

Digging a little deeper

On our website and in the summary report for Vital Signs, we have provided a number of statistics for each of our areas. Following is much more detailed data and sources for each statistic.

Overview

Trends

We are getting better with water

- Our water use is more efficient, down 9% over two years from 2006 to 2008 but use varies considerably between municipalities.
Metro Vancouver
- Nearly three-quarters of residents choose the tap over bottled water, up 10% from 2006. The top reasons for this choice were cost and convenience, with only 11% citing environmental reasons.
Metro Vancouver Drinking Water Survey

Challenges

Waste vs. recycling

The good news we are producing less waste per capita as our population continues to rise. The bad news is we still produce a lot of waste that goes directly to the landfill.

- Waste was 1.5 tonnes per capita in 2008, down from 1.6 tonnes the previous year.
- A total of 56% of our waste is diverted from the landfill. Metro Vancouver's target is 70% by 2015, so there is still a ways to go.
Metro Vancouver

More greenhouse gases

- Greenhouse gas emissions continue to increase in our region. Between 2005 to 2007, emissions went up 8% at a time when the BC government committed to reducing emissions. (The provincial goal for 2020: reduce emissions 33% from 2007 levels.)
- Our vehicles make up the bulk of emissions at 55%, while buildings contribute 41%. Our emissions rate from vehicles is on par with Montreal but better than Toronto and Calgary.

Ministry of Environment Community Energy and Emissions Inventory and Community Foundations of Canada

Progress

Individual actions matter

- Nine out of ten residents say the choices we make as individuals can improve the quality of our environment. However, we are more pessimistic than people in Toronto and Montreal, with 20% believing that quality of our environment is deteriorating.
- One-fifth say expense is the biggest barrier to reducing our environmental impact.

EnviroNics Research, Canadian Environmental Barometer 2010 Vital Signs National Survey

Natural Environment

Natural environment

71% of residents think our region does a good job of protecting wildlife and green spaces
2010 [\[More\]](#)

Urbanization

From 1990 to 2001, our rate of urban intensification from 1990 to 2001 was 80%, far greater than Toronto's (44%) or Calgary's (22%)
2010 [\[More\]](#)

Air quality

80% of residents think our air quality is excellent or good, compared to 59% of Toronto residents and 60% of Montreal residents
2010 [\[More\]](#)

Water quality

Warnings for poor water quality were posted four times at Trout Lake in June and once at False Creek East in July 2010 [\[More\]](#)

Water

Tap vs. the bottle

74% of residents chose tap over bottled water - top reason is cost
2008 [\[More\]](#)

Sustainable Choices

Farmer's markets

20 markets took place regularly in 2010, up from 17 in 2008
2010 [\[More\]](#)

Organic farming

13% of fruits, vegetables and coarse grains grown in our region use organic methods
2007 [\[More\]](#)

Composting

54% of our households composted (mainly yard waste), more than double the previous year
2007 [\[More\]](#)

Environmental Risks

Sea levels

have risen 3 millimetres along our region's coastline since 2000
2009 [\[More\]](#)

ENVIRONMENTAL SUSTAINABILITY

NATURAL ENVIRONMENT

Natural Environment
Data Summary
The metro Vancouver region contains 113,872 hectares of watershed, recreational and protected natural areas, or 40% of the land base. Almost three-quarters of Metro Vancouver residents think our region does an excellent or good job of protecting local wildlife and green spaces.
Date
2006
Geography
Canada, BC, and CMAs: Vancouver, Toronto, Montreal; also Atlantic Region
Description
The region's protected watersheds total an area of 46,680 ha and the recreational and protected natural areas total 67,183 ha, for a total of 113,872 ha or 40% of the land base. Protected watersheds are the Metro Vancouver watersheds. Recreational and protected natural areas include local, regional and provincial parks, ecological reserves and wildlife management areas and recreational facilities such as golf courses, ski areas, exhibition grounds and community centres.



In a June 2010 survey conducted for CFC, 71% of Vancouver respondents rated the protection of local wildlife and green spaces either excellent or good.

	Protection of wildlife & green space excellent/good
Canada	68%
BC	71%
Metro Vancouver	71%

Comparison

Vancouver residents rate the protection of local wildlife and green spaces much higher than those in Toronto or Montreal and on par with residents of the Atlantic region.

	Protection of wildlife & green space excellent/good
Metro Vancouver	71%
Toronto	61%

Montreal	57%
Atlantic Region	71%

Vancouver residents were slightly more concerned about the inverse of conservation, “over-development,” than their counterparts in Toronto and Montreal, but less concerned about loss or damage to trees and vegetation.

The single most important environmental issue facing your local community today is:

	Over-development/too much building/people	Loss/damage to trees/vegetation	Wildlife/habitat destruction
Metro Vancouver	11%	2%	4%
Toronto	10%	6%	3%
Montreal	8%	11%	-

Data Considerations

Golf courses on Agricultural Land Reserve lands are not included.

The Canadian Environmental Barometer survey was conducted June 17-24, 2010 and contains a margin of sampling error of +/- 2.2 percentage points at the 95% confidence level.

Source

Metro Vancouver
 Environics Research, June 2010, Canadian Environmental Barometer 2010 Vital Signs National Survey

Link

<http://www.metrovancouver.org/planning/development/LRSPreview/LRSPDocs/Map5ConRecAreas.pdf>
<http://www.metrovancouver.org/Search/Results.aspx?k=conservation%20and%20recreation%20area%20map%205>

Urban Intensification/Urbanization

Data Summary

Metro Vancouver experienced a high level of urban intensification compared to greenfield development in the period 1990-2001.

Date

2010

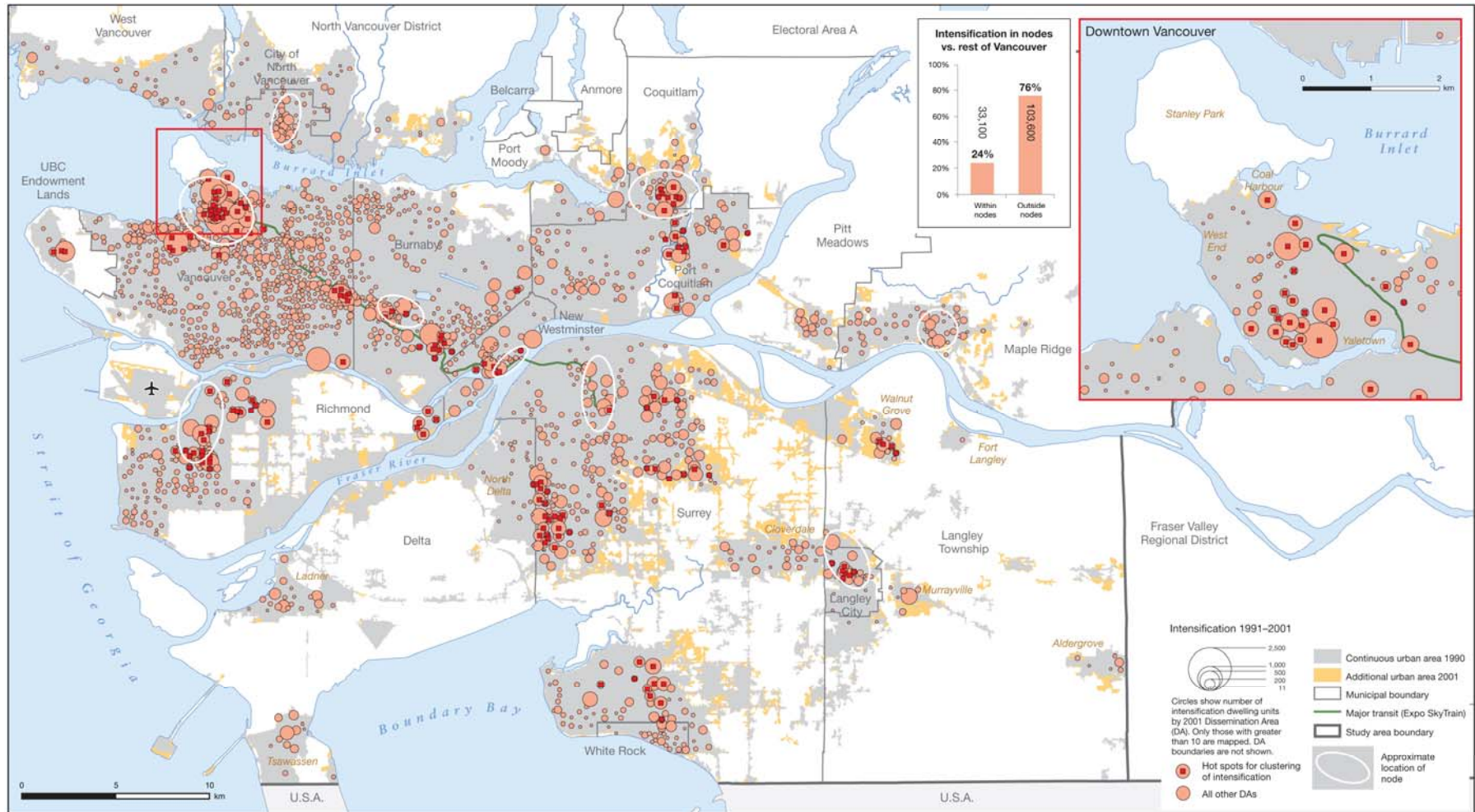
Geography

Metro Vancouver, Toronto (CMA), Montreal (CMA)

Description

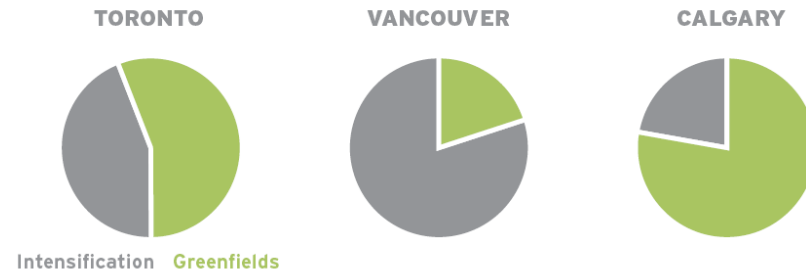
In the map below, each pink circle represents a net increase in dwellings (construction minus demotion) as of 2000 within a census dissemination area that falls within the 1990 urbanized area. While 80% of residential development in Metro Vancouver occurred

within the urbanized region, only 24% (33,100 units) of the growth within this urban zone occurred within the nine centres designated by the regional growth strategy (Burnaby-Metrotown, Coquitlam Town Centre, Downtown New Westminister, Langley Town Centre, Lonsdale Centre, Maple Ridge Town Centre, Richmond City Centre, Surrey City Centre, Vancouver Metro Core). Outside these areas, small amounts of intensification appear to be scattered throughout the built-up urban area. The Expo SkyTrain line appears to have attracted development in Vancouver, Burnaby, New Westminister and Surrey.

