CANADA'S COOLEST CITIES

Ottawa & CMA

Cool Factor: Hybrid Diesel-Electric Buses

Sustainable Energy Solutions

Canada's Coolest Cities looked at the question: "What are Canada's large cities doing to encourage low-carbon choices for personal transportation?"

Ottawa is implementing climate solutions through advanced technology

The City of Ottawa is reducing greenhouse gas emissions one bus at a time. OC Transpo, the City of Ottawa's transit service, has been using hybrid diesel-electric buses since November 2008. In total, 177 hybrid buses have been added to the fleet, accounting for almost 20% of OC Transpo's fleet of full-sized buses. Each hybrid bus is estimated to reduce greenhouse gas emissions by 38% compared to a conventional diesel bus.

Other advanced technology includes the old-fashioned bicycle with a new twist on ownership. The City of Ottawa introduced a pilot bike share program in the summer of 2009. Users pay for the use of the bike and return it to one of the bike stations throughout the city. The limited-scale pilot project consisted of 50 bikes and four stations and generated more than 5,000 trips in its three-month trial period. (See the City of Montreal Case Study for a description of its large-scale bike share program, BIXI.) The City of Ottawa recently introduced plans to increase the percentage of people travelling by bicycle and is planning to add almost 2,000 km of new bike lanes.

The Ottawa-Gatineau Census Metropolitan Area (CMA; see definition on page 6) is home to more than 1.1 million people and had among the highest percentages of commuters walking, biking or taking transit in 2006. The fraction of commuters choosing low-carbon transit is comparable to the Toronto and Montreal metropolitan regions — regions with much higher populations. But that fraction increased only slightly between 2001 and 2006; faster improvements will be needed to significantly reduce greenhouse gas emissions.

Challenges remain

The City of Ottawa may need to devote more resources to understanding its greenhouse gas emissions from transportation and objectives for reductions. The City of Ottawa was working on estimating city-wide greenhouse gas emissions for 2004, as this report went to press, and will be developing reduction targets in the near future. Other major cities have accomplished these tasks previously.

The City of Ottawa and the Ottawa-Gatineau CMA will likely need to incorporate other initiatives to return greenhouse gas emissions to 1990 levels, or even lower. Current accomplishments and a review of trends indicate that new projects and policies to reduce travel distances and encourage low-carbon forms of transportation are needed to reduce emissions.

RESULTS SUMMARY — OTTAWA

- The Ottawa-Gatineau CMA has a relatively low percentage of the population living in neighbourhoods with at least medium density.
- The Ottawa-Gatineau CMA has a similar percentage (28%) of commuters travelling by bike, transit and by foot as the Toronto and Montreal urban areas.
- The City of Ottawa did not have current estimates of greenhouse gas emissions or reduction targets at the time this report was produced. Plans are underway to provide this information later in 2010.

FOR MORE INFORMATION

communities.pembina.org

Here you will find the complete Coolest Cities technical report, plus all six Case Studies:

- Vancouver
- Calgary
- Edmonton
- Toronto
- Ottawa
- Montreal

the PEMBINA institute 25 years of Sustainable Energy Solutions

City Photo: Julia Kilpatrick, The Pembina Institute

City of Ottawa

CITY STATS (2006 CENSUS)

Population: 812,129

Land Area: 2,778.13 km^2

Density: 292.3 residents per km^2

City of Ottawa's greenhouse gas reduction targets

The City of Ottawa is in the process of updating its greenhouse gas reduction targets.

What are the City of Ottawa's emissions?

Data is being updated and is currently not available.

City of Ottawa's strategy for climate action and transportation

The City of Ottawa is a participant in the Partners for Climate Protection program, a network of Canadian municipal governments that have committed to acting on climate change. Ottawa is working toward setting greenhouse gas reduction targets through a process called Choosing Our Future, an innovative joint planning initiative of the City of Ottawa, the City of Gatineau and the National Capital Commission. The project will include a 100-year long-term vision, along with strategic directions for the next 30 years that will include targeted goals and an action plan for the cities and commission to follow.

