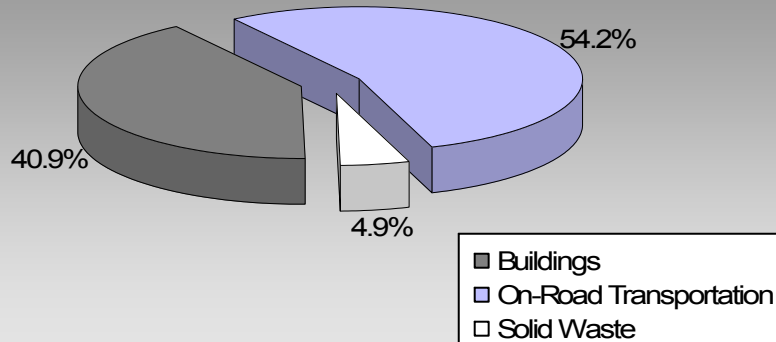


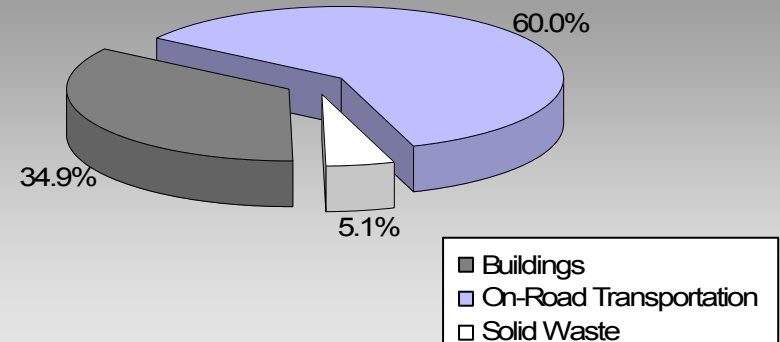
BC's Community Energy and Emission Inventories...supporting efforts towards Complete, Compact, Energy-Efficient Communities

Where are the majority of our community's emissions coming from?

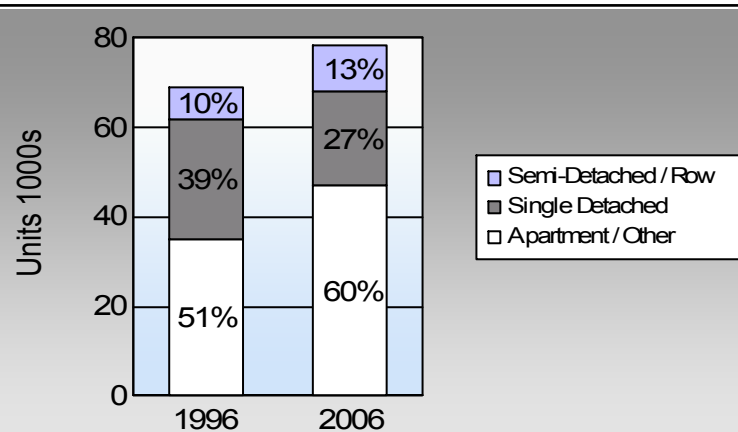
**Burnaby City
2007 GHG Emissions Sources**



**Total for BC
Communities**



Are we living more compactly? Housing Type



In BC, single family detached housing made up 49% of housing in 2006.

Are we driving less? Commute To Work

	1996	2006
	70.3%	62.8%
	6.5%	5.9%
	16.8%	25.0%
	4.6%	4.6%
	1.0%	0.8%

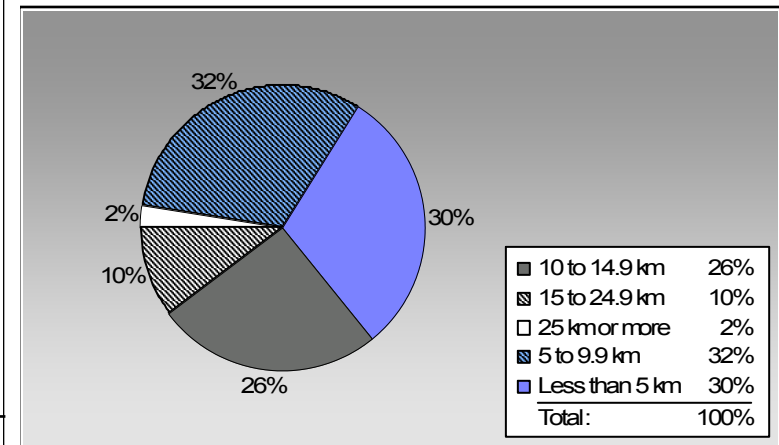
In BC, 10% of people took transit, 7% walked, and 2% cycled to work in 2006.

