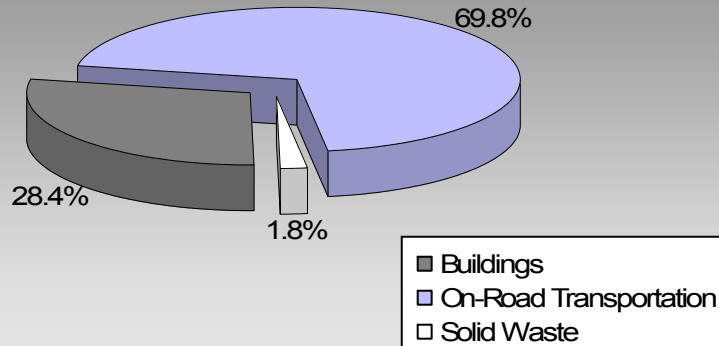


Updated 2007 Community Energy and Emissions Inventory

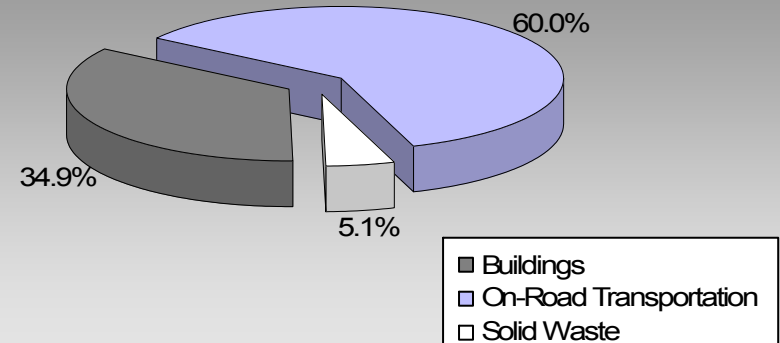
BC's Community Energy and Emission Inventories...supporting efforts towards Complete, Compact, Energy-Efficient Communities

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

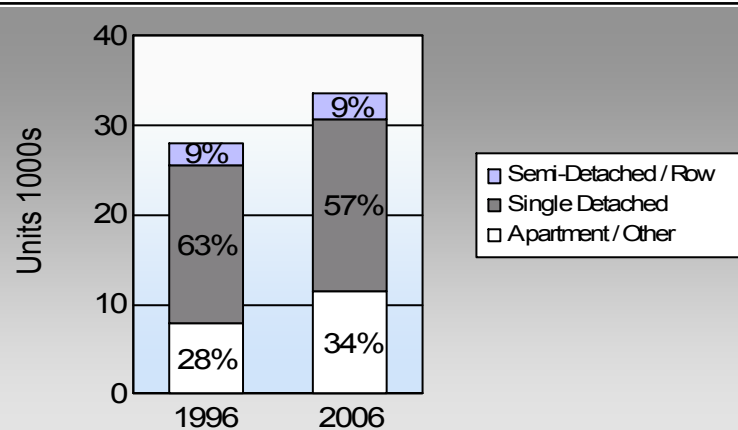
Nanaimo City
2007 GHG Emissions Sources



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

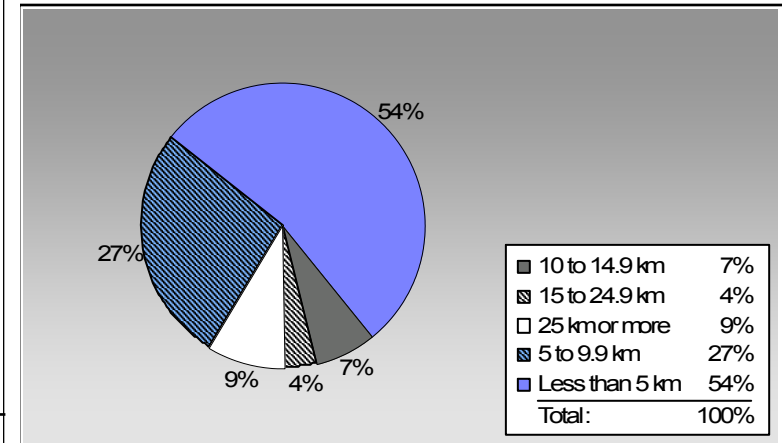
	1996	2006
Car	78.3%	78.7%
Car	7.7%	7.1%
Transit	3.0%	3.4%
Walking	7.2%	7.1%
Cycling	2.0%	2.0%

