

CANADA'S COOLEST CITIES

Vancouver & CMA

Cool Factor: Greenest City Action Plan

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?"

Vancouver striving to be the World's Greenest City

The City of Vancouver wants to be the Greenest City in the World and has developed a team and an action plan to get there. In 2009, the City announced ten specific goals Vancouver needs to achieve by 2020 to become the global leader in progress toward an environmentally sustainable future. These specific goals — on green economy, green communities and human health — will provide direction for policies and a means to evaluate the progress. The City of Vancouver has already demonstrated its success at setting goals, taking action and evaluating progress with its targets to reduce greenhouse gas emissions. The City set greenhouse gas reduction targets in 2003, developed an action plan in 2005 and has presented progress reports every two years following. As of 2008, greenhouse gas emissions for the City have returned to 1990 levels, and the Greenest City Action Plan provides motivation to continue action on reductions.

Other indicators also showed strong progress for the City of Vancouver. In 2006, the City had the largest percentage of commuters travelling by walking or cycling (16%) of the six cities we studied. However, a smaller percentage of people in Vancouver use public transit than in Toronto or Montreal, where the subway systems are more established. Overall, a similar fraction of people in Vancouver use low-carbon modes of transportation as in Toronto and Montreal.

The City of Vancouver planning department reported that greenhouse gas emissions are implicitly being considered as part of its land use and transportation plans, although they are not explicitly incorporated into every decision. All these actions likely helped to limit the growth in greenhouse gas emissions. The City's greenhouse gas emissions from light-duty vehicles increased by 16% between 1990 and 2008.

Challenges remain

The Vancouver Census Metropolitan Area (CMA; see definition on page 6) covers a much larger geographical area than the city and has not achieved the same success. The CMA includes 22 cities that are strongly connected by economic and transportation ties. Transportation and urban form solutions need to consider this wider region since the activities of residents tend to routinely cross the municipal borders. Additionally, the population of the CMA is growing more quickly than the population of the city. The Vancouver CMA has a much lower overall population density than the City of Vancouver and has a much smaller percentage of commuters using transit, bikes or walking.

However, compared to other CMAs, the Vancouver CMA is showing great improvement. The Vancouver CMA increased the fraction of people living in high-density neighbourhoods; as well, transit trips increased by 28% from 2002 to 2006, far exceeding the population growth.

RESULTS SUMMARY — VANCOUVER

- The Vancouver CMA was the only CMA to see a decrease in average commute distance.
- The Vancouver CMA experienced the largest population growth in neighbourhoods with high residential density of the six largest CMAs in Canada.
- In 2006, the City of Vancouver had the largest percentage of commuters travelling by walking or cycling of the six cities in this study.
- The Vancouver CMA showed the largest improvement in commuters travelling by bus, walking and cycling.

FOR MORE INFORMATION

communities.pembina.org

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

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



City Photo: Johan Stroman, GreenLearning Canada

City of Vancouver

CITY STATS (2006 CENSUS)

Population: 578,041

Land Area: 114.71 km²

Density: 5,039 residents per km²

City of Vancouver's strategy for climate action and transportation

The City of Vancouver has been taking action to reduce greenhouse gas emissions since the early '90s. As of 2008, greenhouse gas emissions for the City have returned to 1990 levels, even though the population has grown by 27%. Vancouver's Greenest City initiative includes the targets for greenhouse gas reductions noted above.

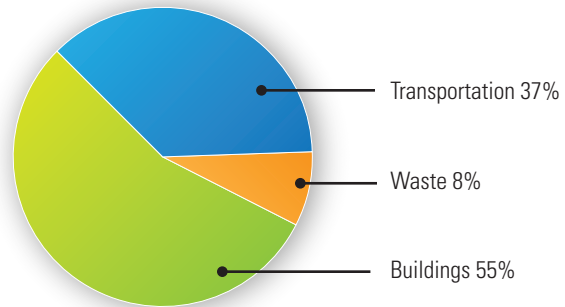
The City's Transportation Plan was released in 1997. While it did not explicitly define greenhouse gas targets, it did set targets for reducing vehicle use. According to City staff, the plan also stated the principle of not increasing the capacity of Vancouver's roads for personal vehicles. Vancouver recently launched the EcoDensity charter, which commits the City to consider environmental sustainability, affordability and livability in all land use decision-making.