Residential Density

Burnaby City: 29.7 people per net ha

BC municipal average: 7.4 people per net ha

Are we living closer to where we work? Commute Distance



In BC, 41% of people lived within 5km of their work in 2006.

Sectors

On Road Transportation		<u>Vehicles</u>	<u>Consumption</u>	<u>Measurement</u>	<u>Average-VKT(km)</u>	<u>Energy (GJ)</u>	<u>CO2e (t)</u>
Small Passenger Cars	Gasoline	44,794	58,688,971	Litres	13,379	2,054,114	139,350
	Diesel Fuel	648	656,601	Litres	13,421	25,148	1,793
	Other Fuel	< 10	8,793	Litres	9,466	337	13
Small Passenger Cars						2,079,599	141,156
Large Passenger Cars	Gasoline	21,332	36,964,988	Litres	14,744	1,293,775	87,462
	Diesel Fuel	436	780,404	Litres	13,976	29,889	2,130
	Other Fuel	52	104,737	Litres	11,790	4,011	160
Large Passenger Cars						1,327,675	89,752
Light Trucks, Vans, SUVs	Gasoline	34,742	66,824,559	Litres	13,537	2,338,860	159,462
	Diesel Fuel	1,100	2,505,498	Litres	17,210	95,961	6,845
	Other Fuel	148	287,917	Litres	10,905	11,027	441
Light Trucks, Vans, SUVs						2,445,848	166,748
Commercial Vehicles	Gasoline	254	1,105,028	Litres	15,698	38,676	2,589
	Diesel Fuel	1,003	4,590,761	Litres	21,442	175,826	12,354
	Other Fuel	78	279,990	Litres	12,652	10,724	429
Commercial Vehicles						225,226	15,372
Tractor Trailer Trucks	Gasoline	29	209,470	Litres	21,324	7,331	492
	Diesel Fuel	1,137	38,902,699	Litres	91,255	1,489,973	104,686
	Other Fuel	< 10	8,365	Litres	8,298	320	13
Tractor Trailer Trucks						1,497,624	105,191
Motorhomes	Gasoline	507	551,094	Litres	3,378	19,288	1,290
	Diesel Fuel	54	64,852	Litres	5,506	2,484	175
	Other Fuel	< 10	8,030	Litres	2,189	308	12
Motorhomes						22,080	1,477
Motorcycles, Mopeds	Gasoline	1,018	455,266	Litres	5,516	15,934	1,063
Motorcycles, Mopeds						15,934	1,063
Bus	Gasoline	426	4,911,342	Litres	29,456	171,897	11,535
	Diesel Fuel	1,055	32,976,427	Litres	54,302	1,262,997	88,741
	Other Fuel	60	1,161,790	Litres	48,544	44,497	1,780
Bus						1,479,391	102,056

Burnaby City

Updated 2007 Community Energy and Emissions Inventory

	Gasoline:	5,939,875	403,243
	Diesel:	3,082,278	216,724
	Other Fuel:	71,224	2,848
On Road Transportation Totals	All Fuels:	9,093,377	622,815

Buildings	<u>Type</u>	<u>Connections</u>	<u>Consumption</u>	<u>Measurement</u>	<u>Energy (GJ)</u>	<u>CO2e (t)</u>
Residential	Electricity	76,863	640,886,965	Kilowatt Hours	2,307,191	15,809
	Natural Gas	36,916	4,103,377	GigaJoules	4,103,377	209,272
	Heating Oil		130,166	GigaJoules	130,166	9,175
	Propane		192,996	GigaJoules	192,996	11,775
Residential					6,733,730	246,031
Commercial/Small-Medium Industrial	Electricity	8,702	1,261,681,113	Kilowatt Hours	4,542,048	31,122
	Natural Gas	4,981	3,767,674	GigaJoules	3,767,674	192,151
Commercial/Small-Medium Industrial					8,309,722	223,273
					Electricity:	46,931
					Natural Gas:	401,423
					Propane:	11,775
					Wood:	
					Heating Oil:	9,175
Buildings Totals				Buildings:	15,043,452	469,304

