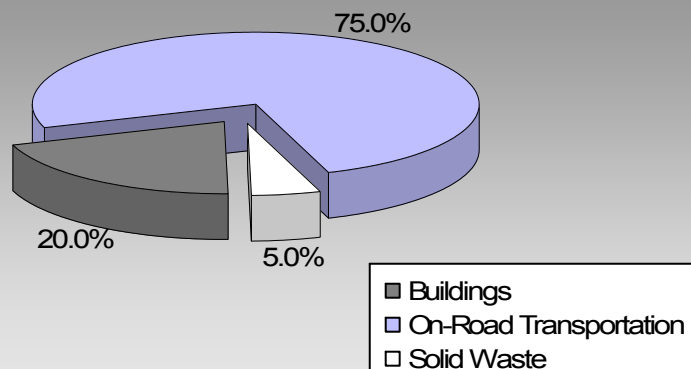


Updated 2007 Community Energy and Emissions Inventory

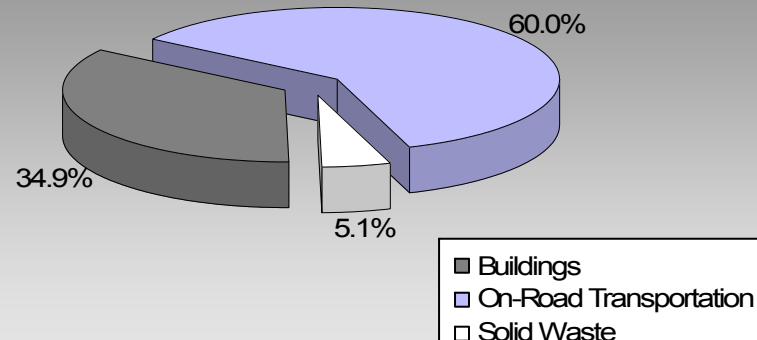
BC's Community Energy and Emission Inventories...supporting efforts towards Complete, Compact, Energy-Efficient Communities

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

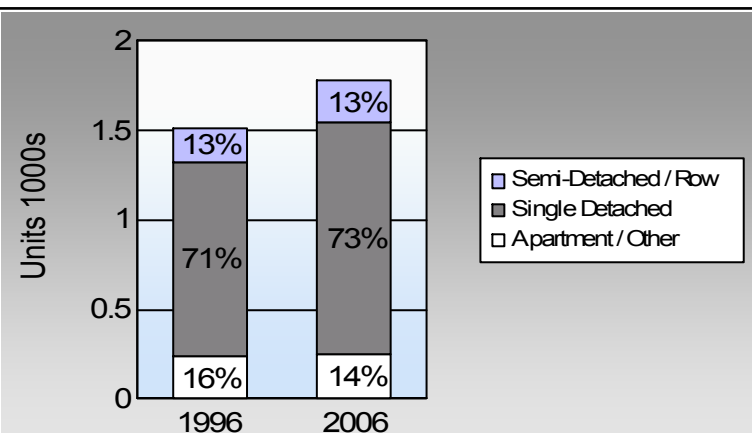
**Armstrong City
2007 GHG Emissions Sources**



**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
	81.7%	81.8%
	7.1%	7.5%
	0.6%	0.6%
	9.6%	8.4%
	1.0%	1.2%

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

Residential Density

Armstrong City: 12.4 people per net ha
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.

