

Urban Transportation Indicators – Fourth Survey

This report provides a brief summary of the results of the fourth installment of the TAC Urban Transportation Indicators (UTI) Survey, based on 2006 data. The UTI Survey series was initiated by the Urban Transportation Council of the Transportation Association of Canada (TAC) in 1994 to assess the progress by Canadian urban areas on key sustainable transportation initiatives. The survey program’s goal is to provide consistent transportation and related data for Canadian urban areas whereby trends can be analysed both among urban areas and over time. These initiatives are based on the 13 decision-making principles towards a desirable future transportation system and supporting land use identified in TAC’s New Vision for Urban Transportation (see www.tac-atc.ca/english/resourcecentre/readingroom/pdf/urban.pdf). The survey has grown into one of the most significant sources of data on urban transportation in Canada.

The UTI survey is only possible through the generous contributions of technical resources from municipalities throughout Canada, and the list of participating Census Metropolitan Areas (CMAs) has grown significantly with each edition. In total, 31 out of 33 CMAs agreed to participate in the 2006 survey. To complement information obtained directly from individual municipalities, data sources also include Statistics Canada’s population and employment, journey-to-work, and vehicle registration data; and fuel sales data from Kent Marketing; and annual ridership and budget figures for transit providers from Canadian Urban Transit Association (CUTA).

	CMA Population	Number of CMAs
Group A	More than 2,000,000	3
Group B	500,000 to 2,000,000	6
Group C	190,000 to 500,000	9
Group D	Less than 190,000	15



Photos: IBI Group

As this survey now covers significantly more CMAs than the previous iterations, throughout this report, urban areas are grouped by their CMA population according to the table below in order to help broadly discern patterns that may vary with these different CMA sizes.

The Role of Urban Areas Continues to Increase

Increasingly, Canada is becoming more urbanized and Census data shows this trend continues at a steady pace, and it is particularly pronounced in the larger CMAs. As of 2006, there were approximately 33.6 million people residing in Canada of which 21.5 million (64%) resided in the 33 CMAs covered by this survey. Similarly, 10.3 million jobs were located in these 33 CMAs. Therefore, understanding transportation trends and opportunities in urban areas is critical to achieving progress on initiatives related to sustainable transportation, and transportation performance in general.

Changes in Urban Structure are Mixed

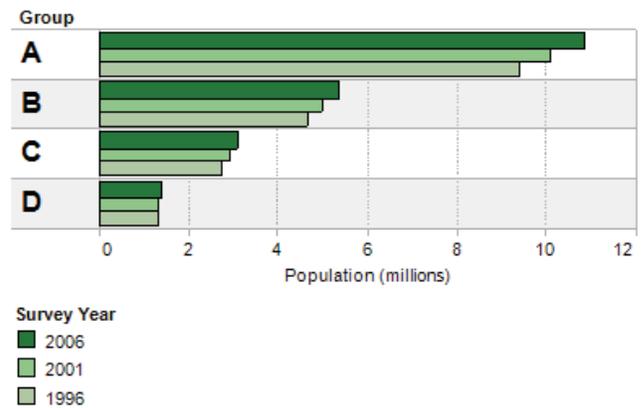
Many transportation trends are influenced by land use patterns such as density and mix of uses. The TAC UTI Survey tracks urban structure trends at a broad level using the geographic areas defined.

Between 2001 and 2006, population increased in all but two urban areas: Saguenay and Saint John. Similarly, an increase in employment was observed in all of the regions in the survey. Notwithstanding that the defined EUA area was held constant between 2001 and 2006 for comparison purposes, it would appear that urban densities are increasing. The only exceptions are Sherbrooke, Kingston and Thunder Bay in Group D, where population densities have decreased. In addition, population density within the EUA is increasing faster than the density in the urban fringe (i.e., the rest of the CMA) in large and medium-sized

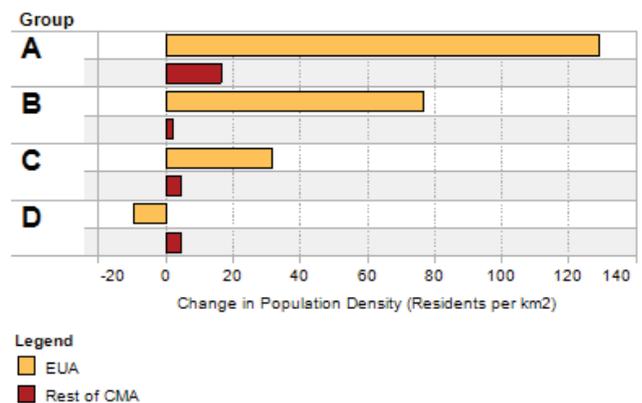
Region: The region is defined as the Statistics Canada Census Metropolitan Area (CMA).

