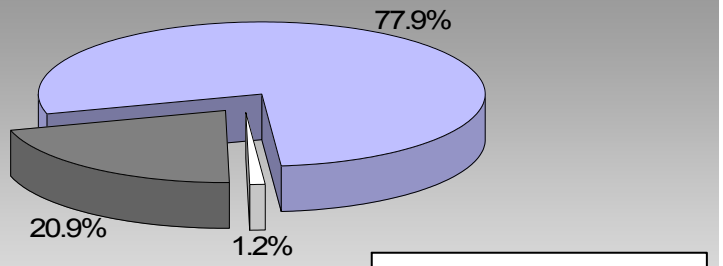
Cowichan Valley Regional District
Updated 2007 Community Energy and Emissions Inventory

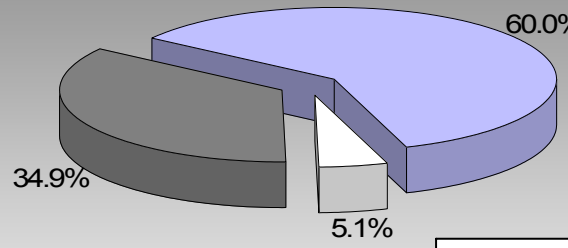
BC's Community Energy and Emission Inventories...supporting efforts towards Complete, Compact, Energy-Efficient Communities

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

Cowichan Valley Regional District
2007 GHG Emissions Sources

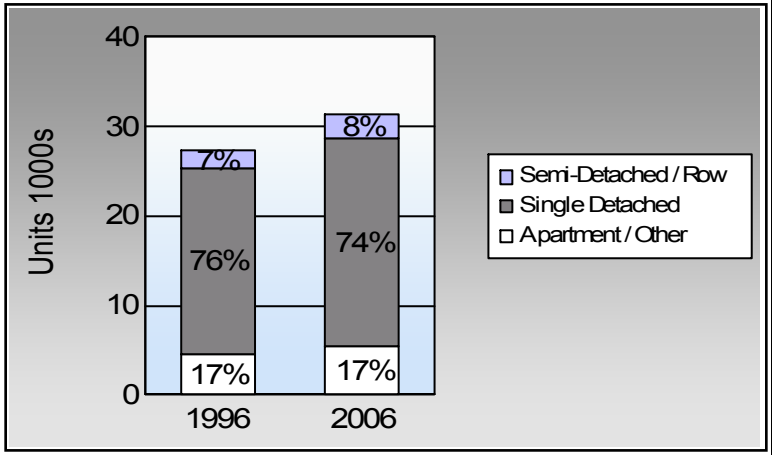


Total for BC Communities



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
	82.5%	80.9%
	7.5%	8.9%
	0.8%	1.1%
	6.4%	6.5%
	1.2%	0.9%

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

Residential Density

This data is only available for municipalities.

BC municipal average: 7.4 people per net ha

Are we living closer to where we work?

Commute Distance

This data is currently unavailable in the CEEI 2007 Reports

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

For more information and to provide feedback on your Community Energy and Emissions Inventory (CEEI) Report see back page.

Sectors

On Road Transportation		Vehicles	Consumption	Measurement	Average-VKT(km)	Energy (GJ)	CO2e (t)
Small Passenger Cars	Gasoline	16,359	22,063,876	Litres	13,167	772,236	52,802
	Diesel Fuel	763	754,504	Litres	13,731	28,897	2,060
	Other Fuel	< 10	1,304	Litres	10,677	50	2
				Small Passenger Cars		**801,183**	**54,864**
Large Passenger Cars	Gasoline	8,548	20,114,991	Litres	18,969	704,025	47,933
	Diesel Fuel	203	482,708	Litres	18,387	18,488	1,317
	Other Fuel	31	85,374	Litres	16,161	3,270	131
				Large Passenger Cars		**725,783**	**49,381**
Light Trucks, Vans, SUVs	Gasoline	22,977	67,257,826	Litres	19,548	2,354,024	161,442
	Diesel Fuel	2,208	5,281,433	Litres	18,477	202,279	14,428
	Other Fuel	205	512,543	Litres	13,158	19,630	785
				Light Trucks, Vans, SUVs		**2,575,933**	**176,655**
Commercial Vehicles	Gasoline	221	1,030,366	Litres	15,129	36,063	2,411
	Diesel Fuel	473	2,105,458	Litres	20,209	80,639	5,666
	Other Fuel	21	82,230	Litres	12,508	3,149	126
				Commercial Vehicles		**119,851**	**8,203**
Tractor Trailer Trucks	Gasoline	19	108,889	Litres	15,676	3,811	255
	Diesel Fuel	698	21,581,982	Litres	79,567	826,590	58,076
	Other Fuel	< 10	4,761	Litres	7,085	182	7
				Tractor Trailer Trucks		**830,583**	**58,338**
Motorhomes	Gasoline	627	654,875	Litres	2,801	22,921	1,529
	Diesel Fuel	86	78,282	Litres	3,950	2,998	211
	Other Fuel	10	13,063	Litres	2,362	500	20
				Motorhomes		**26,419**	**1,760**
Motorcycles, Mopeds	Gasoline	993	391,516	Litres	5,154	13,703	914
				Motorcycles, Mopeds		**13,703**	**914**
Bus	Gasoline	43	355,107	Litres	20,114	12,429	834
	Diesel Fuel	81	827,638	Litres	20,966	31,699	2,227
	Other Fuel	< 10	37,191	Litres	14,854	1,424	57
				Bus		**45,552**	**3,118**