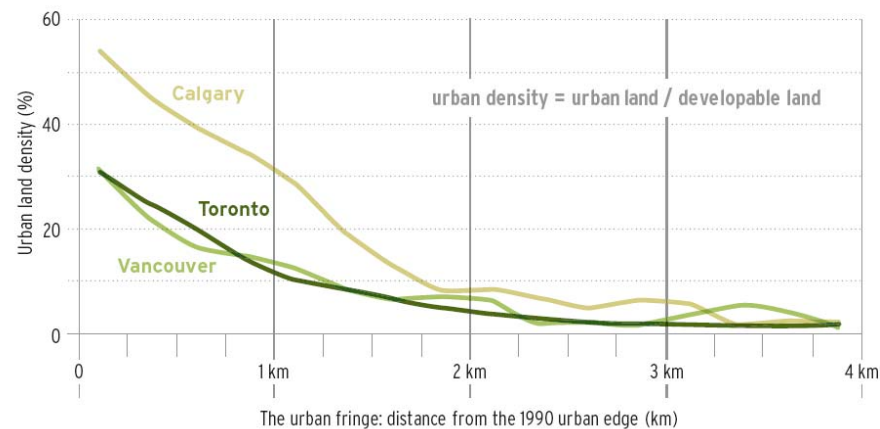


Comparison

For the period 1990-2001, Metro Vancouver's rate of intensification (80%) far surpassed that of the Toronto region (44%) and was nearly four times that of the Calgary region (22%).



The following chart of urban land densities across the urban fringe from 1991-2001 show that all three regions showed a tendency for most greenfield development to occur close to the existing urbanized area, and to drop off with distance from this boundary. This goes counter to what some expect the role of the Agricultural Land Reserve to be in the Vancouver region in bringing about "leapfrog" development.



Data Considerations

"Greenfield development" usually means urban development on previously rural land. This study uses a more precise definition: land converted to urban use between 1990 and 2001 that is located outside the boundary of the 1990 urbanized area. This area is referred to as the urban fringe. For each region, satellite imagery were analyzed to map the built-up urbanized area in 1990 and 2001. Subtracting the 1990 from the 2001 urban area enabled a measurement of how much land was converted from rural to urban use over the decade in the urban fringe.

"Intensification" commonly refers to infill or redevelopment in already urbanized areas. In this study, intensification is defined as

the net increase in dwellings constructed between 1991 and 2001 that are located within the boundary of the 1990 urbanized area. The “residential intensification rate” for the period is the percentage of all dwellings built over the decade that are located inside the 1990 urbanized area.

Therefore, intensification plus greenfield development equals all new development.

Source

Taylor, Z.T. and M. Burchfield. 2010. *Growing Cities: Comparing urban growth patterns and regional growth policies in Calgary, Toronto and Vancouver*. Toronto: Neptis Foundation.

Link

<http://www.neptis.org>

Air Quality

Data Summary

Air quality in Metro Vancouver, as measured by ground level ozone and concentration of fine particulate matter, improved slightly in 2007. In the Vancouver region, there was 1 day above daily maximum threshold levels of ozone in 2008, below the 2001-2008 period average of 1.1 days. Over the 2001-2008 period the number of days above the daily maximum threshold levels of ozone reached a maximum of 3 days in 2006 and a minimum of 0 days in 2002, and 2007. In 2008, the number of days with PM 2.5 concentrations above threshold levels was 0, below the 2001-2008 period average of 0.5 days. Over the 2001-2008 period the number of days above the daily threshold levels of ozone reached a maximum of 2 days in 2005 and a minimum of 0 day in 2001, 2003, 2004, 2007, and 2008.

Date

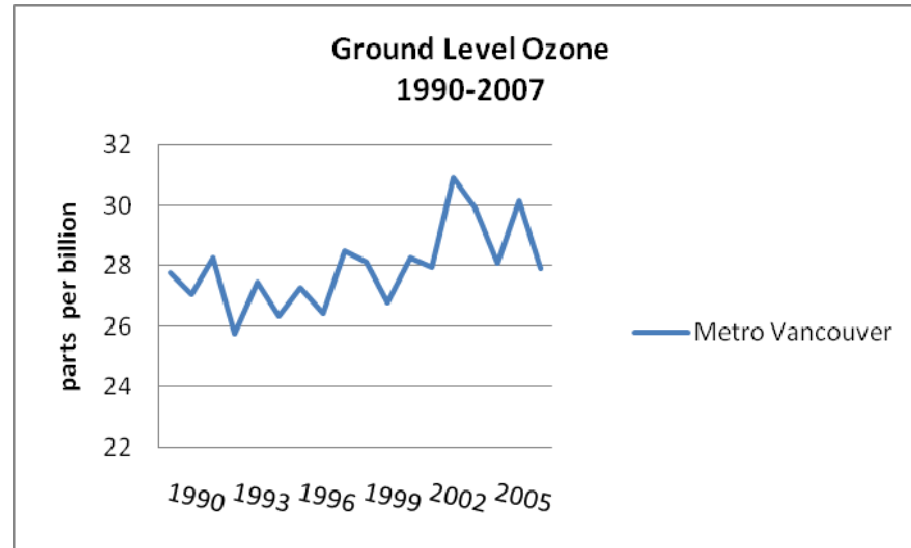
1990-2008

Geography

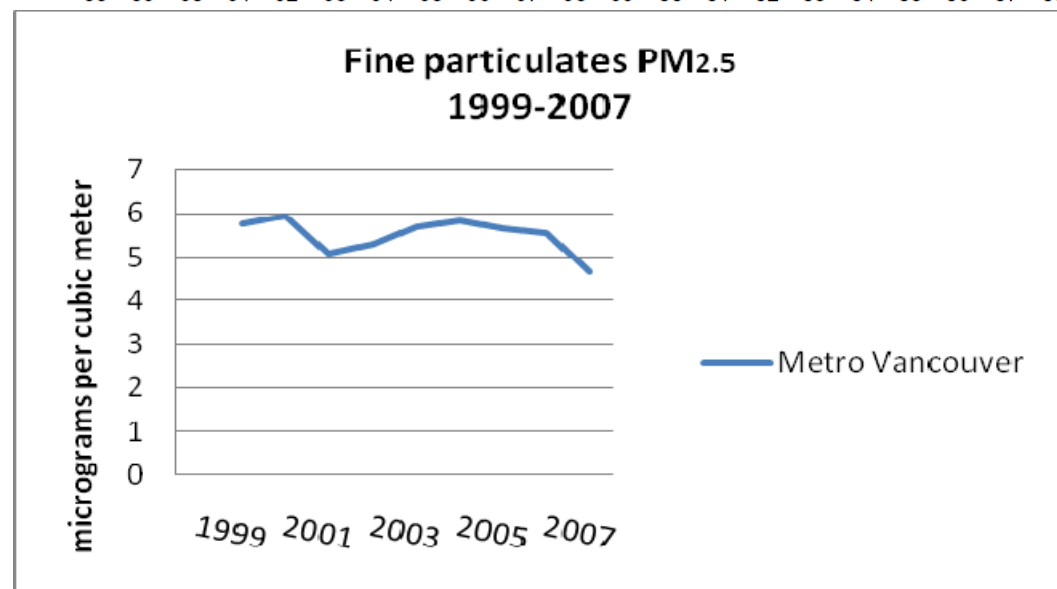
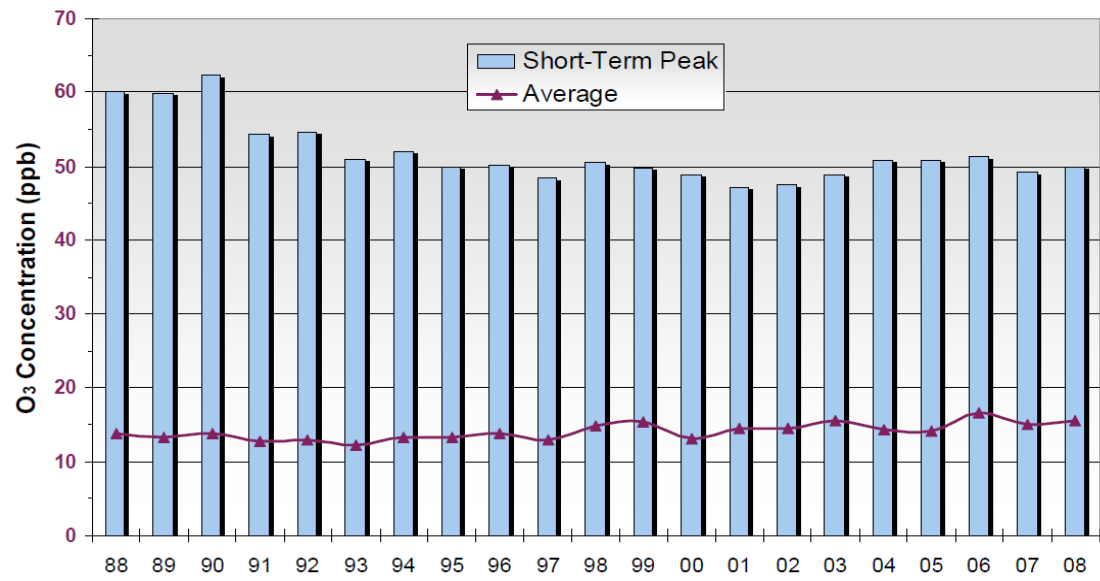
Canada, BC, and CMAs: Vancouver, Toronto, Montreal; also Atlantic Region