Existing Urbanized Area (EUA): The highest proportion of questions in the UTI survey is with respect to the EUA. To isolate urban areas, the EUAs comprise the census tracts where more than 33% of land area falls within Statistics Canada's urbanized area definition.

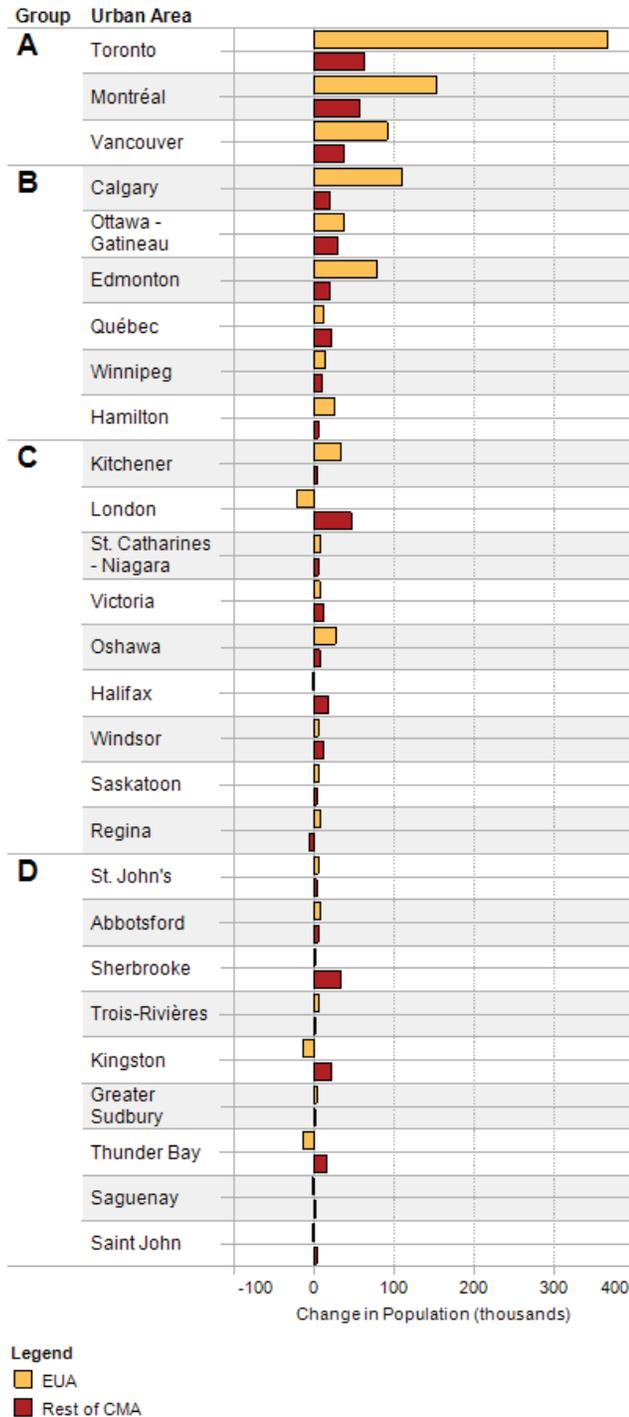
Central Business District (CBD) and Central Area (CA): The CBD is the area in the region with the highest historic concentration of employment. The CA is typically a mixed-used area with high concentration of employment and residential population that includes the CBD, and is generally two to three times larger than the CBD.



EUA Population Density by Urban Area Group, 1996-2006



Change in Population Density per Group, 2001-2006



Changes in Population of EUA versus Rest of CMA, 2001-2006

urban areas. Overall, these trends are a signal that urban sprawl is slowing, which is positive from a transportation perspective in that density tends to improve the viability for transit, walking and cycling trips.

