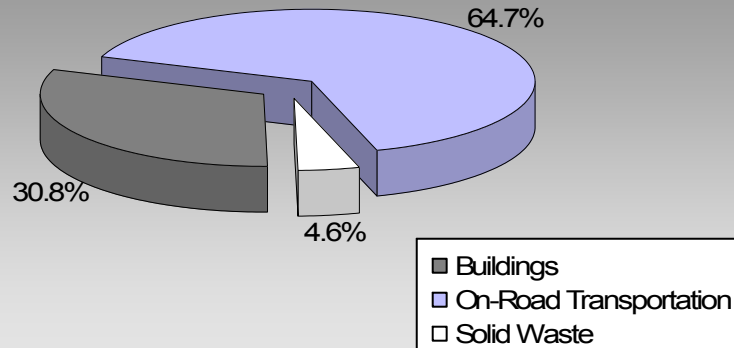


Updated 2007 Community Energy and Emissions Inventory

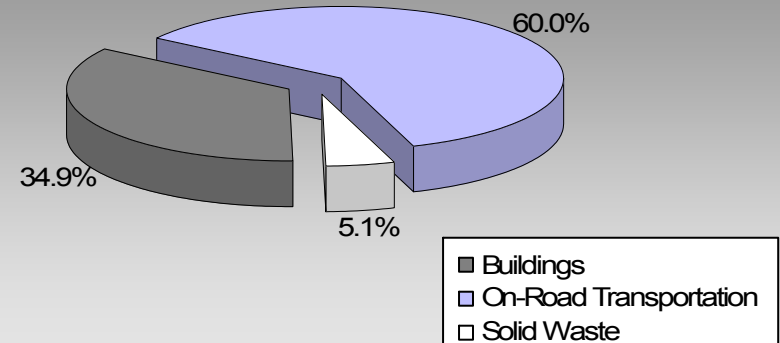
BC's Community Energy and Emission Inventories...supporting efforts towards Complete, Compact, Energy-Efficient Communities

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

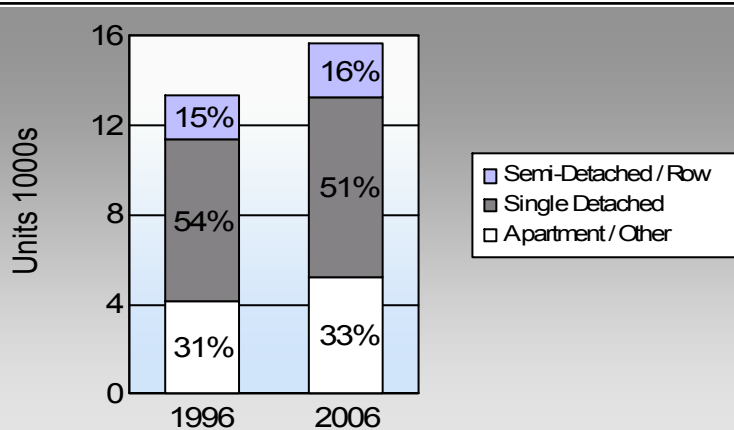
**Vernon City
2007 GHG Emissions Sources**



**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
	79.6%	78.0%
	6.9%	8.6%
	0.7%	1.0%
	9.3%	9.3%
	2.4%	2.3%

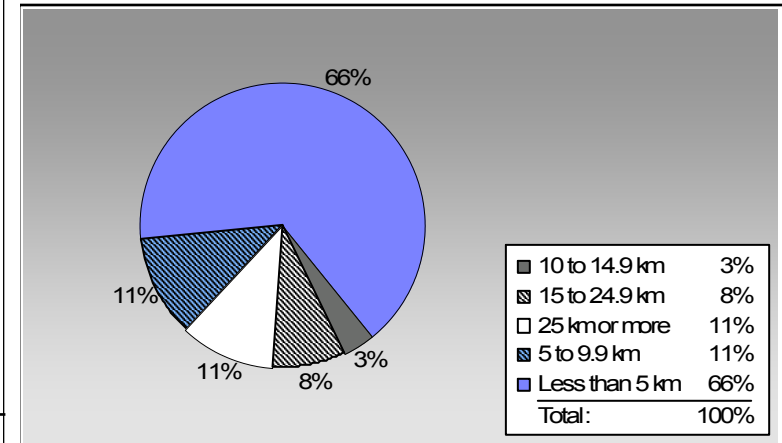
In BC, 10% of people took transit, 7% walked, and 2% cycled to work in 2006.

