as financial measures, prizes or rewards build perceptions of a behaviour's benefits and costs as being *advantageous*. By reinforcing a behaviour's desirability, incentives can also make that behaviour more *congruent*. However, the original behaviour can re-emerge when temporary incentives are withdrawn, and rewards can undermine intrinsic motivations by making the behaviour less interesting, altruistic or congruent.
- **Marketing communications** to improve people's understanding of their options or their environment can make a behaviour more *advantageous* by building understanding of the behaviour's costs and benefits (e.g. comparing carsharing to car ownership), more *practical* by changing a person's understanding of the behaviour's difficulty or their own capacity to adopt it (e.g. how to lock a bike securely), more *popular* by highlighting levels of adoption in the community or among opinion leaders, or more *congruent* by changing the social meaning of that behaviour (e.g. reinforcing the image of cycling as environmentally responsible). The effectiveness of marketing communications can be multiplied when they are part of a multi-pronged approach.
- **Legislation and enforcement** make desired behaviours more *advantageous* by penalizing undesirable behaviours, or *congruent* by changing their social meaning. Penalties tend to be sustainable and effective when they follow fundamental shifts in attitude shifts (e.g. penalties for indoor smoking followed a general shift in the social view of smoking).
- **Behavioural infrastructure** helps individuals follow through on a motivation for change by making a new behaviour more *advantageous* or *practical*. Examples include improving or introducing transit services, adding new cycling facilities, or offering

[2] Congruence implies that a behaviour matches a person's actual or desired self-image. This general framework is consistent with social marketing theory, but its specifics are based on "Nine Big Questions About Behaviour Change" by Simon Christmas Ltd. for the U.K. Department for Transport, 2009

transit fare discounts that remove economic barriers. More subtle examples include mechanisms that enable new decisions by offering personalized, context-sensitive information at key decision points (e.g. transit alerts sent to subscribers by text message), or by providing positive feedback on progress toward personal objectives (e.g. update emails sent from a program that lets individuals track their commutes). Behavioural infrastructure that makes an activity more visible (e.g. centrally located bicycle parking) can also improve *congruence*.

1.2.2 The Important Role of Transportation Demand Management

A "predict and provide" approach to meeting travel needs has dominated community planning since the 1950s. However, it is inadequate to overcome the serious challenges facing Canadian communities, which include fossil fuel dependence, climate change, financial deficits, chronic congestion and high levels of physical inactivity. As a result, governments are now taking a more comprehensive approach to managing mobility by addressing *transportation demand* (the characteristics, needs and desires of individuals), *transportation supply* (the infrastructure, vehicles and services that people use to travel) and *land use* (the homes, workplaces, schools and other places that people travel to or from).[3]

Figure 2 shows that to influence travel behaviours, governments and their partners can apply three types of measures:

- **Transportation demand management (TDM)** measures that change social or economic factors through education, promotion, incentives or disincentives
- **Improved facilities or services** that change physical or economic factors through measures such as active transportation facilities, public transit routes or fares
- **Supportive land use practices** that change physical or social factors through measures such as site selection, transit-oriented design or urban growth boundaries

The objectives of TDM are to motivate individuals to *change modes* (walk, cycle, take transit or carpool instead of driving alone), *travel less* (telework, shop online, choose closer destinations, or link several purposes in a single car journey), or *change trip times or routes* (choose off-peak hours or less congested roads).

As discussed in **Section 1.2.1**, TDM measures can take many different forms including incentives and disincentives, marketing communications, legislation and enforcement, and "behavioural infrastructure" that makes a behaviour easier, more available or accessible. The impact of TDM measures can vary from weak to strong, depending on their nature and the scope of their application.

TDM measures have three key attributes that make them unique and important tools for governments and their partners:

- **Flexibility** – TDM measures can be customized to target specific user groups (e.g. youth), travel purposes (e.g. commuting to work), travel destinations (e.g. a neighbourhood), or timeframes (e.g. sporting events).
- **Speed** – TDM measures can be planned and delivered much faster than transportation supply and land use measures (e.g. in weeks of months, rather than years or decades).
- **Affordability** – TDM measures can be scoped and scaled to match available resources. If necessary, governments can tailor TDM programs to make best use of staff and budgets.

TDM is an excellent way to maximize the efficient operation of urban land use and transportation systems. However, it is critical to emphasize that *TDM measures are not a substitute for transportation supply and land use changes*—rather, they are a powerful and cost-effective complement. In fact, all three types of measure work best when planned and delivered together.

[3] These elements are interrelated—for example, a new rapid transit line will make transit faster and more reliable, but can also lead to more intense development around stations and an enhanced self-image of transit riders, both of which contribute to transit ridership growth.

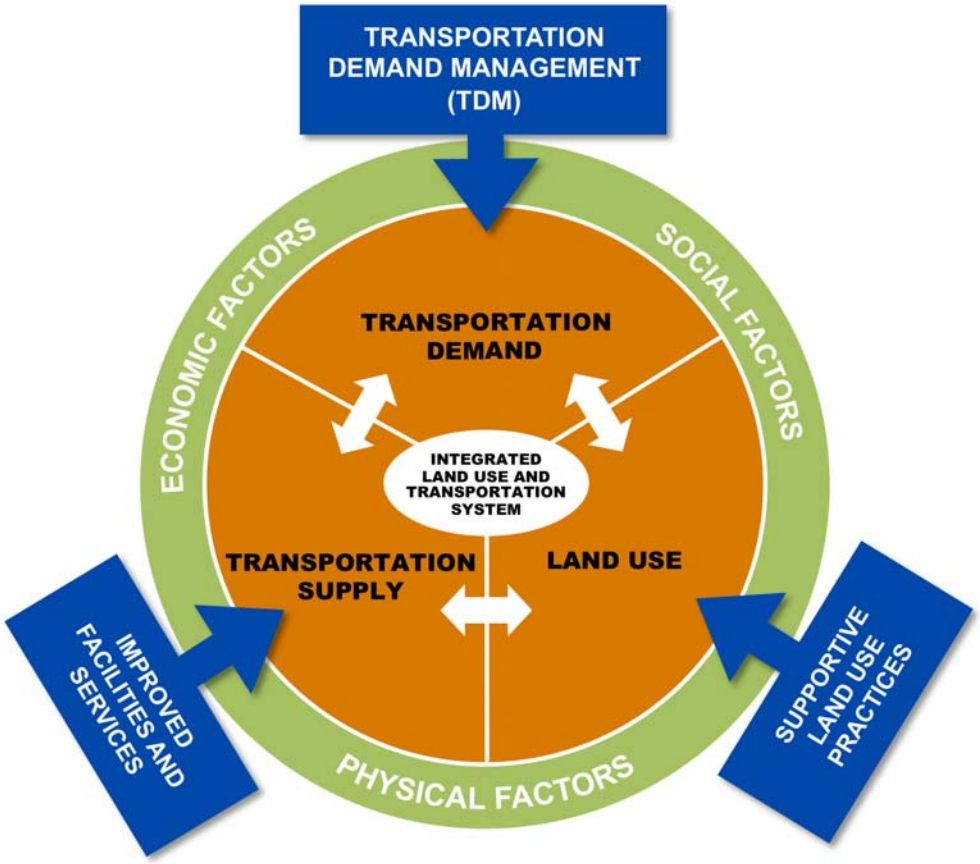


Figure 2 – Influencing travel behaviours

1.2.3 Keys to Success

Successfully shifting travel behaviour—whether through TDM, improved transportation facilities and services, or supportive land use—requires attention to several key principles:

- **Understand the market** through local research that reveals the raw material of behaviour change: the needs, expectations, desires, interests, abilities and constraints of key market segments.
- **Align goals, policies and programs,** both within and between organizations, to ensure coordination and consistency.
- **Respect attitudes and perceptions** that influence individual decisions, rather than just the objective facts of a situation.
- **Think about packages of measures** because no single measure can effectively address the huge variety of personal perspectives and circumstances that shape travel demand.
- **Work with partners** because no organization can single-handedly shape travel behaviour. Governments need to work with institutional, private sector and non-governmental partners that can boost program resources, audiences and credibility.
- **Be persistent.** Many behaviours take time to change, especially within a large population. TDM can represent a type of cultural shift that will not take place overnight.
- **Measure and learn from experience** so that behaviour change strategies grow more effective with time. It can also help to "start small" using pilot projects to try new ideas and build momentum.

2. Tools to Influence Travel Behaviour

This chapter describes 35 TDM tools, which are then referenced by context and application in **Chapter 3**. The tools are grouped into six categories that reflect their basic nature or target audience, in turn reflecting how they might be integrated into the development and implementation of government programs:

- **Section 2.1 – Tools to Engage and Enable Individuals**
- **Section 2.2 – Tools to Shift Costs**
- **Section 2.3 – Tools to Enhance the Built Environment**
- **Section 2.4 – Tools to Influence Commuter Travel**
- **Section 2.5 – Tools to Influence School Travel**
- **Section 2.6 – Tools to Influence Other Travel**

These tools generally address the social and economic factors behind individual travel choices (consistent with the TDM definition in **Section 1.2.2**). They exclude major transportation infrastructure or land use initiatives, but do include minor physical elements that are closely linked to the delivery of other TDM measures. **Figure 3** summarizes all the tools described in this chapter.

Within the sections of this chapter, the following headings are used to present information on each tool:

- **Description** – what the tool is and how it works, including whether it makes a sustainable travel option (or options) more advantageous, practical, popular or congruent
- **Roles and responsibilities** – which stakeholders and partners might be involved, and what they can do
- **Implementation** – issues of interest, possibly related to resource requirements, timing or performance measurement
- **Strengths and weaknesses** – notable characteristics pertaining to circumstances, effectiveness, risks, or synergies or conflicts with other measures
- **For more information** – examples and helpful references, with a focus on Canadian sources wherever possible

TDM TOOLS	Target characteristic(s) of desired behaviour			
	ADVANTAGEOUS	PRACTICAL	POPULAR	CONGRUENT
Tools to engage and enable individuals (Section 2.1)				
Branding, messaging and positioning			■	■
Special events		■	■	■
Individualized marketing	■	■		■
Real-time transit customer information	■	■		
Real-time driver information	■	■		
Route maps and trip planning	■	■		
Centralized travel information	■	■		
Ridematching	■	■		
Cycling skills training	■	■		
Driver education	■	■		
Tools to shift costs (Section 2.2)				
Vehicle ownership pricing	■	■		■
Pay-as-you-drive insurance	■			
Road pricing	■			■
Fuel pricing	■			
Parking pricing	■	■		
Taxation of employer-provided transportation benefits	■	■		
Transit fare incentives	■	■		
Vehicle scrappage incentives	■	■		
Tools to enhance the built environment (Section 2.3)				
Integration of cycling and transit		■		
Wayfinding for walking and cycling		■	■	
Bicycle parking	■	■	■	
Shower, change and locker facilities		■		
Park-and-ride arrangements	■	■		
Carpool parking arrangements	■	■		
Carsharing service support	■	■	■	
Tools to influence commuter travel (Section 2.4)				
Employer engagement	■	■	■	■
Workplace travel planning support	■	■		
Employer transit pass	■	■	■	■
Post-secondary universal transit pass	■	■	■	■
Emergency ride home	■	■		
Tools to influence school travel (Section 2.5)				
School engagement	■	■	■	■
School travel planning support	■	■		
Road safety services around schools		■		
Tools to influence other travel (Section 2.6)				
Destination travel planning support	■	■		
Community transportation service partnerships		■		

Figure 3 – TDM tools discussed in Chapter 2

2.1 Tools to Engage and Enable Individuals

2.1.1 Branding, Messaging and Positioning

Description. *Branding* includes marketing and communications activities that establish a program or service identity, and strengthen the values associated with that identity in the minds of the public. Branding is important for transit systems and mode-specific programs, but it can also reference umbrella programs (like Smart Commute in the GTHA, TravelSmart in Metro Vancouver, TravelWise in Waterloo Region) and help consumers and program partners to "connect the dots" between related products and services.

Messaging and positioning refers to marketing and communications activities that are intended to shift public perceptions about particular services or travel options, and to promote congruence between those services or options and individuals' self-perception. They can change the way that certain activities are perceived by replacing unhelpful associations with more positive ones—e.g. making transit a "cool" or "environmentally responsible" choice rather than a "mode of last resort," or picturing street-clothed commuters rather than athletes in cycling promotions. In this context, messaging and positioning are less about communicating specific information than about reshaping popular perceptions. Social media channels such as Facebook, Twitter and YouTube can be important tools in this regard.

Enhances an individual's perception of sustainable travel options as:	
advantageous	
practical	
popular	■ Shifts attitudes and perceptions about the popularity of sustainable transportation choices and helps identify desired choices as 'normal' and 'the right thing to do'
congruent	■ Shifts other attitudes and perceptions among the general public, or among members of the target market for a particular service ■ Increases individual receptiveness to more specific communications, incentives or services ■ Builds a more positive tone in public and private dialogues concerning sustainable travel choices

Roles and responsibilities

- Program managers in a wide range of settings can research, plan and deliver programs and program components that use branding, messaging and positioning effectively.
- Commercial, government and non-governmental organizations provide a range of TDM programs at a national or regional level that support local implementation teams, and that offer standardized branding, messaging and positioning (e.g. Green Communities Canada's Active and Safe Routes to School Program).
- Federal and provincial governments can research and develop resources for effective branding, messaging and positioning (e.g. Natural Resources Canada's anti-idling campaign resources).

Implementation

- Likely to have little impact in isolation; most effective as a coherent, sustained program that is integrated with the delivery of other TDM, transportation supply and land use measures.
- Costs are variable; many methods (including social media) are inexpensive, but advertising in conventional media is costly.
- Best carried out in conjunction with other measures to remove barriers and enhance benefits.
- Association with the promotion of new transportation facilities and services can affect a TDM brand positively.

Strengths and weaknesses

- A strong brand is greater than the sum of its parts—i.e. it can present sustainable travel options as a suite of choices that offer more flexibility and convenience as a group than they do individually.
- Messaging or positioning must be credible to avoid rejection.
- Branding for TDM programs or initiatives must be cautious in addressing relationships to brands of the parent organization and similar or related services (e.g. transit systems).
- Overlapping or conflicting identities can confuse individuals who are looking for information or assistance.
- Social media channels need active monitoring and support to maintain a vibrant dialogue and prevent stagnation.

For more information

Transportation Demand Management for Canadian Communities: A Guide to Understanding, Planning and Delivering TDM Programs, Noxon Associates Limited for Transport Canada (www.tc.gc.ca/eng/programs/environment-urban-guidelines-practitioners-tdm-2735.htm)

Compendium of Canadian Survey Research on Consumer Attitudes and Behavioural Influences Affecting Sustainable Transportation Options (Cullbridge Marketing and Communications for Transport Canada, 2009 (www.tc.gc.ca/eng/programs/environment-urban-menu-eng-2084.htm)

Changing Transportation Behaviours: A Social Marketing Planning Guide, Cullbridge Marketing and Communications and F. Lagarde for Transport Canada (www.tc.gc.ca/eng/programs/environment-urban-menu-eng-2054.htm)

From Here to There: A Creative Guide to Making Public Transport the Way to Go, World Resources Institute for Sustainable Transport (www.embarq.org)

"Marketing and Branding for Bus Rapid Transit" (www.tc.gc.ca/eng/programs/environment-utsp-casestudy-cs67e-market-809.htm)

Branded Canadian TDM program websites include www.travelsmart.ca (TransLink, Metro Vancouver, BC), www.i-go.ca (Kelowna, BC), www.smartcommute.ca (Metrolinx, Greater Toronto and Hamilton Area, ON), www.ottawa.ca/travelwise (Ottawa, ON), www.voyagezfute.ca and www.mobiligo.ca (Greater Montréal, QC) and www.cadus.ca (Saguenay, QC)

2.1.2 Special Events

Description. Special events raise the visibility and credibility of desirable travel behaviours. They encourage people to try a new way of getting around, even for just one day, and provide positive reinforcement for people who already make regular use of sustainable travel options. They can also attract sponsors and partners who may then become more involved in other aspects of a TDM program.

Enhances an individual's perception of sustainable travel options as:	
advantageous	
practical	■ Encourages trial and gives participants an opportunity to validate the "do-ability" of sustainable travel choices ■ Improves awareness and understanding of mode and route options
popular	■ Encourages visible displays of participation ■ Builds public acceptance and shifts behavioural norms
congruent	■ Encourages trial and gives participants an opportunity to validate the personal fit of sustainable travel choices

Roles and responsibilities

- A wide range of program organizers, from employers to schools to municipalities can organize special events within their jurisdiction.
- Governments, transportation management associations, interest groups and business associations can organize and support special events at a national or regional scale that local organizers can join (e.g. International Walk to School Day, Commuter Challenge.)

Implementation

- Successful events can take several iterations to build; starting small is wise.
- While resource requirements are relatively low at a local level, they are variable and can be significant at the national level; time and effort are easily underestimated. Delivery by non-profit groups or community partners can help contain costs.

Strengths and weaknesses

- Can help maximize return on investment in specific facilities (e.g. new trails or rapid transit lines) by raising public awareness and encouraging trial and the adoption of new travel habits.
- Can engage participants in joining local programs that support more durable behaviour changes (for example, participation in the annual International Walk to School Day is a key method of engaging students and their otherwise hard-to-attract parents in local Active and Safe Routes to School programs.)

- Short-term trial may or may not lead to more durable behaviour changes.
- Few risks but challenges are more numerous: participation by community partners is key but requires perceived value; inadequate preparation can lead to logistical foul-ups or low media attention.
- Resources are required for engagement and promotion.

For more information

International Walk to School Month (www.iwalktoschool.org)

Bike to Work BC (www.biketowork.ca)

National RideShare Week (www.actcanada.com)

Commuter Challenge (www.commuterchallenge.ca)

City of Toronto Bike Month and Bike to Work Day (www.toronto.ca/cycling/events)

"Calgary Commuter Challenge" (www.toolsofchange.com/en/case-studies/detail/155)

"Sunday Car Free Spaces" (www.tc.gc.ca/eng/programs/environment-utsp-casestudyactivetransportation-1719.htm)

"In Town Without My Car" (Montréal) (www.tc.gc.ca/eng/programs/environment-utsp-intownwithoutmycar-959.htm)

2.1.3 Individualized Marketing

Description. Individualized marketing programs (also called residential travel plans) offer customized information and advice on sustainable travel choices to interested individuals and families; those expressing disinterest are not involved further. Communications can include telephone calls, letters, emails and home visits. Information packages, once requested, can also include incentives and rewards.

Enhances an individual's perception of walking, cycling and transit options as:	
advantageous	■ Encourages trial and gives participants an opportunity to validate the personal benefits of sustainable travel choices
practical	■ Encourages trial and gives participants an opportunity to validate the 'do-ability' of sustainable travel choices ■ Improves awareness and understanding of mode and route options
popular	
congruent	■ Encourages trial and gives participants an opportunity to validate the personal fit of sustainable travel choices

Roles and responsibilities

- Municipal or regional authorities, in collaboration with transit, cycling and walking stakeholders, can organize individualized marketing activities

Implementation

- Individualized marketing is labour-intensive and typically contracted out; effective procurement, project management and quality control are essential.
- Resource requirements are high assuming community-wide coverage, although programs are usually delivered area-by-area and can be scaled to fit available budgets.
- Volunteer effort by the community, if properly managed, can help control costs.

Strengths and weaknesses

- Effectiveness is well documented; typical community-wide reductions in car travel of about 10% are common in applications on several continents.
- High market penetration, uptake and durability of behaviour change.
- Addresses personal barriers and thus is effective only to the extent that practical, attractive travel options exist; a wider range of target behaviours increases the relevance to individuals.