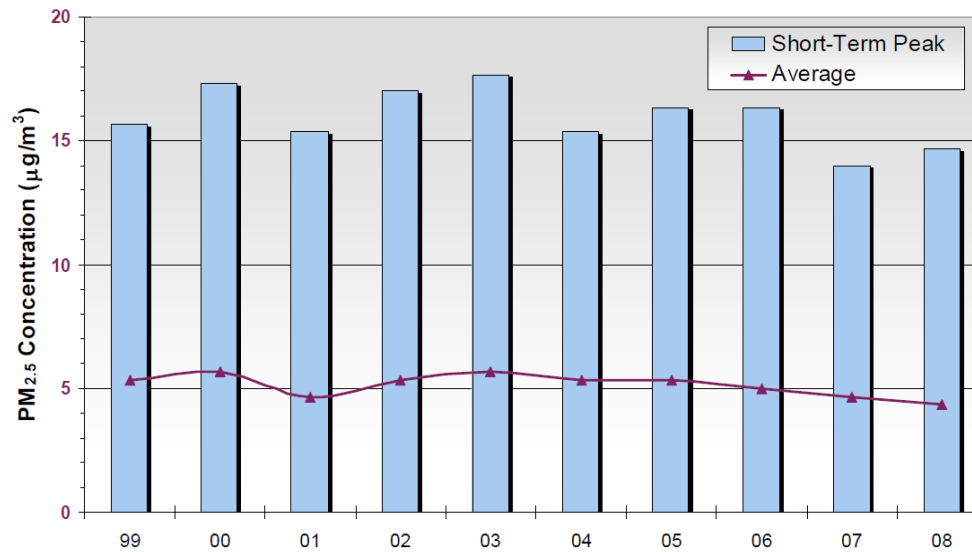
Description

Average ground level ozone concentrations were 28 parts per billion in 2007, a level which has fluctuated around this level for the past 15 years. Ozone levels in the Lower Fraser Valley as a whole have been fairly stable over the past 15 years as well. Concentrations of fine particulates dipped under 5 micrograms per cubic metre in 2007, lower than it has been in a decade. In the Lower Fraser Valley as a whole, fine particulate concentrations are also down slightly below 5 in 2007 and 2008.



Lower Fraser Valley





In a June 2010 survey conducted for CFC, 80% of Vancouver respondents rated the quality of the air they breathe as excellent or good.

	Excellent/Good Air Quality
Canada	73%
B.C.	80%
Metro Vancouver	80%

Comparison

Vancouver has had consistently far better air quality than either of Canada's larger cities, Toronto and Montreal. Since 2002, Vancouver's air quality has been comparable with that of Saint John, NB.

	Days With Daily Maximum 8h Ozone > 65 ppb							
	2001	2002	2003	2004	2005	2006	2007	Average
Metro Vancouver	1	0	1	2	1	3	0	1.1
Toronto	28	29	21	8	27	16	19	21.1
Montreal	25	14	14	3	17	4	14	13.0
Saint John	9	1	1	0	2	0	2	2.1

	TEOM Number of Days with PM25 Concentrations > 30 (ug/m3)							
	2001	2002	2003	2004	2005	2006	2007	Average
Metro Vancouver	0	1	0	0	2	1	0	0.6
Toronto	10	13	12	12	18	6	8	11.3
Montreal	10	12	15	7	17	4	3	9.7
Saint John	4	2	2	1	0	0	0	1.3

In terms of citizen perceptions, based on the June 2010 survey, more Vancouverites also rated their air quality high than those in Toronto or Montreal. In fact, in both other large cities, air quality was considered the single most important environmental issue affecting the community.*

	Excellent/Good Air Quality	Air quality/Air pollution/Smog most important environmental issue affecting our community
Metro Vancouver	80%	12%
Toronto	59%	23%
Montreal	60%	15%
Atlantic Region	82%	7%

Data Considerations

* In Montreal, an equal percentage of respondents considered waste management to be the single most important issue facing the community.

The Canadian Environmental Barometer survey was conducted June 17-24, 2010 and contains a margin of sampling error of +/- 2.2 percentage points at the 95% confidence level.

Ground-level ozone is a reactive, unstable form of oxygen. In very high concentrations, it is a bluish gas. It has a characteristic sharp smell which may be recognized around electrical equipment such as motors or arc welders. In the concentrations found in outdoor air, ground-level ozone is both colourless and odourless. Ground-level ozone is formed in the air from other pollutants, most notably nitrogen oxides and hydrocarbons. Slow-moving air and strong sunshine greatly speed up the formation of ozone. Vehicle exhaust is a large contributor of ground-level ozone as well as industrial emissions. Ground-level ozone irritates the lungs and can make breathing difficult. Exposure to high concentrations can result in chest tightness, coughing and wheezing. Ground-level ozone can also damage agricultural crops such as potatoes and tomatoes as well as affect trees and other vegetation. Ozone also weakens rubber and attacks metals and painted surfaces. Canada-Wide Environmental Standards (CWSS) have been developed for ground-level ozone. The standard to be achieved by 2010 is **65 ppb** (the World Health Organization recommends a higher standard of 50 ppb). This is based on the 4th highest measurement annually (8-hour means), averaged over 3 consecutive years. Particulates are particles in the air either from a natural origin or as a result of human activity. PM-2.5 is particulate matter with

an effective diameter of 2.5 microns or less which bypass filtration in the nose and may be deposited in the lungs. This is referred to as "respirable" particulate. Common natural sources of particulates include wind-blown soil dust, forest fires, sea salt, volcanoes, and plants, as well as, human activity such as fuel combustion and any other burning, travel on dirt roads, construction work, and mining and quarrying. In analyzing particulates, PM-2.5 is of special significance in terms of health impacts since it has a higher chance of entering and remaining in the lungs if inhaled. People with existing breathing complaints such as asthma, bronchitis, or emphysema are likely to be adversely affected by high concentrations of particulates. Particulates can also cause corrosion and soiling of metalwork or other materials, damage vegetation, and reduce visibility. Canada-Wide Environmental Standards (CWSs) have been developed for PM-2.5. The standard to be achieved by 2010 is 30 mg/m³ (the World Health Organization recommends a higher standard of 25 mg/m³). This is based on the 98th percentile measurement annually (24-hour means), averaged over 3 consecutive years.

Source

Metro Vancouver : Lower Fraser Valley Ambient air quality
Environment Canada : Canadian environmental sustainability Indicators
Environics Research, June 2010, Canadian Environmental Barometer 2010 Vital Signs National Survey

Link

<http://www.metrovancouver.org/about/publications/Pages/default.aspx>
<http://www.metrovancouver.org/about/publications/Publications/LowerFraserValleyAmbientAirQuality-2008.pdf>
<http://maps-cartes.ec.gc.ca/indicators-indicateurs/airdetails.aspx?>
<http://maps-cartes.ec.gc.ca/indicators-indicateurs/airTable.aspx#Inkbritishcolumbia>

Water Quality

Data Summary

One of metro Vancouver's swimming beaches (Trout Lake) exceeded the guidelines around contamination at the four checks in June of 2010, and False Creek East also exceeded these guidelines at one count in July 2010.

Date

2010

Geography

Canada, BC, and CMAs: Vancouver, Toronto, Montreal; also Atlantic Region

Description

Metro Vancouver recreational swimming areas are sampled throughout the swimming season to determine compliance with the Canadian Recreational Water Guidelines. These guidelines establish a level of **200 coliform bacteria** (an indicator organism associated with sewage contamination) per 100 ml water as the maximum standard for recreational activities. This level is expressed as a geometric mean over the most recent 30 days. When beach water geometric means exceed the guidelines, a warning sign is posted at beaches because there is an increased risk of infection at this level of contamination.

Water Quality for Recreational Use for Metro Vancouver, June-July 2010											
Area	Beach	Geometric Mean									
		June,1	June,10	June,15	June,22	July,2	July,6	July,15	July,22	July,29	Average
English Bay	Third	22	22	21	21	21	20	21	21	21	21.1
	Second	20	20	22	22	22	22	25	25	25	22.6
	English Bay	39	39	33	21	23	28	45	45	62	37.2
	Sunset	32	28	32	32	38	37	53	50	58	40.0
	Kits Point	40	20	32	36	36	37	36	20	20	30.8
	Kits Beach	21	22	29	29	29	27	27	21	21	25.1
	Jericho	24	26	38	51	43	50	50	25	25	36.9
	Locarno	29	29	40	40	34	32	31	25	25	31.7
	Spanish Banks	20	22	27	27	28	26	26	21	21	24.2
Wreck	Foreshore East	20	39	50	58	66	46	36	24	24	40.3
	Acadia	30	47	54	43	43	46	43	42	42	43.3
	Wreck/Trail 4	20	21	22	22	22	24	27	30	33	24.6
	Wreck/Trail 6	24	26	27	27	26	29	28	33	33	28.1
	Wreck/Trail 7	65	67	54	65	54	65	65	64	74	63.7
False Creek	West	46	47	54	78	70	70	69	67	57	62.0
	Central	32	30	54	71	66	72	102	105	87	68.8
	East	80	109	150	145	172	220	184	174	135	152.1

Trout Lake	Trout Lake	269	282	254	214	200	170	156	127	115	198.6
West Vancouver	Ambleside	33	54	46	41	48	39	34	33	36	40.4
	Dundarave	21	31	33	36	36	33	27	25	25	29.7
	Eagle Harbour	36	76	97	105	133	100	67	46	43	78.1
	Whytecliffe Park	21	21	20	20	20	20	20	20	20	20.2
North Vancouver	Cates Park	42	45	29	24	21	22	30	30	30	30.3
	Deep Cove	42	57	50	67	74	49	51	56	46	54.7
Richmond	Iona	21	22	22	23	22	22	21	21	37	23.4
	Gary Point	48	41	43	69	36	30	29	35	53	42.7

In a June 2010 survey conducted for CFC, 67% of Vancouver respondents reported that the quality of the water in nearby lakes, rivers or oceans is excellent or good.

