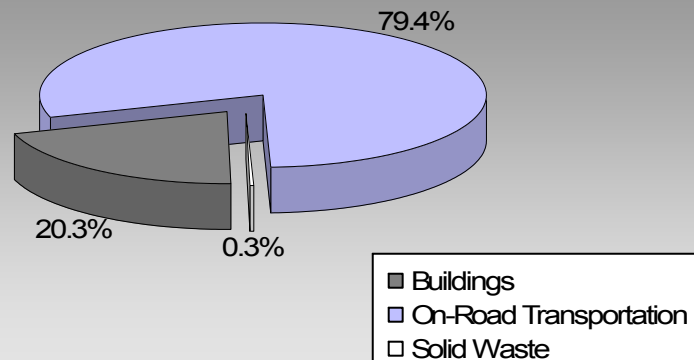


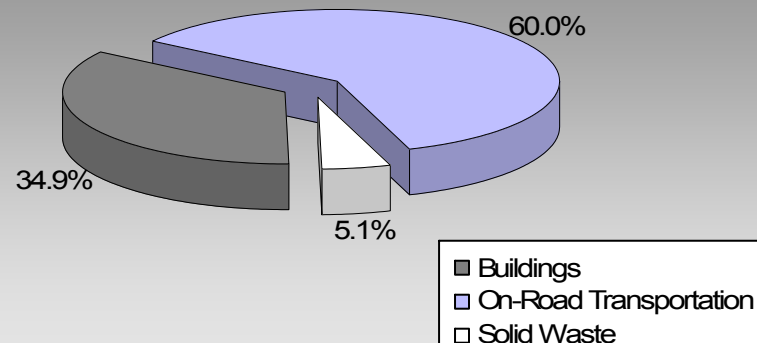
BC's Community Energy and Emission Inventories...supporting efforts towards Complete, Compact, Energy-Efficient Communities

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

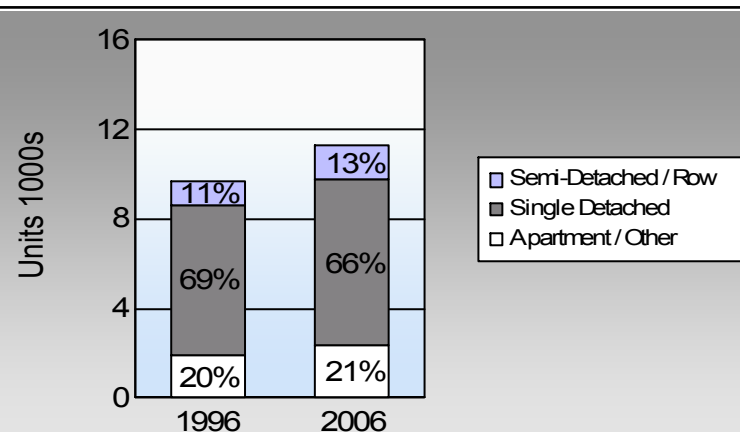
**North Cowichan District Municipality
2007 GHG Emissions Sources**



**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
	83.3%	81.9%
	7.2%	8.7%
	0.7%	1.0%
	5.9%	6.5%
	1.5%	0.8%

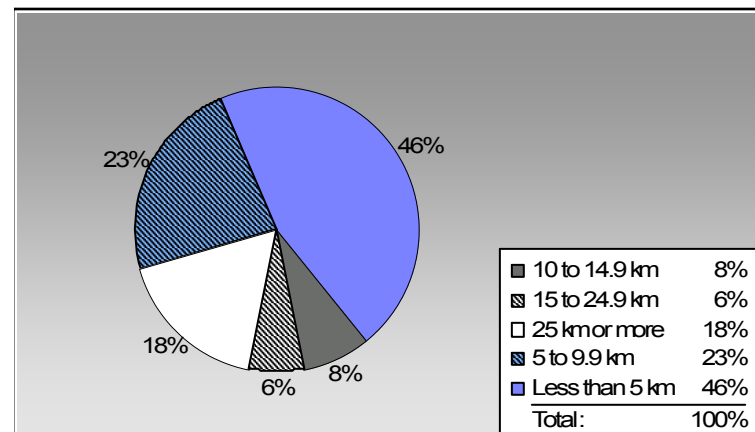
In BC, 10% of people took transit, 7% walked, and 2% cycled to work in 2006.