Within each urban area, the patterns vary and trends are less clear. For example, the proportion of employment located within the CBD is declining in most areas suggesting a decentralization of employment. Conversely, several of the larger urban areas saw an increase in population in their central areas between 2001 and 2006. In Toronto and Vancouver, as well as Victoria and Regina, the rate of growth in population in the central area has actually been higher than in the CMA as a whole. However, most of CMAs show the opposite trend: a greater percentage growth in the rest of CMA than in the central area.

The Impacts of Automobile Use are Still Profound

As can be expected, transportation activity has increased with population and employment growth. Overall, since the previous survey, people living in Canada's urban areas own more vehicles, travel further to work, and consume more fuel for transportation. Daily fuel use and light-duty vehicles per capita have increased since 2001. In 2006, urban area residents burned approximately 58 billion litres of fuel, some 6 billion litres more than in 2001. This data suggests that for the 33 urban regions covered by this study, total transportation-related GHG emissions are now 44.1 percent above 1990 levels. Thus, addressing transportation sustainability is crucial to dealing with the the various GHG emission reduction targets being set by municipalities, provinces, and the Canadian federal government.

On the positive side, it appears that the rate of increase is slowing and there are signs that more Canadians are switching to other modes of travel for specific trip purposes. For example, almost

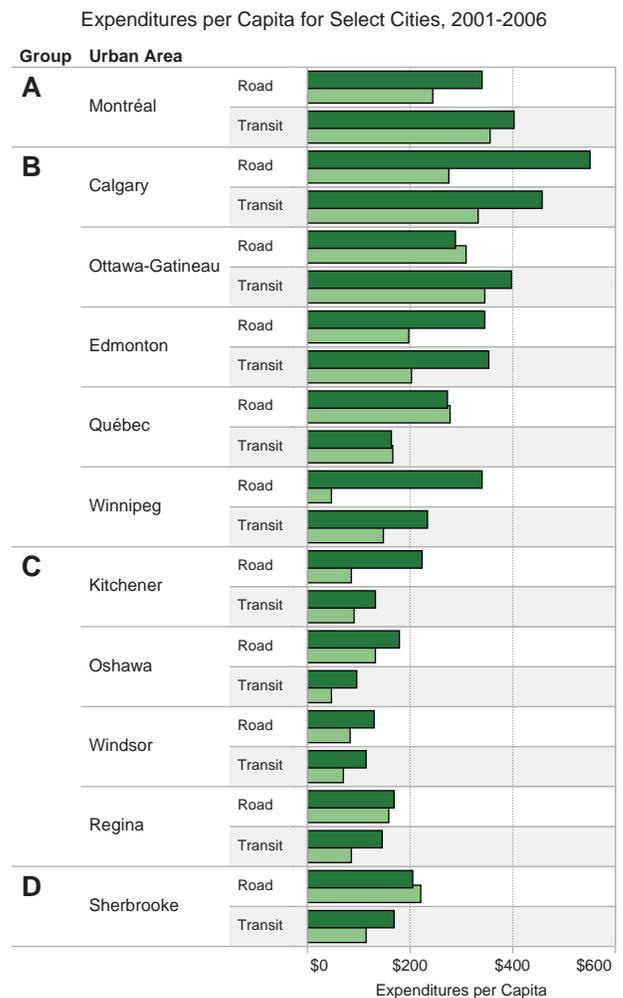
half of the urban areas in the survey saw an increase in the percentage of journey-to-work transit mode shares. Similarly, most cities saw an increase in the use of cycling modes for work trips, although walk mode shares decreased. The challenge, however, is that these alternative modes continue to represent a small proportion of total travel. Thus, these are large changes relatively speaking, but they continue to have a small influence on the absolute impacts of auto travel on energy use and emissions.