City of Vancouver's greenhouse gas reduction targets

1. Reduce the City of Vancouver's greenhouse gas emissions to:
 - 6% below 1990 levels by 2012
 - 33% below 2007 levels by 2020
 - 80% below 2007 levels by 2050
2. By 2020, all new construction will be carbon neutral, and Vancouver will improve the efficiency of existing buildings by 20%.
3. By 2020, the majority (greater than 50%) of transportation trips will be made on foot, bicycle and transit.

What are the City of Vancouver's emissions?

In 2008, emissions in the City of Vancouver were approximately 2.74 million tonnes of CO₂ equivalent.



COOL FACTOR: World's Greenest City

The Greenest City initiative includes ten specific targets for 2020:

1. Create 20,000 new green jobs.
2. Reduce greenhouse gas emissions 33% from 2007 levels.
3. All new construction to be carbon neutral; improve efficiency of existing buildings by 20%.
4. Make the majority of trips on foot, bicycle and public transit.
5. Reduce per capita solid waste going to landfill/incinerator 40%.
6. Every person lives within a five-minute walk of a park, beach, greenway or other natural space; plant 150,000 additional trees.
7. Reduce per capita ecological footprint by 33%.
8. Always meet or beat the strongest of B.C., Canada and World Health Organization drinking water standards; reduce per capita water consumption by 33%.
9. Always meet or beat World Health Organization air quality guidelines, which are stronger than Canadian guidelines.
10. Reduce the carbon footprint of our food by 33%.

CITY OF VANCOUVER SUCCESSES

- Reducing greenhouse gases is an acknowledged priority for the City of Vancouver.
- Greenest City initiative includes ten specific targets including transportation.
- As of 2008, the City's total greenhouse gas emissions have returned to 1990 levels.
- Provincial leadership is encouraging specific action to reduce greenhouse gas emissions.

CITY OF VANCOUVER CHALLENGES

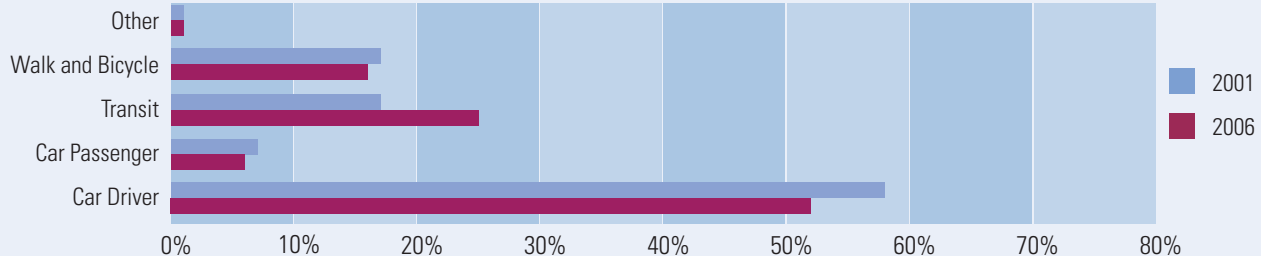
- Land use and transportation decisions are slow to incorporate greenhouse gases.
- There is a gap between the high-level goals and the actions currently being taken.
- Greenhouse gases emissions from light-duty vehicles grew by 16% from 1990 to 2008.



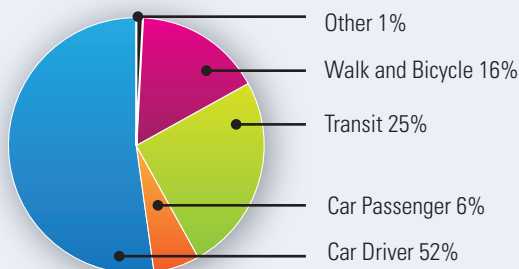
City of Vancouver

How do Vancouverites get to work?