	Excellent/Good Recreational Water Quality
Canada	56%
B.C.	71%
Metro Vancouver	67%

Comparison

Based on survey results, Vancouverites' rating of the water quality in our recreational water bodies is higher than that in Toronto and Montreal, and comparable with that in the Atlantic region.

	Quality of recreational water excellent/good
Metro Vancouver	67%
Toronto	46%
Montreal	33%
Atlantic Region	67%

Data Considerations

False Creek is not classified as a Primary Contact Recreation Water Body (i.e. it is not a swimming/bathing beach). However, activities such as kayaking, canoeing, and sailing bring people in contact with these waters. The Canadian Environmental Barometer survey was conducted June 17-24, 2010 and contains a margin of sampling error of +/- 2.2

percentage points at the 95% confidence level.

Source

Vancouver Coastal Health
Environics Research, June 2010, Canadian Environmental Barometer 2010 Vital Signs National Survey

Link

http://www.vch.ca/your_environment/water_quality/recreational_water/recreational_water

WATER

Per Capita Water Use

Data Summary

Metro Vancouver continues its trend toward a more resource efficient use of water, with an average of 503 litres used per capita in 2008.

Date

2000-2008

Geography

Metro Vancouver and municipalities; selected European cities

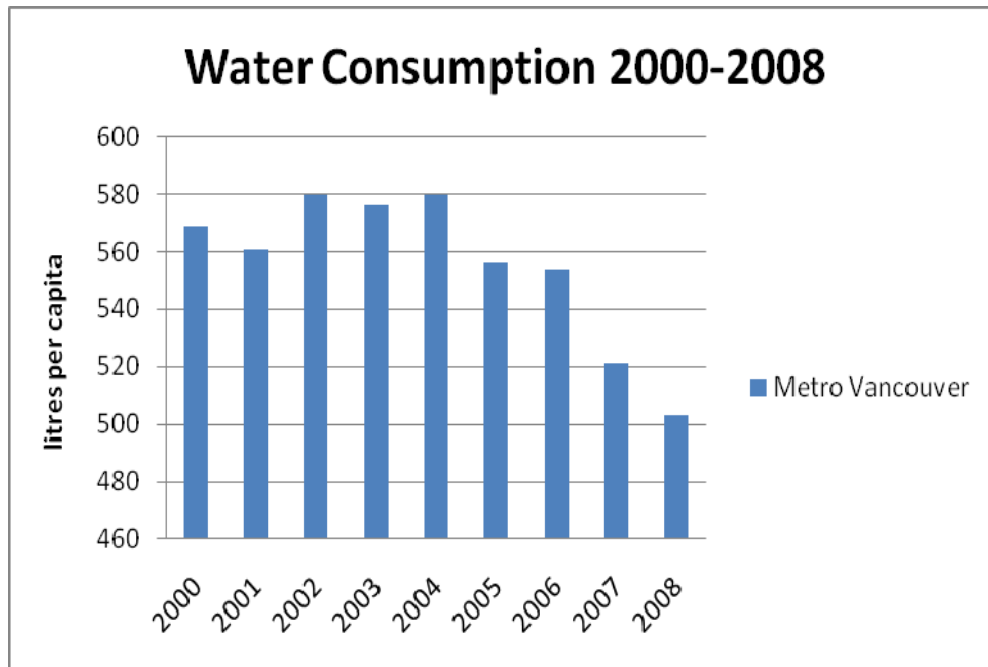
Description

Region-wide, water usage decreased 9% between 2006-2008. Water usage throughout the region ranges quite widely from a low of 145 litres per capita in the Township of Langley to a high of 1130 litres per capita in the UBC University Endowment Lands.

ANNUAL AVERAGE DAILY FLOWS Litres per capita

Municipality	2000	2001	2002	2003	2004	2005	2006	2007	2008	% Change, 2006-2008
Vancouver	616	600	635	626	611	596	571	543	519	-9%
Burnaby	595	587	568	578	583	550	542	500	499	-8%
New Westminster	505	578	542	484	428	447	459	363	338	-26%
Richmond	624	650	623	611	609	591	624	580	536	-14%
Delta	737	688	733	744	759	746	786	741	708	-10%
Surrey	462	446	457	476	474	468	510	456	436	-15%
Coquitlam	497	457	474	496	502	466	387	453	402	4%

Port Moody	562	568	628	552	522	505	517	470	455	-12%
Port Coquitlam	451	473	506	524	525	492	523	501	459	-12%
Pitt Meadows	656	624	715	784	823	686	800	517	539	-33%
Maple Ridge	443	436	457	487	491	472	478	453	422	-12%
West Vancouver	499	558	508	559	468	411	438	320	323	-26%
North Vancouver District	574	593	620	575	586	550	557	491	531	-5%
North Vancouver City	554	539	523	495	467	455	442	393	425	-4%
University Endowment Lands	2207	2102	2140	1988	1938	1899	1454	1112	1130	-22%
Langley City	481	469	480	464	474	475	480	456	429	-11%
Langley Township	145	157	183	171	170	178	154	157	145	-6%
Metro Vancouver	569	561	580	576	580	556	554	521	503	-9%



Comparison

Metro Vancouver's water consumption, while on the decline, is high compared to major European cities. We consume almost three times what is consumed in Paris, and about four times what is consumed in Berlin or Brussels.

Consumption of water (litres per day) per inhabitant, selected European cities

CITIES	1989_1993	1994_1998	1999_2002	2003_2006
Oslo			502.74	489.86
Paris				267.40
Stuttgart			133.15	186.03
Berlin	214.25	171.51	124.11	163.01
Lausanne	498.90	481.10	310.96	293.97
Geneva	510.68	440.82	413.70	407.12
Brussels	170.41	167.12	192.88	167.95

Data Considerations

The average daily flow of water is estimated by the population weighted average of the municipal water distribution services, based on the 2004 population distribution. Data includes all water removed from regional source lakes including agricultural, institutional, commercial and industrial users as well as residential users and any system leakage or unaccounted for water

Source

Metro Vancouver
Eurostat

Link

<http://www.metrovancouver.org/about/publications/Publications/2008WaterConsumptionStatistics.pdf>

Use of Tap Water For Drinking

Data Summary

In 2008, about three-quarters of metro Vancouverites consumed tap water rather than bottled water most often.

Date

2006, 2008, 2010

Geography

Metro Vancouver, Toronto (CMA), Montreal (CMA)

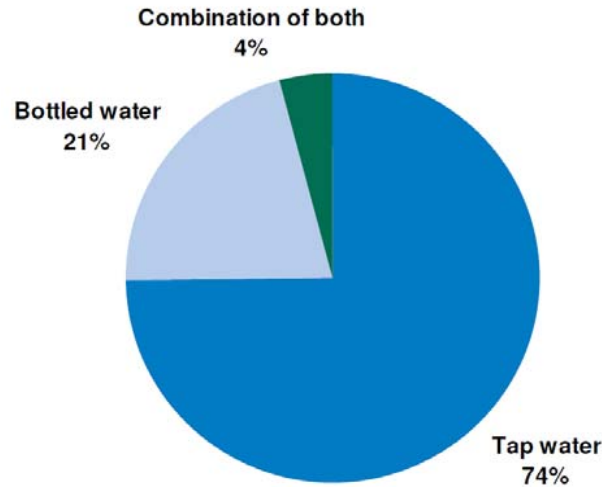
Description

There is currently a debate about the use of bottled versus tap water. While some people are concerned about the quality of water that comes from the tap, others are concerned about the monitoring of bottled water and the contaminants from the plastic that holds it. Bottled drinking water also has environmental impacts in terms of increased waste from bottles and greenhouse gas emissions from the transportation of bottled water.

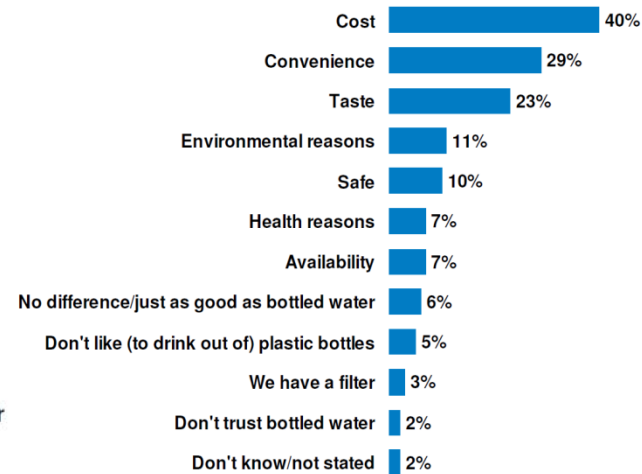
Bottled water was consumed most often by 21% of the region's residents, a slight decrease since 2006 (when 23% reported the

same). Tap water drinkers, at 74%, are up from 2006, when 67% of households reported drinking primarily tap water. This represents an increase of 10%. Amongst the reasons given for preferring tap water by the 74% who do, 40% of residents across the region cited cost, 29% cited convenience, 23% cited taste, and 11% noted environmental reasons.

Type of Drinking Water Consumed Most Often



Reasons for Drinking Tap Water



In a June 2010 survey conducted for CFC, 92% of Vancouver respondents rated the quality of the water they drink as excellent or good.

Comparison

Vancouverites' satisfaction with our water quality compares favorably to that in both Toronto and Montreal by a significant margin.