Solid Waste	<u>Mass (t)</u>	<u>CO2e (t)</u>
Community Solid Waste	154,539	56,232

Burnaby City

Updated 2007 Community Energy and Emissions Inventory

Grand Total	CONSUMPTION		ENERGY (GJ)	CO2e (t)
Diesel Fuel	80,477,242	L	3,082,278	216,724
Electricity	1,902,568,078	kWh	6,849,239	46,931
Gasoline	169,710,718	L	5,939,875	403,243
Heating Oil	130,166	GJ	130,166	9,175
Natural Gas	7,871,051	GJ	7,871,051	401,423
Other Fuel	1,859,622	L	71,224	2,848
Propane	192,996	GJ	192,996	11,775
Solid Waste	154,539	T	0	56,232
Total of Transportation / Buildings / Solid Waste:			24,136,829 GJ	1,148,351 tonnes

Memo Items

Buildings	Type	Connections	Consumption	Measurement	Energy (GJ)	CO2e (t)
Large Industrial	Electricity	7	withheld	Kilowatt Hours	-	-
	Natural Gas	106	2,972,890	GigaJoules	2,972,890	151,617
Large Industrial					2,972,890	151,617

Supporting Indicators

Below you will find supporting indicators for which data is provided. These are the first five supporting indicators for which data is provided as a part of the updated 2007 CEEI. Columns with all zeros indicate data unavailable in these CEEI reports. Thirteen additional supporting indicators are under consideration for future reports (see next page). Local government feedback is requested on all supporting indicators. Please take the time to complete the short CEEI Survey at <http://www.env.gov.bc.ca/cas/mitigation/ceei/index.html> or contact us directly at CEEIRPT@gov.bc.ca

Housing Type - Private dwellings by structural type

Housing type is important for reducing building-related GHG emissions and energy consumption. A trend toward fewer single family dwellings indicates an increase in residential density, which is known to reduce transportation-related GHG emissions.

	1996		2001		2006	
	Units	%	Units	%	Units	%
Single Detached House	26,615	28	26,550	36	21,280	27
Semi-Detached House	1,905	2	2,650	4	2,680	3
Row House	5,120	5	6,030	8	7,255	9
Apartment, Duplex	5,125	5	6,445	9	11,050	14
Apartment, 5 storeys or higher	11,485	12	12,705	17	14,615	19
Apartment, under 5 storeys	18,355	19	19,515	26	21,065	27
Other Single Attached House	105	0	90	0	65	0
Movable Dwelling	40	0	20	0	25	0

Commute to Work - Employed labour force - by mode of commute

An increase in the number of people choosing to walk, cycle and use transit reduces GHG emissions. More compact, complete, connected communities should see an increase in the use of these transportation modes.

	1996		2001		2006	
	People	%	People	%	People	%
Car, Truck, Van as Driver	56,045	70	59,640	70	58,815	63
Car, Truck, Van as Passenger	5,175	6	6,075	7	5,520	6
Public Transit	13,415	17	14,160	17	23,440	25
Walked	3,645	5	3,755	4	4,285	5
Bicycle	820	1	805	1	720	1
Motorcycle	130	0	115	0	175	0
Taxicab	90	0	105	0	50	0
Other Method	410	1	450	1	650	1

Residential Density

* Net of Crown land, parks, Indian Reserves, water features, airports, ALR, waste disposal sites.

Increasing residential densities is known to reduce vehicle use resulting in fewer transportation-related GHG emissions. There are many additional benefits from more compact development.

2009	
Population	222,802.0
Net Land Area (ha) *	7,492.5
Residential Density (people per net ha)	29.7

Commute Distance

Shorter commute distances generally reduce GHG emissions by increasing the likelihood of people walking, cycling or using transit. Commute distance is also indicative of the 'completeness' of a community from an employment perspective.

2006	
	People %
Less than 5 km	24,735 30
5 to 9.9 km	25,895 32
10 to 14.9 km	21,040 26
15 to 24.9 km	8,430 10
25 km or more	1,870 2

Parks and Protected Greenspace

* Total is net of Indian Reserves

** The quantity of parkland may be underestimated

Parks and protected greenspaces are important for the protection and enhancement of community carbon sinks.

	2009	
	Area (ha)	%
National Parks	0.0	0.0
Provincial Parks / Protected Areas	0.0	0.0
Local Parks	1,338.8	14.6
Agricultural Land Reserve	234.6	2.5
Other land use	7,607.9	82.9
Total Land Area	9,181.4	100.0

Supporting Indicators Under Consideration

The following supporting indicators are under consideration for inclusion in future CEEI reports. The 2007 CEEI reports provide these 'placeholder' indicators to give indication of data that may be provided in the future by the Province on an ongoing basis to assist in monitoring actions to reduce GHG emissions and energy consumption. Please submit feedback to CEEIRPT@gov.bc.ca (see survey on CEEI website).

