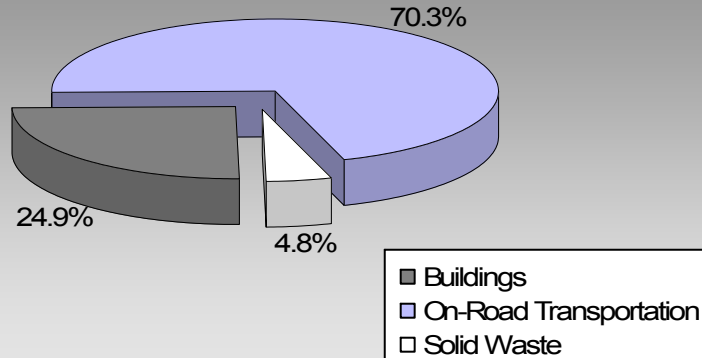


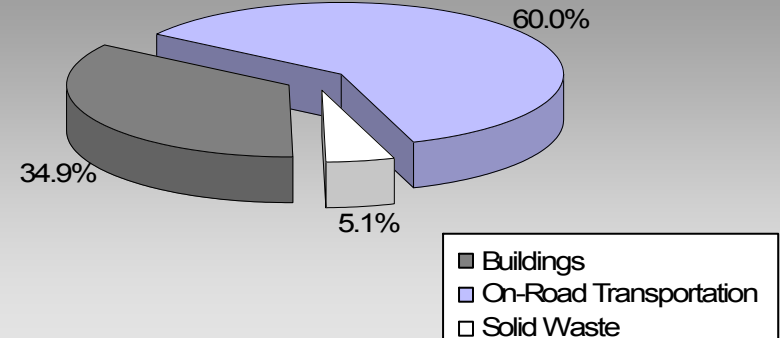
BC's Community Energy and Emission Inventories...supporting efforts towards Complete, Compact, Energy-Efficient Communities

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

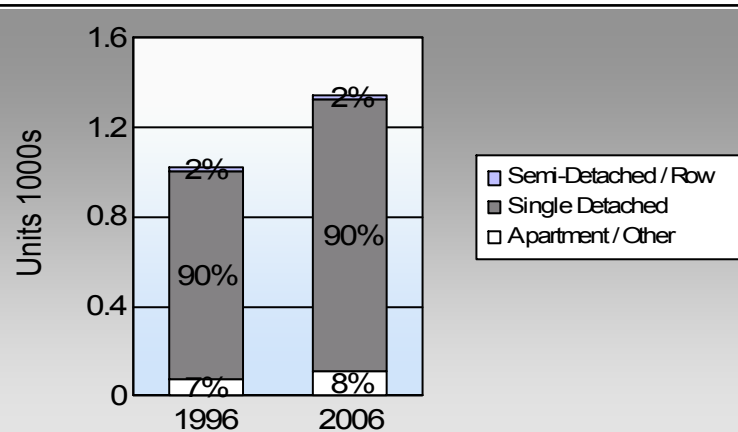
**Bowen Island Municipality
2007 GHG Emissions Sources**



**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

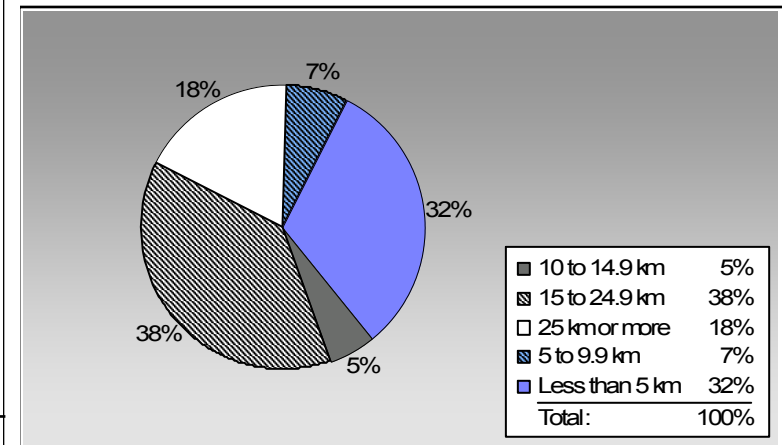
	1996	2006
	64.6%	68.8%
	11.1%	6.8%
	12.8%	13.3%
	6.2%	8.0%
	0.9%	0.9%