	Excellent/Good Drinking Water Quality
Metro Vancouver	92%
Toronto	80%
Montreal	77%

Data Considerations

The Canadian Environmental Barometer survey was conducted June 17-24, 2010 and contains a margin of sampling error of +/- 2.2 percentage points at the 95% confidence level.

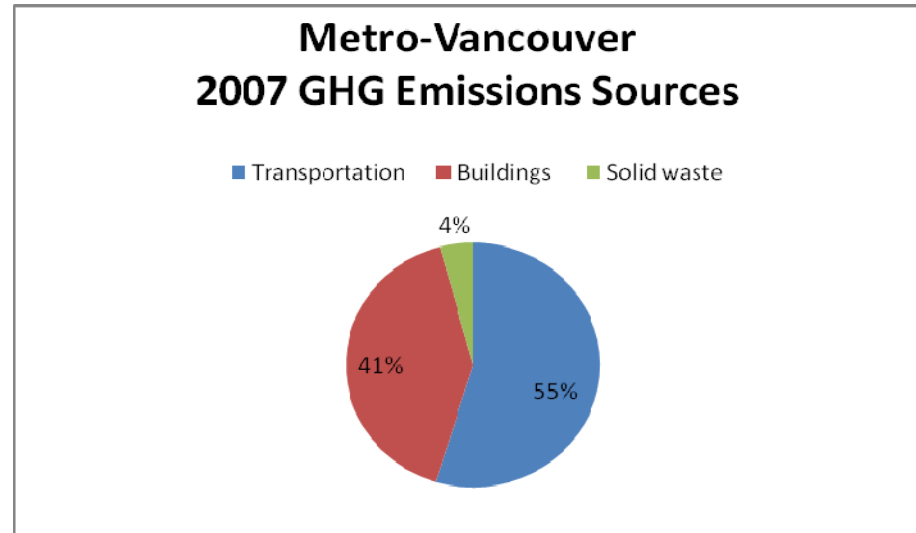
Source

Metro Vancouver Drinking Water Survey EnviroNics Research, June 2010, Canadian Environmental Barometer 2010 Vital Signs National Survey
Link
http://www.metrovancouver.org/region/tapwater/Pages/default.aspx http://www.metrovancouver.org/region/tapwater/Documents/2008DrinkingWaterSurvey.pdf

ENERGY USE

Greenhouse Gas Emissions Per Capita
Data Summary
In 2007, Metro Vancouver residents were responsible for 5.7 tonnes of greenhouse gas emissions per capita, or 11.5 million tonnes overall, measured in CO ₂ equivalent gases. Most of these emissions (55%) come from the fuels we use in transportation; the other major share (41%) comes from heating and cooling our buildings.
Date
1990-2008
Geography
Canada and CMAs: Vancouver, Victoria, Montreal, Toronto, Calgary, Ottawa-Gatineau
Description

Metro Vancouver's GHG emissions increased (+7.9%) since 2005, when we emitted 10.7 million tonnes. The increase Canada wide for this period was 2.6%. Per capita emissions in Metro Vancouver in 2007 were 5.7 tonnes.



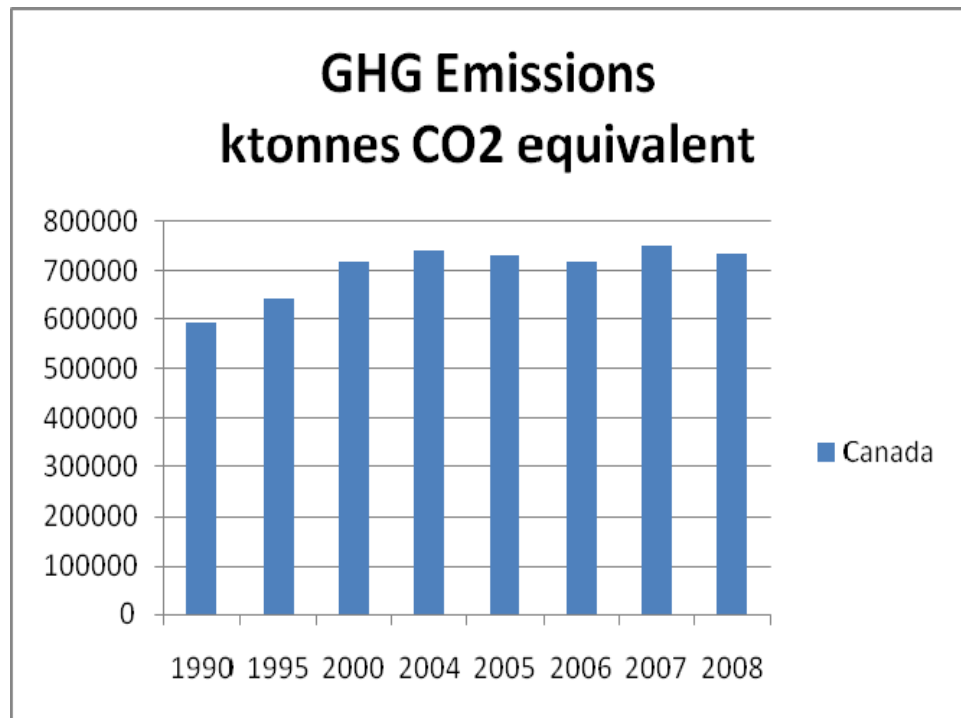
	GHG emissions in tonnes of CO2 equivalent 2007		GHG emissions in tonnes of CO2 equivalent 2005	
	total	per capita		Total
On road Transportation	6,300,290	2.8161	Motor vehicles	5,386,785
Buildings	4,739,766	2.6799	Buildings	4,756,641
Solid waste	479,079	0.2141	Landfills + electric power generation	528,970
Total	11,519,135	5.7101	Total	10,672,496

Comparing these trends with those for Canada as a whole, Canada's GHG emissions increased from 1990 to 2007 then decreased 2.1% from 2007-2008. It bears recalling, however, that Canada's commitment to the Kyoto Protocol promised a decrease in GHG levels below 1990 emissions of 592,000 kt between 2008-2012. Instead, our emissions have increased 24%.

Total GHG emissions in Canada 1990-2008 in kilo tonnes CO₂ equivalent.

1990	1995	2000	2004	2005	2006	2007	2008	%
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									Change 1990- 2008
Canada	592,000	641,000	717,000	741,000	731,000	718,000	750,000	734,000	+24.0



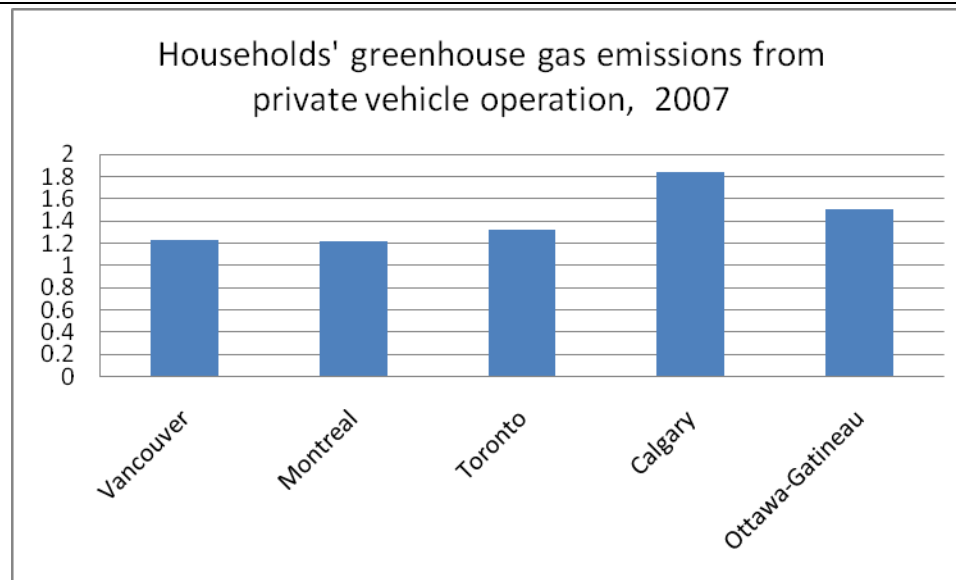
Comparison

Metro Vancouver emits more GHGs per capita than does Victoria in transportation, buildings, and waste sectors. Considering GHG emissions from private vehicle operation alone, Metro Vancouver fares better than Toronto, Calgary, or Ottawa, and on par with Montreal.

Victoria (Capital Regional District)	GHG emissions in tonne CO2 equivalent, 2007	
	total	per capita
Transportation	831,338	2.3140
Buildings	563,766	1.5692
Solid waste	45,885	0.1277
Total	1,440,989	4.0109

Households' greenhouse gas emissions from private vehicle operation (tonnes of CO2 Equivalent per capita), 2007

	2007
Metro Vancouver	1.228
Metro Montreal	1.2190
Metro Toronto	1.322



Data Considerations

The term CO₂ equivalent represents a conversion of all measured greenhouse warming gases (eg. methane, nitrous oxide, and hydrofluorocarbons) to a standard global warming potential, that produced by the major greenhouse warming gas, CO₂. The carbon dioxide equivalency of a gas is calculated by multiplying its mass and its global warming potential (where CO₂ is given a global warming potential of 1).

Ministry of Environment GHG emissions data does not include emissions from industry or agriculture. As such, data for Canada-wide GHG emissions are not directly comparable to the regional figures, as the Canada-wide emissions data do include industrial emissions.

Source

Ministry of Environment Community Energy and Emissions Inventory: **Reports**

Comparative data provided by CFC.

Environment Canada. 2010. National Inventory Report: Greenhouse Gas Sources and Sinks in Canada 1990-2008. The Canadian Government's Submission to the UN Framework Convention on Climate Change.