Most Urban Areas are Investing in Transit

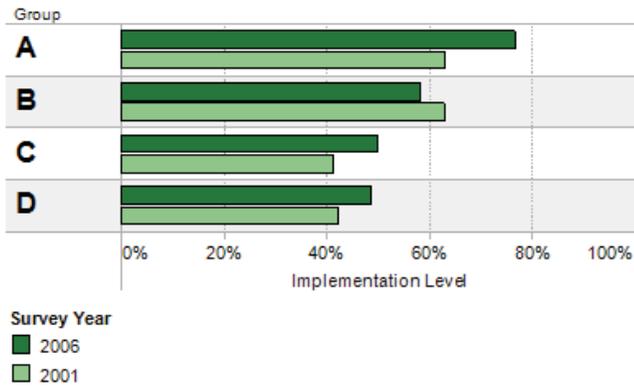
Trends in transportation supply are somewhat difficult to track as cities tend to embark on major infrastructure projects sporadically. Nevertheless, most urban areas reported increases in investment levels for both roads and transit. The trend in most areas has been an increase in the absolute capital and operating expenditures on roads. However, this may not necessarily translate into an increase in the supply of roads on a per capita basis. In other words, the investment levels in roads may not have kept pace with population growth. This trend could be in part attributed to substantial increases in construction costs between 2001 and 2006, but it is also a sign that urban areas are refocusing attention on transit and other non-automobile investments. This is confirmed by the UTI Survey, which shows that, in contrast to road investments, most urban areas increased their per capita investment levels in transit.

	2001	2006
Light-Duty Vehicles per Capita	0.51	0.55
Fuel Use per Capita (L/Day)	2.79	2.96
Annual Transit Trips per Capita	87.7	90.3
Work Trip Transit Mode Shares	14.8%	15.2%
Work Trip Walk Mode Shares	5.7%	5.7%
Work Trip Cycle Mode Shares	1.3%	1.4%

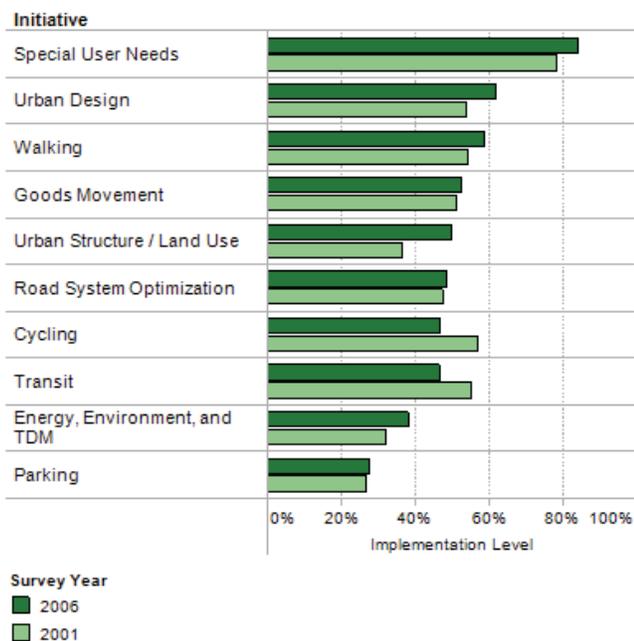
Summary of Automobile and Non-Automobile Indicators, 2001-2006



Road and Transit Expenditures per Capita, 2001-2006



Implementation Level for Unchanged Questions, 2001-2006



Average Implementation Levels by Category, 2001-2006

Policy Changes are Encouraging

Notwithstanding the fact that actual transportation trends are not all good news stories, such as the continued increase in the transportation-related per capita consumption of fossil fuels, there are signs that policies to encourage reversing these trends are increasingly being established. In particular, there have been positive developments in several areas of land use and transportation initiatives. For example, ten urban areas reported having implemented greenhouse gas emission targets throughout their urban areas in 2006 compared to just three in the previous survey. Similarly, many urban areas reported a higher degree of implementation of initiatives related to land use such as implementing controls to limit development beyond designated urban boundaries.

Although the responses to questions on land use and transportation initiatives are subjective and dependent on the perspective of the survey respondent, one of the trends that emerges from this fourth survey is that policy progress is most positive for the larger and the smaller urban areas, whereas progress in medium-sized areas has been regressing. This difference is most apparent in indicators related to walking, urban design, land use, road system optimization, energy and the environment.

Sustainability Scorecard

One of the original motivations for conducting the TAC Urban Indicators Survey was to track progress on the *New Vision for Urban Transportation* (TAC, 1998). This vision identified 13 decision-making principles that point the way to a more sustainable future and provide a basis for tracking progress with respect to sustainable transportation.