Percent Change in City of Vancouver mode share, 2001–2006



City of Vancouver mode share, 2006



City of Vancouver's transportation choices

In 2006, Vancouver had the largest percentage of commuters travelling by walking or cycling (16%) of the six core cities in this report. The City of Vancouver had the largest increase in commuters travelling by transit, cycling or walking, from 34% in 2001 to 41% in 2006. However, in 2001 the City of Vancouver experienced a transit strike for four months, which affects that year's ridership figures.

City of Vancouver lessons learned (from interviews)

According to interviews with key City staff, four key things have allowed Vancouver to be successful in reducing automobile use and improving alternative transportation options:

- The hierarchy of transportation modes (i.e., prioritization of pedestrians, cyclists, transit, commercial vehicles and, finally, personal vehicles) was critical in shaping both land use and transportation decisions since the implementation of the 1997 Transportation Plan.
- Transportation and land use planners have been able to work very closely and cooperatively together, a culture shift that followed the implementation of the 1997 Transportation Plan.
- The City specifically decided to not increase vehicle capacity on Vancouver roads, and this decision has support from both the transportation and land use departments.
- Consistent leadership and support at both the political and staff level has been critical.



Vancouver bicycle paths

On-street: 347 km

Off-street: 68 km

Total: 415 km

Bike path kilometres per 1,000 people: 0.66

The City of Vancouver has an extensive network of both on-street and off-street bicycle facilities, with proposals to expand the existing network to a total of 524 km by 2011.



Vancouver CMA

CMA STATS (2006 CENSUS)

Population: 2,116,581

Land Area: 2,877.36 km²

Density: 735.6 residents per km²

Description of the Vancouver Census Metropolitan Area (CMA)

The Vancouver CMA comprises 21 municipal governments and one unincorporated area. The largest fraction of the population (27%) lives in the City of Vancouver, but Surrey experienced the highest growth in population, adding 47,000 new residents between 2001 and 2006. In 2005, Metro Vancouver estimated emissions from motor vehicles equaled 5.6 million tonnes (36% of total emissions).

VANCOUVER CMA POPULATION IN MEDIUM- AND HIGH-DENSITY AREAS

	2001		2006		Change	% Change
	Population	% of Total Population	Population	% of Total Population		
Living in medium-density ¹ areas	1,089,000	55%	1,149,000	54%	+60,000	6%
Living in high-density ² areas	147,000	7%	166,000	8%	+19,000	13%

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 Vancouver CMA choosing to live?

Between 2001 and 2006, the population of the Vancouver CMA grew by 130,000 people, or approximately 7%. Where people choose to live significantly affects how they choose to travel for work and play. Between 2001 and 2006, the population of areas with at least medium density grew by 59,000 or 6% compared to 2001. This was slightly less than the 7% population growth of the CMA over the same period. Of those moving into at least medium-density areas, 19,000 chose to move into neighbourhoods with high residential density — an increase of 13% from 2001 and nearly double the rate of growth seen in the rest of the CMA.

Vancouver trails both Montreal and Toronto in terms of overall percentage of the population living in neighbourhoods with medium or high residential density. However, overall, Vancouver experienced the largest population growth in dense neighbourhoods, particularly high-density areas, of any of the major Canadian cities.



Photo: Dominic Ali / www.domali.com

CMA SUCCESSES

- Vancouver CMA was the only CMA to see a decrease in average commuting distance.
- The proportion of the CMA population living in high-density neighbourhoods increased by 13% from 2001, nearly double the rate of growth seen in the rest of the CMA.

CMA CHALLENGES

- The overall percentage of people living in medium- and high-density neighbourhoods is low relative to the Montreal and Toronto CMAs.
- It is a challenge to coordinate regional decision-making.



Vancouver CMA

How do people in the Vancouver CMA get to work?