For more information

"TravelSmart" (Vancouver, BC) (www.tc.gc.ca/eng/programs/environment-utsp-travelsmart-263.htm and www.toolsofchange.com/en/case-studies/detail/628)

WinSmart Community-Based Travel Marketing Pilot Project (www.greenactioncentre.ca/content/cbtm)

City of Portland, Oregon - SmartTrips Program (www.portlandonline.com/transportation/index.cfm?c=54616)

2.1.4 Real-time Transit Customer Information

Description. Transit users in some communities can now use wireless devices, computers, telephones or fixed displays at transit stops / stations to get real-time transit vehicle arrival information at any stop along a route. Knowing when the next bus, streetcar or train will arrive makes using transit more predictable and convenient, makes transfers more comfortable, reduces waiting time and enhances security. Some systems even allow users to track their vehicle's progress using a wireless device and reassess their transfer options, making transit use more efficient and convenient.

Enhances an individual's perception of public transit as:	
advantageous	■ Improves customer convenience and comfort
practical	■ Makes using transit easier and more predictable
popular	
congruent	

Roles and responsibilities

- Transit operators can implement real-time customer information systems.
- Governments can help fund start-up costs.
- Governments and industry associations can reduce purchasing risk by ensuring that transit operators have easy access to reliable information on available systems and their performance.

Implementation

- Resource requirements are high for a complete system; however, most transit systems are implementing much of the required infrastructure (e.g. in-vehicle GPS units) for fleet management purposes, and the incremental requirements for providing real-time customer information are relatively low.

Strengths and weaknesses

- Can attract and retain transit customers. For example, Transport for London (UK) credits real-time transit information with attracting 13% of new transit users; a Winnipeg survey found that real-time bus departure displays motivated 45% of existing users to make at least one more weekly trip by transit.
- More effective in more complex transit systems and on low-frequency routes (i.e. those with higher wait times.)
- Complements other transit-related TDM efforts.

For more information

"EasyGO Traveler Information System" (www.tc.gc.ca/eng/programs/environment-utsp-casestudy-cs68e-easygo-271.htm)

"Intelligent Transportation Systems in 98 B-Line Rapid Bus Service: Advanced Technology at Work" (www.tc.gc.ca/eng/ programs/environment-utsp-intelligenttransportationsystems-945.htm)

2.1.5 Real-time Driver Information

Description. Technological advances are supporting more efficient driving decisions. Drivers can choose less congested, faster routes based on real-time information about traffic volumes, road and weather conditions, collisions or construction activity that is gathered and disseminated by government agencies. Drivers can obtain this information before their trip through websites, telephone systems and the local media; or they can obtain it during their trip through dynamic message displays, radio advisories and web-enabled devices (e.g. automated text messages received and read by a vehicle's audio entertainment system or Bluetooth-enabled wireless device). Real-time information that is electronically linked to in-vehicle navigation systems can provide dynamic routing suggestions based on actual conditions.

Enhances a driver's perception of route or time shifting as:	
advantageous	■ Enables route or time shifting of driver trips to reduce delay, distance driven and fuel used
practical	■ Makes it easier to shift routes and times
popular	
congruent	

Roles and responsibilities

- Government agencies or road authorities can gather and disseminate information.
- Federal and provincial governments can reduce purchasing risk by ensuring that there is easy access to reliable information on available systems and their performance.

Implementation

- Resource requirements can be high, particularly for roadside display or sophisticated Web-based systems.
- Costs may be shared by safety programs in recognition of the potential to reduce collisions.
- Impacts will grow with congestion, as more vehicles are equipped with the necessary electronics, and as wireless applications become more sophisticated.

Strengths and weaknesses

- Use of real-time traffic and road condition information has been shown to reduce traffic congestion, time spent driving and distance travelled, and to increase network capacity.
- Only effective if vehicles and drivers are equipped with technologies to access the information.
- More effective in larger communities with greater recurring (daily) or non-recurring (unexpected) congestion.

For more information

Driver Use of En Route Real-Time Travel Time Information (U.S. Federal Highway Administration, 2009) (http://tmcpfs.ops.fhwa.dot.gov/cfprojects/new_detail.cfm?id=86&new=2)

Intelligent Transportation Systems, Costs, Deployment and Lessons Learned (US Department of Transportation, 2008) (http://trid.trb.org/view.aspx?id=874811)

2.1.6 Route Maps and Trip Planning

Description. Route selection is a very important part of travel decision-making for transit users, cyclists and (to a lesser degree) pedestrians. Clear, helpful information on available routes and their implications (travel times, transit transfer locations and shelter availability, bike parking at destinations, steep hills or dangerous intersections for cyclists and pedestrians, nature of on-road and off-road cycling facilities) helps individuals assess the practicality and desirability of using a particular mode.

Paper-based and Web-based route maps are both commonly available for transit users, cyclists and pedestrians. Trip planning services (typically offered by automated telephone or Web-based systems) provide more customized services, including the ability of individuals to specify preferences (e.g. minimize transfers, travel time or use of multi-lane roads). Google Maps offers transit and bike route options for a number of Canadian cities, and complements transit and bike trip planners offered directly by some municipalities. Trip planners for drivers are rare with the exception of Google Maps, which allows drivers to plan trips that avoid highways or tolls.

Face-to-face travel training is a more intensive, customizable approach to helping transit users navigate a complex system. It is most commonly offered to persons with disabilities, seniors and recent immigrants, and addresses many aspects of transit use in addition to planning specific trips.

Enhances an individual's perception of walking, cycling and public transit as:	
advantageous	■ Improves awareness and understanding of mode and route options ■ Improves understanding of the implications of travel decisions
practical	■ Improves user confidence and comfort in making trips at new times, or to new destinations
popular	
congruent	

Roles and responsibilities

- Transit operators can distribute printed route maps at kiosks and post them in transit shelters, offer electronic route maps on websites, and offer trip planning services on websites or by automated telephone systems. They may offer in-person trip planning services at special events such as workplace transportation fairs or during university orientation weeks.
- Municipalities can distribute printed cycling and walking maps, and offer electronic maps on websites.
- Non-governmental organizations (e.g. cycling advocacy groups) can offer personalized route advice by telephone, email or websites.

- Google Maps offers transit, cycling and walking route planning services in an increasing number of Canadian communities.

Implementation

- Map costs can be relatively low if the required electronic data exist, which is increasingly common.
- Geocoded route data can be provided to Google Maps for posting at no cost.
- Face-to-face travel training can be resource-intensive, but may be delivered through volunteer or non-profit organizations.

Strengths and weaknesses

- Printed maps may be carried by cyclists for consultation without electronic devices, and can also include information related to road safety and cycling skills.
- Electronic information is particularly suited to planning multimodal trips (e.g. bike and transit).
- Electronic route information can immediately reflect any changes in networks or services. It can be accessed on-the-go by smart phone users, but requires verification and continuous updating to avoid becoming outdated and causing user frustration.

For more information

OC Transpo travel planner (Ottawa, ON) (www.octranspo.com/travelplanner)

City of Toronto Cycling Map and Bikeway Network information (www.toronto.ca/cycling)

Cycling Maps for Metro Vancouver (www.translink.ca/en/Cycling/Cycling-Routes.aspx)

University of British Columbia cycling route planner (www.cyclevancouver.ubc.ca)

York Region Transit MyRide travel training (www.yrt.ca/en/programs/myride.asp)

2.1.7 Centralized Travel Information

Description. Centralized travel information refers to an Internet portal providing information on various travel options. Users might compare the amount of time needed for a trip by car versus transit or cycling, or seek ridesharing opportunities. They could be alerted to transit service disruptions, road closures or delays, and even to transportation system responses to major disruptions such as natural disasters. Web-based portals are increasingly formatted for use with a wide range of mobile devices.

Enhances an individual's perception of sustainable transportation choices as:	
advantageous	■ Inform users of expected times for trips by different modes
practical	■ Increase convenience and practicality of sustainable travel options through greater understanding and access to advice
	■ Increase awareness of sustainable travel options by users who are looking for something else (e.g. a driver seeking traffic conditions who views ridesharing or transit information)
popular	
congruent	

Roles and responsibilities

- Regional or municipal authorities can assemble the information and promote the use of local portals.
- Governments and/or businesses can develop public domain software and on-line services for gathering and displaying centralized travel information so that local agencies can set up and maintain portals more easily, in less time, with greater impacts and less cost.

Implementation

- Relatively low resource requirements for portals to gather existing information resources in one place.
- Adequate promotion is essential when launching the portal.

Strengths and weaknesses

- A good platform for promoting TDM tools and programs, especially new services.
- More effective in larger communities with more complex options (e.g. multiple transit operators).

- Provides a convenient channel for quick and effective dissemination of information on short-term or emergency circumstances.
- Current owners or sources of information may resist centralization that would draw users away from their sites.

For more information

TravelSmart (MetroVancouver, BC) (www.travelsmart.ca)

iMove (Metro Vancouver, BC) (www.i-move.ca)

Commuter Page (Arlington, VA) www.commuterpage.com)

2.1.8 Ridematching

Description. Ridematching services help individuals find suitable partners for carpooling or vanpooling. They were once manual services delivered by telephone or email, but are now almost always automated and Web-based. They are increasingly sophisticated in using online mapping and allowing individuals to search for partners along travel routes rather than only near specific trip origins and destinations, to search for single trips as well as recurring trips, and to customize preferences in terms of not only fixed daily schedules but also schedule variability and personal preferences (gender, smoking/non-smoking, etc.). Community-wide ridematching services can offer premium services for workplaces or post-secondary institutions that, on demand, will match registrants only with other registrants from the same workplace or institution.

Enhances an individual's perception of carpooling and vanpooling as:	
advantageous	■ Helps reduce travel costs where ridesharers agree to share tolls, fuel or parking costs
practical	■ Improves the practicality of carpooling or vanpooling by overcoming the barrier of not having a suitable ridesharing partner(s)
popular	
congruent	

Roles and responsibilities

- Local governments and non-governmental organizations can develop, provide and promote local ride matching services.
- Employers and post-secondary institutions can subscribe to or acquire and then promote such services for their employees and students.

Implementation

- Community-wide ride matching services can offer premium services for workplaces or post-secondary institutions that, on demand, will match registrants only with other registrants from the same workplace or institution.
- Resource requirements are relatively low; off-the-shelf Web-based services are inexpensive and constantly evolving.
- Measuring effectiveness is challenging because registrants tend to remove themselves from the ridematching database once they have found suitable partners.

Strengths and weaknesses

- Fuel and greenhouse gas reduction impacts are greater in larger communities with longer average trips.
- Larger populations and complementary incentives (e.g. carpool lanes, priority parking) favour success.
- Ridematching tends to succeed for trips that cannot be made effectively by transit due to off-peak timing, poor service quality, trans-boundary services, etc.
- Attracting carpool drivers, who must be willing to share their vehicles, to a ridematching system is more difficult than attracting passengers.
- Privacy of registrant data can be a concern of users, and is subject to privacy laws (i.e. Canadian user data may not be stored on U.S. servers).
- The proprietary nature of Web-based systems and data controls can make it difficult to switch vendors.
- Transit stakeholders may view ridematching as competition for market share; however, there is little evidence to validate this concern.

For more information

Carpool Zone (Greater Toronto and Hamilton Area, ON) (www.carpoolzone.ca)

Jack Bell Ride-Share (BC) (www.ride-share.com)

Ottawa Ride Match (ON) (www.ottawaridematch.com)

Calgary Regional Carpool Program (www.calgary.ca)

2.1.9 Cycling Skills Training

Description. Road safety is a key barrier to cycling, particularly for women and children. Parents are more likely to allow children to cycle to school and other destinations if the children have been adequately trained and the parents have had the opportunity to observe their children's skills. Confidence in cycling skills, especially in on-road situations, is also an important motivator for recreational cyclists to make more utilitarian trips by bicycle.

Enhances an individual's perception of cycling as:	
advantageous	■ Reduces risk of injury to cyclist
practical	■ Increases confidence in reaching everyday destinations that require cycling in traffic
popular	
congruent	

Roles and responsibilities

- Governments or non-governmental organizations can develop curriculum and trained staff, and solicit participation by organizations or individuals.
- Employers and school boards can offer courses to workers and students.

Implementation

- In-person training is resource-intensive, and wide-scale application would require substantial resources.
- Introductory training can be offered to larger groups in less time, and without on-bike activity. It is conceivable that computer-based training systems could help.

Strengths and weaknesses

- Safety concerns are a principal barrier to cycling; even where infrastructure solutions are being undertaken, personal skills and confidence remain a challenge.
- In-school training can create lifelong cyclists by giving young people the basic on-road skills and confidence to use bicycles for transportation; integration into school curriculum would require displacement of other current priorities.
- Course fees (e.g. through recreation programs) may limit participation.
- Participation in skills training may be more likely where facilities are perceived to be safe, and where cycling trips are perceived to be practical.

For more information

CAN-BIKE Program (www.canbike.net)

"Cycling Training for the School Community" (www.tc.gc.ca/eng/programs/environment-utsp-cycletraining-841.htm)

City of Toronto Cycling Safety and Education (www.toronto.ca/cycling/safety)

Making Tracks Program, Nova Scotia (www.saferoutesns.ca)

2.1.10 Driver Education

Description. Training programs can teach drivers to reduce fuel consumption through driving habits, and can be delivered to drivers who are qualifying or re-qualifying for their license, taking an advanced driver training course (e.g. to reduce insurance premiums or as part of their job). Training can address issues such as engine and tire pressure maintenance, proper shifting of gears, stop/start and acceleration/braking behaviours, idling reduction, driving speeds and vehicle purchasing.

Enhances an individual's perception of fuel conservation habits as:	
advantageous	■ Educates participants about financial savings and social and environmental benefits of reducing fuel use
practical	■ Provides the skills necessary to reduce fuel use
popular	
congruent	

Roles and responsibilities

- Provincial governments can add fuel efficiency driving tips to driver training and testing curricula.

Implementation

- Applies in all environments; rural residents tend to drive more, but urban traffic conditions provide a greater opportunity for driver behaviour to reduce fuel consumption.

Strengths and weaknesses

- Long-term durability of behaviour changes may depend on existence of an ongoing program of incentives, feedback and reminders.

For more information

ecoDriver program (www.ecodriver.org)

Driver education materials by Natural Resources Canada (www.oee.nrcan.gc.ca/transportation/personal)

2.2 Tools to Shift Costs

2.2.1 Vehicle Ownership Pricing

Description. Increased purchase or registration costs make vehicle ownership less attractive. Fees that vary by vehicle fuel consumption can encourage the purchase of more fuel-efficient vehicles. "Feebates" shift the relative attractiveness of vehicles by adding levies to the purchase of more inefficient vehicles, and rebating money on the purchase of more efficient vehicles. Note that some pricing tools (e.g. small surcharges on annual vehicle registration fees) are not intended to change behaviour, and instead are a way of generating government revenue; such measures are not considered to be within the realm of TDM.

Enhances an individual's perception of owning fewer vehicles as:	
advantageous	■ Increases the cost of car ownership in general, or only for cars that are not fuel-efficient ■ Uses price signals to reinforce awareness of the public costs of automobile ownership
practical	■ Creates a disincentive to vehicle acquisition; large costs create a practical barrier to purchasing
popular	
congruent	■ Uses price signals to reinforce the social costs of motor vehicle use and appeal to social norms

Roles and responsibilities

- Federal and provincial governments can change taxes and licensing fees, and otherwise provide incentives and disincentives.

Implementation

- Resource requirements are low to moderate; administration requirements can be significant depending on the program.
- May have to overcome substantial public resistance.

Strengths and weaknesses

- Market impacts will vary by location (e.g. rural vs. urban communities) and market segment (e.g. wealthy vs. low-income families).
- Impacts would be greater where practical travel options exist, particularly quality public transit in urban areas.
- Price changes sufficient to have an effect may be challenging in terms of public and political acceptance.
- Disincentives to purchase new vehicles could simply encourage retention of older vehicles.
- Disincentives to purchase larger vehicles could have equity impacts on large families.

For more information

"UNEP Global Fuel Economy Initiative: Cleaner More Efficient Vehicles - Feebates in France, Canada, China and the UK" (www.unep.org/transport/gfei/autotool/approaches/economic_instruments/fee_bate.asp)

2.2.2 Pay-as-you-drive Vehicle Insurance

Description. Pay-as-you-drive vehicle insurance converts fixed insurance premiums to a per-kilometre basis. This provides more equitable costs for low-mileage drivers, and provides a financial incentive to reduce driving and to consider and eventually maintain more sustainable travel options.

Enhances an individual's perception of sustainable travel options as:	
advantageous	■ Provides an incentive to reduce the distance driven and to consider and maintain sustainable travel options, especially for long and/or frequent trips
practical	
popular	
congruent	

Roles and responsibilities

- Insurance companies can offer pay-as-you-drive policies (they already do in Texas, California, Australia, Israel, South Africa, Spain and Japan)
- Provincial governments can enact legislation or regulations that enable the provision of pay-as-you-drive insurance policies by private companies. Alternatively (in the case of provinces with public insurers) they can offer it directly to consumers.

Implementation

- This approach requires a relatively low expenditure of public resources, if costs are passed through insurers to policy-holders

Strengths and weaknesses

- Potential impacts are high; economic analyses indicate widespread pay-as-you-drive insurance could reduce vehicle use in urban areas by 5% to 10%. However, evidence of real-world impacts remains scarce.
- More effective in communities with attractive travel options, particularly public transit.
- Could require extensive public education and engagement if offered by public insurers.
- May face resistance by high-mileage drivers and insurance companies.
- Requires additional infrastructure to track and verify odometer readings.

For more information

"Pay as You Drive Insurance," Victoria Transport Policy Institute (www.vtpi.org/tdm/tdm79.htm and www.vtpi.org/payd_rec.pdf)

2.2.3 Road Pricing

Description. Road pricing is a general term that involves direct charges to a vehicle for the use of a specific road or access to a road network. There are four classes of road pricing applications: tolls on specific elements of road infrastructure such as bridges, tunnels or expressways; tolls on integrated networks of expressways and higher functioning roads; access charges to defined urban areas; and charges on vehicles as a per-kilometre or per-minute fee (possibly varying by time of day and/or level of congestion) for use of the road system. These different approaches have a range of legal, administrative, technical and user requirements. It should be noted that road pricing is considered to be a means of influencing travel demand, but this objective is frequently of lesser interest to governments than the potential of road pricing to generate revenues that could support public investments in transportation systems or other priorities.

Enhances an individual's perception of sustainable travel options as:	
advantageous	■ Provides an incentive to change mode, drive less, drive at off-peak times or drive on less-congested routes
practical	
popular	
congruent	■ Uses price signals to reinforce the social costs of motor vehicle use and appeal to social norms

Roles and responsibilities

- Authority to implement road pricing in Canada lies with provinces. Some provinces have delegated limited powers to regional transportation authorities (e.g. TransLink), major municipalities (e.g. City of Toronto) or private-sector operators (e.g. Highway 407 in the Greater Toronto Area).

Implementation

- Road pricing is a sensitive public and political topic, receiving only minimal consideration in a handful of Canadian jurisdictions. The United States is more actively experimenting with and applying road pricing measures—but almost exclusively facility tolls, rather than cordon tolls or comprehensive, system-wide pricing applications.
- Implementation costs would be substantial, but offset by revenues.
- Technologies are developing rapidly, and include automated vehicle recognition tolling and in-vehicle GPS systems.
- Effectiveness would increase in communities with attractive travel options.
- Effects on businesses, low-income travellers, land development and other sectors may be contentious.