1. Plan for increased densities and more mixed land use

Within existing urban areas, residential densities increased between 2001 and 2006 and the ratio of growth within the EUA is much higher than in the rest of the region (urban fringe). Most central areas now exhibit a relatively even balance of population and jobs.

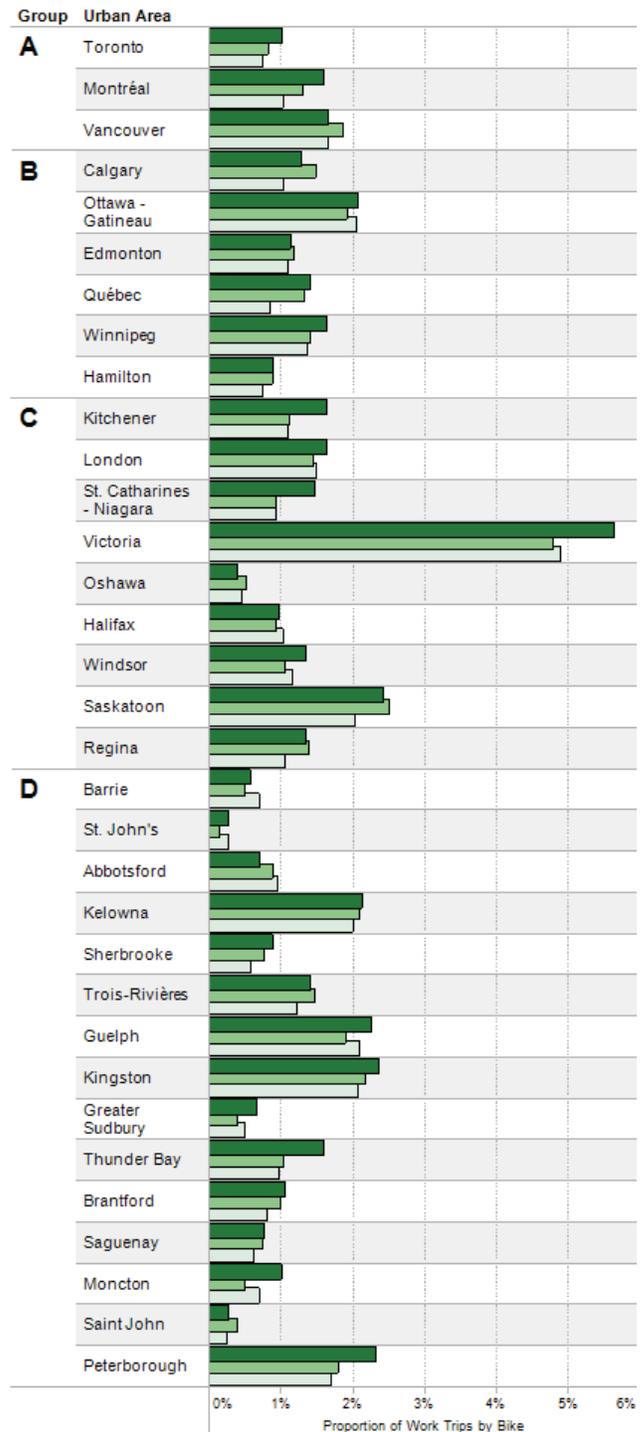
2. Promote walking as the preferred mode for person trips

Between 1996 and 2001, walk mode shares for work trips decreased slightly from 5.8% to 5.7%. In 2006, this figure remained steady at 5.7%. An increase or stabilization of work trip walking mode shares was seen by 20 out of 33 urban areas between 2001 and 2006.