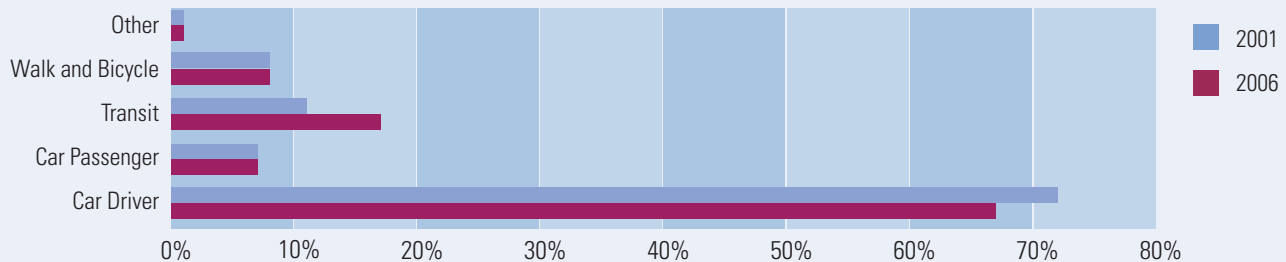
In 2006, 25% of commuters chose to walk, bike or take transit in the Vancouver CMA. However, the vast majority of commuters travelled either as vehicle drivers or passengers.

The Vancouver CMA falls fourth behind Montreal, Toronto and Ottawa-Gatineau in terms of the fraction of commuters who walk, cycle or take transit to work. The City of Vancouver's success at encouraging low-carbon modes of transportation has not yet transferred to the wider CMA.

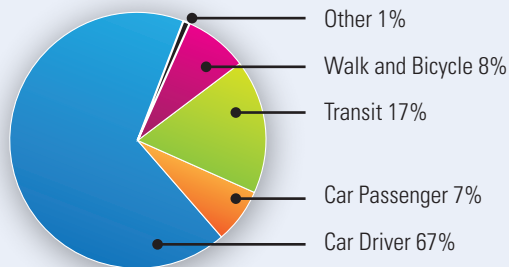


Photo: Dominic Ali / www.domali.com

Percent Change in Vancouver CMA mode share, 2001–2006



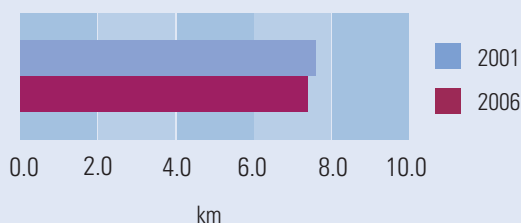
Vancouver CMA mode share, 2006



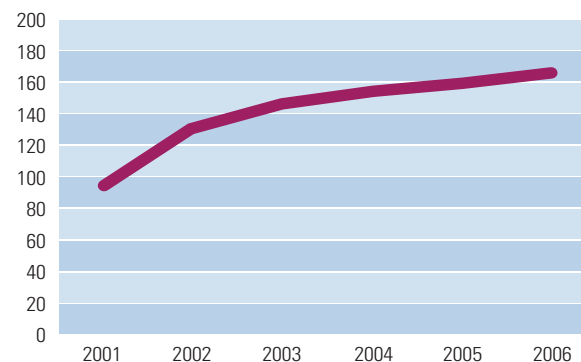
How far are residents of the Vancouver CMA commuting?

Between 2001 and 2006 the Vancouver CMA saw the average commute distance decrease by 3%, from 7.6 km to 7.4 km. Vancouver was the only CMA to see a decrease in the commute distance during this time period.

Average commute distance in Vancouver CMA



Regular passenger transit trips in Vancouver CMA



Vancouver CMA transit services

Transit trips in the Vancouver CMA¹ increased by 28% from 2002² to 2006, far exceeding the population growth of 6%. The CMA improved transit service but not in pace with growth in transit trips — transit service hours increased by 18% and transit vehicle kilometres increased by 17%.

¹ Transit data for Vancouver are reported for an urban area similar to the CMA boundaries.

² 2002 was used as the base year for this indicator, due to a transit strike in 2001 which would bias results.

CANADA'S COOLEST CITIES



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>.