The City of Ottawa Transportation Master Plan, released in November 2008, states that there will be a focus on improving walking, cycling and transit options. The City aims to increase the share of morning peak-hour travel by alternative transit modes as follows:

1. Walking modal share will increase from 9.3% in 2005 to 10% in 2031.
2. Cycling modal share will increase from 1.7% in 2005 to 3% in 2031.
3. Transit modal share will increase from 23% in 2005 to 30% in 2031.

To support these objectives, the City of Ottawa has developed a Cycling Plan (2008) and a Pedestrian Plan (2009).

COOL FACTOR: Hybrid diesel-electric buses

One of the City of Ottawa's success stories is the strong uptake of new technologies for reducing greenhouse gas emissions. The City's 2008 Transportation Master Plan set the objective to "achieve state-of-the-art environmental efficiency, including fuel efficiency and a reduced greenhouse gas footprint." This objective has been realized, in part, through the purchase of hybrid diesel-electric buses. The City has purchased 177 hybrid buses, with each bus capable of reducing greenhouse gas emissions by 38%, compared to conventional diesel buses. Evaluation of the buses has not been completed yet.

The Transportation Master Plan also sets goals for increased use of public transit. In particular, the plan "aims to increase the proportion of motorized person-trips carried by transit in the morning peak hour from 23% in 2005 to 30% (a level similar to many European cities) in 2031." The plan includes measures to meet this goal, such as "improve the form of development, reduce the supply of abundant free parking at key destinations, improve public awareness and support, level the financial playing field between transit and driving, better integrate transit with other modes, and set priorities for new infrastructure that improve transit's service advantage wherever possible."

CITY OF OTTAWA SUCCESSES

- There is good cooperation between land use and transportation departments.
- The City developed a new Transportation Master Plan in 2008, followed by specific plans for cycling and walking.
- An additional 1,967 km of bike lanes are planned.

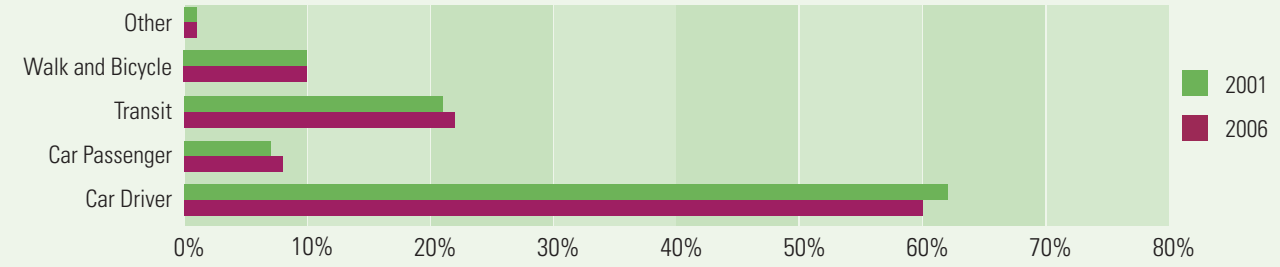
CITY OF OTTAWA CHALLENGES

- Information on greenhouse gas emissions from recent years is not yet available.
- Updated targets for greenhouse gas reductions are being established at time of printing.
- Translating plans and targets into action is challenging.
- Targets for cycling, walking and transit are not very ambitious.

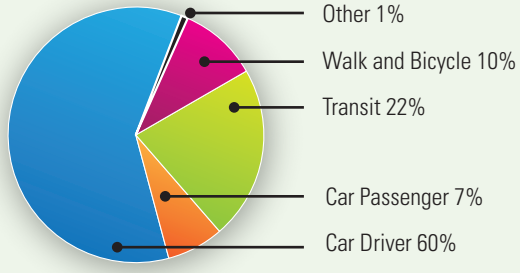
City of Ottawa

How do Ottawans get to work?