Link

<http://www.env.gov.bc.ca/cas/mitigation/ceei/reports.html#V>

http://www.env.gov.bc.ca/cas/mitigation/ceei/RegionalDistricts/Metro-Vancouver/ceei_2007_metro-vancouver_regional_district.pdf

<http://www.ec.gc.ca/ges-ghg>

SUSTAINABLE CHOICES

Farmers Markets			
Data Summary			
There are 20 farmers' markets in Metro Vancouver in 2010. This is up from a count of 17 in 2008.			
Date			
2008, 2010			
Geography			
Metro Vancouver municipalities			
Description			
Name	Location	Time	Number of vendors
Ambleside Farmers' Market	Bellevue St., Ambleside, West Vancouver	Open from 1 st Sunday in May to Last Sunday in October, Sun 10 am - 3 pm	26
Burnaby Farmers' Market	Burnaby City Hall, Burnaby	Open from 1 st Saturday in May to last Saturday in October, Sat 9 am - 2 pm	30
Coquitlam Farmers' Market	624 Poirier Street, Coquitlam	Open from Mothers Day to last Sunday in October, Sun 9 am - 1 pm	59
Haney Farmers' Market	Memorial Peace Park, Maple Ridge	Open from Mothers Day to Thanksgiving, Sat 9 am - 2 pm	40
Ladner Village Market	48 th Av., between Delta St. and Elliott St., Ladner Village	Open from June 14 - Sept 13, Sun 10 am - 4 pm	140

Langley Community Farmers' Market	Kwantlen Polytechnic University, Langley City	Open from May 26 - Oct 6, Wed 3 - 7 pm	35
Lonsdale Quay Farmers' Market	East Plaza, Lonsdale Quay Market & Shops, North Vancouver City	Open from 2 nd Saturday in May to Last Saturday in Oct, Sat 10 am - 3 pm	20
Port Coquitlam Farmers' Market	2252 Leigh Square, Port Coquitlam	Open from May 20 - Sept 16, Thu 3 pm - 7 pm	34
Potter's Farm Market	19158 48 th Ave, Surrey	Open from May 1 - Oct 9, Sat 10am - 3pm	22
Royal City Farmers' Market	Tipperary Park, New Westminster	Open from June 10 - Oct 7, Thu 3 pm - 7 pm	35
Steveston Farmers' and Artisans' Market	Gulf of Georgia Cannery National Historic Site, Richmond	Open from May 23 - Oct 10, Sun 10 am - 4 pm	80
Surrey Urban Farmers' Market	North Surrey Recreation Centre Courtyard, Surrey	Open from June 16 - Sept 29, Wed 1 pm - 6 pm	25
White Rock Farmers' Market	Miramar Village Plaza, White Rock	Open from May 31 - Oct 11, Sun 9 am - 1 pm	50
East Vancouver Farmers Markets	Trout Lake Community Centre at 15th Avenue and Victoria Drive	Open from May 16th to Oct 10th Sat 9:00am to 2:00pm	48
Kitsilano Farmers Market	10th Avenue and Larch in the parking lot of Kitsilano Community Centre	Open from June 7th to Oct 25th Sun 10:00am to 2:00pm	48
Main Street Station Farmers Market	At the eastern foot of Thornton Park	Open from June 10th to October 21st Wed 3:00pm to 7:00pm	35
UBC Farm Market	UBC Farm Harvest Hut at 6128 South Campus Road	Open from June 12th to October Sat	-

	Vancouver Winter Farmers Market	WISE Hall - 1882 Adanac Street	Open from November 7 to April 24 Sat 10:00am to 2:00pm	50
	West End Farmers Market	1100 Block of Comox Street between Bute and Thurlow across from Nelson Park in Vancouver's West End	Open from June 6th to Oct 24th Sat 9:00am to 2:00pm	35
	Granville Island Farmers Market	Triangle Square, Granville Island, Vancouver	Open from June 3 rd to Oct. 21 st Thurs at 9:00am	n/a

Comparison

Currently, there are over 105 farmers' markets throughout the Province, 88 of which include vendors who make, bake, or grow the food they sell.

Data Considerations

Markets listed are B.C. Association of Farmers Markets members and include producer-only markets. Additional information was provided by the City of Surrey. Pocket markets are not included.

Source

BC Association of Farmers' Markets
City of Surrey

Link

<http://www.bcfarmersmarket.org/findamarket.asp>

Organic Farming

Data Summary

In 2007, there were 455 certified organic farmers in BC. About 13% of the fruits, vegetables and coarse grains grown in the Lower Mainland are produced using organic methods.

Date

2007

Geography

Provinces and Lower Mainland

Description

In 2008, we reported that there were 2,618 farms in Metro Vancouver (based on 2006 figures). Using a 2007 count, there are 455 certified organic farmers province-wide, almost 13% of the organic farmers across Canada as a whole.

Table 1: 2007 Canada: Organically managed land area and farms according to province 2007

Province	Number of certified farmers	Number of certified processors and handlers	Hectares (converted)	Acres (converted area)
British Columbia	455	201	13'439	33'208
Alberta	231	64	160'765	397'244
Saskatchewan	1'104	105	264'734	654'150
Manitoba	181	49	36'962	91'333
Ontario	669	? (>90)	40'763	100'723
Quebec	988	485	35'963	88'865
New Brunswick	46	8	2'023	5'000
Nova Scotia	57	6	931	2'300
Prince Edward Island	43	3	693	1'713
Newfoundland	5			
Yukon	3	1		
Totals Canada	3'782	>1'012	556'273	1'374'536

Source: Canadian Organic Growers 2008

Consumers in BC buy more than those in other provinces and 13 % of the country's population buys 26% of our organic food. There were 201 processors and certified handlers and traders certified as organic in BC in 2007, this figure increased by 20% since 2005. However, BC has lost 27 organic farmers since 2005.

Examining data from the Census of Agriculture, organic production accounts for 13% of fruits, vegetables and coarse grains produced in the Lower Mainland, which is less than the 17% of those grown across B.C. The proportion of dairy, eggs, fish and meats produced using organic methods is about 1% in the Lower Mainland, about the same as for B.C. as a whole.

Estimated quantity of organic production relative to conventional production, in Tonnes, BC and Lower Mainland

Category	Lower Mainland Production	Estimate of Organic Production (Lower Mainland)	% of Total Product Category	BC Production	Estimate of Organic Production (BC)	% of Total Product Category
Vegetables	276,255	34,919	13%	339,071	56,016	17%
Fruit	101,751	12,861	13%	222,172	36,704	17%
Milk	460,288	4,098	1%	639,647	4,819	1%
Eggs	39,990	356	1%	49,473	373	1%
Fish	37,073	330	1%	148,294	1,117	1%
Poultry	186,887	1,664	1%	216,712	1,633	1%
Beef	7,174	64	1%	69,321	522	1%
Pig	13,241	118	1%	17,900	135	1%
Lamb, Sheep	181	2	1%	1,218	9	1%
Coarse Grains	5,221	660	13%	192,024	31,723	17%

Source: Source: Stats Canada, 2006 Census of Agriculture; FAO Stats; Serecon



In a June 2010 survey conducted for CFC, 71% of Vancouver respondents rated the protection of local wildlife and green spaces either excellent or good.

		Protection of wildlife & green space excellent/good
	Canada	68%
	BC	71%
	Metro Vancouver	71%

Comparison

See provincial comparison in the table above.

Data Considerations

None

Source

Canadian Organic Growers
Food Secure Vancouver Baseline report, 2009, Vancouver Food Policy Council

Link

<http://www.metrovancouver.org/planning/development/LRSPreview/LRSPDocs/Map5ConRecAreas.pdf>
<http://www.metrovancouver.org/Search/Results.aspx?k=conservation%20and%20recreation%20area%20m%20ap%205>
<http://www.vancouverfoodpolicycouncil.ca/sites/default/files/FoodSecureVancouverBaselineStudy.pdf>

Proportion of Waste Composted

Data Summary

In 2007, 54% of Metro Vancouver's households composted, mostly yard waste. This is more than double the rate of 2006.

Date

2006-2007

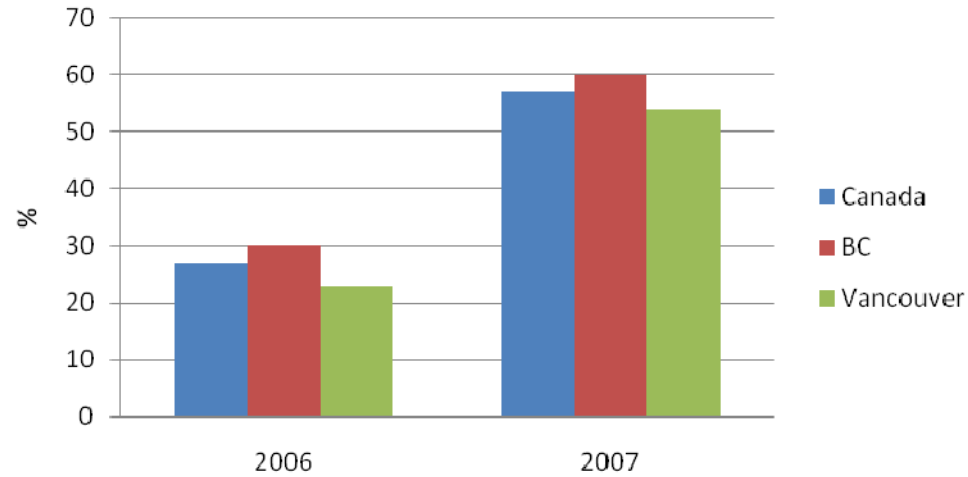
Geography

Canada, BC, and CMAs: Vancouver, Toronto, Montreal, Ottawa-Gatineau, Calgary

Description

Composting became a much more common activity in Vancouver from 2006 to 2007, as it did across B.C. and throughout Canada. Metro Vancouver residents compost less than Canadians or British Columbians on average. This is due to a lower rate of kitchen waste composting in Metro Vancouver; when it comes to yard waste, we compost more than province- or country-wide.