Strengths and weaknesses

- Road pricing has the potential to strongly influence behaviour.

- Road pricing approaches that vary charges by route, time and ambient congestion levels have the greatest potential to enhance system efficiency.
- TAC's 2009 briefing (see reference, below) notes numerous and substantial challenges in areas such as public acceptance, social equity, economic competitiveness, and implementation. Considerable research, development and consultation are required before road pricing will be widely feasible in Canada.

For more information

Road Pricing in an Urban Context, Transportation Association of Canada (www.tac-atc.ca/english/resourcecentre/ readingroom/pdf/roadpricing-brief.pdf)

"Road Pricing," Victoria Transport Policy Institute (www.vtpi.org/tdm/tdm35.htm)

Tolling and Pricing Program, United States Federal Highway Administration (www.ops.fhwa.dot.gov/tolling_pricing)

2.2.4 Fuel Pricing

Description. Levies or taxes on motor vehicle fuels influence driving costs according to vehicle fuel economy as well distance driven. Fuel prices are not readily perceived by users as a disincentive to driving on a trip-by-trip basis. Like road pricing, their most common purpose is to generate revenue rather than influence behaviour. However, fuel charges of a sufficient magnitude could influence vehicle purchase and maintenance practices, as well as the amount of vehicle use.

Enhances an individual's perception of sustainable travel options as:	
advantageous	■ Creates an incentive to drive less, operate more efficient vehicles, operate vehicles more efficiently, and choose other modes
practical	
popular	
congruent	

Roles and responsibilities

- Federal and provincial governments can increase taxes on fuels.

Implementation

- Resource requirements for fuel pricing approaches are low due to existing fuel tax collection by governments.

Strengths and weaknesses

- There is evidence demonstrating the influence of fuel prices on vehicle usage, but impacts are dependent on the magnitude of price changes and the existence of attractive travel options.
- There may be resistance from the general public as well as petroleum, vehicle and transportation industries. Public resistance may be tempered if tax revenues are dedicated to transportation spending.
- Concerns may exist about equity impacts on low-income and rural residents.

For more information

"Fuel Taxes," Victoria Transport Policy Institute (www.vtpi.org/tdm/tdm17.htm)

2.2.5 Parking Pricing

Description. Governments can change the price of parking at their own facilities (offices, client service centres, etc.), at government-owned off-street parking lots and garages, and in on-street parking spaces. Aside from higher hourly rates, governments can eliminate "early bird" rates, daily maximums and monthly permit discounts, all of which are incentives for long-term parking activity.

In the few jurisdictions where provincial legislation permits it, municipalities or regional transportation authorities can apply other charges to parking activity. These include sales taxes on commercial parking transactions, or an annual per-space levy on property owners that encourages them to charge tenants and/or users for parking activity.

Enhances an individual's perception of sustainable travel options as:	
advantageous	■ Creates an incentive to drive less, especially for regular commuting purposes (i.e. all-day parking) and in areas where parking is now free
practical	■ Sufficient price changes can make driving unaffordable for some individuals and some trips
popular	
congruent	

Roles and responsibilities

- Governments control parking price levels and structures at facilities and on streets under their control.
- Provincial governments can empower municipal taxes or levies on parking spaces or commercial parking transactions.

Implementation

- Replacing free with paid parking can require costly control equipment (gates, meters, pay-and-display stations)
- New taxes or levies can require new processes for collection and reconciliation.

Strengths and weaknesses

- Drivers are most sensitive to out-of-pocket costs like parking charges. Impacts can vary, depending on pricing levels and the existence of attractive travel options.
- Raising rates for public parking facilities can shift demand to private facilities.
- Public resistance to greater parking costs can be strong, and raising on-street parking rates may undesirably impact private businesses.

For more information

Parking Management: Comprehensive Implementation Guide, Victoria Transport Policy Institute (www.vtpi.org/park_man_comp.pdf)

2.2.6 Taxation of Employer-provided Transportation Benefits

Description. Consistent, equitable policies for the taxation (or non-taxation) of employer-provided transportation benefits can influence commuting behaviour. Free or subsidized parking provided by employers to employees is a taxable benefit, but in most cases is not taxed due to several exemptions and limitations on the audit capacity of Canada Revenue Agency. However, other employer-provided transportation benefits such as subsidized transit passes, or reimbursed expenses for commuting by foot, bike, carpool or vanpool are virtually always taxed. More rigorous enforcement of the taxable benefit status of employer-provided parking, or tax exemption for other employer-provided transportation benefits, would eliminate this unintended structural advantage that favours driving commuters.

Enhances an individual's perception of sustainable travel options as:	
advantageous	■ Creates an incentive for employers to provide, and for employees to accept, benefits that in turn act as incentives for employees to commute by transit, active transportation and ridesharing
practical	■ Sufficient price incentives can make travel options more affordable for some individuals
popular	
congruent	

Roles and responsibilities

- Federal and provincial governments can amend tax legislation to exempt employer-provided benefits for sustainable commuting.

Implementation

- An analysis by IBI Group for the Canadian Urban Transit Association in 2005 estimated a 20-year net present cost of provincial and federal taxes foregone of $650M to $1.8B, but also estimated a net social benefit over that same period.

Strengths and weaknesses

- Tax exemption for employer-provided transportation benefits (including parking) in the United States has been the cornerstone of the very successful Commuter Choice program, and has become consider-

ably more generous over 25 years including an allowance for pre-tax employee contributions toward transit pass purchases.

- Impacts could be relatively high. Federal legislation would cover the entire country, and car commuting represents a large percentage of greenhouse gas emissions and other air pollution from transportation. Impacts would depend on the extent of employer participation, which could be substantial.
- There are few implementation challenges and risks. These include equity concerns pertaining to rural commuters, and commuters whose employers do not offer benefits. Cost concerns are mitigated by the fact that taxes foregone would increase only with greater uptake.

For more information

Tax Exemptions for Employer-Provided Transit Benefits (2005), IBI Group for Canadian Urban Transit Association (www.cutaactu.ca/en/publicationsandresearch/resources/Tax-Exempt_Benef_IBI-Report_2005_EN.pdf)

2.2.7 Transit Fare Incentives

Description. Reducing the cost of public transit use can benefit and attract riders in particular market segments.

Typically, incentives in the form of reduced cash, ticket or pass prices are used to favour children, students and seniors. Discounted transit passes can be sold by subscription to the general public, to high school or post-secondary students, or to employees of participating workplaces.

The use of electronic smartcards allow transit fare incentives to escape the limits of conventional transit fare media—for example, by charging all (or selected) riders lower fares during off-peak times or in off-peak direction, or providing discounts for bulk transit fare purchases for timeframes other than the conventional one-month calendar period, or offering rewards for loyal customers.

For more limited promotional purposes, transit operators can provide free or discounted fares for events such as Canada Day, New Year's Eve, Earth Day or Clean Air Day.

Enhances an individual's perception of public transit as:	
advantageous	■ Provides an incentive to take transit
practical	■ At sufficient levels, fare incentives can make transit a more practical (affordable) choice for some individuals
popular	
congruent	

Roles and responsibilities

- Transit fare incentives are typically offered by transit operators.

Implementation

- Resource requirements are low, excluding revenues foregone that are likely to only be partially recovered through ridership increases.

Strengths and weaknesses

- Conventional fare incentives have a strong track record and experience with more innovative (e.g. smartcard-based) incentives is growing.
- Attracting drivers to become new transit riders is a challenge, and could require substantial incentives or combinations of incentives and other actions to make transit more attractive.
- Impacts are greater for choice transit users (e.g. those with access to a car) than for transit-reliant users, and are higher for discretionary off-peak transit riders than for peak-period commuter.
- Fare incentives are unlikely to build regular ridership if transit services are otherwise unattractive.
- Transit operating cost pressures are driving transit fares higher, making incentives more difficult to justify.
- Many large transit systems operate at or near capacity at peak times, and may not want to attract additional demand to overburdened routes.

2.2.8 Vehicle Scrappage Incentives

Description. Vehicle scrappage incentives are financial or non-financial benefits offered to vehicle owners to retire older vehicles to scrap and either manage with one less vehicle or purchase a more fuel-efficient, less polluting one. For example, Canada's Retire Your Ride Program, which ended in March 2011, provided as an

incentive a public transit pass, carsharing program membership, $300 in cash, or a rebate on the purchase of a 2004 or newer vehicle. In some regions, participants can also receive a charitable tax receipt.

Enhances an individual's perception of retiring one's older vehicle as:	
advantageous	■ Provides an incentive to replace older polluting, low-efficiency vehicles with less-polluting, more efficient ones, or to reduce the number of vehicles owned by a household and adopting sustainable travel options
practical	■ Provides practical assistance in making greater use of sustainable travel options (e.g. public transit)
popular	
congruent	

Roles and responsibilities

- Vehicle scrappage programs can be funded by the federal and/or provincial governments and/or automobile manufacturers, and delivered by governments, automobile manufacturers and/or non-governmental organizations.
- Additional incentives can be offered by transit operators (e.g. free or discounted transit passes for a period of time) and other business partners looking for promotional opportunities (e.g. cinemas offering free or discounted movie passes).

Implementation

- Resource requirements can be substantial; the Retire Your Ride Program incentive of $300 per vehicle was considered to be insufficient, leading car manufacturers to offer additional incentives.

Strengths and weaknesses

- Retire Your Ride involved about 500,000 vehicles per year in 2010 and 2011, or 2.5% of the number of registered light-duty vehicles in Canada each year. The fuel efficiency of new vehicles is not substantially greater than that of older vehicles.
- Impact data are somewhat limited, and seldom reflect "business as usual" rates of vehicle replacement, or the life-cycle impacts of new (replacement) vehicles.
- Support from the auto industry may be greater for programs requiring a lower fuel economy threshold for replacement cars, which would undermine program impacts.

For more information

"Scrapping for Our Environment," Environment Canada (www.ec.gc.ca/envirozine/default.asp?lang=en&n=74C3565E-1)

Clear the Air! program, Association québécoise de lutte contre la pollution atmosphérique (www.cleartheairprogram.org)

2.3 Tools to Enhance the Built Environment

2.3.1 Integration of Cycling and Transit

Description. The integration of cycling and transit can lengthen the practical distance of trips involving bicycles, and extend the practical reach of transit service towards origins and destinations.

Integration can involve bike parking at transit stops and stations, or enabling the carriage of bicycles on transit vehicles (via either bike racks on buses, or permissive policies and in-car spaces on rail cars).

Enhances an individual's perception of sustainable travel options as:	
advantageous	
practical	■ Removes barriers (fear of bicycle theft, inability to bike on both ends of a transit trip) ■ Extends practical range and reach of both transit and cycling
popular	
congruent	

Roles and responsibilities

- Transit operators are usually responsible for providing the necessary facilities.

Implementation

- Resource requirements are relatively low; the incremental cost of bus racks is small.

Strengths and weaknesses

- Impacts may be greater within certain markets (e.g. long-distance commuters, reverse commuters from urban cores to suburban jobs, commuter rail users).
- More effective on long, high-quality transit routes, and in areas where cycling is already attractive.
- There are few implementation challenges and risks.

For more information

Bicycling Access and Egress to Transit: Informing the Possibilities, Mineta Transportation Institute (www.transweb.sjsu.edu/PDFs/research/2825_bicycling_access.pdf)

"Integrating Bicycling and Public Transport in North America", J. Pucher and R. Buehler in *Journal of Public Transportation*, Vol. 12, No. 3, 2009 (www.nctr.usf.edu/jpt/pdf/JPT12-3Pucher.pdf)

2.3.2 Wayfinding for walking and cycling

Description. Wayfinding for walking and cycling includes destination and route signage along sidewalks, on-road cycling lanes, bike boulevards and off-road trails. Of particular interest is wayfinding for transit users in the urban fabric around transit facilities, and for pedestrians and cyclists as a complement to general road signage.

Enhances an individual's perception of walking and cycling as:	
advantageous	
practical	■ Makes walking and cycling for transportation more practical and convenient, by minimizing the chances of becoming lost or taking the wrong route (both of which have greater consequences for pedestrians and cyclists than for motor vehicle users)
popular	■ Acts as a reminder for the general public of the opportunity to walk or cycle to important destinations and strengthens social norms around walking and cycling.
congruent	

Roles and responsibilities

- Governments, non-governmental organizations, business associations and developers can all play important roles in developing effective wayfinding systems.

Implementation

- Resource requirements are low for a limited network in a small community, growing more significant for rigorous implementation in a large community with extensive active transportation facilities.

Strengths and weaknesses

- May have limited direct impacts, but wayfinding can help maximize the use of new active transportation facilities.
- Effectiveness also increases with size of community, number of key destinations, and range of routing options available to users.
- Wayfinding in urban areas around transit facilities, particularly high-volume rapid transit stations introduced into the urban fabric, is particularly valuable for supporting transit passengers.
- Wayfinding signage benefits from consistency, durability and attractiveness.
- Approaches to designating long (e.g. crosstown) cycling routes, which may involve different types of facilities and multiple turning movements, are challenging.

For more information

Section on Downtown Wayfinding System in "WinSmart: Winnipeg for Sustainable Management Advancing Responsible – Final Report" (www.tc.gc.ca/eng/programs/ environment-utsp-winnipeg-1983.htm)

City of Toronto Cycling Map and Bikeway Network information (www.toronto.ca/cycling)

Wasaga Beach Wayfinding Project (www.wasagawayfinding.com)

Legible London (UK) (www.tfl.gov.uk/microsites/legible-london)

2.3.3 Bicycle Parking

Description. The availability, security, location and visibility of bicycle parking all affect the attractiveness of cycling as a travel option.

Bike parking includes unattended or attended racks, either indoors or outdoors. It can also include locked bicycle cages or storage rooms for registered users who possess passcards, keys or combinations.

Some bike parking is provided directly by governments in public rights-of-way and open space or at public

facilities. Other bike parking is provided by other stakeholders, and is generally intended for use by employees, customers or visitors at a particular destination.

Enhances an individual's perception of cycling as:	
advantageous	■ Reduces the time required to begin and end a cycling trip
practical	■ Reduces the real or perceived risk of bicycle theft, which is a significant barrier to cycling for some users
popular	■ Increases the visibility and norm appeal of cycling when well-used parking facilities are installed in central, highly visible locations
congruent	

Roles and responsibilities

- Governments can provide bicycle parking in public spaces, from street rights-of-way to government buildings or parks.
- Municipalities can use zoning by-laws or development standards to require or encourage the provision of bicycle parking by developers, landowners and property managers at workplaces, institutions, and multi-family residential buildings. They can help others to plan, design, procure and install bicycle parking, and in some cases can even subsidize procurement.
- Institutions, business associations, developers, property managers, employers and schools can install and maintain quality bicycle parking in areas under their control.

Implementation

- The resource requirements for public bicycle parking are moderate, depending on the scale and quality of the parking facilities. Bicycle parking on private land is paid for by others.
- Secure, attended public bike storage facilities can be costly to build and operate and are only warranted in limited situations. In most cases, visible, sheltered and properly designed racks are adequate for most users.

Strengths and weaknesses

- Can be effective if bike security is a major issue and other barriers to cycling are addressed. More effective where cycling routes and distances are amenable to cycling.
- Overcoming stakeholder resistance to installing bicycle parking can be a challenge when cycling volumes are low, even if the lack of secure parking is a cause.

For more information

Bicycle End-of-Trip Facilities: A Guide for Canadian Municipalities and Employers (Gris Orange Consultant for Transport Canada) (www.tc.gc.ca/eng/programs/environment-urban-menu-eng-1887.htm)

Guidelines for the Design and Management of Bicycle Parking Facilities, City of Toronto (www.toronto.ca/planning/pdf/bicycle_parking_guidelines_final_may08.pdf)

TDM Supportive Guidelines For Development Approvals: A Handbook for Practitioners, BA Group for ACT Canada (www.actcanada.com/ ACTCanada/EN/Resources.aspx)

2.3.4 Shower, Change and Locker Facilities

Description. Many people who commute by foot or bicycle prefer to shower, change and store their commuting gear upon arrival at work. The absence of supportive facilities in a workplace can be a significant barrier to commuting by active travel modes.

Enhances an individual's perception of walking and cycling as:	
advantageous	
practical	■ Improves comfort and convenience for active commuters
popular	
congruent	

Roles and responsibilities

- Governments can provide these facilities in their own workplaces, and municipalities can require or encourage their provision by developers and property managers through zoning by-laws and development standards or guidelines.
- Employers, developers and property managers can provide these facilities on their premises.

Implementation

- Government resource requirements are low. The cost to include supportive facilities in new buildings is moderate, but the cost to retrofit existing buildings to offer showers and change rooms can be significant.

Strengths and weaknesses

- Effectiveness depends on average trip length to the destination and the conduciveness of active transportation networks. Target audience demographics and levels of interest are also influential. Surveys show that not all active commuters see shower and change facilities as important.
- Winter cycling is more gear-intensive and requires storage space. Warm-weather, long-distance and exercise-focused cyclists are more likely to want a shower.
- Retrofits in existing workplaces can be very costly and may face resistance from building owners and managers.
- Requirements for new developments face resistance from developers, especially where active transportation is seen as impractical for commuters.

For more information

"Development Related By-laws and Supplements: Requirement for Shower/Change Rooms," City of Vancouver (www.vancouver.ca/engsvcs/parking/admin/developers.htm)

Commuter Options: The Complete Guide for Canadian Employers (Noxon Associates Limited for Transport Canada) (www.tc.gc.ca/eng/programs/environment-commuteroptions-menu-519.htm)

TDM Supportive Guidelines For Development Approvals: A Handbook for Practitioners, BA Group for ACT Canada (www.actcanada.com/ ACTCanada/EN/Resources.aspx)

"Bicycle Parking, Storage and Changing Facilities," Victoria Transport Policy Institute (www.vtpi.org/tdm/tdm85.htm)

2.3.5 Park-and-ride Arrangements

Description. Park-and-ride is an important form of access to transit service for some markets, notably individuals commuting into urban areas from surrounding suburban, rural or exurban communities. The construction of new park-and-ride lots and the provision of transit serving them are major supply-side measures that fall outside the realm of TDM. However, one form of park-and-ride provision could be viewed as simply making best use of existing supply: that is, the re-purposing of existing parking facilities at locations already served by transit, to enable access by important market segments.

An example of this approach would be the promotion of park-and-ride activity in a designated portion of a parking lot operated by a retail, religious, recreational or other community facility in a suburban, exurban or rural area. Shopping centres, in particular, may permit this use of their parking areas as a means of boosting customer traffic during the morning and afternoon peak periods.

Enhances an individual's perception of transit as:	
advantageous	■ Can reduce costs for individuals who can pay for a transit pass instead of more costly downtown parking
practical	■ Makes transit use more practical for individuals who live beyond the limits of established transit service areas
popular	
congruent	

Roles and responsibilities

- Municipal and provincial governments or transit authorities can allow park-and-ride activities at their own parking facilities, or negotiate permission and promote the opportunity at other facilities.
- Retail, religious, recreational or other community facilities can permit and promote their existing parking facilities for park-and-ride purposes.

Implementation

- Resource requirements are typically very low, assuming that no new infrastructure changes are required apart from signage and basic amenities for transit passengers.
- May require or warrant transit route/schedule enhancements to serve park-and-ride facilities.
- May require legal agreements, liability coverage and/or compensation for facility owners.