Residential Density

North Cowichan District Municipality: 2.2 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	6,041	8,119,647	Litres	13,235	284,188	19,419
	Diesel Fuel	224	219,025	Litres	13,563	8,389	598
Small Passenger Cars						292,577	20,017
Large Passenger Cars	Gasoline	3,019	7,069,786	Litres	19,232	247,443	16,825
	Diesel Fuel	61	151,302	Litres	19,683	5,795	413
	Other Fuel	15	37,100	Litres	16,295	1,421	57
Large Passenger Cars						254,659	17,295
Light Trucks, Vans, SUVs	Gasoline	8,116	23,595,722	Litres	19,711	825,850	56,588
	Diesel Fuel	684	1,674,041	Litres	18,853	64,116	4,573
	Other Fuel	71	173,344	Litres	13,545	6,639	266
Light Trucks, Vans, SUVs						896,605	61,427
Commercial Vehicles	Gasoline	64	294,634	Litres	14,999	10,312	689
	Diesel Fuel	120	561,902	Litres	20,674	21,521	1,512
	Other Fuel	< 10	14,507	Litres	12,093	556	22
Commercial Vehicles						32,389	2,223
Tractor Trailer Trucks	Gasoline	< 10	44,000	Litres	23,949	1,540	103
	Diesel Fuel	241	8,425,290	Litres	91,254	322,689	22,672
	Other Fuel	< 10	595	Litres		23	1
Tractor Trailer Trucks						324,252	22,776
Motorhomes	Gasoline	189	202,772	Litres	2,715	7,097	473
	Diesel Fuel	24	20,583	Litres	3,720	788	55
	Other Fuel	< 10	4,015	Litres	2,189	154	6
Motorhomes						8,039	534
Motorcycles, Mopeds	Gasoline	355	144,131	Litres	5,369	5,045	336
Motorcycles, Mopeds						5,045	336
Bus	Gasoline	16	143,266	Litres	20,491	5,014	336
	Diesel Fuel	11	121,922	Litres	20,609	4,670	328
	Other Fuel	< 10	13,783	Litres	13,211	528	21
Bus						10,212	685

North Cowichan District Municipality

Updated 2007 Community Energy and Emissions Inventory

	Gasoline:	1,386,489	94,769
	Diesel:	427,968	30,151
	Other Fuel:	9,321	373
On Road Transportation Totals	All Fuels:	1,823,778	125,293

Buildings	<u>Type</u>	<u>Connections</u>	<u>Consumption</u>	<u>Measurement</u>	<u>Energy (GJ)</u>	<u>CO2e (t)</u>	
Residential	Electricity	12,286	186,568,594	Kilowatt Hours	671,646	4,602	
	Natural Gas	2,110	110,758	GigaJoules	110,758	5,648	
	Heating Oil		126,816	GigaJoules	126,816	8,939	
	Propane		21,876	GigaJoules	21,876	1,335	
	Wood			154,568	GigaJoules	154,568	57
Residential					1,085,664	20,581	
Commercial/Small-Medium Industrial	Electricity	1,198	86,130,928	Kilowatt Hours	310,071	2,125	
	Natural Gas	241	182,954	GigaJoules	182,954	9,331	
Commercial/Small-Medium Industrial					493,025	11,456	
					Electricity:	981,717	6,727
					Natural Gas:	293,712	14,979
					Propane:	21,876	1,335
					Wood:	154,568	57
					Heating Oil:	126,816	8,939
Buildings Totals	Buildings:				1,578,689	32,037	

Solid Waste	<u>Mass (t)</u>	<u>CO2e (t)</u>
Community Solid Waste	2,737	536

North Cowichan District Municipality

Updated 2007 Community Energy and Emissions Inventory

Grand Total	CONSUMPTION		ENERGY (GJ)	CO2e (t)
Diesel Fuel	11,174,065	L	427,968	30,151
Electricity	272,699,522	kWh	981,717	6,727
Gasoline	39,613,958	L	1,386,489	94,769
Heating Oil	126,816	GJ	126,816	8,939
Natural Gas	293,712	GJ	293,712	14,979
Other Fuel	243,344	L	9,321	373
Propane	21,876	GJ	21,876	1,335
Solid Waste	2,737	T	0	536
Wood	154,568	GJ	154,568	57
Total of Transportation / Buildings / Solid Waste:			3,402,467 GJ	157,866 tonnes

Memo Items

Buildings	Type	Connections	Consumption	Measurement	Energy (GJ)	CO2e (t)
Large Industrial	Electricity	4	withheld	Kilowatt Hours	-	-
	Natural Gas	1	withheld	GigaJoules	-	-
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	6,670	41	7,165	68	7,405	66
Semi-Detached House	500	3	640	6	740	7
Row House	580	4	715	7	780	7
Apartment, Duplex	280	2	205	2	405	4
Apartment, 5 storeys or higher	0	0	0	0	0	0
Apartment, under 5 storeys	1,265	8	1,360	13	1,540	14
Other Single Attached House	20	0	55	1	35	0
Movable Dwelling	375	2	340	3	375	3

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	8,540	83	8,675	84	9,520	82
Car, Truck, Van as Passenger	735	7	710	7	1,005	9
Public Transit	70	1	40	0	110	1
Walked	605	6	625	6	760	7
Bicycle	150	1	165	2	95	1
Motorcycle	30	0	15	0	40	0
Taxicab	10	0	0	0	0	0
Other Method	110	1	105	1	95	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	29,493.0
Net Land Area (ha) *	13,296.8
Residential Density (people per net ha)	2.2

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	4,490	46
5 to 9.9 km	2,270	23
10 to 14.9 km	755	8
15 to 24.9 km	610	6
25 km or more	1,730	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	37.5	0.2
Local Parks	526.9	2.6
Agricultural Land Reserve	6,325.9	31.4
Other land use	13,231.3	65.8
Total Land Area	20,121.6	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.