Residential Density

Vernon City: 5.6 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	7,788	10,603,974	Litres	13,422	371,139	25,331
	Diesel Fuel	233	246,483	Litres	13,940	9,440	673
	Other Fuel	< 10	1,278	Litres	9,135	49	2
Small Passenger Cars						380,628	26,006
Large Passenger Cars	Gasoline	4,732	10,445,220	Litres	18,016	365,583	24,850
	Diesel Fuel	92	238,252	Litres	18,705	9,125	650
	Other Fuel	10	27,958	Litres	15,407	1,071	43
Large Passenger Cars						375,779	25,543
Light Trucks, Vans, SUVs	Gasoline	10,257	31,170,074	Litres	19,954	1,090,953	74,659
	Diesel Fuel	845	2,176,920	Litres	20,164	83,376	5,947
	Other Fuel	88	215,781	Litres	13,289	8,264	331
Light Trucks, Vans, SUVs						1,182,593	80,937
Commercial Vehicles	Gasoline	58	245,019	Litres	14,582	8,576	573
	Diesel Fuel	198	909,077	Litres	21,192	34,818	2,446
	Other Fuel	19	72,093	Litres	12,533	2,761	110
Commercial Vehicles						46,155	3,129
Tractor Trailer Trucks	Gasoline	< 10	35,467	Litres	21,388	1,241	83
	Diesel Fuel	458	17,971,178	Litres	102,343	688,296	48,359
	Other Fuel	< 10	4,761	Litres	7,085	182	7
Tractor Trailer Trucks						689,719	48,449
Motorhomes	Gasoline	255	310,336	Litres	2,988	10,862	725
	Diesel Fuel	38	46,538	Litres	4,456	1,782	125
	Other Fuel	< 10	8,999	Litres	2,189	345	14
Motorhomes						12,989	864
Motorcycles, Mopeds	Gasoline	411	192,110	Litres	5,333	6,724	449
Motorcycles, Mopeds						6,724	449
Bus	Gasoline	21	187,047	Litres	20,889	6,547	438
	Diesel Fuel	46	739,977	Litres	29,563	28,341	1,991
	Other Fuel	< 10	39,502	Litres	15,902	1,513	61
Bus						36,401	2,490

Vernon City Updated 2007 Community Energy and Emissions Inventory

	Gasoline:	1,861,625	127,108
	Diesel:	855,178	60,191
	Other Fuel:	14,185	568
On Road Transportation Totals	All Fuels:	2,730,988	187,867

Buildings	<u>Type</u>	<u>Connections</u>	<u>Consumption</u>	<u>Measurement</u>	<u>Energy (GJ)</u>	<u>CO2e (t)</u>
Residential	Electricity	16,861	156,049,522	Kilowatt Hours	561,778	3,849
	Natural Gas	12,352	918,712	GigaJoules	918,712	46,855
	Heating Oil		18,477	GigaJoules	18,477	1,302
	Propane		32,607	GigaJoules	32,607	1,989
	Wood		162,590	GigaJoules	162,590	60
Residential					1,694,164	54,055
Commercial/Small-Medium Industrial	Electricity	2,801	181,936,801	Kilowatt Hours	654,972	4,488
	Natural Gas	1,562	605,846	GigaJoules	605,846	30,898
Commercial/Small-Medium Industrial					1,260,818	35,386
					Electricity:	8,337
					Natural Gas:	77,753
					Propane:	1,989
					Wood:	60
					Heating Oil:	1,302
Buildings Totals	Buildings:				2,954,982	89,441

Solid Waste	<u>Mass (t)</u>	<u>CO2e (t)</u>
Community Solid Waste	16,295	13,280

Vernon City

Updated 2007 Community Energy and Emissions Inventory

Grand Total	CONSUMPTION		ENERGY (GJ)	CO2e (t)
Diesel Fuel	22,328,425	L	855,178	60,191
Electricity	337,986,323	kWh	1,216,750	8,337
Gasoline	53,189,247	L	1,861,625	127,108
Heating Oil	18,477	GJ	18,477	1,302
Natural Gas	1,524,558	GJ	1,524,558	77,753
Other Fuel	370,372	L	14,185	568
Propane	32,607	GJ	32,607	1,989
Solid Waste	16,295	T	0	13,280
Wood	162,590	GJ	162,590	60
Total of Transportation / Buildings / Solid Waste:			5,685,970 GJ	290,588 tonnes

Memo Items

Buildings	Type	Connections	Consumption	Measurement	Energy (GJ)	CO2e (t)
Large Industrial	Electricity	0	0	Kilowatt Hours	-	-
	Natural Gas	8	155,913	GigaJoules	155,913	7,952
Large Industrial					155,913	7,952

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	7,240	35	7,945	54	8,010	51
Semi-Detached House	765	4	880	6	1,095	7
Row House	1,195	6	1,445	10	1,390	9
Apartment, Duplex	330	2	365	3	910	6
Apartment, 5 storeys or higher	160	1	300	2	310	2
Apartment, under 5 storeys	3,335	16	3,385	23	3,780	24
Other Single Attached House	35	0	30	0	35	0
Movable Dwelling	240	1	260	2	155	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	9,305	80	10,585	81	11,665	78
Car, Truck, Van as Passenger	805	7	940	7	1,280	9
Public Transit	85	1	140	1	145	1
Walked	1,090	9	1,060	8	1,395	9
Bicycle	285	2	200	2	345	2
Motorcycle	30	0	30	0	35	0
Taxicab	10	0	25	0	10	0
Other Method	80	1	160	1	85	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	38,968.0
Net Land Area (ha) *	6,955.5
Residential Density (people per net ha)	5.6

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	8,420	66
5 to 9.9 km	1,465	11
10 to 14.9 km	445	3
15 to 24.9 km	1,075	8
25 km or more	1,390	11

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	227.6	2.0
Local Parks	56.9	0.5
Agricultural Land Reserve	2,366.7	20.7
Other land use	8,779.5	76.8
Total Land Area	11,430.7	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)

Updated 2007 Community Energy and Emissions Inventory

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.