Strengths and weaknesses

- Park-and-rides target daily commutes, so a single park-and-ride space can remove hundreds of commuter vehicle trips each year. The scale of the market is a function of community size, transit service structure, and specific partnership opportunities.
- Shopping centres may permit this use of their parking areas as a means of boosting customer traffic during peak periods.
- Once established, scaling park-and-ride arrangements up or down to meet actual demand is possible at little risk or cost.

2.3.6 Carpool Parking Arrangements

Description. Similar to the park-and-ride arrangements discussed in the preceding section, the use of existing parking lots as carpool parking facilities can enable and promote carpooling activity. Such arrangements can be enacted at any scale and in any location where carpool participants might meet, form their carpool, and leave unused cars for the day.

Another form of carpool parking is the provision of preferential parking spaces at travel destinations (e.g. workplaces, post-secondary campuses, public parking lots). The form of preference could include discounted parking permit fees, priority allocation of available parking permits to carpooling applicants, permission for long-term parking in on-street spaces, or allocation of the most desirable off-street spaces (aside from those reserved for disabled persons) to carpoolers.

Enhances an individual's perception of carpooling as:	
advantageous	■ Provides financial incentives by allowing carpoolers to share fuel and parking costs
practical	■ Can reduce driving necessary for carpoolers to meet up ■ Can enable carpooling by partners who would otherwise not have a place to leave a car
popular	
congruent	

Roles and responsibilities

- Municipal and provincial governments or transit authorities can allow carpool parking activities at their own parking facilities, or negotiate permission and promote the opportunity at other facilities. Retail, religious, recreational or other community facilities can permit and promote their existing parking facilities for carpool parking purposes.
- Municipalities or parking authorities can designate preferential carpool parking spaces in public parking lots. Workplaces and post-secondary institutions can do the same for employees and students who carpool.

Implementation

- Resource requirements are typically very low, assuming that no new infrastructure changes are required apart from signage and basic amenities for carpoolers.
- May require legal agreements, liability coverage and/or compensation for facility owners.

Strengths and weaknesses

- Carpool parking arrangements serve daily commutes, so a single carpool space can remove hundreds of commuter vehicle trips each year. The scale of the market is a function of community size, commuting patterns, and specific partnership opportunities.
- Shopping centres may permit this use of their parking areas as a means of boosting customer traffic during peak periods.
- Once established, scaling carpool parking up or down to meet actual demand is possible at little risk or cost.
- It can be a challenge to offer security for users (e.g. lighting, patrols) and their vehicles at multiple small locations.
- It can be difficult to enforce preferential carpool parking by ensuring that users who receive special discounts or permits are actually carpooling.

2.3.7 Carsharing Service Support

Description. Carsharing services allow users access to a motorized vehicle when they need it. The costs of vehicle ownership, maintenance, insurance, parking and fuel are borne by the carsharing service; users generally pay a periodic subscription or membership fee, and a per-use fee based on time and distance driven.

Carsharing services are generally self-sufficient businesses or not-for-profit operations, but can benefit from the availability of convenient, visible parking spaces for shared cars, as well as from external promotion and marketing partnerships. They can also benefit from municipal development regulations that permit reductions in required parking capacity at new developments that offer carsharing services to occupants.

Enhances an individual's perception of carsharing as:	
advantageous	■ Cross-promotion with transit or bike sharing services can provide financial incentives for non-car owners who use multiple travel modes
practical	■ Visible designated parking spaces for shared cars (i.e. on-street, at the well-lit entrance of off-street parking lots) increases convenience and security for users
popular	■ Cross-promotion with transit or bike sharing services increases the visibility and legitimacy of carsharing among potential users
congruent	

Roles and responsibilities

- Governments can provide visible, convenient reserved parking spaces for carsharing vehicles in on-street parking areas, or in priority locations within off-street lots (e.g. at a well-lit entrance or near the attendant).
- Governments, transit authorities and bike sharing services can enter agreement for cross-promotion with carsharing services (e.g. carshare members receive a discount on annual transit passes; transit pass-holders receive a discount on carsharing fees).
- Municipalities can offer reductions in required parking capacities at new developments that offer carsharing services to occupants.

Implementation

- Carsharing services may or may not pay market rates for reserved parking in on-street parking areas or public off-street lots.

Strengths and weaknesses

- Particularly in urban cores with rising residential populations, carsharing services can discourage personal car ownership and the resulting demand for private parking spaces. Carsharing can help make "car-free" lifestyles more practical.

For more information

Car Sharing Co-operatives in Canada, Canadian Co-operative Association (www.growourregion.ca/images/file/ Cooperatives/Microsoft_Word_-_CAR_SHARING_REPORT_FINAL.pdf)

"Car Sharing in Canada: Making More Sustainable Personal Travel Choices," Transport Canada (www.tc.gc.ca/eng/programs/ environment-utsp-carsharing-1068.htm)

2.4 Tools to Influence Commuter Travel

2.4.1 Employer Engagement

Description. Workplace policies, facilities and services can strongly influence commuter behaviours; the involvement of employers in TDM programs is therefore very important. This is particularly vital in areas like telework, an activity that government has little ability to facilitate independently. Employer engagement strategies can attract attention, build understanding, foster dialogue, build their capacity and enhance their willingness to act.

Enhances an employer's perception of becoming engaged as:	
advantageous	■ Persuades employers of positive benefits of acting ■ Raises public profile of successful employers through awards
practical	■ Demonstrates the practicality and potential effectiveness of employer involvement
popular	■ Highlights corporate leadership success stories ■ Raises credibility of employer engagement as "business as usual"
congruent	■ Demonstrates consistency with corporate social responsibility objectives

Roles and responsibilities

- Municipal and regional governments can lead or fund employer engagement, and recognize and reward successes.
- Non-profit organizations such as transportation management associations or Chambers of Commerce, and even private consultants, can be effective avenues for employer engagement.

Implementation

- Key actors need to appreciate governmental objectives as well as employers' constraints and opportunities.
- Employer engagement is most effective when its purpose is to offer an attractive "value proposition" (i.e. services or opportunities for participation), rather than simply information or encouragement. It can be a critical entry point to the offer of delivery of workplace travel planning support (where it is offered, see next section).
- The cost and effort required by employer engagement activities are relatively low.
- Identification of champions and success stories within the business sector can be very helpful in legitimizing and raising the profile of employer involvement.

Strengths and weaknesses

- Employer engagement is a necessary precursor to maximizing employer uptake of other tools (e.g. employer transit pass, ridematching.)
- More effective when employers face transportation-related challenges that available tools can help with (e.g. employee recruitment or retention).

For more information

Transportation Demand Management for Canadian Communities: A Guide to Understanding, Planning and Delivering TDM Programs, Noxon Associates Limited for Transport Canada (www.tc.gc.ca/eng/programs/environment-urban-guidelines-practitioners-tdm-2735.htm)

Workplace Travel Plans: Guidance for Canadian Employers, Noxon Associates Limited for Transport Canada (www.tc.gc.ca/eng/programs/environment-urban-menu-eng-1682.htm)

Smart Commute Program, Metrolinx (ON) (www.smartcommute.ca)

TravelSmart Program, TransLink (BC) (www.travelsmart.ca/en/Work/Businesses)

WORKshift Program, Calgary Economic Development (www.workshiftcalgary.com)

2.4.2 Workplace Travel Planning Support

Description. Workplace travel plans are packages of coordinated actions to encourage efficient and sustainable commuting among employees. Rather than a document, a travel plan is an ongoing process of preparation and implementation. Most employers require external support, ranging from advice to hands-on assistance, to effectively undertake a workplace travel plan.

Travel planning support services can include commuter surveys, audits of workplace environments, analysis of policy and practice, evaluations of alternative measures,

development of action plans, and facilitation of employee buy-in and management approval. They can also include preparation for and implementation assistance with specific initiatives or events (e.g. special events, ridematching services).

Enhances an employer's perception of workplace travel planning as:	
advantageous	■ Reduces the resource burden on employers ■ Helps to accurately identify the benefits to the employer and employees
practical	■ Demystifies the travel planning process ■ Facilitates access to external tools, programs services that can benefit employers and employees
popular	
congruent	

Roles and responsibilities

- Governments can provide (directly or through an intermediary service provider) the skills required to lead or support a workplace travel planning process.
- Non-profit organizations such as transportation management associations (TMAs) or *centres de gestion des déplacement* (CGDs, as TMAs are known in Quebec) can provide an effective base for service delivery.

Implementation

- Resource requirements can be significant. A Transport Canada review of related programs found that most agencies providing comprehensive planning services could serve 5 to 10 employers per full-time staff member. Resource limitations typically necessitate a focus on larger or more committed employers. The ready availability of tools and materials to support workplace travel plans can help.

Strengths and weaknesses

- Active assistance can lead to the implementation of more aggressive workplace-based TDM measures than employers might otherwise consider. In particular, small and mid-sized employers are unlikely to implement travel planning processes without help.
- Planning services are most warranted when success is realistic—i.e. employers face commuting-related challenges, and attractive and effective travel options exist.

For more information

Transportation Demand Management for Canadian Communities: A Guide to Understanding, Planning and Delivering TDM Programs, Noxon Associates Limited for Transport Canada (www.tc.gc.ca/urban)

Workplace Travel Plans: Guidance for Canadian Employers, Noxon Associates Limited and ACT Canada for Transport Canada (www.tc.gc.ca/eng/programs/environment-urban-menu-eng-1682.htm)

Smart Commute Program, Metrolinx (ON) (www.smartcommute.ca)

TravelSmart Program, TransLink (BC) (www.travelsmart.ca/en/Work/Businesses)

"Smart Commute – North Toronto, Vaughan," Transport Canada (www.tc.gc.ca/eng/programs/environment-utsp-smartcommute-255.htm)

2.4.3 Employer Transit Pass

Description. Many Canadian transit systems sell discounted transit passes to commuters through their workplaces. One example is payroll-deduction transit pass programs that offer a discount in return for a minimum one-year commitment by participants as well as a minimum number of participants per workplace. Programs can also require additional employer subsidies, or encourage employer subsidies by escalating the transit operator's discount.

Enhances an individual's perception of transit as:	
advantageous	■ Provides a financial incentive for individual commuters to take transit ■ Provides an incentive for commuters to purchase a transit pass rather than use tickets or cash fares
practical	■ Makes transit passes more convenient to buy (i.e. no need for a monthly errand to buy one) and more inconvenient to stop purchasing regularly
popular	■ Improves visibility of transit messaging by using workplace communications to reach commuters
congruent	■ Reinforces the social value of transit ridership by leveraging the credibility of employers

Roles and responsibilities

- Transit operators can develop and offer employer transit pass programs.
- Employers can either act as a reseller, or as a financial intermediary that forwards payroll deductions to the transit operator.
- Intermediaries (e.g. municipalities or transportation management associations) can promote or administer the programs.

Implementation

- Viability increases with transit service quality.
- Programs are typically revenue-neutral for transit operators; monthly discounts are offset by requirement to purchase 12 passes each year (vs. average of 10 or 11).
- Involves extra administration by transit operator, employer and/or intermediary. Transit operator's administration costs can be low for small programs delivered manually, but can be more substantial for large programs that require customized computer-based administration systems.
- Performance measurement is simplified by asking new registrants if they are frequent, occasional or new transit riders.

Strengths and weaknesses

- Builds and rewards customer loyalty. May initially attract few new riders, but can help retain existing riders and gain ridership among new hires.
- Transit systems may see a risk in potential loss of revenue. Payback may not warrant extra administrative costs to transit system, especially at small workplaces.
- Customers may resist the typical requirement for 12-month minimum commitment, particularly summer cyclists who take transit in the winter.
- Employers may resist subsidizing employees due to taxable status of employer-provided transit benefits.
- Smartcard-based fare systems enable similar programs with less administration.

For more information

TransLink Employer Pass Program (www.translink.ca/en/Fares-and-Passes/Employer-Pass.aspx)

Grand River Transit Corporate Pass (www.grt.ca/en/riderprograms/ corporatepass.asp)

"EcoPass: Employer-Sponsored Transit Passes," Transport Canada (www.tc.gc.ca/eng/ programs/environment-utsp-ecopass-844.htm)

2.4.4 Post-secondary Universal Transit Pass

Description. At a number of Canadian post-secondary institutions, students (e.g. full-time undergraduates) pay a fee that gives them unlimited access to transit for the entire semester, school year or calendar year. Universal transit pass (U-Pass) fees are lower than the cost of buying regular passes or tickets, because the cost of transit fares is redistributed from a smaller group (i.e. existing transit customers) to a larger one (i.e. entire student body).

Enhances an individual's perception of transit as:	
advantageous	■ Provide a financial incentive to take transit for commuting and other trip purposes ■ Encourage trial and adoption among non-transit users by providing them with no-cost access
practical	■ Improve convenience by providing transit access with regular student card
popular	■ Establishes transit use as the 'norm' for students
congruent	■ Validates transit use by signaling endorsement by the institutional and student administrations

Roles and responsibilities

- Transit operators can offer post-secondary universal transit pass programs.
- Student associations are typically the negotiating and contracting party, sometimes in partnership with the administration.

Implementation

- Transit systems may face capital and operating cost burdens to serve resulting growth in ridership. Investment in fleet, facilities and services presents some continuity risk if the agreement is not renewed and ridership decreases.
- Student commitment typically requires approval through a referendum, and agreements are typically renegotiated every two or three years.

Strengths and weaknesses

- Canadian experience shows that student ridership can increase by 100% or more in some cases; however, it is typical for a significant portion of new transit users to be former pedestrians, cyclists and carpoolers.
- Can be difficult to gain student endorsement where existing ridership is too low (e.g. lower than 15%) or too high (e.g. above 50%).
- Resistance among students who do not want to pay a mandatory fee can sidetrack negotiations and threaten transit's image.

For more information

U-Pass Toolkit, Noxon Associates Limited for Canadian Urban Transit Association (www.cutaactu.ca/en/publicationsandresearch/reports.asp)

"Universal Transit Passes in Canada," Transport Canada (www.tc.gc.ca/eng/programs/environment-utsp-universaltransitpasses-1086.htm)

2.4.5 Emergency Ride Home

Description. A service offered by an employer or third party that helps non-driving commuters get home quickly and conveniently in case of family emergency, unexpected overtime or other unforeseen event. Transportation is typically by free or reimbursable taxi or car rental.

Enhances an individual's perception of sustainable travel options as:	
advantageous	■ Provide a sense of security for individuals that their use of sustainable commuting modes will not risk their ability to meet personal or family commitments
practical	■ Where the ability to meet personal or family commitments is critical, this can make sustainable travel options practical
popular	
congruent	

Roles and responsibilities

- Governments can encourage, facilitate and enable emergency ride home programs at external workplaces. For example, the Smart Commute program of Metrolinx provides an electronic process for registered employees of partner employers to access the service.
- Individual employers can register with a municipal or regional program, or offer a similar service directly to their employees.

Implementation

- Costs are borne by the employer, but experience demonstrates that benefits are accessed only rarely. Eligibility criteria and usage caps can be used to limit financial risks.

Strengths and weaknesses

- Service coordination and facilitation by governments or transportation management associations can provide an incentive for employers to engage with and participate in community-wide TDM programs.
- Canadian experience with emergency ride home programs is limited, but growing. Commuter surveys typically find that these programs are viewed as a valuable form of insurance against unexpected personal circumstances.

For more information

Smart Commute Emergency Ride Home Program, Metrolinx (www.emergencyridehome.ca)

Guaranteed Ride Home, Peterborough Moves (www.peterboroughmoves.com/GRH)

"Guaranteed Ride Home," Victoria Transport Policy Institute (www.vtpi.org/tdm/tdm18.htm)

2.5 Tools to Influence School Travel

2.5.1 School Engagement

Description. School policies, facilities and services can strongly influence how children get to school. Different approaches to engaging schools can attract their attention, build understanding, generate and maintain dialogue, build their capacity and enhance their willingness to act. Other school stakeholders including families, school councils and school boards are also important participants.

Enhances a school's perception of becoming engaged as:	
advantageous	■ Persuades schools of the positive benefits of acting
practical	■ Demonstrates the practicality and potential effectiveness of school involvement
popular	■ Highlights success stories and raises the credibility of school engagement as "business as usual"
congruent	■ Demonstrates consistency with objectives for student health and social responsibility

Roles and responsibilities

- Provincial, regional and municipal authorities can engage school boards and encourage support for pilot projects or broader coordinated programs.
- Governments and non-governmental organizations can play a valuable leadership role in actively engaging individual schools and other partners to encourage or facilitate school travel planning or active and safe routes to school programs.
- Other potential partners include student groups, parental groups, health units, police services and community associations.

Implementation

- School engagement is less resource intensive than active assistance (see next section), but can still require considerable investment of human (and sometimes political) capital to get the attention of stakeholders and raise the priority of travel among the many issues facing most schools and school boards.

Strengths and weaknesses

- Government powers are generally limited to encouragement and facilitation, but these can help motivate action by individual school boards and school communities.
- Viability and effectiveness are greater in areas with supportive walking and cycling environments, or where resources to improve them are available.

For more information

Green Communities Canada, Active and Safe Routes to School Program (www.saferoutestoschool.ca)

Mon école à pied, à vélo ! program, Vélo Québec Association (www.velo.qc.ca/transport-actif/a_ecole/Mon-ecole-a-pied-a-velo-!)

Metrolinx, Stepping It Up Program (www.metrolinx.com/en/projectsandprograms/steppingitup/stepping_it_up.aspx)

National Center for Safe Routes to School (USA) (www.saferoutesinfo.org)

2.5.2 School Travel Planning Support

Description. The delivery of effective transportation demand management measures at schools requires the buy-in and involvement of a community of stakeholders. The process of school travel plans involves assembling a stakeholder working group, gathering and assessing baseline data and issues, developing an action plan, and measuring and reporting on impacts.

Enhances a school's perception of school travel planning as:	
advantageous	■ Reduces the resource burden on schools ■ Helps to accurately identify the benefits to schools and students
practical	■ Demystifies the travel planning process ■ Facilitates access to external tools, programs and services that can benefit employers and employees
popular	
congruent	

Roles and responsibilities

- Governments can provide or enable services to lead or support a school planning process, which can also extend to preparation for and implementation assistance with specific initiatives or events.
- A number of non-governmental organizations in several Canadian communities offer this assistance to school stakeholders, with financial support from federal, provincial and local governments.
- Other potential partners include student groups, parental groups, health units, police services and community associations.

Implementation

- Resource requirements can be significant when working with many schools.
- Intensive involvement of school administrators, teachers, parents and community groups is generally required. This can be a challenge in view of other priorities faced by schools.
- Transportation issues at schools typically include safety concerns that may warrant complementary changes to transportation supply or operations (see next section).

Strengths and weaknesses

- Canadian experience demonstrates that expert assistance is vital to motivate, inform and facilitate effective school travel planning processes.
- Viability and effectiveness are greater at schools facing transportation-related challenges (e.g. school area congestion, parking shortages) and in areas with supportive walking and cycling environments, or where resources to improve them are available.

For more information

Green Communities Canada, School Travel Planning (www.saferoutestoschool.ca/schooltravel.asp)

Green Communities Canada, School Travel Planning Tools (www.saferoutestoschool.ca/schooltraveltools.asp)

Vélo Québec Association, *Mon école à pied, à vélo !* program (www.velo.qc.ca/transport-actif/a_ecole/Mon-ecole-a-pied-a-velo-!)

Metrolinx, Stepping It Up Program (www.metrolinx.com/en/projectsandprograms/steppingitup/stepping_it_up.aspx)

2.5.3 Road Safety Services Around Schools

Description. Removing barriers to more sustainable travel to and from school often requires addressing parents' and administrators' concerns around children's safety. While demand-side measures can improve user perceptions and skills and encourage parents to accompany children to school by foot or bike, supply-side issues like vehicle volumes and speeds, unsafe road crossings, and inadequate or unsafe walking and cycling facilities can effectively limit the potential for behaviour change unless addressed.