Percent change in City of Ottawa mode share, 2001–2006



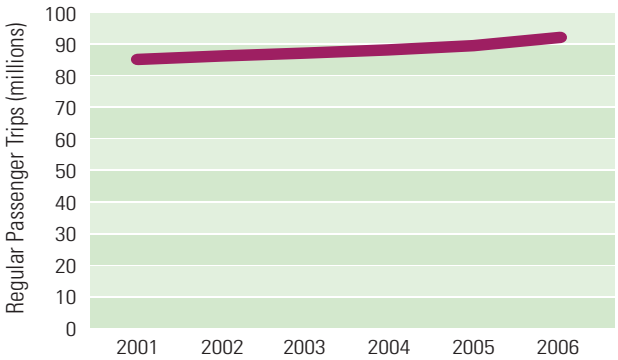
City of Ottawa mode share, 2006



City of Ottawa's transportation choices

In 2006, approximately one-third of Ottawans chose to commute by transit, walking or cycling. This percentage was unchanged from 2001.

Regular passenger transit trips in City of Ottawa



City of Ottawa transit services

Transit trips by OC Transpo increased by 8% from 2001 to 2006, the same rate as population growth in the areas served by OC Transpo. Transit service improved at approximately the same rate — transit service hours increased by 5% and transit vehicle kilometres increased by 8%.

City of Ottawa lessons learned (from interviews)

- Internal leadership is currently really helping to advance the sustainability and the environmental portfolio.
- The transportation and land use departments communicate well and work closely together. The new community sustainability department is working on the integration of sustainability throughout the City.
- Ottawa's transportation and land use policies do not explicitly consider greenhouse gas reductions. Instead, there is a focus on promoting alternative modes of transportation.
- Reducing greenhouse gas emissions is not a priority in the job descriptions of most Ottawa employees.
- Lack of funding has been a significant challenge.

Ottawa bicycle paths

On-street: 283 km
Off-street: 258 km
Total: 541 km
Bike path kilometres per 1,000 people: 0.67

The City of Ottawa has 541 km of bike paths. The 2008 Cycling Plan outlined plans for an additional 1,967 km of bike lanes, although there is no specified time frame for implementing the new lanes.

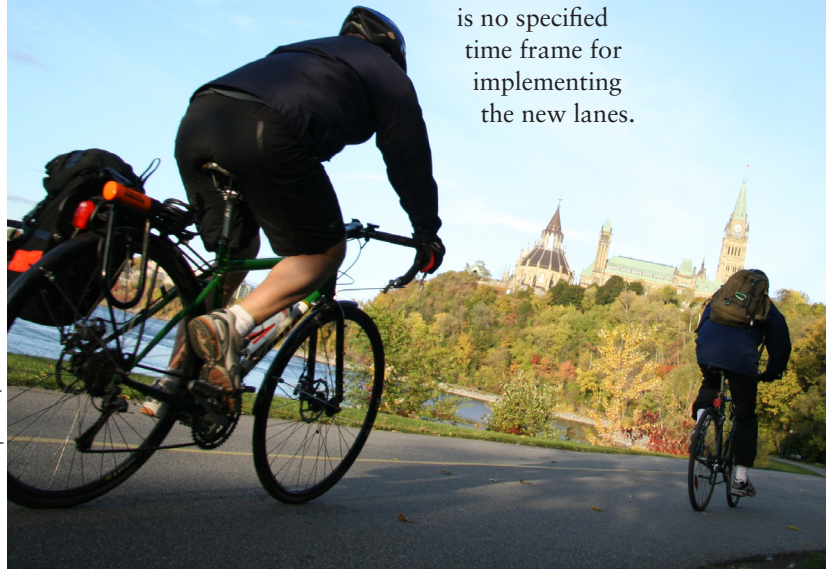


Photo: Julia Kilpatrick, The Pembina Institute

Ottawa-Gatineau CMA

CMA STATS (2006 CENSUS)

Population: 1,130,761

Land Area: 5,716 km^2

Density: 197.8 residents per km^2

Description of the Ottawa-Gatineau Census Metropolitan Area (CMA)

The Ottawa-Gatineau Census Metropolitan Area (CMA), located in both Ontario and Quebec, is the only CMA to cross provincial boundaries. This CMA is home to approximately 1.1 million people living in 11 cities or towns. More than 800,000 of those people live in the City of Ottawa, representing 72% of the total CMA population. Between 2001 and 2006, the Quebec portion of the CMA, Gatineau, grew faster (+8.5%) than the Ontario portion, Ottawa (+5.0%).