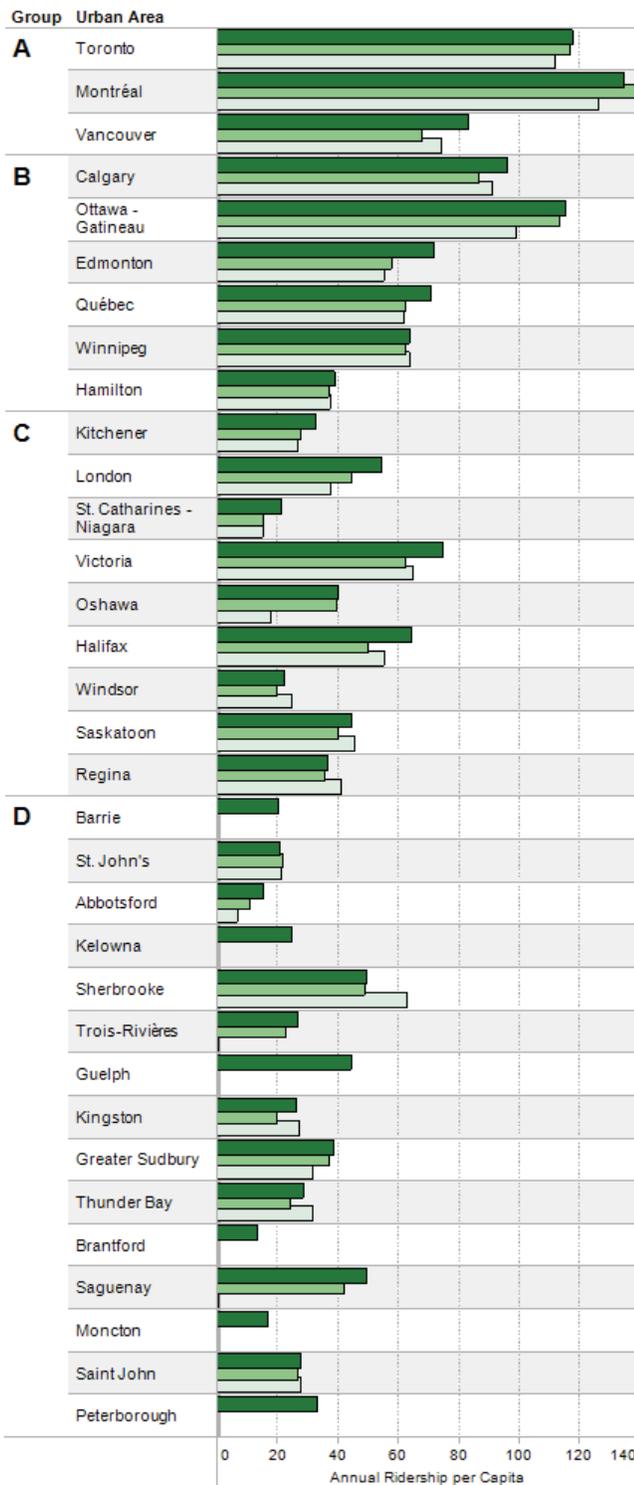
3. Increase opportunities for cycling as an optional mode of travel

Journey-to-work mode shares for cycling have been steadily increasing since 1996 and are now at 1.4% of all trips. The highest use of cycling occurs in Victoria, which has a 5.7% modal share for work trips.

The rate of expansion of dedicated cycling facilities is difficult to track due to inconsistencies in defining such facilities, but one encouraging trend is that many smaller urban areas have been very aggressive at expanding facilities. In several urban areas, the length of on-street bikeways per lane kilometre of roadway is between five and ten percent.



CMA Journey-to-Work Cycling Mode Shares, 1996-2006



Annual Transit Rides per Capita, 1996-2006

4. Provide higher quality transit service to increase its attractiveness relative to the private automobile

Use of transit continues to grow with all urban areas seeing an increase in transit ridership per capita, which was not the case for the previous survey. The largest percentage changes in transit use occurred in small to medium-sized urban areas with many increases around 10-20%.

Transit mode shares for work trips also increased since the last survey, and averaged close to 15.2% in 2006. Despite these positive changes, the prevalence of the automobile continues to grow.

5. Create an environment in which automobiles can play a more balanced role

In areas reporting detailed mode-share data, automobiles accounted for approximately 70% of total peak-period trips. Outside central areas, sustainable travel modes—walking, cycling, and transit—have been used for only a small portion of daily trips; they appear to remain unattractive or not cost- or time-competitive compared with automobile use.

6. Plan parking supply and price to be in balance with walking, cycling, transit and auto priorities

Most regions were able to provide very limited data on parking supply, and trends from the previous survey were difficult to track. From a policy perspective, there has been significant progress with many urban areas now implementing parking management plans. The lack of parking pricing throughout urban areas remains an issue from a travel demand management perspective.