Road safety services can therefore be essential to the success of demand-side programs at schools. Crossing guard programs, police enforcement, parent education, traffic calming, road signs, "speed watch" programs, on-street parking management, modifications to driveway access and internal circulation, and new sidewalks or pedestrian crossings are some services that may be helpful.

Enhances an individual's perception of sustainable travel options as:	
advantageous	
practical	■ Removes physical or operational barriers that raise safety concerns among children, parents or administrators, and that may inhibit the adoption or effectiveness of TDM measures
popular	
congruent	

Roles and responsibilities

- Local governments and police services are typically responsible for funding and/or providing these services, although some services can be delivered by non-government organizations.
- The involvement of school administrators, parents and community associations is necessary to identify issues and evaluate possible solutions.

Implementation

- Required resources can vary from low to substantial, depending on the specific services delivered.

Strengths and weaknesses

- Safety improvements can overcome substantial barriers and unlock the potential of other measures.

- School needs can be considered and prioritized within broader programs to improve road safety, implement neighbourhood traffic calming measures, and enhance walking and cycling routes.
- The time required to study, approve, design, fund and implement some safety-related measures can be several years, which is a constraint on the effectiveness of TDM programs in the interim.

For more information

Green Communities Canada, Active and Safe Routes to School Program *(*www.saferoutestoschool.ca)

2.6 Tools to Influence Other Travel

2.6.1 Destination Travel Planning Support

Description. Some community destinations other than workplaces and schools either attract large numbers of people infrequently and predictably (e.g. festivals or sporting events), or attract smaller numbers of people on a regular, predictable basis (e.g. local merchants). Promoting and supporting sustainable travel to these destinations can have a real impact on quality of life in a community.

Related services can range from informal advice to assistance with development of complete travel plans. Examples include helping festivals encourage transit, carpooling, cycling and walking by patrons; working with major sports facility tenants to maximize travel choices for patrons and minimize negative impacts of their travel on adjacent neighbourhoods; helping local merchant associations promote "shopping locally" by foot or bike; and partnering with community groups to minimize the carbon footprint of neighbourhood events.

Enhances stakeholders' perception of TDM measures as:	
advantageous	■ Helps to accurately identify potential benefits for both organizers and patrons
practical	■ Educates organizers about helpful tools and services, and facilitates access to them
popular	
congruent	

Roles and responsibilities

- Governments can offer help directly or through an intermediary service provider.
- Transit operators and others can be important partners; for example, transit fare discounts can be offered to event ticket-holders, and cycling groups can provide attended bike parking at festivals or sporting events.
- Merchant associations, businesses, festival organizers and sporting event coordinators have central roles.

Implementation

- Resource requirements are relatively low, as services tend to include advice rather than intensive hands-on travel planning assistance. However, working with major destinations such as professional sports facilities to promote sustainable travel can require more substantial effort.

Strengths and weaknesses

- Potential for success depends on the destination contexts, trip lengths and purposes (e.g. shopping trip vs. all-day festival attendance), the quality of available travel options, and the enthusiasm, skills and resources of the partner organizations.

For more information

"Special Event Transport Management", Victoria Transport Policy Institute (www.vtpi.org/tdm/tdm48.htm)

Roll out the GREEN carpet! Green Guide for Festivals and Special Events, Bathurst Sustainable Development (www.bathurstsustainabledevelopment.com/reading_room.cfm)

Active in My Neighbourhood, Rosemont-La-Petite-Patrie (QC) (www.cdec-rpp.ca/fr/jemactive.aspx)

2.6.2 Community Transportation Service Partnerships

Description. Particularly in small and rural communities, transportation services operated by public and non-profit organizations (e.g. public health units, school boards, seniors' homes) may be the only form of public (shared) transportation. However, individuals other than those specifically targeted by those services are usually ineligible to use them. Innovative partnerships can make better use of existing services and improve

access to sustainable travel options for other residents, while protecting the service operator's objectives.

For example, several Quebec communities have programs that let adults take advantage of empty seats on school buses or accessible vehicles for customers with disabilities (if not precluded by legislative, regulatory or insurance requirements). In BC's Regional District of East Kootenay, Elk Valley Transit operates twice-weekly Health Connections routes to the Cranbrook Hospital from nearby towns; medical patients have priority use of the service, but any resident can ride the bus if there is an empty seat.

Enhances an individual's perception of sustainable travel options as:	
advantageous	
practical	■ Enables access to sustainable transportation options for individuals who would otherwise be ineligible
popular	
congruent	

Roles and responsibilities

- In principle, any public or non-profit organization (e.g. public health units, school boards, seniors' homes) operating shared transportation services with spare capacity can offer these arrangements.
- Governments, non-governmental organizations and local business or economic development associations can facilitate and promote these partnerships.

Implementation

- Resource requirements for this approach are low, as it principally takes advantage of spare transport capacity.

Strengths and weaknesses

- Low cost, flexible approach that meets individual needs while generating revenue to support existing services.
- Creates options for people who might have very low potential for independent mobility (seniors, youth, low-income adults) in low-density, rural environments.
- Transferability will depend on local partners, regulatory and insurance constraints, and so on.

For more information

Improving Travel Options in Small and Rural Communities, Noxon Associates Limited for Transport Canada (www.tc.gc.ca/urban)

Elk Valley Transit (BC), Health Connections service (www.transitbc.com/regions/elk/ health_connections)

3. Identifying Effective Strategies to Influence Travel Behaviour

Any single strategy to influence travel behaviour will not be appropriate or effective in every situation. This chapter follows the thought process illustrated in **Figure 4** to help readers identify TDM tools that will be effective in their own contexts.

This chapter is divided into three parts:

- **Section 3.1 – Effective Strategies by Organization**
- **Section 3.2 – Effective Strategies by Community Type**
- **Section 3.3 – Effective Strategies by Community Objective**

Each section contains a number of lenses identifying different contexts that readers may relate to. For each lens, the chapter suggests one or more possible directions for action (see **Figure 5** for a list of all lenses and directions in this chapter). The directions represent strategic objectives or desirable outcomes, address common challenges or opportunities, and reflect other factors including jurisdictional responsibilities. For each direction, the chapter then suggests tools of three different types:

- **Primary TDM tools** are those most likely to be contextually appropriate and supportive of a given strategic direction. See **Chapter 2** for more information on each of these.
- **Secondary TDM tools** may also be appropriate and supportive, but with additional reservations or qualifications. See **Chapter 2** for more information on each of these.
- **Complementary measures** include land use or transportation supply tools that could offer important synergies. (Note these are not included in the TDM tools described in **Chapter 2.**)

Before applying the information in this chapter, readers must consider two important notes. First, **multiple lenses may apply to any given reader, organization or community**. Second, **the lenses, directions and tools are suggestive rather than prescriptive**. They are intended to help readers develop a short list of TDM strategies and tools as the basis for further consultation and analysis. Readers must consider the relevance and applicability of each direction and tool to select those that are appropriate for their own circumstances, priorities and resources.

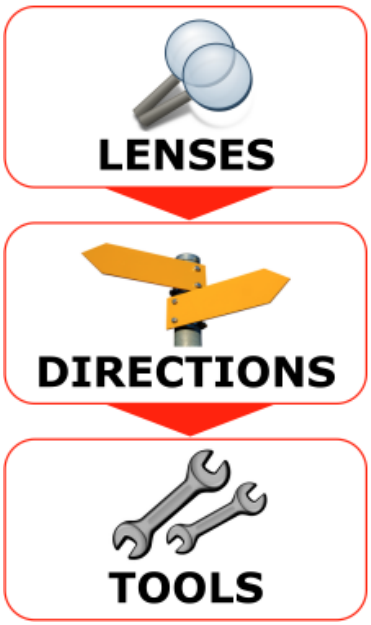


Figure 4. Thought Process For Identifying Effective Strategies

Figure 5 – Lenses and Directions

(a) Effective Strategies by Organization (see Section 3.1)

LENS: **Federal government**
DIRECTION: **Build capacity among other orders of government and non-governmental organizations**
DIRECTION: **Encourage workplace-based TDM measures**

LENS: **Provincial or territorial governments**
DIRECTION: **Build capacity among other orders of government and non-governmental organizations**
DIRECTION: **Encourage workplace-based TDM measures**
DIRECTION: **Encourage responsible driving behaviour**
Many other lenses in Figure 5, and the directions within them, may be applicable to provincial and territorial governments in view of their wide-ranging jurisdictional authorities. A list of additional relevant directions would be lengthy and repetitive, and is not provided.

LENS: **Regional authorities**
DIRECTION: **Develop or coordinate a regional approach to TDM tool delivery**

LENS:
Almost all the lenses in Figure 5 (except for the first three, above) and the directions within them, are applicable to municipal governments. A list of the relevant directions would be lengthy and repetitive, and is not provided.

LENS: **Road authorities**
DIRECTION: **Encourage responsible, efficient driving behaviour**
DIRECTION: **Make ridesharing more advantageous and practical**

LENS: **Transit authorities**
DIRECTION: **Make transit more practical and accessible**
DIRECTION: **Remove barriers related to transit understanding and information**
DIRECTION: **Provide financial incentives and remove financial barriers to transit use**
DIRECTION: **Support perception of transit as popular and congruent**

LENS: **Parking authorities**
DIRECTION: **Make sustainable travel options more advantageous**
DIRECTION: **Make cycling more advantageous and practical**
DIRECTION: **Make ridesharing more advantageous and practical**
DIRECTION: **Make alternatives to car ownership more advantageous and practical**

LENS: **Non-governmental organizations**
DIRECTION: **Deliver initiatives to key audiences**

Figure 5. Lenses and Directions

(b) Effective Strategies by Community Type (see Section 3.2)

LENS: **Communities with less TDM experience**
DIRECTION: **Create a strong TDM program foundation**
DIRECTION: **Implement "quick win" tools to improve travel options and build support**

LENS: **Communities with more TDM experience**
DIRECTION: **Implement more complex tools that build on strong foundations**

LENS: **Large communities**
DIRECTION: **Support more complex travel decisions**
DIRECTION: **Improve travel options for long trips**

LENS: **Small communities**
DIRECTION: **Make active transportation more advantageous and practical**
DIRECTION: **Make ridesharing more advantageous and practical**

LENS: **Rural communities**
DIRECTION: **Make ridesharing more advantageous and practical**
DIRECTION: **Improve public transportation options**
DIRECTION: **Encourage responsible driving behaviour**

LENS: **Urban cores**
DIRECTION: **Make alternatives to car ownership more advantageous and practical**
DIRECTION: **Encourage sustainable travel by commuters**
DIRECTION: **Encourage sustainable travel by non-commuters**

LENS: **Suburban areas**
DIRECTION: **Support perception of sustainable travel options as practical and congruent**

LENS: **Communities with limited resources**
DIRECTION: **Implement low-cost tools**
DIRECTION: **Implement tools that can recover costs or leverage partner resources**

Figure 5. Lenses and Directions

(c) Effective Strategies by Community Objective (see Section 3.3)

LENS: **Increase walking**
DIRECTION: **Make walking more advantageous and practical**
DIRECTION: **Support perception of walking as popular and congruent**

LENS: **Increase cycling**
DIRECTION: **Make cycling more advantageous and practical**
DIRECTION: **Support perception of cycling as popular and congruent**

LENS: **Increase public transit use**
DIRECTION: **Make transit more advantageous and practical**
DIRECTION: **Support perception of transit as popular and congruent**

LENS: **Increase ridesharing**
DIRECTION: **Make ridesharing more advantageous and practical**
DIRECTION: **Support perception of ridesharing as popular and congruent**

LENS: **Support development intensification**
DIRECTION: **Reduce parking demands in new commercial developments**
DIRECTION: **Reduce parking demands in new residential developments**

LENS: **Improve public health**
DIRECTION: **Reduce air emissions from transportation**
DIRECTION: **Encourage physical activity**

LENS: **Improve community competitiveness**
DIRECTION: **Improve civic self-image**
DIRECTION: **Make the community more attractive to employers**

LENS: **Improve opportunity and independence for youth**
DIRECTION: **Make cycling and transit more advantageous and practical**

LENS: **Improve opportunity and equity for low-income residents**
DIRECTION: **Make cycling, transit and ridesharing more advantageous and practical**

LENS: **Combat area-specific traffic or parking issues**
DIRECTION: **Address traffic or parking issues in employment areas**
DIRECTION: **Address traffic or parking issues at post-secondary institutions**
DIRECTION: **Address traffic or parking issues around schools**
DIRECTION: **Address other traffic or parking issues in the community**

3.1 Effective Strategies by Organization

In this section, seven lenses help readers identify effective strategies to influence travel behaviour for different organizations with varying jurisdiction and responsibility:

- **Federal government** (Section 3.1.1)
- **Provincial or territorial governments** (Section 3.1.2)
- **Regional authorities** (Section 3.1.3)
- **Municipal governments** (Section 3.1.4)
- **Road authorities** (Section 3.1.5)
- **Transit authorities** (Section 3.1.6)
- **Parking authorities** (Section 3.1.7)
- **Non-governmental organizations** (Section 3.1.8)

3.1.1 Federal Government

While the federal government has little formal involvement in the transportation issues addressed by this guide it can still play a very important leadership role.

BUILD CAPACITY AMONG OTHER ORDERS OF GOVERNMENT AND NON-GOVERNMENTAL ORGANIZATIONS

Since 2001, federal initiatives including the Urban Transportation Showcase Program, ecoMOBILITY, Moving on Sustainable Transportation (MOST), and Auto$mart have created important resources for governments, businesses, practitioners, community organizations and individuals. By supporting the demonstration and evaluation of innovative approaches, the federal government has helped regional and local authorities to manage risk and learn from each other. By encouraging dialogue and disseminating information, it has ensured that knowledge is shared and good ideas can spread quickly. By centrally developing needed resources, it has enhanced efficiency and helped stakeholders avoid "reinventing the wheel."

Complementary measure:

- **SUPPORT RESEARCH, DEMONSTRATION AND INFORMATION EXCHANGE AMONG TRANSPORTATION STAKEHOLDERS** – to increase their capacity to develop and implement effective strategies to influence travel behaviour

ENCOURAGE WORKPLACE-BASED TDM MEASURES

Through the *Income Tax Act* the federal government controls the tax treatment of employee benefits, including travel-related support and incentives such as employer-provided subsidies for parking, transit fares, and cycling or ridesharing expenses. While the federal Transit Pass Tax Credit provides some tax relief for transit commuters, it provides no rationale for employers to actively offer broader multimodal incentives that could (for example) offset the free parking enjoyed by many car commuters. For more than two decades, similar legislation in the United States has provided the impetus for vast involvement by employers in programs to shift commuter behaviour towards more sustainable modes. In Canada, detailed studies by the Canadian Urban Transit Association have found that tax-exempt status for employer-provided transit benefits could have a substantial influence on travel behaviour with positive economic impacts.

Primary TDM tool:

- **TAXATION OF EMPLOYER-PROVIDED TRANSPORTATION BENEFITS** – by amending the *Income Tax Act* to provide tax-exempt status for financial support offered to employees who commute by transit, active transportation or ridesharing

3.1.2 Provincial or Territorial Governments

Provinces and territories are responsible for municipal affairs and therefore have an important leadership role. They have indirect control over most aspects of local and regional passenger transportation systems, they frequently have direct responsibility for highway networks, and in some areas they operate regular transit or commuter rail services; for these reasons, they may also consider directions and tools suggested under many other lenses in this chapter (e.g. for road and transit authorities later in this section, and for various community attributes in **Section 3.2**).

BUILD CAPACITY AMONG OTHER ORDERS OF GOVERNMENT AND NON-GOVERNMENTAL ORGANIZATIONS

Just as the federal government has a potentially important role in building capacity, so do provincial and territorial governments. They can effectively gather and disseminate information to help municipal, regional and

non-governmental organizations succeed in a common provincial context (i.e. under shared legislation, regulation, policies, programs and culture). Ontario's recent Transportation Demand Management Municipal Grant Program is just one example of possible actions.

Complementary measure:

- **SUPPORT RESEARCH, DEMONSTRATION AND INFORMATION EXCHANGE AMONG TRANSPORTATION STAKEHOLDERS** – to increase their capacity to develop and implement effective strategies to influence travel behaviour

ENCOURAGE WORKPLACE-BASED TDM MEASURES

Provincial and territorial governments can support the delivery of TDM initiatives in the workplace. One possible area of action would be to align with any federal move to make employer-provided transportation benefits tax-exempt (see the preceding section for further discussion). Another area would be the relaxation of regulatory barriers that limit the provision of sustainable travel options; one notable example is legislation (such as Ontario's *Public Vehicles Act*) that prohibits third-party non-profit organizations or transit authorities from managing workplace vanpool fleets, as allowed in British Columbia.

Primary TDM tool:

- **TAXATION OF EMPLOYER-PROVIDED TRANSPORTATION BENEFITS** – by amending relevant legislation to provide tax-exempt status for financial support offered to employees who commute by transit, active transportation or ridesharing

Complementary measure:

- **REMOVE LEGISLATIVE BARRIERS** – by amending laws or regulations that inhibit innovative services such as third-party vanpool provision in workplaces

ENCOURAGE RESPONSIBLE DRIVING BEHAVIOUR

Provinces and territories are responsible for vehicle licensing and insurance, driver education and testing, and municipal powers of taxation. Each of these areas offers potential tools to encourage responsible driving behaviour.

Primary TDM tools:

- **PAY-AS-YOU-DRIVE INSURANCE** – by permitting or requiring insurers to offer consumers this option, or (in the case of public insurers) by doing so directly
- **DRIVER EDUCATION** – by requiring or encouraging inclusion of relevant issues in driving school curricula and driver testing, and by developing a continuing education curriculum for driver training

Secondary TDM tools:

- **ROAD PRICING** – considering the potential benefits of road pricing on provincial roads, and empowering the use of road pricing by municipalities
- **PARKING PRICING** – by empowering the use of taxes or levies on parking spaces or commercial parking transactions by municipalities

3.1.3 Regional Authorities

Regional authorities can consider the range of directions and tools suggested under many other lenses in this chapter (e.g. for road and transit authorities later in this section, and for various community attributes in **Section 3.2**). However, regional authorities have a unique opportunity to add value to initiatives involving local authorities in their area.

DEVELOP OR COORDINATE A REGIONAL APPROACH TO TDM TOOL DELIVERY

There are several areas where regional integration is important to maximize the effectiveness of measures that could be delivered or supported at a local level. "Integration" includes a range of approaches, from facilitation and capacity building to centralized funding and delivery. Tools that could benefit from regional coordination are identified below.