OTTAWA-GATINEAU CMA POPULATION IN MEDIUM- AND HIGH-DENSITY AREAS

	2001		2006			
	Population	% of Total Population	Population	% of Total Population	Change	% Change
Living in medium-density[1] areas	465,000	44%	454,000	40%	-11,000	-2%
Living in high-density[2] areas	24,000	2%	23,000	2%	-1,000	-4%

[1] Medium density is a threshold defined as 30 residents per hectare.
[2] High density is a subset of medium-density areas with a threshold of 100 residents per hectare.

Where are residents of the Ottawa-Gatineau CMA choosing to live?

Between 2001 and 2006, the population of the Ottawa-Gatineau CMA grew by 63,000 people, a 6% increase. During the same period, the population of medium-density areas decreased by 2%. As a result, the percentage of residents living in medium-density neighbourhoods dropped from 44% in 2001 to 40% in 2006. In the high-density subset of neighbourhoods, there was a decrease of 4%.

Note: Staff at the City of Ottawa are concerned with undercounting in the 2006 Census. Estimates by the staff based on building permits and average population by type of residence show increases of approximately 4,425 people in the central and inner areas of the city between 2001 and 2006. Since many neighbourhoods in these areas would have more than 30 residents per hectare, the City of Ottawa estimates do not align with Statistics Canada results shown above. Statistics Canada is aware of this concern but was unable to provide further information at the time of this report.

CMA SUCCESSES

- The CMA has among the highest percentage of commuters walking, biking or taking transit to work.
- The fraction of commuters walking, biking or taking transit has increased from 2001 to 2006.

CMA CHALLENGES

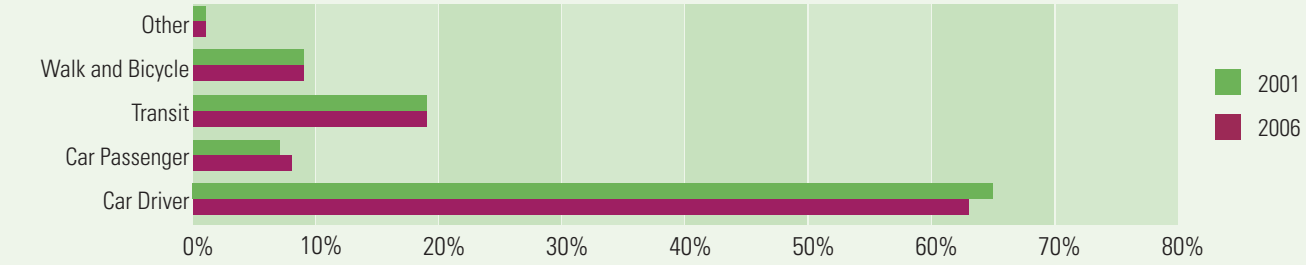
- CMA crosses provincial boundaries, which can make coordination difficult.
- Transit services in the region are not fully harmonized, requiring travellers to purchase multiple tickets to travel between Ottawa and Gatineau.

Ottawa-Gatineau CMA

How do people in the Ottawa-Gatineau CMA get to work?

In 2006, the combined percentage of workers choosing to walk, bike or take transit was 28% in the Ottawa-Gatineau CMA, amongst the highest of the major Canadian urban areas. For this indicator, the Ottawa-Gatineau CMA matches the Toronto CMA and is just slightly below the Montreal CMA (29%). This is a strong achievement considering that the Ottawa-Gatineau CMA has a lower population base than the Toronto or Montreal CMAs.

Percent change in Ottawa-Gatineau CMA mode share, 2001–2006



Ottawa-Gatineau CMA mode share, 2006

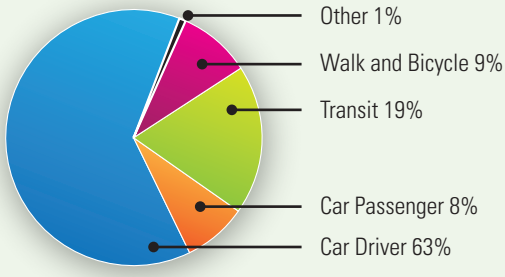


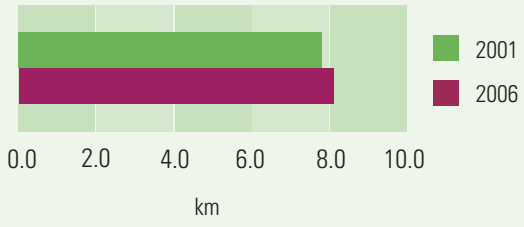
Photo: Julia Kilpatrick, The Pembina Institute

How far are residents of the Ottawa-Gatineau CMA commuting?