On-Road Transportation (and Land Use)

Proximity to Transit	Persons, dwelling units (du) and employment within 400m of a quality transit stop/line
Proximity to Services	Persons and dwelling units (du) within 400m of services (e.g. grocery store, school, other retail etc.)
Transit Ridership	Annual per capita transit ridership

Buildings

Residential; Public Building Energy Intensity	Average energy use per person per square metre of floor space
Floor Space	Average residential dwelling unit size

Solid Waste (and Water)

Waste Diversion	Tonnes of waste diverted
Avoided Waste Emissions	Tonnes of CO ₂ e of avoided future emissions due to reduced waste since 2007
Water Use	Per capita residential water use

Land-Use Change

Impervious Surface Cover	% change in impervious surface cover
Tree Canopy Cover	% change in tree canopy cover

Community and Renewable Energy Supply

District Energy	# and energy output (e.g. buildings connected, energy consumed in GJ or kWh) of district energy systems by energy type (e.g. renewable or non-renewable)
On-Site Renewable Energy	# and energy output (in GJ or kWh) from households producing and/or consuming on-site renewable heat (e.g. biomass, solar thermal, geo-exchange) and/or electrical (e.g. solar photovoltaic, small wind, small scale hydro) energy
Energy Recovery From Waste	Energy (GJ or kWh) recovered from waste (e.g. from landfill gas, sewage treatment, industrial operations, farm)

This is your local government's Updated 2007 Community Energy and Emissions Inventory (CEEI) Report

What is a CEEI Report?

CEEI Reports are a result of a multi-agency effort to provide a province-wide solution to assist local governments in BC to track and report on community-wide energy consumption and greenhouse gas (GHG) emissions every two years. CEEI Reports are one of the many resources available through the Climate Action Toolkit (<http://www.toolkit.bc.ca>), a web-based service provided through the ongoing collaboration between UBCM and the Province.

Why does my local government need a CEEI Report?

A community energy and GHG emissions inventory can be a valuable tool that helps local governments plan and implement GHG and energy management strategies, while at the same time strengthening broader sustainability planning at the local level. CEEI reports fulfill local governments' Climate Action Charter commitment to measure and report their community's GHG emissions profile, establish a base year inventory for local governments to consider as they develop targets, policies, and actions related to BC's *Local Government Act* requirements, and fulfill Milestone One requirements for those local government members of the Federation of Canadian Municipalities' (FCM's) Partners in Climate Protection (PCP) program.

A first in North America!

CEEI is a first in North America and a first step for BC communities. The 2007 CEEI Reports are based on best available province-wide data. The accuracy and detail of CEEI reports will continue to improve to meet increasing local and provincial government information needs. Improvements have been made from the original draft 2007 CEEI Reports posted in Spring 2009. These include estimates for residential heating oil, propane and wood use, breaking out small and medium from large industrial buildings, including updated land-use change and new agricultural sectors as 'memo items', and the first of a suite of 'supporting indicators'. Following the 2010 CEEI Reports, inventories will be generated every two years, and will continue to improve as government information needs, international protocols and new data sources emerge.

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For More Information:

- The full list of all BC local government Updated 2007 CEEI Reports, CEEI Data Summary Report, Technical Methods and Guidance Document, and additional information on the Secondary Indicators are available at: <http://www.env.gov.bc.ca/cas/mitigation/ceei/index.html>.
- For guidance on target setting and community actions, go to <http://www.toolkit.bc.ca> and <http://www.cd.gov.bc.ca/lgd/greencommunities/targets.htm>.

We Need Your Feedback:

- To continue to guide us on CEEI, particularly now with the new Indicators. Please take the time to complete the short CEEI Survey at <http://www.env.gov.bc.ca/cas/mitigation/ceei/index.html> or contact us directly at CEEIRPT@gov.bc.ca

Notice to the Reader: This CEEI Report uses information from a variety of sources to estimate GHG emissions. While the methodologies, assumptions and data used are intended to provide reasonable estimates of greenhouse gas emissions, the information presented in this report may not be appropriate for all purposes. The Province of BC and the data providers do not provide any warranty to the user or guarantee the accuracy or reliability of the data contained in this report. The user accepts responsibility for the ultimate use of such data. We need your help to make these reports better, where you do note inaccuracies, please contact us.