Primary TDM tools:

- **BRANDING, MESSAGING AND POSITIONING** – by providing some degree of regional action and consistency (e.g. market research, program identities, priority-setting) even though local municipalities may justifiably take their own approaches to public communication
- **REAL-TIME TRANSIT CUSTOMER INFORMATION** – by coordinating information tools available to cross-boundary or longer-distance customers who use multiple transit services
- **RIDEMATCHING** – by recognizing that municipal boundaries are not relevant to potential carpoolers, and providing a central ridesharing tool, database and promotional activities
- **EMERGENCY RIDE HOME** – by providing a common service or template for local services, recognizing

that major employers with workplaces in multiple municipalities require a single approach

Secondary TDM tools:

- **SPECIAL EVENTS** – by providing an overall coordinating framework within which area municipalities or non-governmental organizations can develop events that fit their local context
- **REAL-TIME DRIVER INFORMATION** – by coordinating the gathering, synthesis and dissemination of information on road conditions and operations
- **CENTRALIZED TRAVEL INFORMATION** – by coordinating information gathering, synthesis and dissemination for all modes and customers in a region
- **EMPLOYER ENGAGEMENT** – by providing common approaches and tools for shared use by local organizations, particularly with respect to information about services delivered under a common regional program identity
- **WORKPLACE TRAVEL PLANNING SUPPORT** – by providing common approaches and tools for shared use by local organizations
- **SCHOOL ENGAGEMENT** – by engaging with regional school boards on behalf of local organizations (where applicable)
- **SCHOOL TRAVEL PLANNING SUPPORT** – by providing common approaches and tools for shared use by local organizations

3.1.4 Municipal Governments

Most of the subsequent lenses in this chapter, and the directions within them, are applicable to municipal governments. **For this reason, a list of directions specific to municipalities is not provided; it would simply repeat most of the chapter.** For example, municipalities can be parking, transit and road authorities (**Section 3.1**), and they represent a full range of different communities (**Section 3.2**) and different objectives (**Section 3.3**).

3.1.5 Road Authorities

Provincial, regional or municipal agencies having a mandate that focuses on road planning, construction and operation can play significant roles in shifting travel behaviour. Their motivation for doing so often lies in their desire to preserve acceptable levels of service by managing demand for road infrastructure—in other words, by encouraging drivers making non-essential car trips to change their mode (especially shifting from driving alone to ridesharing), time or route. In reviewing the directions and tools suggested below, readers should note that there is potential overlap with the preceding sections for provincial and regional authorities.

ENCOURAGE RESPONSIBLE, EFFICIENT DRIVING BEHAVIOUR

Provincial and territorial road authorities are responsible for driver education. They, as well as regional or municipal road departments, also gather information that could be provided to drivers to enable efficient decision-making behind the wheel.

Primary TDM tools:

- **DRIVER EDUCATION** – by requiring or encouraging inclusion of relevant issues in driving school curricula and driver testing, and by developing continuing education curriculum for driver training
- **REAL-TIME DRIVER INFORMATION** – by coordinating the gathering, synthesis and dissemination of information on road conditions and operations

MAKE RIDESHARING MORE ADVANTAGEOUS AND PRACTICAL

Drivers, particularly those who feel that driving is their only travel option, may be more likely to give attention to road authorities than to transit systems or non-governmental organizations with multimodal mandates. For this reason, road authorities can play valuable roles in promoting ridesharing as an option to driving alone.

Primary TDM tool:

- **RIDEMATCHING** – by providing and/or promoting ridematching services, perhaps in partnership with other agencies

Secondary TDM tool:

- **CARPOOL PARKING ARRANGEMENTS** – by arranging convenient meeting points for carpoolers to leave a car for the day, especially in rural or exurban environments

Complementary measures:

- **DEDICATED CARPOOL PARKING LOTS** – by planning, building and maintaining dedicated lots for carpoolers to meet up with partners

- **HIGH-OCCUPANCY VEHICLE LANES** – giving carpoolers a time and convenience incentive by converting regular traffic lanes to carpool lanes, or establishing carpool lanes on new or widened roads

3.1.6 Transit Authorities

In many communities, public transit is seen as the foremost strategic alternative to car use. Transit authorities including local governments, regional governments and regional transportation agencies are essential actors in attempts to influence travel behaviour.

MAKE TRANSIT MORE PRACTICAL AND ACCESSIBLE

While the practicality and accessibility of transit service are generally determined by the quality of transit supply (i.e. facilities and services) rather than by TDM strategies, certain aspects of transit service can be considered to lie in the realm of demand management.

Primary TDM tool:

- **INTEGRATION OF CYCLING AND TRANSIT** – by optimizing the ability of transit users and cyclists to combine both modes and travel more efficiently, through features such as bike parking at transit stops and stations, and policies or bike racks enabling cyclists to bring their bikes on transit vehicles

Secondary TDM tool:

- **PARK-AND-RIDE ARRANGEMENTS** - by arranging convenient locations for transit users to park their car and board transit, especially in rural or exurban environments

Complementary measures:

- **INCREASE TRANSIT ROUTE COVERAGE, SERVICE HOURS AND FREQUENCIES**
- **IMPROVE THE PLANNING AND DESIGN OF NEW DEVELOPMENT** – to ensure efficient transit routing, shorter walking or cycling distances from land uses to transit stops, and a higher quality pedestrian environment
- **INCREASE AMENITIES IN CUSTOMER WAITING AREAS** – by adding shelters, benches, shade trees and other features

REMOVE BARRIERS RELATED TO TRANSIT UNDERSTANDING AND INFORMATION

Particularly to non-users, transit systems can seem very complex and even intimidating. Planning a trip, paying a fare and navigating successfully can all pose a challenge.

Primary TDM tools:

- **REAL-TIME TRANSIT CUSTOMER INFORMATION** – to maximize user comfort and convenience, and minimize delay
- **ROUTE MAPS AND TRIP PLANNING** – to help transit users plan trips and navigate transfers, with particular attention to removing language barriers and using technology to maximize the availability of information when and where customers need it; face-to-face “travel training” can be particularly valuable for persons with disabilities, seniors and recent immigrants

Secondary TDM tool:

- **INDIVIDUALIZED MARKETING** – to proactively reach current and potentially interested transit users, identifying and removing barriers to greater transit use; initiatives can focus on geographical areas, or on key market segments that face barriers to understanding and information such as recent immigrants, aboriginals, elderly persons and youth

PROVIDE FINANCIAL INCENTIVES AND REMOVE FINANCIAL BARRIERS TO TRANSIT USE

Fare-related initiatives can provide incentives for transit use, but they can also remove significant barriers related to affordability for some users.

Primary TDM tools:

- **EMPLOYER TRANSIT PASS** – to reward and retain existing transit pass commuters, and to attract new ones through financial incentives and greater convenience
- **POST-SECONDARY UNIVERSAL TRANSIT PASS** – to make transit an affordable alternative for more students (both for commuting and other travel), and to guarantee the revenues required to invest in better on-campus service
- **TRANSIT FARE INCENTIVES** – to remove barriers to transit use faced by low-income users such as seniors or families on social assistance, and to boost transit use in low-demand periods (e.g. mid-days and Sundays)

Complementary measure:

- **SMARTCARD-BASED TRANSIT FARE SYSTEM** – a major step that creates numerous opportunities for targeted fare incentives based on passenger loyalty, demographics, affiliation, destination, location or time of travel; also creates opportunities for promotion and cross-incentives with retailers and other service providers (e.g. bikeshare or carshare)
- **INTEGRATED CROSS-BOUNDARY FARES** – in regions where customers transferring between transit systems must pay an additional fare, agreements to reduce or eliminate these extra costs can remove financial barriers for some users

SUPPORT PERCEPTION OF TRANSIT AS POPULAR AND CONGRUENT

The image of many transit systems is inconsistent with popularity and personal congruence. Particularly in conjunction with more tangible improvements to transit services and facilities, efforts to reshape individual perceptions of transit can be effective.

Primary TDM tool:

- **BRANDING, MESSAGING AND POSITIONING** – to reinforce the value of transit in the minds of potential users, and to create a stronger "top of mind" image of transit as a smart, desirable travel option

Secondary TDM tool:

- **SPECIAL EVENTS** – to encourage trial, attract attention and foster dialogue that can validate transit as an effective travel option

3.1.7 Parking Authorities

The supply and price of parking are known to play a key role in shaping travel demand. While much of the parking supply in communities is privately owned and operated, municipal governments and parking commissions control on-street parking and at least some off-street parking in communities.

MAKE SUSTAINABLE TRAVEL OPTIONS MORE ADVANTAGEOUS

Free parking, particularly for daily commuters, is a strong incentive for individuals to drive.

Primary TDM tool:

- **PARKING PRICING** – to improve the competitive position of non-driving travel options; relevance, effectiveness and potential public opposition are highly dependent on local market conditions

MAKE CYCLING MORE ADVANTAGEOUS AND PRACTICAL

A lack of secure, visible and convenient public bicycle parking can discourage cycling, particularly where the risk of theft is significant.

Primary TDM tool:

- **BICYCLE PARKING** – to improve the availability, security and convenience of bike parking at public destinations; key areas include downtown cores, main streets, and any other place where public car parking is provided

MAKE RIDESHARING MORE ADVANTAGEOUS AND PRACTICAL

Primary TDM tool:

- **CARPOOL PARKING ARRANGEMENTS –** by providing preferential public parking spaces for carpools

MAKE ALTERNATIVES TO CAR OWNERSHIP MORE ADVANTAGEOUS AND PRACTICAL

Primary TDM tool:

- **CARSHARING SERVICE SUPPORT** – by reserving spaces for carshare vehicles in public parking lots, to increase the visibility and attractiveness of carsharing services

3.1.8 Non-governmental Organizations

Non-governmental organizations (NGOs) can be important partners in the delivery of TDM strategies.

DELIVER INITIATIVES TO KEY AUDIENCES

NGOs can extend the reach of government, improving access to key market segments and creating effective channels for dialogue with other groups and individuals. They can make effective use of resources, due to lower-cost staff structures and volunteer involvement. They can be nimble in responding to new opportunities, and

do not face the same communication constraints as government agencies. Finally, they can add credibility to TDM communications for some audiences that may discount messages that come directly from government sources.

Primary TDM tools:

- **SPECIAL EVENTS** – to engage and involve key audiences, build public recognition, create partnerships, and encourage trial of new behaviours; NGOs are well suited to soliciting sponsorship, encouraging individual participation and media coverage
- **INDIVIDUALIZED MARKETING –** to proactively reach people who are interested but infrequent users of sustainable travel options, identifying and removing barriers to the options that interest them; NGOs can provide human resources and generate community spirit
- **CYCLING SKILLS TRAINING** – to help existing and potential cyclists ride with greater safety, comfort and confidence; NGOs can coordinate volunteer or paid instructors and promote participation
- **DRIVER EDUCATION** – to engage drivers and provide tools to help them save time, fuel and money; NGOs can deliver training sessions to audiences such as those in workplaces
- **EMPLOYER ENGAGEMENT** – to encourage workplaces to take advantage of TDM tools and services available to them and their employees, and to make changes in the workplace that support TDM objectives; NGOs can approach employers and facilitate uptake of TDM tools and services
- **WORKPLACE TRAVEL PLANNING SUPPORT** – to provide active assistance to employers in an ongoing process of planning, implementing and revising TDM measures; NGOs can work directly with employers in a consulting capacity, to guide and support workplace travel plan development
- **SCHOOL ENGAGEMENT –** to encourage schools to take advantage of TDM tools and services available to them, their employees and students, and to make changes within schools that support TDM objectives; NGOs can approach schools and facilitate a dialogue within school communities that leads to consensus on the need for action
- **SCHOOL TRAVEL PLANNING SUPPORT –** to provide active assistance to school communities in an ongoing process of planning, implementing and revising TDM measures; NGOs can work directly with school communities in a consulting capacity, to guide and support school travel plan development

Secondary TDM tool:

- **COMMUNITY TRANSPORTATION SERVICE PARTNERSHIPS** – to expand the travel options available to people who have few or none, particularly in small and rural communities; NGOs can coordinate, or even directly offer, access to transportation services for people in target market segments

3.2 Effective Strategies by Community Type

In this section, eight lenses help readers identify effective strategies to influence travel behaviour for different kinds of communities:

- **Communities with less TDM experience** (Section 3.2.1)
- **Communities with more TDM experience** (Section 3.2.2)
- **Large communities** (Section 3.2.3)
- **Small communities** (Section 3.2.4)
- **Rural communities** (Section 3.2.5)
- **Urban cores** (Section 3.2.6)
- **Suburban areas** (Section 3.2.7)
- **Communities with limited resources** (Section 3.2.8)

3.2.1 Communities with Less TDM Experience

Communities that have historically relied on supply-side measures to meet or influence travel demand are advised to take a methodical and pragmatic approach to developing a robust TDM program.

CREATE A STRONG TDM PROGRAM FOUNDATION

When preparing a concerted program to influence travel behaviour, the establishment of a relevant and effective communication framework is an early priority. Note that this does not imply limiting efforts to communications; rather, it is important to deliver subsequent

initiatives in a way that maximizes the engagement and receptiveness of key audiences. For this reason, market research into key audience characteristics (e.g. barriers and motivators among different groups) is an important element of a strong TDM program foundation.

Primary TDM tools:

- **BRANDING, MESSAGING AND POSITIONING** – to develop a positive program identity, effective messages to guide ongoing communications, and an understanding of how the competitive positions of travel options must shift to change individuals' behaviour
- **SPECIAL EVENTS** – to engage and involve key audiences, build public recognition, create partnerships, and encourage trial of new behaviours

Secondary TDM tool:

- **CENTRALIZED TRAVEL INFORMATION** – to provide more convenient travel information for users, establish a platform for social media communications, and attract partner support for a visible shared initiative

IMPLEMENT "QUICK WIN" TOOLS TO IMPROVE TRAVEL OPTIONS AND BUILD SUPPORT

In the early stages of a comprehensive TDM program, it can make sense to focus effort on "quick wins" that establish credibility, demonstrate success, and attract key partners and champions without incurring undue risk. It is also advisable to focus on practical changes that represent meaningful, if small, improvements to individuals' travel options.

Primary TDM tools:

- **ROUTE MAPS AND TRIP PLANNING** – for transit and active transportation
- **RIDEMATCHING** – to enable potential carpoolers to find each other and arrange rides
- **TRANSIT FARE INCENTIVES** – for seniors, students and families
- **INTEGRATION OF CYCLING AND TRANSIT** – through bike parking at transit stops and stations, and bike racks on buses
- **BICYCLE PARKING** – ensure adequate, secure bike parking at key public destinations, and encourage partners and stakeholders to do so at other destinations including workplaces

Secondary TDM tools:

- **DRIVER EDUCATION** – to engage drivers (establishing an inclusive tone) and provide tools to help them save time, fuel and money
- **EMPLOYER ENGAGEMENT** – to identify leaders in the business community, pilot test key measures and processes, and create initial "success stories" that attract further interest
- **EMPLOYER TRANSIT PASS** – to reward and retain existing riders, attract new riders, and provide an attractive service that employers can implement in workplaces
- **SCHOOL ENGAGEMENT** – to pilot test key measures and processes, and to create initial "success stories" that attract further interest
- **ROAD SAFETY SERVICES AROUND SCHOOLS** – to address fundamental safety-related barriers that inhibit more sustainable travel to school
- **WAYFINDING FOR WALKING AND CYCLING –** to visually reinforce the importance of active transportation, and to help new pedestrians and cyclists (including visitors to the community) navigate unfamiliar routes

3.2.2 Communities with More TDM Experience

Having developed a strong program foundation and tackled "quick wins", TDM stakeholders and partners can move on to more challenging measures.

IMPLEMENT MORE COMPLEX TOOLS THAT BUILD ON STRONG FOUNDATIONS

A number of initiatives to influence travel behaviour tend to be more complex and resource-intensive, or involve greater uncertainties and risks that imply greater degrees of experimentation.

Primary TDM tools:

- **INDIVIDUALIZED MARKETING –** a resource-intensive approach, but one with demonstrated effectiveness
- **REAL-TIME TRANSIT CUSTOMER INFORMATION** – to maximize user comfort and convenience, and minimize delay
- **REAL-TIME DRIVER INFORMATION** – by gathering, synthesizing and disseminating information on road conditions and operations

- **PARKING PRICING** – to improve the competitive position of non-driving travel options; relevance, effectiveness and potential public opposition are highly dependent on local market conditions
- **POST-SECONDARY UNIVERSAL TRANSIT PASS -** to make transit an affordable alternative for more students (both for commuting and other travel), and to guarantee the revenues required to invest in better on-campus service

Secondary TDM tools:

- **CYCLING SKILLS TRAINING** – to help existing and potential cyclists ride with greater safety, comfort and confidence
- **SHOWER, CHANGE AND LOCKER FACILITIES** – to encourage or require end-of-trip facilities for the comfort and convenience of active transportation users at workplaces, residential buildings and other travel destinations
- **WORKPLACE TRAVEL PLANNING SUPPORT** – to provide active assistance to employers in an ongoing process of planning, implementing and revising TDM measures
- **EMERGENCY RIDE HOME** – to assure non-driving commuters at participating workplaces of a quick, inexpensive trip home in case of personal or family need
- **SCHOOL TRAVEL PLANNING SUPPORT** – to provide active assistance to school communities in an ongoing process of planning, implementing and revising TDM measures

3.2.3 Large Communities

While large communities have fewer limitations in selecting relevant tools (and should generally consider a relatively large portfolio of measures), the following directions are worth considering as a reflection of either transportation system complexity or geographic size.

SUPPORT MORE COMPLEX TRAVEL DECISIONS

Larger communities have complicated road, transit and pathway systems, more possible destinations, and greater numbers of new residents – all of which combine to make travel decisions more challenging for a greater number of people.

Primary TDM tools:

- **INDIVIDUALIZED MARKETING** – an approach with demonstrated effectiveness that is better suited to communities with more complex, higher-quality travel options
- **REAL-TIME TRANSIT CUSTOMER INFORMATION** – to maximize user comfort and convenience, and minimize delay
- **REAL-TIME DRIVER INFORMATION** – to gather, synthesize and disseminate information on road conditions and operations

Secondary TDM tools:

- **CENTRALIZED TRAVEL INFORMATION** – to provide more convenient travel information for users, establish a platform for social media communications, and attract partner support for a visible shared initiative
- **WAYFINDING FOR WALKING AND CYCLING** – to help pedestrians and cyclists navigate unfamiliar routes

IMPROVE TRAVEL OPTIONS FOR LONG TRIPS

Larger communities also tend to have longer average trip distances, particularly for commuting to work. Certain TDM tools are suited to helping long-distance commuters get to work sustainably.

Primary TDM tools:

- **RIDEMATCHING** – to help potential carpoolers find partners more easily
- **INTEGRATION OF CYCLING AND TRANSIT** – to make it more practical to include cycling as part of a long trip made at least partly by transit
- **PARK-AND-RIDE ARRANGEMENTS -** by arranging convenient locations for transit users to park their car and board transit, especially in rural or exurban environments
- **CARPOOL PARKING ARRANGEMENTS –** by arranging convenient meeting points for carpoolers to leave a car for the day, especially in rural or exurban environments

Secondary TDM tool:

- **SHOWER, CHANGE AND LOCKER FACILITIES** – to encourage or require end-of-trip facilities for the comfort and convenience of active transportation users at workplaces, residential buildings and other travel destinations

Complementary measures:

- **VANPOOLING SUPPORT** – to help employers establish an internal service for employees to commute by vanpool, a mode well suited to long-distance commutes
- **DEDICATED CARPOOL PARKING LOTS –** by planning, building and maintaining dedicated lots for carpoolers to meet up with partners

3.2.4 Small Communities

In small communities, transit is less likely to be a practical option for many people. However, origins and destinations of many trips tend to be closer together, making active transportation more attractive; and ridesharing is often the only real alternative to driving alone for longer trips between communities.

MAKE ACTIVE TRANSPORTATION MORE ADVANTAGEOUS AND PRACTICAL

Smaller communities may not have developed effective support systems for people who want to travel by foot or bike. As a result, there are many possible directions to improve the attractiveness of active transportation.