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	901	1,260,609	Litres	13,145	44,121	3,020
	Diesel Fuel	52	50,701	Litres	13,471	1,942	138
Small Passenger Cars						46,063	3,158
Large Passenger Cars	Gasoline	615	1,393,977	Litres	17,623	48,789	3,329
	Diesel Fuel	< 10	19,480	Litres	16,953	746	53
	Other Fuel	< 10	1,971	Litres	13,497	75	3
Large Passenger Cars						49,610	3,385
Light Trucks, Vans, SUVs	Gasoline	1,513	4,645,496	Litres	19,561	162,592	11,143
	Diesel Fuel	214	508,359	Litres	18,472	19,470	1,389
	Other Fuel	< 10	27,335	Litres	12,764	1,047	42
Light Trucks, Vans, SUVs						183,109	12,574
Commercial Vehicles	Gasoline	18	77,991	Litres	13,120	2,730	182
	Diesel Fuel	58	235,582	Litres	19,491	9,023	634
	Other Fuel	< 10	9,646	Litres	12,709	369	15
Commercial Vehicles						12,122	831
Tractor Trailer Trucks	Gasoline	< 10	23,500	Litres	21,620	822	55
	Diesel Fuel	237	6,872,764	Litres	75,436	263,227	18,494
Tractor Trailer Trucks						264,049	18,549
Motorhomes	Gasoline	41	51,100	Litres	3,022	1,788	119
	Diesel Fuel	< 10	8,176	Litres	4,514	313	22
	Other Fuel	< 10	831	Litres		32	1
Motorhomes						2,133	142
Motorcycles, Mopeds	Gasoline	51	23,786	Litres	4,698	833	56
Motorcycles, Mopeds						833	56
Bus	Gasoline	< 10	16,093	Litres	15,902	563	38
	Diesel Fuel	< 10	30,395	Litres	55,771	1,164	82
	Other Fuel	< 10	2,926	Litres		112	4
Bus						1,839	124

Armstrong City

Updated 2007 Community Energy and Emissions Inventory

	Gasoline:	262,238	17,942
	Diesel:	295,885	20,812
	Other Fuel:	1,635	65
On Road Transportation Totals	All Fuels:	559,758	38,819

Buildings	<u>Type</u>	<u>Connections</u>	<u>Consumption</u>	<u>Measurement</u>	<u>Energy (GJ)</u>	<u>CO2e (t)</u>	
Residential	Electricity	2,034	19,083,847	Kilowatt Hours	68,702	471	
	Natural Gas	1,585	120,186	GigaJoules	120,186	6,129	
Residential					188,888	6,600	
Commercial/Small-Medium Industrial	Electricity	321	22,689,231	Kilowatt Hours	81,681	560	
	Natural Gas	192	62,073	GigaJoules	62,073	3,166	
Commercial/Small-Medium Industrial					143,754	3,726	
					Electricity:	150,383	1,031
					Natural Gas:	182,259	9,295
					Propane:		
					Wood:		
					Heating Oil:		
Buildings Totals	Buildings:				332,642	10,326	

Solid Waste	<u>Mass (t)</u>	<u>CO2e (t)</u>
Community Solid Waste	3,180	2,595

Armstrong City

Updated 2007 Community Energy and Emissions Inventory

Grand Total	CONSUMPTION	ENERGY (GJ)	CO2e (t)
Diesel Fuel	7,725,457 L	295,885	20,812
Electricity	41,773,078 kWh	150,383	1,031
Gasoline	7,492,552 L	262,238	17,942
Natural Gas	182,259 GJ	182,259	9,295
Other Fuel	42,709 L	1,635	65
Solid Waste	3,180 T	0	2,595
Total of Transportation / Buildings / Solid Waste:		892,400 GJ	51,740 tonnes

Memo Items

Buildings	Type	Connections	Consumption	Measurement	Energy (GJ)	CO2e (t)
Large Industrial	Electricity	0	0	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	1,080	42	1,230	72	1,295	73
Semi-Detached House	125	5	50	3	145	8
Row House	70	3	150	9	85	5
Apartment, Duplex	45	2	20	1	25	1
Apartment, 5 storeys or higher	10	0	0	0	0	0
Apartment, under 5 storeys	165	6	230	13	205	12
Other Single Attached House	0	0	0	0	15	1
Movable Dwelling	20	1	25	1	5	0

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	1,275	82	1,255	79	1,415	82
Car, Truck, Van as Passenger	110	7	120	8	130	8
Public Transit	10	1	10	1	10	1
Walked	150	10	155	10	145	8
Bicycle	15	1	30	2	20	1
Motorcycle	0	0	10	1	0	0
Taxicab	0	0	0	0	0	0
Other Method	0	0	15	1	10	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	4,533.0
Net Land Area (ha) *	365.0
Residential Density (people per net ha)	12.4

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	0.0	0.0
Provincial Parks / Protected Areas	0.0	0.0
Local Parks	3.4	0.7
Agricultural Land Reserve	157.8	30.0
Other land use	365.2	69.4
Total Land Area	526.4	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.