Households that composted



	Households that composted (%) ¹	Composted kitchen waste (%) ¹	Composted yard waste (%) ²
Canada	57	37	72
BC	60	34	82
Metro Vancouver	54	28	83

Comparison

Metro Vancouver's composting rate is comparable to that of Ottawa or Calgary, but has a long way to go to catch up with Toronto's rate of 72%.

	Households that composted (%) ¹	Composted kitchen waste (%) ¹	Composted yard waste (%) ²
Metro Vancouver	54	28	83
Metro Toronto	72	63	91
Metro Montreal	29	11	48
Ottawa-Gatineau	57	26	83

	Calgary Region	46	24	55
Data Considerations				
<p>1. As a percentage of all households</p> <p>2. As a percentage of households that were not apartment building dwellers and had a lawn or garden in 2005.</p> <p>In 2007, the survey questions were:</p> <p>During the past 12 months, did your household separate any kitchen waste from the rest of your garbage and put it out for compost collection, take it to a depot or put it in a compost bin or pile?</p> <p>In the past 12 months, did your household separate any yard waste from such as leaves, plants or grass clipping from the rest of your garbage and put it out for collection, take it to a depot or put it in a compost bin or pile?</p>				
Source				
<p>Data collected by CFC</p> <p>2007 data by special request, based on Statistics Canada, Households and the Environment Survey, 2007</p>				
Link				
http://www.statcan.gc.ca/pub/11-526-x/11-526-x2009001-eng.pdf				

Environmental Perceptions and Responsibilities/Individual Actions			
Data Summary			
<p>One-fifth of Vancouver residents are pessimistic about recent trends in the quality of our natural environment. At the same time, 90% of Vancouver residents believe individuals can make a difference in improving environmental quality; 21% see cost barriers as the most significant obstacle to positive action.</p>			
Date			
2010			
Geography			
Canada, BC, and CMAs: Vancouver, Toronto, Montreal			
Description			
<p>Respondents in Vancouver were less likely than respondents across Canada or across B.C. to believe that overall, the quality of the environment in our community is generally getting better. We were more likely to think it is getting worse.</p>			
	Getting Better	Getting Worse	Not Changing
Canada	34%	16%	48%
B.C.	31%	17%	48%
Metro Vancouver	30%	20%	47%

At the same time, Vancouver respondents were more likely than others across Canada or in any other region to think that individuals can make a major or some difference in improving the environmental quality in our community.

	Individuals Can Make a Major/Some Difference	Individuals can make no difference at all
Canada	86%	3%
B.C.	87%	4%
Metro Vancouver	90%	6%

When asked about the biggest obstacles keeping citizens in the community from doing more to reduce their environmental impact, Vancouverites were much more likely than those across Canada to respond that cost barriers were the biggest obstacle, along with a lack of leadership.

	Too costly/expensive/cannot afford to pay for changes	Lack of leadership from local/government leaders
Canada	14%	7%
B.C.	18%	11%
Metro Vancouver	21%	11%

Comparison

Respondents in Vancouver were more pessimistic than those in Toronto or Montreal about trends in the quality of the environment over time.

	Quality of the environment getting worse over time	Individual citizens can make a major/some difference	Cost is a big obstacle to reducing environmental impacts	Lack of leadership is a big obstacle to reducing environmental impacts
Metro Vancouver	20%	90%	21%	11%
Toronto	18%	86%	14%	6%
Montreal	11%	88%	12%	7%

Data Considerations

The Canadian Environmental Barometer survey was conducted June 17-24, 2010 and contains a margin of sampling error of +/- 2.2 percentage points at the 95% confidence level.

Source

Environics Research, June 2010, Canadian Environmental Barometer 2010 Vital Signs National Survey
Link
N/A

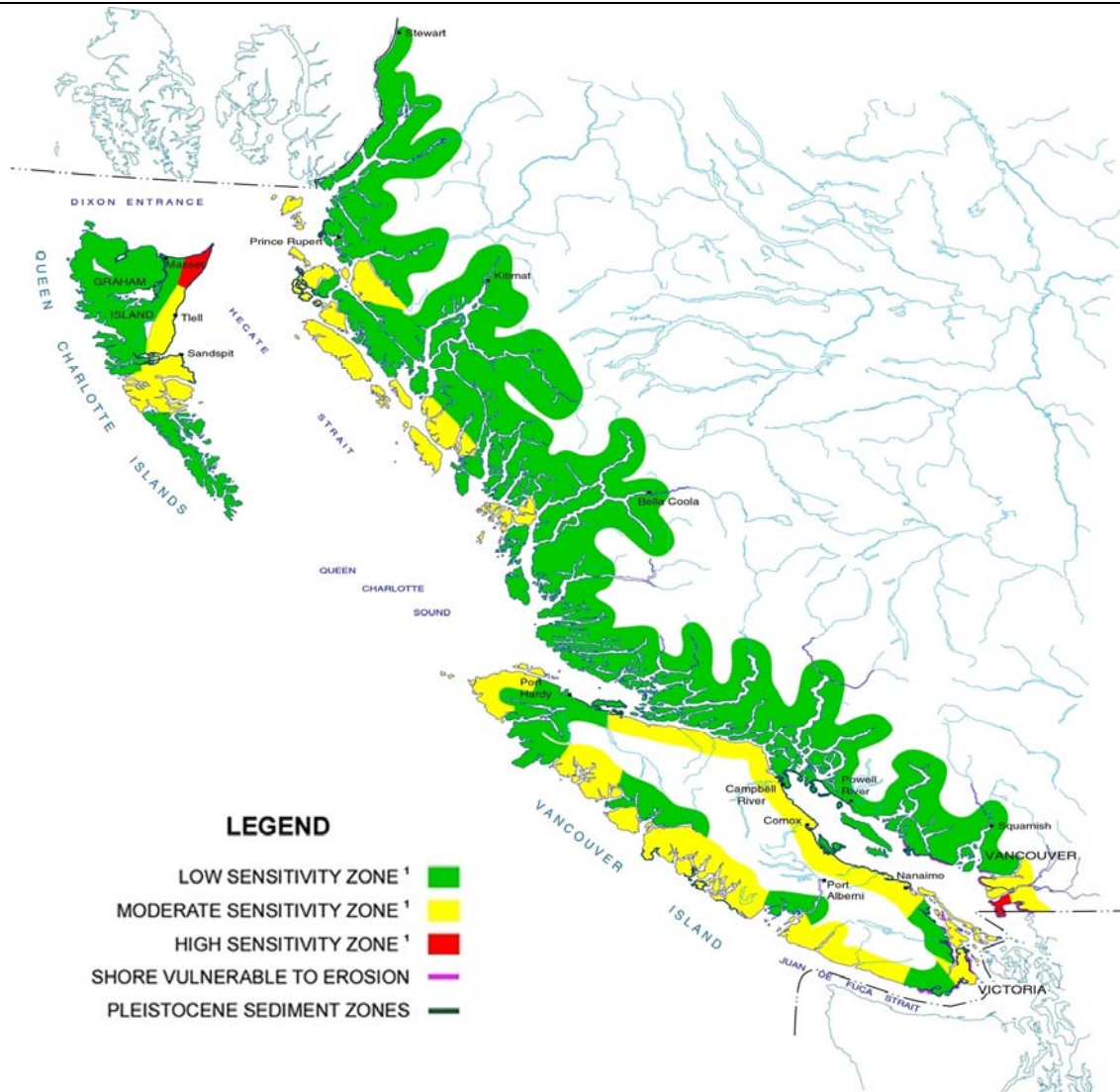
ENVIRONMENTAL RISKS

Sea Level Rise
Data Summary
Sea levels along Metro Vancouver's coastline have risen by 2 mm since 1990 and by 3 mm since 2000.
Date
1990-2009
Geography
BC coast: Vancouver, Victoria, Prince Rupert, Tofino
Description
Globally, sea levels are rising but the rate of sea level rise is highly variable. For the period 1993-2005, global sea level rise was 2.3-3.9 mm/yr. Current projections for sea level rise this century range from 18 cm - 1.4 m. In Vancouver and throughout British Columbia, year over year sea level change can be larger than the longer term averages, due to natural geological processes. Since measurement began at the Vancouver station #7735 in 1911, a trend of 2 cm sea level rise has been recorded. The graph below shows a sea level rise of 2 mm since 1990 and 3 mm since 2000.

Annual Average Sea Level, Vancouver Sta. 7735



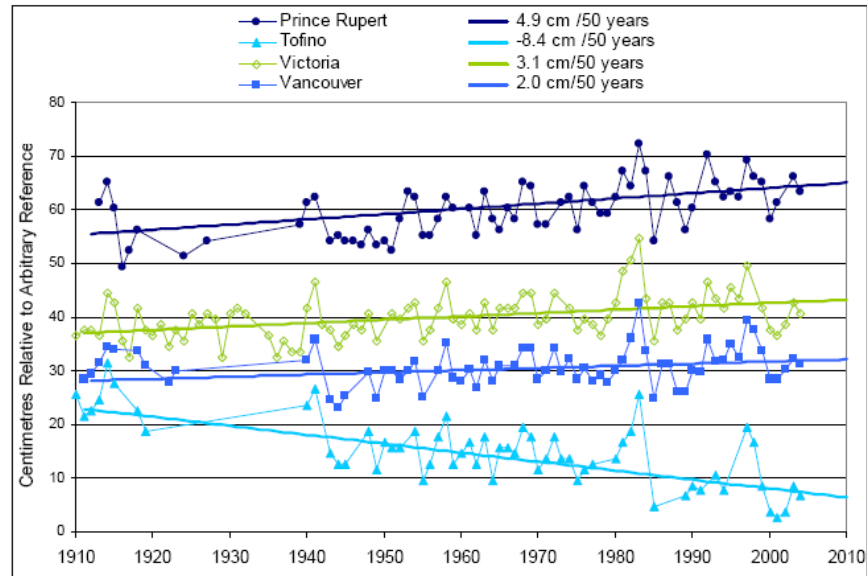
Portions of the region are rated as being at extreme risk of flooding due to sea level rise.