7. Improve the efficiency of the urban goods distribution system

Data on urban goods movement are sparse and limit the ability to assess efficiency.

8. Promote inter-modal and inter-line connections

Only the three largest regions and a few others reported having fully implemented the development of inter-modal freight terminals. On the passenger side, the lack of significant progress in improving transit, cycling, and walking mode shares may indicate that inter-modal connections are not being improved.

9. Promote new technologies that improve urban mobility and protect the environment

Emissions

Emissions control technologies are continuing to improve. Since the last survey, regions that had indicated a low degree in deploying initiatives to encourage the use of alternative fuels and use of fuel-efficient vehicles in municipal fleets are now reporting significant improvements.

Energy

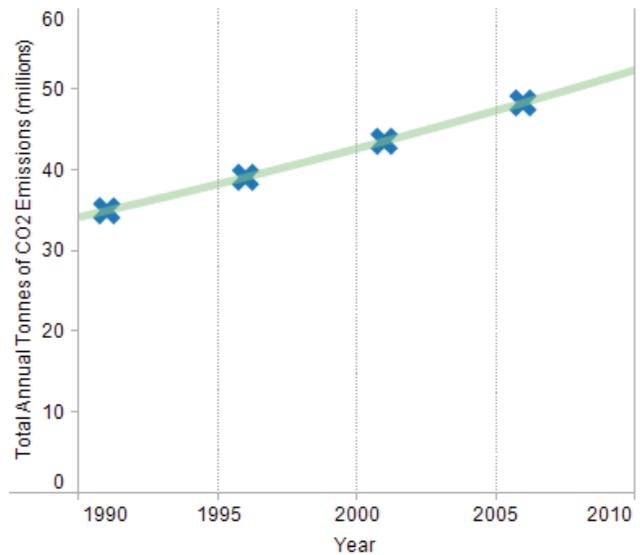
In terms of energy use, the results are very disappointing with almost every region seeing an increase in per capita fuel consumption, which translates into increased per capita GHG emissions. This is largely due to increases in average trip lengths.

10. Optimize the use of existing transportation systems to move people and goods

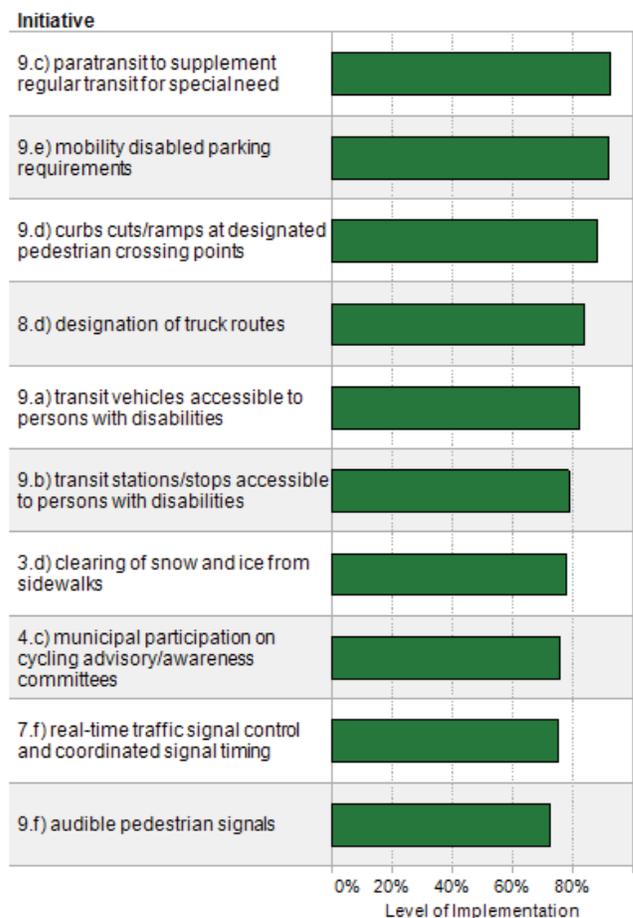
Reporting on initiatives related to optimization of existing infrastructure was similar to previous survey. Use of high-occupancy vehicle lanes had not increased measurably. However, since 2006 several HOV lanes have been implemented in Central Ontario, for example, and results to date suggest they have improved travel times and the use of car pooling.