	Gasoline:	3,919,212	268,120
	Diesel:	1,191,590	83,985
	Other Fuel:	28,205	1,128
On Road Transportation Totals	**All Fuels:**	**5,139,007**	**353,233**

Buildings

	Type	Connections	Consumption	Measurement	Energy (GJ)	CO2e (t)
Residential	Electricity	33,690	528,140,280	Kilowatt Hours	1,901,303	13,028
	Natural Gas	5,823	278,209	GigaJoules	278,209	14,189
	Heating Oil		465,769	GigaJoules	465,769	32,832
	Propane		80,315	GigaJoules	80,315	4,900
	Wood		567,961	GigaJoules	567,961	210
			Residential		**3,293,557**	**65,159**
Commercial/Small-Medium Industrial	Electricity	4,252	248,783,669	Kilowatt Hours	895,620	6,137
	Natural Gas	936	459,762	GigaJoules	459,762	23,448
			Commercial/Small-Medium Industrial		**1,355,382**	**29,585**

	Electricity:	2,796,923	19,165
	Natural Gas:	737,971	37,637
	Propane:	80,315	4,900
	Wood:	567,961	210
	Heating Oil:	465,769	32,832
Buildings Totals	**Buildings:**	**4,648,939**	**94,744**

Solid Waste

		Mass (t)	CO2e (t)
	Community Solid Waste	27,948	5,472

Cowichan Valley Regional District
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Grand Total

	CONSUMPTION		ENERGY (GJ)	CO2e (t)
Diesel Fuel	31,112,005	L	1,191,590	83,985
Electricity	776,923,949	kWh	2,796,923	19,165
Gasoline	111,977,446	L	3,919,212	268,120
Heating Oil	465,769	GJ	465,769	32,832
Natural Gas	737,971	GJ	737,971	37,637
Other Fuel	736,466	L	28,205	1,128
Propane	80,315	GJ	80,315	4,900
Solid Waste	27,948	T	0	5,472
Wood	567,961	GJ	567,961	210
Total of Transportation / Buildings / Solid Waste:			**9,787,946** GJ	**453,449** tonnes

Memo Items

Buildings

	Type	Connections	Consumption	Measurement	Energy (GJ)	CO2e (t)
Large Industrial	Electricity	6	withheld	Kilowatt Hours	-	-
	Natural Gas	1	withheld	GigaJoules	-	-
				Large Industrial	**-**	**-**

Agriculture

		Number of Animals	Methane	CO2e (t)
	Enteric Fermentation	15,297	878	18,438

Land-Use Change

	Area (ha)	CO2e (t)
Deforestation from Agriculture	14	9,337
Deforestation from Settlement	29	26,128
Deforestation:	**43**	**35,465**

Cowichan Valley Regional District
Updated 2007 Community Energy and Emissions Inventory

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	20,760	43	21,940	76	23,200	74
Semi-Detached House	905	2	900	3	1,240	4
Row House	930	2	1,240	4	1,335	4
Apartment, Duplex	580	1	480	2	865	3
Apartment, 5 storeys or higher	10	0	15	0	10	0
Apartment, under 5 storeys	2,640	6	2,830	10	3,240	10
Other Single Attached House	55	0	140	0	130	0
Movable Dwelling	1,320	3	1,300	5	1,200	4

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
This data is currently unavailable in the CEEI 2007 Reports.

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	22,145	83	23,165	84	25,685	81
Car, Truck,Van as Passenge	2,005	7	1,990	7	2,825	9
Public Transit	215	1	170	1	340	1
Walked	1,705	6	1,705	6	2,050	6
Bicycle	310	1	265	1	300	1
Motorcycle	40	0	45	0	105	0
Taxicab	20	0	0	0	25	0
Other Method	395	1	320	1	425	1

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	%
This data is currently unavailable in the CEEI 2007 Reports.	

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	5,582.4	1.6
Provincial Parks / Protected Areas	18,882.4	5.4
Local Parks	1,217.1	0.4
Agricultural Land Reserve	18,998.9	5.4
Other land use	304,848.1	87.2
Total Land Area	349,528.9	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 CO2e 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