Between 2001 and 2006 the Ottawa-Gatineau CMA saw the average commute distance increase by 4% from 7.8 km to 8.1 km.

The Ottawa-Gatineau CMA is tied with the Montreal CMA for the third longest commute of the CMAs in this study.

Average Commute Distance in Ottawa-Gatineau CMA



RECOMMENDATIONS

Our analysis highlights five key actions for successful progress: Measure, Estimate, Implement, Share and Evaluate. These actions have been undertaken to some degree already by cities in each urban area. Now governments must co-ordinate these actions to reduce greenhouse gas emissions across the whole urban area.

MEASURE Develop systems for consistent, frequent estimates of greenhouse gas emissions from urban personal transportation and ensure results are readily available to City departments and to the public.

ESTIMATE Provide estimates of future greenhouse gas emissions for any significant infrastructure or policy development.

IMPLEMENT Ensure land use and transportation plans are implemented and develop additional initiatives to meet greenhouse gas reduction targets.

SHARE Increase participation of multiple departments and across municipalities in planning and information sharing.

EVALUATE Track progress toward meeting greenhouse gas reduction targets and estimate the impact of infrastructure.

The key actions will require initiatives and resources from all levels of government. Priority initiatives for municipal governments to support these actions are:

1. Track progress toward meeting greenhouse gas reduction targets from transportation and land use policies.
2. Reward development of compact communities to limit sprawl in large urban areas. Implement these policies jointly with neighbouring communities to ensure the policies are effective for the region.
3. Invest in low-carbon transportation choices (transit, walking and biking infrastructure).
4. Develop policies to encourage people to live close to work and services, encouraging low-carbon transportation options and reducing time spent behind the wheel.

Provincial and federal governments also have a strong role to play in supporting municipalities by providing leadership and funding for developing compact communities and low-carbon transportation choices.

See the Technical Report for additional initiatives for each of the key actions.

About the project

Canada's six largest urban areas provide homes and jobs for almost 15 million people, nearly half of our population. Transporting these citizens to and from work, school, health care, shopping and other destinations consumes energy, which in turn contributes to environmental problems, in particular climate change. Municipal and other local governments have the opportunity and responsibility to take action on reducing greenhouse gas emissions, especially those from transportation in their boundaries.

The amount of energy consumed for personal transportation in cities depends on urban design — the locations of homes, jobs and services, plus the options for travelling among these locations. Urban design and transportation policies can help decrease energy consumption, save money, limit environmental impacts and make communities more livable.

The information in this case study was developed by analyzing numeric data from both the core city and the wider census metropolitan area (CMA), and by interviewing staff at the core city. The numeric data provide a picture of current transportation and urban design choices, as influenced by past policies and decisions. The interviews allowed us to explore potential future directions based on current policies.

WHAT IS A CMA?

Canada's Coolest Cities focuses on Canada's six largest Census Metropolitan Areas (CMAs) and the core city within each CMA. A CMA is a Statistics Canada definition for the metropolitan region that covers multiple municipalities. CMAs are similar to, but not exactly the same as, the informal designations for the urban areas such as MetroVancouver and the Greater Toronto Area. The CMA definitions are used because they are clearly defined by Statistics Canada, the main source of data for this project. Because the CMAs cover much larger areas than individual cities, the data for a CMA captures more of the transportation behaviour.

The study consists of six case studies, one for each of Canada's largest urban areas (Toronto, Montreal, Vancouver, Ottawa, Edmonton and Calgary), and a technical report. The technical report covers the research approach, findings across the different urban areas and recommendations. The other case studies and the technical report are available at http://communities.pembina.org.