11. Design and operate transportation systems that can be used by the physically disabled

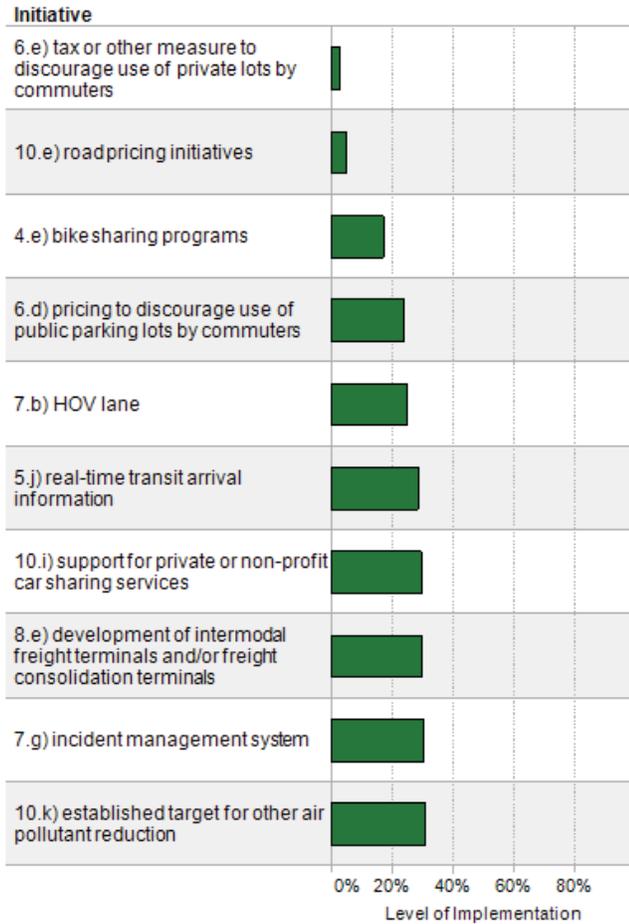
Consistent with past surveys, deployment of initiatives pertaining to special user needs received the highest level of application of all initiatives listed in Part A of the survey. The average level of utilization increased from 79% to 84% between 2001 and 2006.



Total Transportation-Related CO₂ Emissions



Ten Most-Implemented Initiatives, 2006



Ten Least-Implemented Initiatives, 2006

12. Ensure that urban transportation decisions protect and enhance the environment

The level of implementation of land use and transportation initiatives suggests there has been a significant increase in the use of policies and other initiatives related to sustainable transportation. The largest improvements have occurred in large and small urban areas.

13. Create better ways to pay for future urban transportation systems

The initiatives with the least reported levels of implementation were those related to pricing or taxation. Trends in transportation funding vary widely, suggesting that most urban areas do not have stable and predictable funding. However, there has been a significant increase in the use of federal and provincial subsidies as well as fuel taxes in transportation.

Concluding Remarks

It has been over 15 years since the Urban Transportation Council initiated the first Urban Transportation Indicators Survey. With four surveys now complete, the UTI survey provides urban areas the ability to readily benchmark their performance against others on a variety of transportation indicators. Perhaps more importantly, the survey data enables the tracking of progress across Canada on measures to promote more sustainable transportation.

Overall, the UTI surveys are seen as a valuable resource to the Urban Transportation Council, survey participants, and the broader transportation community including key decision makers. However, there is always room for improvement. TAC is currently undertaking a review of changing practices in data collection on the movement of people, which may inform the refinement and scoping of indicators for the fifth UTI survey. Preliminary directions suggest consolidating the number of indicators and maximizing the use of standardized sources.

Acknowledgements and Disclaimer

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The Urban Transportation Indicators (UTI) Fourth Survey Report, and previous editions, were prepared by IBI Group on behalf of TAC. The UTI Fourth Survey report is available as a free download in TAC's Resource Centre (see: <http://tac-atc.ca/english/resourcecentre/reports.cfm>).

The information in this briefing was extracted from the UTI Fourth Survey report. The primary authors of the briefing were Brian Hollingworth and Dylan Passmore of IBI Group.

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