Comparison

Along the B.C. coast, relative sea levels have been rising at Prince Rupert, Vancouver, and Victoria, but falling at Tofino.

Figure 13. Changes in annual mean sea level at four locations on the B.C. coast.



Data Considerations

Annual changes in mean sea level rise are measured by daily readings taken from Station Name Vancouver, Station Number 7735, since 1911, the first year of records. Levels are in cm relative to an arbitrary reference value.

Source

Marine Environmental Data Service, Department of Fisheries and Oceans

Link

http://www.env.gov.bc.ca/soe/indicators/04_climate_change/technical_paper/climate_change.pdf

WASTE

Waste and Recycling

Data Summary

Despite a steady increase in population, Metro Vancouver residents generated less waste in 2008 than was the case in 2007. In 2008, Vancouver residents diverted 55.5% of their waste from landfills.

Date

2002-2008

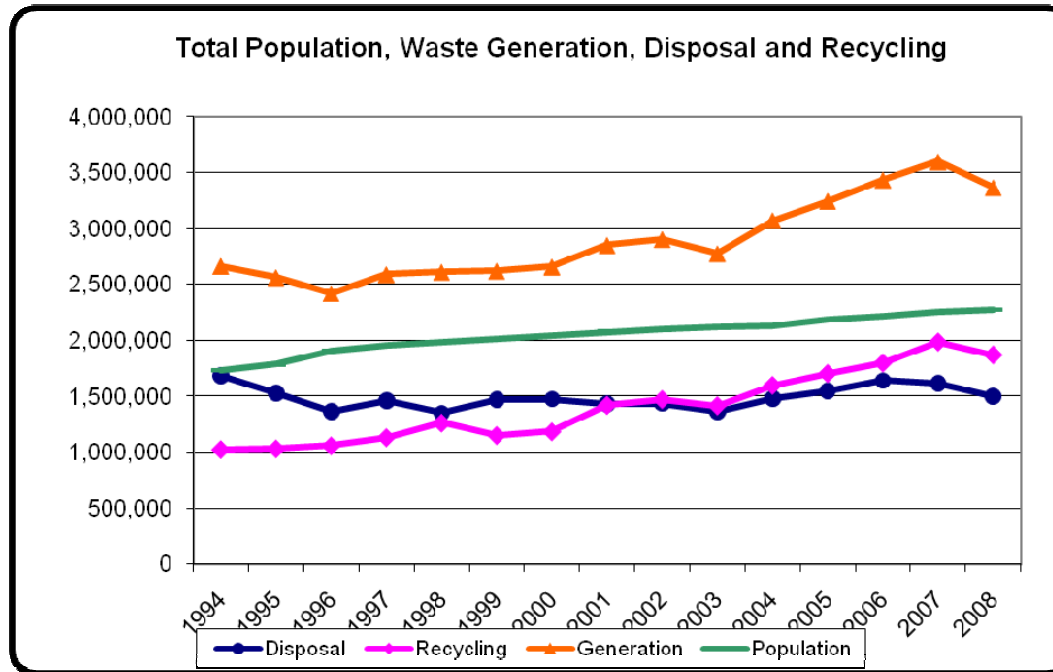
Geography

Canada, BC, and CMAs: Vancouver, Toronto, Montreal; also Atlantic Region

Description

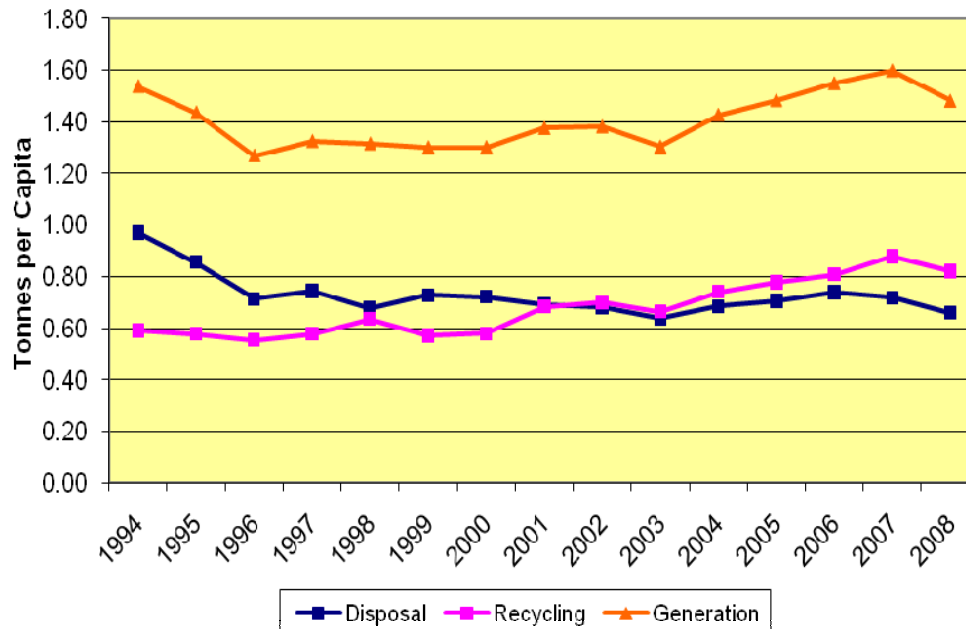
The following figure shows that the region was increasing its generation of waste at a faster rate than our population growth until 2007. But, in 2008, the trend has changed, with a decrease of the amount of waste generated in the region. Also increasing is the proportion of waste that we recycle, compared to what we send to landfill; in 2001, we recycled the same quantity of waste that we sent to landfill and in 2008 we recycled or diverted almost 25% more than we sent to landfill. In 2008, we diverted 55.5% of our waste from landfill.

Year	Waste Generated (tonnes)	Waste Recycled (tonnes)	Waste Disposed (tonnes)	Waste Per Capita (tonnes)	% Waste Diverted from Landfill
2002	2,903,894	1,470,445	1,433,449	1.4	50.6%
2003	2,755,455	1,414,390	1,361,065	1.3	50.9%
2004	3,072,702	1,595,999	1,476,703	1.4	51.9%
2005	3,245,794	1,701,412	1,544,382	1.5	52.4%
2006	3,434,616	1,794,613	1,640,003	1.5	52.2%
2007	3,598,143	1,980,752	1,617,392	1.6	55.0%
2008	3,366,121	1,866,891	1,499,231	1.5	55.5%



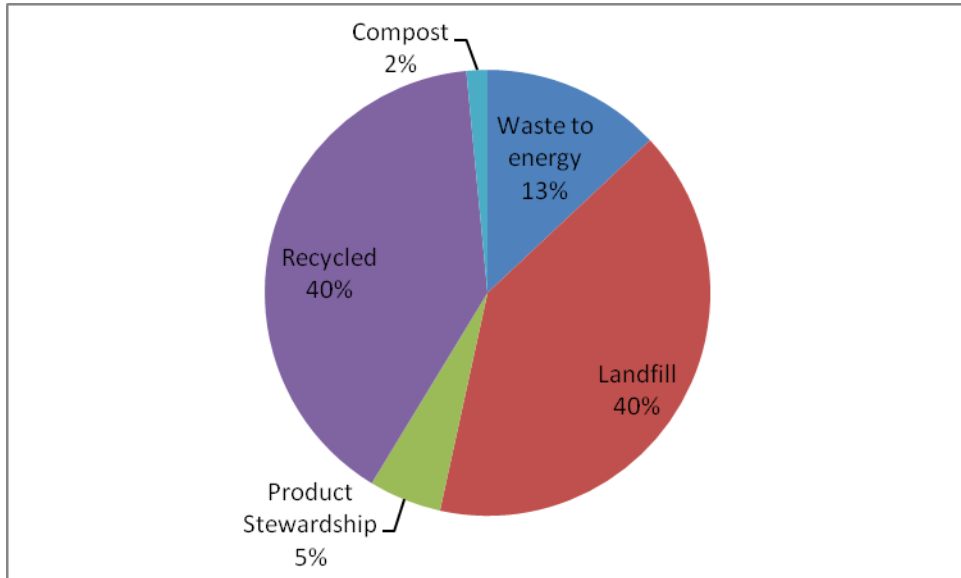
In 2008, the region generated an average 1.48 tonnes of waste per capita. These figures include waste management habits in the residential, commercial and industrial sectors.

Figure 12: Total Waste Generation, Disposal and Recycling Rates per Capita



In 2008, the same proportion of waste was recycled and disposed of in Metro Vancouver (40%) and 13% was used in our waste-to-energy facilities. The chart below considers waste for residential and commercial sectors only.

Where does the waste go ? (2008)



In a June 2010 survey conducted for CFC, 70% of Vancouver respondents stated that the management of waste and garbage in the region is excellent or good. While waste management was the most common issue cited as the most important environmental issue facing the community across Canada, in Vancouver this issue ranked second to car pollution/too much traffic.

	Excellent/Good Waste Management	Waste Management is Most Important Environmental Issue
Canada	68%	16%
B.C.	65%	14%
Metro Vancouver	70%	15%

Comparison

Vancouverites' perceptions of the quality of waste management here is on par with perceptions in Toronto and Montreal. When responding to the June 2010 survey question regarding the single most important environmental issue facing the local community, all three cities responded at the same rate that this was an issue related to waste management, garbage dumps, or incinerators. However, for Montreal, this was the most common response.*

	Waste management is excellent/good	Waste Management is Most Important Environmental Issue

	Metro Vancouver	70%	15%
	Toronto	70%	15%
	Montreal	66%	15%

Data Considerations

* In Montreal, another 15% also responded the single most important environmental issue was air quality. The Canadian Environmental Barometer survey was conducted June 17-24, 2010 and contains a margin of sampling error of +/- 2.2 percentage points at the 95% confidence level.

Source

Metro Vancouver
 Environics Research, June 2010, Canadian Environmental Barometer 2010 Vital Signs National Survey

Link

<http://www.metrovancouver.org/about/publications/Publications/ZWCManagementPlanMarch2009.pdf>