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

Residential Density

Nanaimo City: 11.5 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	19,119	24,296,049	Litres	12,885	850,362	58,012
	Diesel Fuel	631	627,032	Litres	13,775	24,015	1,712
	Other Fuel	< 10	4,227	Litres	9,839	162	6
Small Passenger Cars						874,539	59,730
Large Passenger Cars	Gasoline	10,288	20,082,497	Litres	16,241	702,887	47,704
	Diesel Fuel	250	565,008	Litres	17,531	21,640	1,543
	Other Fuel	27	59,644	Litres	12,799	2,284	91
Large Passenger Cars						726,811	49,338
Light Trucks, Vans, SUVs	Gasoline	21,435	62,842,996	Litres	20,037	2,199,505	150,500
	Diesel Fuel	1,497	3,619,403	Litres	19,758	138,623	9,888
	Other Fuel	161	372,105	Litres	13,493	14,252	570
Light Trucks, Vans, SUVs						2,352,380	160,958
Commercial Vehicles	Gasoline	133	601,219	Litres	15,760	21,043	1,408
	Diesel Fuel	649	3,020,335	Litres	22,726	115,679	8,128
	Other Fuel	16	58,434	Litres	11,846	2,238	90
Commercial Vehicles						138,960	9,626
Tractor Trailer Trucks	Gasoline	< 10	45,509	Litres	13,906	1,593	107
	Diesel Fuel	509	17,463,932	Litres	89,477	668,869	46,995
	Other Fuel	< 10	6,295	Litres	9,368	241	10
Tractor Trailer Trucks						670,703	47,112
Motorhomes	Gasoline	560	576,632	Litres	2,932	20,182	1,348
	Diesel Fuel	92	108,621	Litres	5,357	4,160	292
	Other Fuel	< 10	11,491	Litres	2,189	440	18
Motorhomes						24,782	1,658
Motorcycles, Mopeds	Gasoline	1,066	407,413	Litres	5,404	14,259	951
Motorcycles, Mopeds						14,259	951
Bus	Gasoline	57	462,483	Litres	19,162	16,187	1,087
	Diesel Fuel	84	1,866,317	Litres	40,471	71,480	5,022
	Other Fuel	< 10	4,389	Litres		168	7
Bus						87,835	6,116

Nanaimo City Updated 2007 Community Energy and Emissions Inventory

On Road Transportation Totals	Gasoline:	3,826,018	261,117
	Diesel:	1,044,466	73,580
	Other Fuel:	19,785	792
	All Fuels:	4,890,269	335,489

Buildings	Type	Connections	Consumption	Measurement	Energy (GJ)	CO2e (t)
Residential	Electricity	34,490	452,885,643	Kilowatt Hours	1,630,387	11,171
	Natural Gas	12,287	760,754	GigaJoules	760,754	38,798
	Heating Oil		364,441	GigaJoules	364,441	25,689
	Propane		62,913	GigaJoules	62,913	3,838
	Wood		443,817	GigaJoules	443,817	164
Residential					3,262,312	79,660
Commercial/Small-Medium Industrial	Electricity	3,902	339,629,546	Kilowatt Hours	1,222,665	8,378
	Natural Gas	1,728	944,910	GigaJoules	944,910	48,190
Commercial/Small-Medium Industrial					2,167,575	56,568
Buildings Totals	Electricity:				2,853,052	19,549
	Natural Gas:				1,705,664	86,988
	Propane:				62,913	3,838
	Wood:				443,817	164
	Heating Oil:				364,441	25,689
Buildings:					5,429,887	136,228

Solid Waste	Mass (t)	CO2e (t)
Community Solid Waste	42,455	8,704

Nanaimo City

Updated 2007 Community Energy and Emissions Inventory

Grand Total	CONSUMPTION		ENERGY (GJ)	CO2e (t)
Diesel Fuel	27,270,648	L	1,044,466	73,580
Electricity	792,515,189	kWh	2,853,052	19,549
Gasoline	109,314,798	L	3,826,018	261,117
Heating Oil	364,441	GJ	364,441	25,689
Natural Gas	1,705,664	GJ	1,705,664	86,988
Other Fuel	516,585	L	19,785	792
Propane	62,913	GJ	62,913	3,838
Solid Waste	42,455	T	0	8,704
Wood	443,817	GJ	443,817	164
Total of Transportation / Buildings / Solid Waste:			10,320,156 GJ	480,421 tonnes

Memo Items

Buildings	Type	Connections	Consumption	Measurement	Energy (GJ)	CO2e (t)
Large Industrial	Electricity	5	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	17,615	39	18,630	61	19,115	57
Semi-Detached House	1,165	3	1,215	4	1,475	4
Row House	1,360	3	1,485	5	1,430	4
Apartment, Duplex	1,410	3	1,350	4	2,775	8
Apartment, 5 storeys or higher	800	2	820	3	1,020	3
Apartment, under 5 storeys	4,970	11	5,845	19	6,735	20
Other Single Attached House	50	0	150	0	105	0
Movable Dwelling	660	1	1,180	4	870	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	22,485	78	23,165	80	27,125	79
Car, Truck, Van as Passenger	2,220	8	1,885	7	2,460	7
Public Transit	860	3	865	3	1,160	3
Walked	2,065	7	2,045	7	2,445	7
Bicycle	560	2	570	2	695	2
Motorcycle	60	0	65	0	140	0
Taxicab	20	0	45	0	30	0
Other Method	465	2	285	1	415	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	84,228.0
Net Land Area (ha) *	7,329.5
Residential Density (people per net ha)	11.5

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	15,560	54
5 to 9.9 km	7,855	27
10 to 14.9 km	2,005	7
15 to 24.9 km	1,040	4
25 km or more	2,575	9

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	334.3	3.7
Local Parks	743.8	8.3
Agricultural Land Reserve	417.8	4.7
Other land use	7,437.8	83.3
Total Land Area	8,933.7	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.