Primary TDM tools:

- **SPECIAL EVENTS** – to encourage trial, attract attention and foster dialogue that can validate active transportation (particularly cycling) as a viable and effective travel option
- **ROUTE MAPS AND TRIP PLANNING** – to highlight opportunities for pedestrians and cyclists to make both recreational and utilitarian trips
- **CYCLING SKILLS TRAINING** – to help existing and potential cyclists ride with greater safety, comfort and confidence
- **BICYCLE PARKING** – provide at key public destinations, and encourage at other destinations
- **SCHOOL ENGAGEMENT** – to pilot test key measures and processes, and to create initial "success stories" that attract further interest

Secondary TDM tool:

- **BRANDING, MESSAGING AND POSITIONING** – to develop meaningful messages that promote a positive image for active transportation

MAKE RIDESHARING MORE ADVANTAGEOUS AND PRACTICAL

In most small communities, sharing rides with family and friends is a normal part of life—for trips between small communities, or between a small community and the surrounding rural area, carpooling is likely the main alternative to driving alone. A more deliberate approach to fostering carpooling can still yield benefits.

Primary TDM tool:

- **RIDEMATCHING** – to help potential carpoolers find partners more easily outside their immediate circle of family, neighbours, friends and co-workers

Secondary TDM tool:

- **CARPOOL PARKING ARRANGEMENTS** – by arranging convenient meeting points for carpoolers to leave a car for the day, especially for commuting between communities

Complementary measure:

- **DEDICATED CARPOOL PARKING LOTS** – by planning, building and maintaining dedicated lots for carpoolers to meet up with partners, especially for commuting between communities

3.2.5 Rural Communities

In many rural communities, conventional public transit is non-existent and active transportation is not a practical choice for most people.

MAKE RIDESHARING MORE ADVANTAGEOUS AND PRACTICAL

As with the preceding lens for small communities, there are tools to make ridesharing more practical.

Primary TDM tool:

- **RIDEMATCHING –** to help potential carpoolers find partners more easily outside their immediate circle of family, neighbours, friends and co-workers; may involve relatively simple (even manual) technologies

Secondary TDM tool:

- **CARPOOL PARKING ARRANGEMENTS** – by arranging convenient meeting points for carpoolers to leave a car for the day, especially for commuting from a rural area into a nearby larger community

IMPROVE PUBLIC TRANSPORTATION OPTIONS

Even in communities without formal public transit services, there are often transportation services run by school boards, health agencies, non-profit groups or even private businesses such as retirement homes. It may be possible to make more effective use of these resources by extending user eligibility outside the primary intended audience.

Primary TDM tool:

- **COMMUNITY TRANSPORTATION SERVICE PARTNERSHIPS** – to expand the travel options available to people who have few or none

ENCOURAGE RESPONSIBLE DRIVING BEHAVIOUR

Because personal cars are the primary mode of travel in rural communities and the only practical mode for most people, responsible driving is an important objective.

Primary TDM tool:

- **DRIVER EDUCATION** – to engage drivers and provide tools to help them save time, fuel and money

3.2.6 Urban Cores

The downtown core is the single largest traffic generator in most medium-sized and large cities in Canada, and peak period congestion is commonplace. Many cities are trying to intensify existing downtown development without investing heavily in new roads, and TDM initiatives can support this goal.

MAKE ALTERNATIVES TO CAR OWNERSHIP MORE ADVANTAGEOUS AND PRACTICAL

Downtowns tend to have many destinations in close proximity, quality transit service and walkable environments—and for these reasons, they have much lower rates of car ownership than other parts of a city. Cities are working to make living downtown more attractive and to increase the population of urban cores—while discouraging all those new residents from bringing cars with them.

Primary TDM tools:

- **INTEGRATION OF CYCLING AND TRANSIT** – to increase the practicality of reaching destinations outside the core, including workplaces, by a combination of transit and bicycle
- **BICYCLE PARKING** – to reduce the risk of bike theft through the provision of secure indoor bike parking in residential buildings
- **CARSHARING SERVICE SUPPORT** – to increase the visibility and attractiveness of carsharing services as an alternative to personal car ownership

ENCOURAGE SUSTAINABLE TRAVEL BY COMMUTERS

There is considerable overlap between this strategic direction and several others in this guide, but given the scale and impacts of commuting to downtown in most cities it is worth considering TDM measures that target downtown commuters as a key market segment.

Primary TDM tools:

- **RIDEMATCHING** – to help potential carpoolers find partners more easily outside their immediate circle of family, neighbours, friends and co-workers
- **PARKING PRICING** – to improve the competitive position of non-driving travel options; relevance, effectiveness and potential public opposition are highly dependent on local market conditions
- **BICYCLE PARKING** – to improve the availability, security and convenience of bike parking at workplaces
- **SHOWER, CHANGE AND LOCKER FACILITIES** – to encourage or require end-of-trip facilities for the comfort and convenience of active transportation users at workplaces
- **EMPLOYER ENGAGEMENT** – to encourage workplaces to take advantage of TDM tools and services available to them and their employees, and to make changes in the workplace that support TDM objectives
- **EMPLOYER TRANSIT PASS** – to reward and retain existing transit pass commuters, and to attract new ones through financial incentives and greater convenience
- **POST-SECONDARY UNIVERSAL TRANSIT PASS** – to make transit an affordable alternative for more students (both for commuting and other travel), and to guarantee the revenues required to invest in better on-campus service
- **EMERGENCY RIDE HOME** – to assure non-driving commuters at participating workplaces of a quick, inexpensive trip home in case of personal or family need

Secondary TDM tools:

- **SPECIAL EVENTS** – to engage and involve key audiences, build public recognition, create partnerships, and encourage trial of new behaviours
- **CYCLING SKILLS TRAINING** – to help existing and potential cyclists (identified and trained at their workplaces) ride with greater safety, comfort and confidence
- **WORKPLACE TRAVEL PLANNING SUPPORT** – to provide active assistance to employers in an ongoing process of planning, implementing and revising TDM measures

Complementary measures:

- **ACTIVE TRANSPORTATION NETWORKS** – to improve safe walking and cycling connections within crowded downtown cores, and connecting to routes approaching downtown from elsewhere in the city
- **EXPRESS TRANSIT SERVICES** – to provide faster, more direct transit service between downtown and outlying areas of the city

ENCOURAGE SUSTAINABLE TRAVEL BY NON-COMMUTERS

Lots of people do not live or work downtown, but travel there for other reasons. Unless other options are accessible and attractive, infrequent visitors are likely to drive downtown.

Primary TDM tools:

- **ROUTE MAPS AND TRIP PLANNING** – to make it easier for visitors to find their way by transit or active transportation
- **TRANSIT FARE INCENTIVES** – to make transit more affordable (versus the cost of gas and parking), especially for families travelling downtown for the day and for special events
- **WAYFINDING FOR WALKING AND CYCLING** – to help pedestrians and cyclists navigate unfamiliar routes
- **BICYCLE PARKING** – to improve the availability, security and convenience of bike parking in public areas and at major destinations
- **DESTINATION TRAVEL PLANNING SUPPORT** – to help partners (e.g. festival or sporting event organizers) implement measures that remove barriers to sustainable travel by their patrons and visitors

Secondary TDM tools:

- **SPECIAL EVENTS** – to motivate people to try travelling downtown without a car, through events such as street festivals on Car Free Day
- **PARKING PRICING** – to provide a meaningful disincentive for visitors to drive downtown; the challenge is doing so without dissuading their trips altogether

3.2.7 Suburban Areas

In suburban areas, significant land use changes and structural improvements to public transit and active transportation networks are required to bring about substantial shifts in travel behaviour, but they can take many years once underway. While those critical changes are being pursued, TDM provides an opportunity to make the best of an existing situation.

SUPPORT PERCEPTION OF SUSTAINABLE TRAVEL OPTIONS AS PRACTICAL AND CONGRUENT

Two of the biggest barriers faced by sustainable travel options in suburban areas are limited practicality and poor congruence—in other words, many people who rely on their cars for almost every trip simply don't see themselves as transit users, carpoolers, pedestrians or cyclists.

Primary TDM tools:

- **INDIVIDUALIZED MARKETING –** to proactively reach people who are interested but infrequent users of sustainable travel options, identifying and removing barriers to the options that interest them; initiatives can focus on geographical areas, or on key market segments that face barriers to understanding and information such as recent immigrants, aboriginals, elderly persons and youth
- **REAL-TIME TRANSIT CUSTOMER INFORMATION** – to remove transit users' uncertainty about transit waiting times, particularly at major hubs and in areas of low service frequencies where long waits are common
- **RIDEMATCHING** – to help potential carpoolers find partners more easily outside their immediate circle of family, neighbours, friends and co-workers
- **INTEGRATION OF CYCLING AND TRANSIT** – to increase the practicality of reaching destinations by a combination of transit and bicycle

- **EMPLOYER ENGAGEMENT** – to encourage workplaces to take advantage of TDM tools and services available to them and their employees, and to make changes in the workplace that support TDM objectives

Secondary TDM tools:

- **SPECIAL EVENTS** – to engage and involve key audiences, build public recognition, create partnerships, and encourage trial of new behaviours
- **BICYCLE PARKING** – to improve the availability, security and convenience of bike parking in public areas and at major destinations
- **EMERGENCY RIDE HOME** – to assure non-driving commuters at participating workplaces of a quick, inexpensive trip home in case of personal or family need

3.2.8 Communities with Limited Resources

For a variety of reasons, TDM programs—particularly in their early stages—frequently have access to limited financial and human resources, while they are simultaneously tasked with demonstrating success and building momentum in a new area.

IMPLEMENT LOW-COST TOOLS

One strategic direction when resources are limited is to focus on measures that require little funding to put in place.

Primary TDM tools:

- **RIDEMATCHING** – to help potential carpoolers find partners more easily outside their immediate circle of family, neighbours, friends and co-workers
- **DRIVER EDUCATION** – to engage drivers and provide tools to help them save time, fuel and money
- **BICYCLE PARKING** – to improve the availability, security and convenience of bike parking
- **INTEGRATION OF CYCLING AND TRANSIT** – to increase the practicality of reaching destinations by a combination of transit and bicycle
- **EMPLOYER ENGAGEMENT** – to encourage workplaces to take advantage of TDM tools and services available to them and their employees, and to make changes in the workplace that support TDM objectives
- **EMERGENCY RIDE HOME** – to assure non-driving commuters at participating workplaces of a quick, inexpensive trip home in case of personal or family need
- **SCHOOL ENGAGEMENT** – to encourage schools to take advantage of TDM tools and services available to them, their employees and students, and to make changes within schools that support TDM objectives

Secondary TDM tools:

- **PARK-AND-RIDE ARRANGEMENTS** – by arranging convenient locations for transit users to park their car and board transit, especially in rural or exurban environments
- **CARPOOL PARKING ARRANGEMENTS –** by arranging convenient meeting points for carpoolers to leave a car for the day, especially in rural or exurban environments; or by providing preferential public parking spaces for carpools

IMPLEMENT TOOLS THAT CAN RECOVER COSTS OR LEVERAGE PARTNER RESOURCES

Another direction when resources are limited is to focus on measures that may have greater costs, but that can either recover costs or generate significantly greater investment by other parties (thus adding value).

Primary TDM tools:

- **SPECIAL EVENTS** – non-profit organizations can coordinate special events efficiently, and can generate revenues through sponsorships to offset costs
- **CYCLING SKILLS TRAINING** – fees for training courses can largely offset operating costs, although resources may be required to establish the course offering
- **DESTINATION TRAVEL PLANNING SUPPORT** – advice and assistance can lead to significant investment by event organizers or facility managers

Secondary TDM tools:

- **WORKPLACE TRAVEL PLANNING SUPPORT** – advice and assistance can lead to significant investment by employers and property managers; the relative benefits are much greater for support provided to very large employers than to smaller ones
- **SCHOOL TRAVEL PLANNING SUPPORT** – advice and assistance can lead to significant investment by school boards and school administrations

3.3 Effective Strategies by Community Objective

In this section, ten lenses help readers identify effective strategies to influence travel behaviour in support of different community objectives:

- **Increase walking** (Section 3.3.1)
- **Increase cycling** (Section 3.3.2)
- **Increase public** transit use (Section 3.3.3)
- **Increase ridesharing** (Section 3.3.4)
- **Support development intensification** (Section 3.3.5)
- **Improve public health** (Section 3.3.6)
- **Improve community competitiveness** (Section 3.3.7)
- **Improve opportunity and independence for youth** Section 3.3.8)
- **Improve opportunity and equity for low-income residents** (Section 3.3.9)
- **Combat area-specific traffic or parking issues** (Section 3.3.10)

3.3.1 Increase Walking

Walking is the most affordable, equitable and environment-friendly mode of transportation, with real benefits for community health, safety and vibrancy.

MAKE WALKING MORE ADVANTAGEOUS AND PRACTICAL

While many barriers to walking are related to trip distances and inadequate facilities, some other barriers can be removed through TDM initiatives.

Primary TDM tools:

- **INDIVIDUALIZED MARKETING** – to identify and address highly individual barriers to walking
- **SCHOOL ENGAGEMENT** – to encourage schools to take advantage of TDM tools and services available to them, their employees and students, and to make changes within schools that support TDM objectives; walking to school is a frequent focus of school programs

Secondary TDM tools:

- **WAYFINDING FOR WALKING AND CYCLING** – to help pedestrians navigate unfamiliar routes
- **SCHOOL TRAVEL PLANNING SUPPORT** – to provide active assistance to school communities in an ongoing process of planning, implementing and revising TDM measures
- **ROAD SAFETY SERVICES AROUND SCHOOLS** – to address fundamental safety-related barriers that inhibit walking and other forms of sustainable travel to school

Complementary measure:

- **WALKING ROUTE IMPROVEMENTS** – to improve safe walking connections, particularly near major community destinations and across physical barriers

SUPPORT PERCEPTION OF WALKING AS POPULAR AND CONGRUENT

Walking can suffer from a lack of community profile, with promotional programs tending to support transit, cycling or ridesharing.

Primary TDM tools:

- **BRANDING, MESSAGING AND POSITIONING** – to develop meaningful messages that promote a positive image for walking
- **SPECIAL EVENTS** – to engage and involve key audiences, build public recognition, create partnerships, and encourage people to try walking for more trips

3.3.2 Increase Cycling

Cycling is another affordable, equitable, environment-friendly and healthy mode.

MAKE CYCLING MORE ADVANTAGEOUS AND PRACTICAL

Many barriers to cycling are related to the perceived convenience and safety of riding to everyday destinations.

Primary TDM tools:

- **INDIVIDUALIZED MARKETING** – to identify and address highly individual barriers to cycling
- **ROUTE MAPS AND TRIP PLANNING** – to help cyclists find safe, comfortable and direct routes
- **CYCLING SKILLS TRAINING** – to help existing and potential cyclists ride with greater safety, comfort and confidence

- **INTEGRATION OF CYCLING AND TRANSIT** – to increase the practicality of reaching destinations by a combination of transit and bicycle
- **BICYCLE PARKING** – to improve the availability, security and convenience of bike parking
- **SCHOOL ENGAGEMENT** – to encourage schools to take advantage of TDM tools and services available to them, their employees and students, and to make changes within schools that support TDM objectives; cycling to school can be a focus of school programs

Secondary TDM tools:

- **TAXATION OF EMPLOYER-PROVIDED TRANSPORTATION BENEFITS** – by amending relevant legislation to provide tax-exempt status for financial support offered to bicycle commuters
- **WAYFINDING FOR WALKING AND CYCLING** – to help pedestrians and cyclists navigate unfamiliar routes
- **SHOWER, CHANGE AND LOCKER FACILITIES** – to encourage or require end-of-trip facilities for the comfort and convenience of active transportation users at workplaces, residential buildings and other travel destinations
- **SCHOOL TRAVEL PLANNING SUPPORT** – to provide active assistance to school communities in an ongoing process of planning, implementing and revising TDM measures
- **ROAD SAFETY SERVICES AROUND SCHOOLS** – to address fundamental safety-related barriers that inhibit cycling and other forms of sustainable travel to school

Complementary measure:

- **CYCLING ROUTE IMPROVEMENTS** – to improve safe cycling connections, particularly near major community destinations and across physical barriers

SUPPORT PERCEPTION OF CYCLING AS POPULAR AND CONGRUENT

Despite a substantial increase in the public profile of cycling, some degree of social and personal resistance continues to exist.

Primary TDM tools:

- **BRANDING, MESSAGING AND POSITIONING** – to develop meaningful messages that promote a positive image for cycling
- **SPECIAL EVENTS** – to engage and involve key audiences, build public recognition, create partnerships, and encourage people to try cycling for more trips

Secondary TDM tools:

- **WAYFINDING FOR WALKING AND CYCLING** – to help pedestrians and cyclists navigate unfamiliar routes; identifying key routes and destinations validates cycling as a practical travel choice
- **BICYCLE PARKING** – to improve the availability, security and convenience of bike parking; placing racks in a prominent, visible location can raise the profile of cycling

3.3.3 Increase Public Transit Use

In many urban communities, transit is the primary strategic alternative to car use for trips that exceed the typical length for walking or cycling. Transit is also accessible to people of all ages and physical abilities, at all times of day and in all seasons.

MAKE TRANSIT MORE ADVANTAGEOUS AND PRACTICAL

Particularly among people who never or infrequently use transit, a lack of familiarity with transit systems and how to use them can be a barrier to use.

Primary TDM tools:

- **INDIVIDUALIZED MARKETING** – to identify and address highly individual barriers to transit use; particularly useful in conjunction with improvements to transit services or facilities, such as the introduction of a new rapid transit line or express route
- **REAL-TIME TRANSIT CUSTOMER INFORMATION** – to maximize user comfort and convenience, and minimize delay
- **ROUTE MAPS AND TRIP PLANNING** – to help transit users find the best route to their destination
- **PARKING PRICING** – to improve the competitive position of non-driving travel options; relevance, effectiveness and potential public opposition are highly dependent on local market conditions
- **EMPLOYER TRANSIT PASS** – to reward and retain existing transit pass commuters, and to attract new ones through financial incentives and greater convenience

- **POST-SECONDARY UNIVERSAL TRANSIT PASS –** to make transit an affordable alternative for more students (both for commuting and other travel), and to guarantee the revenues required to invest in better on-campus service

Secondary TDM tools:

- **TAXATION OF EMPLOYER-PROVIDED TRANSPORTATION BENEFITS** – to provide tax-exempt status through the federal *Income Tax Act*
- **TRANSIT FARE INCENTIVES –** to remove barriers to transit use faced by low-income users such as seniors or families on social assistance, and to boost transit use in low-demand periods (e.g. mid-days or Sundays)
- **INTEGRATION OF CYCLING AND TRANSIT** – to increase the practicality of reaching destinations by a combination of transit and bicycle
- **PARK-AND-RIDE ARRANGEMENTS** – by arranging convenient locations for transit users to park their car and board transit, especially in rural or exurban environments
- **EMERGENCY RIDE HOME –** to assure non-driving commuters at participating workplaces of a quick, inexpensive trip home in case of personal or family need

SUPPORT PERCEPTION OF TRANSIT AS POPULAR AND CONGRUENT

The poor public image of transit in some communities can be countered, at least in part, through TDM initiatives.