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

Residential Density

Bowen Island Municipality:
1.2 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	592	761,790	Litres	13,054	26,663	1,802
	Diesel Fuel	35	33,734	Litres	13,931	1,292	92
Small Passenger Cars						27,955	1,894
Large Passenger Cars	Gasoline	305	539,804	Litres	14,835	18,893	1,273
	Diesel Fuel	11	21,327	Litres	13,276	817	58
	Other Fuel	< 10	687	Litres		26	1
Large Passenger Cars						19,736	1,332
Light Trucks, Vans, SUVs	Gasoline	872	1,669,894	Litres	13,804	58,446	3,977
	Diesel Fuel	60	135,696	Litres	17,299	5,197	371
	Other Fuel	< 10	10,117	Litres	10,302	387	16
Light Trucks, Vans, SUVs						64,030	4,364
Commercial Vehicles	Gasoline	< 10	22,330	Litres	14,127	782	52
	Diesel Fuel	14	73,130	Litres	24,287	2,801	197
	Other Fuel	< 10	2,873	Litres	11,356	110	4
Commercial Vehicles						3,693	253
Tractor Trailer Trucks	Gasoline	< 10	5,984	Litres	8,905	209	14
	Diesel Fuel	16	328,900	Litres	52,070	12,597	885
	Other Fuel	< 10	2,380	Litres	7,085	91	4
Tractor Trailer Trucks						12,897	903
Motorhomes	Gasoline	16	13,000	Litres	2,328	455	30
	Diesel Fuel	< 10	1,354	Litres	4,364	52	4
Motorhomes						507	34
Motorcycles, Mopeds	Gasoline	60	23,324	Litres	6,276	816	54
Motorcycles, Mopeds						816	54
						Gasoline:	7,202
						Diesel:	1,607
						Other Fuel:	25
On Road Transportation Totals						All Fuels:	8,834

Bowen Island Municipality

Updated 2007 Community Energy and Emissions Inventory

Buildings	Type	Connections	Consumption	Measurement	Energy (GJ)	CO2e (t)
Residential	Electricity	1,744	36,586,908	Kilowatt Hours	131,713	902
	Heating Oil		12,902	GigaJoules	12,902	909
	Propane		19,085	GigaJoules	19,085	1,164
	Wood		10,266	GigaJoules	10,266	4
Residential					173,966	2,979
Commercial/Small-Medium Industrial	Electricity	232	6,008,398	Kilowatt Hours	21,630	148
Commercial/Small-Medium Industrial					21,630	148
					Electricity:	1,050
					Natural Gas:	1,164
					Propane:	4
					Wood:	909
					Heating Oil:	1,164
Buildings Totals	Buildings:				195,596	3,127

Solid Waste	Mass (t)	CO2e (t)
Community Solid Waste	1,661	604

Grand Total	CONSUMPTION	ENERGY (GJ)	CO2e (t)
Diesel Fuel	594,141 L	22,756	1,607
Electricity	42,595,306 kWh	153,343	1,050
Gasoline	3,036,126 L	106,264	7,202
Heating Oil	12,902 GJ	12,902	909
Other Fuel	16,057 L	614	25
Propane	19,085 GJ	19,085	1,164
Solid Waste	1,661 T	0	604
Wood	10,266 GJ	10,266	4
Total of Transportation / Buildings / Solid Waste:			12,565 tonnes

Memo Items

Buildings	<u>Type</u>	<u>Connections</u>	<u>Consumption</u>	<u>Measurement</u>	<u>Energy (GJ)</u>	<u>CO2e (t)</u>
Large Industrial	Electricity	0	0	Kilowatt Hours	-	-
Large Industrial					-	-

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	925	90	1,060	93	1,210	90
Semi-Detached House	0	0	15	1	5	0
Row House	25	2	15	1	20	1
Apartment, Duplex	35	3	15	1	40	3
Apartment, 5 storeys or higher	0	0	0	0	0	0
Apartment, under 5 storeys	30	3	15	1	55	4
Other Single Attached House	0	0	10	1	5	0
Movable Dwelling	10	1	5	0	10	1

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	730	65	900	71	1,115	69
Car, Truck, Van as Passenger	125	11	85	7	110	7
Public Transit	145	13	185	15	215	13
Walked	70	6	55	4	130	8
Bicycle	10	1	10	1	15	1
Motorcycle	10	1	0	0	20	1
Taxicab	0	0	10	1	0	0
Other Method	40	4	15	1	15	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	3,608.0
Net Land Area (ha) *	3,043.1
Residential Density (people per net ha)	1.2

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	370 32
5 to 9.9 km	80 7
10 to 14.9 km	60 5
15 to 24.9 km	445 38
25 km or more	210 18

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	407.4	8.1
Local Parks	258.9	5.1
Agricultural Land Reserve	181.9	3.6
Other land use	4,208.6	83.2
Total Land Area	5,056.8	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.