Primary TDM tools:

- **BRANDING, MESSAGING AND POSITIONING** – to develop meaningful messages that promote a positive image for public transit, in conjunction with a transit system's existing brand
- **SPECIAL EVENTS** – to engage and involve key audiences, build public recognition, create partnerships, and encourage people to try transit for more trips

Secondary TDM tools:

- **EMPLOYER ENGAGEMENT** – to encourage workplaces to take advantage of TDM tools and services available to them and their employees, and to make changes in the workplace that support TDM objectives
- **EMPLOYER TRANSIT PASS** – to reward and retain existing transit pass commuters, and to attract new ones through financial incentives and greater convenience; an employer's involvement can strengthen employees' congruence with the idea of holding a transit pass
- **POST-SECONDARY UNIVERSAL TRANSIT PASS –** to establish transit as a natural part of student life and make it an affordable alternative for more students

3.3.4 Increase Ridesharing

Ridesharing with family, friends and neighbours is commonplace; the goal of TDM initiatives is to make ridesharing, particularly formal carpool commuting (i.e. with people outside one's immediate circle), more attractive.

MAKE RIDESHARING MORE ADVANTAGEOUS AND PRACTICAL

As a routine behaviour, ridesharing is often perceived as difficult and inconvenient.

Primary TDM tools:

- **RIDEMATCHING –** to help potential carpoolers find partners more easily outside their immediate circle of family, neighbours, friends and co-workers
- **CARPOOL PARKING ARRANGEMENTS** – to provide convenient meeting points for carpoolers to leave a car for the day, especially in rural or exurban environments; also to provide preferential public parking spaces for carpools

Secondary TDM tool:

- **INDIVIDUALIZED MARKETING** – to identify and address highly individual barriers to ridesharing

Complementary measures:

- **DEDICATED CARPOOL PARKING LOTS –** by planning, building and maintaining dedicated lots for carpoolers to meet up with partners
- **HIGH-OCCUPANCY VEHICLE LANES** – giving carpoolers a time and convenience incentive by converting regular traffic lanes to carpool lanes, or establishing carpool lanes on new or widened roads

SUPPORT PERCEPTION OF RIDESHARING AS POPULAR AND CONGRUENT

Ridesharing can be seen by some people as a mode of last resort, rather than as a responsible choice.

Primary TDM tools:

- **BRANDING, MESSAGING AND POSITIONING** – to develop meaningful messages that promote a positive image for ridesharing
- **SPECIAL EVENTS** – to engage and involve key audiences, build public recognition, create partnerships, and encourage people to try ridesharing for more trips
- **CARPOOL PARKING ARRANGEMENTS** – visibility at destinations
- **HIGH-OCCUPANCY VEHICLE LANES** – to provide a visible reminder to all drivers of the desirability of carpooling

3.3.5 Support Development Intensification

Many communities are integrating the goal of intensification into their growth management and land use plans. However, this idea can face resistance from residents of existing neighbourhoods, as well as from prospective residents of new neighbourhoods who prefer the idea of a calm, low-density environment. Intensification also places additional burdens on infrastructure that is already under pressure in many instances.

REDUCE PARKING DEMANDS IN NEW COMMERCIAL DEVELOPMENTS

TDM initiatives can help reduce stakeholder concerns about the negative impacts of new commercial developments, especially infill projects. Reductions in expected parking demand that lead to reduced requirements for parking supply are an effective, self-enforcing outcome of TDM measures.

Primary TDM tools:

- **TRANSIT FARE INCENTIVES** – developer-subsidized transit passes for tenants of new commercial buildings can reduce parking supply requirements
- **BICYCLE PARKING** – adequate, secure and convenient bike parking can reduce parking supply requirements (sometimes codified in zoning by-laws)
- **SHOWER, CHANGE AND LOCKER FACILITIES** – adequate, secure and convenient end-of-trip facilities for the comfort and convenience of active transportation users at workplaces can reduce parking supply requirements
- **CARPOOL PARKING ARRANGEMENTS** – adequate, convenient carpool parking can reduce parking supply requirements
- **CARSHARING SERVICE SUPPORT** – provision of carsharing vehicle spaces for use by business tenants can reduce parking supply requirements
- **EMPLOYER ENGAGEMENT** – to encourage developers, property managers and tenants to take advantage of TDM tools and services available to them and their employees, and to make changes in the workplace that support TDM objectives
- **WORKPLACE TRAVEL PLANNING SUPPORT** – to provide active assistance to developers, property managers and tenants in an ongoing process of planning, implementing and revising TDM measures

REDUCE PARKING DEMANDS IN NEW RESIDENTIAL DEVELOPMENTS

TDM initiatives can help reduce stakeholder concerns about the negative impacts of new residential developments, especially infill projects. Reductions in expected parking demand that lead to reduced requirements for parking supply are an effective, self-enforcing outcome of TDM measures.

Primary TDM tools:

- **TRANSIT FARE INCENTIVES** – developer-subsidized transit passes for residential tenants or homeowners can reduce parking supply requirements
- **BICYCLE PARKING** – adequate, secure and convenient bike parking can reduce parking supply requirements in multi-family buildings (sometimes codified in zoning by-laws)
- **CARSHARING SERVICE SUPPORT** – provision of carsharing vehicle spaces for use by tenants and condominium owners can reduce parking supply requirements

Secondary TDM tool:

- **PARKING PRICING** – to permit, encourage or require the “unbundling” of parking space purchases from residential condominium units, to discourage overbuilding of parking spaces by the developer

Complementary measure:

- **EARLY SERVICE FUNDING BY DEVELOPERS** – to guarantee minimum revenue levels for transit services in operation prior to full occupancy of greenfield residential developments, so that transit service can be provided to occupants in earlier phases

3.3.6 Improve Public Health

Increasing attention is being paid to the links between urban form, transportation systems and public health. Travel behaviour influences health in two primary ways: air emissions from vehicles can lead to respiratory and other chronic illnesses, and the lack of physical activity associated with car dependence can lead to obesity, type 2 diabetes and poor heart health among other problems.

REDUCE AIR EMISSIONS FROM TRANSPORTATION

A modal shift from car driving to active transportation, transit use and ridesharing is one important way to reduce vehicular emissions. Others include simply driving less, driving in a fuel-efficient manner, and avoiding road congestion.

Primary TDM tools:

- **INDIVIDUALIZED MARKETING** – to engage interested individuals in a dialogue about their personal travel needs and habits, and about the benefits of trying new behaviours
- **REAL-TIME DRIVER INFORMATION** – to gather, synthesize and disseminate information on road conditions and operations; can be particularly valuable in minimizing emissions when unexpected road conditions occur
- **DRIVER EDUCATION** – to engage drivers and provide tools to help them save time, fuel and money

Secondary TDM tool:

- **VEHICLE SCRAPPAGE INCENTIVES** – to motivate the removal of older, more-polluting vehicles from active use; requires careful design to maximize return on investment

ENCOURAGE PHYSICAL ACTIVITY

See directions on INCREASE CYCLING and INCREASE WALKING earlier in this section for a wide range of TDM tools that enable and promote greater levels of physical activity.

Primary TDM tool:

- **INDIVIDUALIZED MARKETING** – to engage interested individuals in a dialogue about their personal travel needs and habits, and about the health benefits of trying new behaviours; can be customized to address the needs and interests of key market segments including children, seniors and sedentary adults

3.3.7 Improve Community Competitiveness

A common community objective is to become as attractive as possible to prospective new residents and businesses. The ability to attract knowledge workers, young families and the "creative class" is often seen as a precursor to attracting new investment and economic growth.

IMPROVE CIVIC SELF-IMAGE

While the transformation of a community's image may be best described as a mysterious process, the collective self-image of that community's residents certainly plays a leading role. Transportation is fundamentally linked to issues of personal choice and family lifestyle, and progress toward sustainable transportation can encourage residents to view their community as green, healthy and progressive.

Primary TDM tools:

- **BRANDING, MESSAGING AND POSITIONING** – to develop meaningful messages that promote healthy, sustainable lifestyles and the benefits of travel choices for society, economy and the environment
- **SPECIAL EVENTS** – to engage and involve key audiences, generate enthusiasm and celebrate successes while also creating partnerships and encouraging trial of new behaviours
- **INDIVIDUALIZED MARKETING** – to engage interested individuals in a dialogue about their personal travel needs and habits, and about the health benefits of trying new behaviours; can involve community organizations in the delivery of positive messages to a variety of audiences

MAKE THE COMMUNITY MORE ATTRACTIVE TO EMPLOYERS

TDM programs can be one more factor among the many attributes that prospective business investors look for in a community. Employers would look positively on the fact that local organizations are ready and able to help new workers (who could be relocating from elsewhere) find healthy, efficient and sustainable ways of getting to work.

Primary TDM tools:

- **EMPLOYER ENGAGEMENT** – to encourage workplaces to take advantage of TDM tools and services available to them and their employees, and to make changes in the workplace that support TDM objectives
- **WORKPLACE TRAVEL PLANNING SUPPORT** – to provide active assistance to employers in an ongoing process of planning, implementing and revising TDM measures

Secondary TDM tools:

- **RIDEMATCHING –** to help potential carpoolers find partners more easily outside their immediate circle of family, neighbours, friends and co-workers
- **EMPLOYER TRANSIT PASS** – to reward and retain existing transit pass commuters, and to attract new ones through financial incentives and greater convenience
- **EMERGENCY RIDE HOME –** to assure non-driving commuters at participating workplaces of a quick, inexpensive trip home in case of personal or family need

3.3.8 Improve Opportunity and Independence for Youth

The goals of retaining and attracting young adults, and maximizing their employment, educational, social and recreational opportunities, are common among communities.

MAKE CYCLING AND TRANSIT MORE ADVANTAGEOUS AND PRACTICAL

Young adults are the population segment that typically makes the greatest use of active transportation and public transit to meet daily travel needs, so measures to make those travel choices more attractive and beneficial can be very helpful.

Primary TDM tools:

- **INDIVIDUALIZED MARKETING** – to engage interested individuals in a dialogue about their personal travel needs and habits, and about the benefits of trying new behaviours; can be targeted to youth through channels such as secondary schools and post-secondary institutions
- **CYCLING SKILLS TRAINING** – to help existing and potential cyclists ride with greater safety, comfort and confidence
- **SCHOOL ENGAGEMENT** – to encourage secondary schools to take advantage of TDM tools and services available to them, their employees and students, and to make changes within schools that support TDM objectives
- **SCHOOL TRAVEL PLANNING SUPPORT** – to provide active assistance to school communities in an ongoing process of planning, implementing and revising TDM measures
- **ROAD SAFETY SERVICES AROUND SCHOOLS** – to address fundamental safety-related barriers that inhibit more sustainable travel to school

Secondary TDM tools:

- **INTEGRATION OF CYCLING AND TRANSIT** – to increase the practicality of reaching destinations by a combination of transit and bicycle
- **WAYFINDING FOR WALKING AND CYCLING** – to help pedestrians and cyclists navigate unfamiliar routes

Complementary measures:

- **SCHOOL-FOCUSED PEAK PERIOD TRANSIT ROUTES** – to improve travel options for secondary school students and help them reach after-school employment and recreational opportunities

3.3.9 Improve Opportunity and Equity for Low-income Residents

For some low-income residents, the costs of car ownership, maintenance and operation can consume a disproportionate amount of their financial resources. For others who simply cannot afford a car or choose not to own one, meeting daily needs without a car can be time-consuming and logistically challenging.

MAKE CYCLING, TRANSIT AND RIDESHARING MORE ADVANTAGEOUS AND PRACTICAL

TDM measures can help make alternatives to car use as functional and attractive as possible for low-income residents.

Primary TDM tools:

- **INDIVIDUALIZED MARKETING** – to engage interested individuals in a dialogue about their personal travel needs and habits, and about the benefits of trying new behaviours
- **RIDEMATCHING –** to help potential carpoolers find partners more easily outside their immediate circle of family, neighbours, friends and co-workers
- **CYCLING SKILLS TRAINING** – to help existing and potential cyclists ride with greater safety, comfort and confidence; can be extended to include bicycle maintenance skills and services such as shared tools
- **TRANSIT FARE INCENTIVES** – to remove barriers to transit use faced by low-income users such as seniors or families on social assistance

Secondary TDM tool:

- **COMMUNITY TRANSPORTATION SERVICE PARTNERSHIPS** – to expand the travel options available to people who have few or none, particularly in small or rural communities that do not have conventional transit service

3.3.10 Combat Area-specific Traffic or Parking Issues

Consideration of TDM measures is often based in a desire to mitigate the impacts of excessive traffic or parking demands. While it is certainly possible to do so, it is important to emphasize that it requires persistence and determination, in probable addition to a willingness to take risks and use disincentives.

ADDRESS TRAFFIC OR PARKING ISSUES IN EMPLOYMENT AREAS

The habitual nature of commuting, and the potential for employers to collaborate on TDM measures with governments and other partners, make employment areas the most common focus of TDM programs.

Primary TDM tools:

- **INDIVIDUALIZED MARKETING** – to engage interested individuals in a dialogue about their personal travel needs and habits, and about the benefits of trying new behaviours; can be delivered in workplace environments
- **RIDEMATCHING –** to help potential carpoolers find partners more easily outside their immediate circle of family, neighbours, friends and co-workers
- **PARKING PRICING** – to improve the competitive position of non-driving travel options; relevance, effectiveness and potential public opposition are highly dependent on local market conditions
- **EMPLOYER ENGAGEMENT** – to encourage workplaces to take advantage of TDM tools and services available to them and their employees, and to make changes in the workplace that support TDM objectives
- **WORKPLACE TRAVEL PLANNING SUPPORT** – to provide active assistance to employers in an ongoing process of planning, implementing and revising TDM measures
- **EMPLOYER TRANSIT PASS** – to reward and retain existing transit pass commuters, and to attract new ones through financial incentives and greater convenience

Secondary TDM tool:

- **REAL-TIME DRIVER INFORMATION** – to gather, synthesize and disseminate information on road conditions and operations; can be particularly valuable in actively managing congestion levels on major highways, and in helping drivers find parking facilities with available spaces

ADDRESS TRAFFIC OR PARKING ISSUES AT POST-SECONDARY INSTITUTIONS

Universities and colleges, many of which have rapidly growing student and worker populations while they struggle with dwindling vacant lands and limited funds for building parking facilities, are often TDM leaders within communities.

Primary TDM tools:

- **INDIVIDUALIZED MARKETING** – to engage interested individuals in a dialogue about their personal travel needs and habits, and about the benefits of

trying new behaviours; can be delivered in residences, to faculty and staff, and among the general student population particularly early in the academic year

- **RIDEMATCHING** – to help potential carpoolers find partners more easily outside their immediate circle of family, neighbours, friends and co-workers
- **PARKING PRICING** – to improve the competitive position of non-driving travel options; relevance, effectiveness and potential public opposition are highly dependent on campus conditions
- **CARPOOL PARKING ARRANGEMENTS** – to provide preferential parking spaces for carpoolers; can be very effective on large campuses with long walking distances from parking lots to major destinations
- **WORKPLACE TRAVEL PLANNING SUPPORT –** to provide active assistance to post-secondary institutions in an ongoing process of planning, implementing and revising TDM measures
- **EMPLOYER TRANSIT PASS** – to reward and retain existing transit pass commuters, and to attract new ones through financial incentives and greater convenience
- **POST-SECONDARY UNIVERSAL TRANSIT PASS -** to make transit an affordable alternative for more students (both for commuting and other travel), and to guarantee the revenues required to invest in better on-campus service

ADDRESS TRAFFIC OR PARKING ISSUES AROUND SCHOOLS

Concerns about traffic congestion, unsafe road conditions and limited parking capacity are among the common motivators for schools to examine TDM measures like school travel plans.

Primary TDM tools:

- **TRANSIT FARE INCENTIVES** – to make transit more affordable and attractive; can include reduced-cost student passes good for the academic year
- **SCHOOL ENGAGEMENT** – to encourage schools to take advantage of TDM tools and services available to them, their employees and students, and to make changes within schools that support TDM objectives
- **SCHOOL TRAVEL PLANNING SUPPORT** – to provide active assistance to school communities in an ongoing process of planning, implementing and revising TDM measures
- **ROAD SAFETY SERVICES AROUND SCHOOLS** – to address fundamental safety-related barriers that inhibit more sustainable travel to school

Secondary TDM tools:

- **CYCLING SKILLS TRAINING** – to help existing and potential cyclists ride with greater safety, comfort and confidence; can be delivered in-class or through extra-curricular programs
- **BICYCLE PARKING** – to improve the availability, security and convenience of bike parking

Complementary measure:

- **SCHOOL-FOCUSED PEAK PERIOD TRANSIT ROUTES** – to improve travel options for secondary students and help them reach after-school employment and recreational opportunities

ADDRESS OTHER TRAFFIC OR PARKING ISSUES IN THE COMMUNITY

Non-work, non-school trips make up a substantial proportion of travel within a community, and include travel to non-routine destinations or social, recreational, shopping and personal business purposes.

Primary TDM tools:

- **SPECIAL EVENTS** – to engage and involve key audiences, build public recognition, create partnerships, and encourage trial of new behaviours; can include campaigns encouraging residents to support local merchants, or “open street” events providing an opportunity for residents and merchants to enjoy a car-free environment
- **INDIVIDUALIZED MARKETING** – to engage interested individuals in a dialogue about their personal travel needs and habits, and about the benefits of trying new behaviours; delivery direct to families can effectively address home-based travel and support objectives such as promoting cycling and walking for short trips
- **DESTINATION TRAVEL PLANNING SUPPORT** – to help partners (e.g. festival or sporting event organizers) implement measures that remove barriers to sustainable travel by their patrons and visitors

4. Conclusion

The following paragraphs offer some concluding perspectives on this guide.

Behaviour change is a necessary response to Canada's current mobility challenges. Fossil fuel dependence, climate change, financial deficits, chronic congestion and high levels of physical inactivity cannot be addressed solely (or even primarily) through technological or road-based, supply-side solutions. Tailoring travel behaviour to fit Canada's objectives and constraints must be a priority.

Social marketing offers an effective, holistic approach to influencing behaviour. It emphasizes the need to identify and understand key market segments, to consider multiple ways that a desired behaviour can be made more attractive relative to existing behaviours, and to implement actions that directly influence the decisions of individuals as well as those that influence the environments in which those decisions are made.

In efforts by governments and their partners to influence travel behaviour, TDM is a vital complement to changes in land use and transportation supply. Not only do TDM measures influence people in ways that changes to the physical environment cannot, but the combination of mutually supportive TDM and physical measures can be particularly effective.

Descriptive information on activity levels, barriers and motivators within key travel market segments is essential to successfully influencing behaviour. Properly conducted, social marketing can be both efficient and effective because it promotes targeting the right measures at the right audiences. To do so, a clear understanding of those market segments—who and where they are, what their behavioural barriers and motivators are, and how to reach them—is essential. Local market research is fundamental to the development of this understanding.

The practical advice in this guide provides a useful and balanced starting point. This guide attempts to find a workable compromise between social marketing theory (which encourages the consideration of each market as unique, a laudable but frequently impractical goal) and a one-size-fits-all approach to TDM. It does so by recommending TDM measures that are most likely to be relevant and appropriate for a range of different contexts and objectives. In other words, it proposes a balance between considering each community as completely unique, and considering all communities as the same.

Readers are encouraged to carefully apply this guide in combination with local knowledge and experience. The advice in these pages is suggestive rather than prescriptive. It is intended to help readers develop a short list of TDM strategies and tools as the basis for further consultation and analysis. Readers must consider the relevance and applicability of each suggested tool to select those that are appropriate for their own circumstances, priorities and resources.

Readers are encouraged to seek other insights. Many published guides, case studies and research reports (see **Additional Resources**) offer astute guidance on diverse aspects of TDM planning and implementation.

Readers are encouraged to consider the keys to success discussed in Section 1.2.3. Achieving sustainable success in TDM requires organizational alignment, enduring partnerships, a multi-pronged approach, persistence, and a willingness to both innovate and learn from experience.