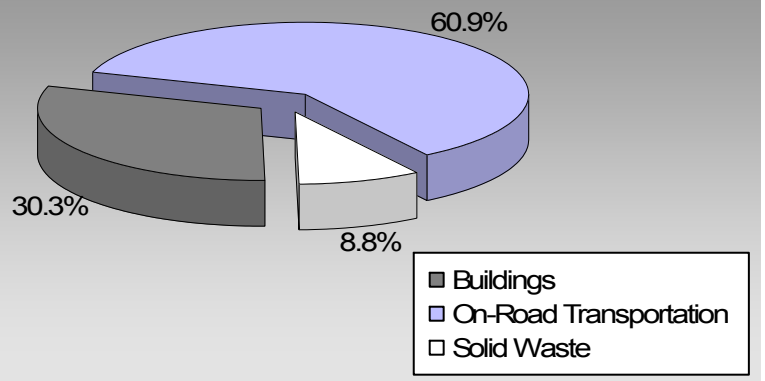
Grand Forks City
Updated 2007 Community Energy and Emissions Inventory

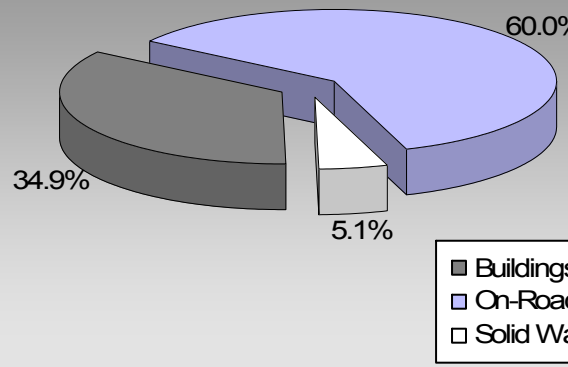
BC's Community Energy and Emission Inventories...supporting efforts towards Complete, Compact, Energy-Efficient Communities

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

Grand Forks City
2007 GHG Emissions Sources

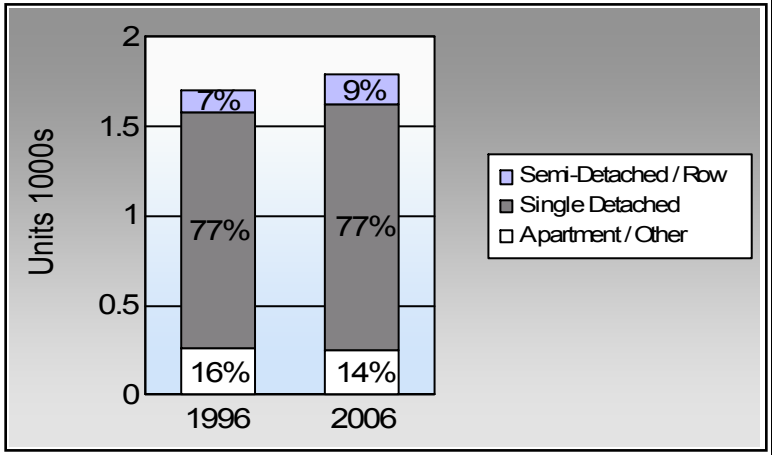


Total for BC Communities



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
	72.6%	70.4%
	5.9%	11.8%
	0.0%	0.0%
	16.0%	13.8%
	4.9%	3.4%

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

Residential Density

Grand Forks City: 5.0 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.

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	893	1,235,478	Litres	13,356	43,242	2,967
	Diesel Fuel	38	38,338	Litres	13,667	1,468	105
				Small Passenger Cars		**44,710**	**3,072**
Large Passenger Cars	Gasoline	655	1,228,957	Litres	15,006	43,013	2,932
	Diesel Fuel	11	23,887	Litres	17,493	915	65
	Other Fuel	< 10	2,695	Litres	13,144	103	4
				Large Passenger Cars		**44,031**	**3,001**
Light Trucks, Vans, SUVs	Gasoline	1,789	5,186,375	Litres	18,974	181,523	12,469
	Diesel Fuel	136	341,857	Litres	18,760	13,093	934
	Other Fuel	23	49,962	Litres	12,724	1,914	77
				Light Trucks, Vans, SUVs		**196,530**	**13,480**
Commercial Vehicles	Gasoline	20	69,097	Litres	11,879	2,418	161
	Diesel Fuel	36	164,718	Litres	20,842	6,309	443
	Other Fuel	< 10	10,826	Litres	12,286	415	17
				Commercial Vehicles		**9,142**	**621**
Tractor Trailer Trucks	Diesel Fuel	42	876,619	Litres	52,087	33,574	2,359
				Tractor Trailer Trucks		**33,574**	**2,359**
Motorhomes	Gasoline	31	42,475	Litres	2,847	1,487	99
	Diesel Fuel	< 10	3,155	Litres	2,993	121	8
	Other Fuel	< 10	1,246	Litres		48	2
				Motorhomes		**1,656**	**109**
Motorcycles, Mopeds	Gasoline	57	29,013	Litres	4,699	1,015	68
				Motorcycles, Mopeds		**1,015**	**68**
Bus	Gasoline	< 10	11,704	Litres	15,902	410	27
	Diesel Fuel	17	114,495	Litres	16,552	4,385	308
				Bus		**4,795**	**335**

	Gasoline:	273,108	18,723
	Diesel:	59,865	4,222
	Other Fuel:	2,480	100
On Road Transportation Totals	**All Fuels:**	**335,453**	**23,045**

Buildings

	Type	Connections	Consumption	Measurement	Energy (GJ)	CO2e (t)
Residential	Electricity	1,767	20,404,850	Kilowatt Hours	73,457	122
	Natural Gas	1,313	95,168	GigaJoules	95,168	4,853
	Heating Oil		10,281	GigaJoules	10,281	725
	Propane		18,096	GigaJoules	18,096	1,104
	Wood		21,550	GigaJoules	21,550	8
			Residential		**218,552**	**6,812**
Commercial/Small-Medium Industrial	Electricity	366	9,173,888	Kilowatt Hours	33,026	55
	Natural Gas	261	85,343	GigaJoules	85,343	4,352
			Commercial/Small-Medium Industrial		**118,369**	**4,407**
Wholesale	Electricity	1	41,152,000	Kilowatt Hours	148,147	247
			Wholesale		**148,147**	**247**

	Electricity:	254,630	424
	Natural Gas:	180,511	9,205
	Propane:	18,096	1,104
	Wood:	21,550	8
	Heating Oil:	10,281	725
Buildings Totals	**Buildings:**	**485,068**	**11,466**

Solid Waste

	Mass (t)	CO2e (t)
Community Solid Waste	2,037	3,327

Grand Total		CONSUMPTION		ENERGY (GJ)	CO2e (t)
	Diesel Fuel	1,563,069	L	59,865	4,222
	Electricity	70,730,738	kWh	254,630	424
	Gasoline	7,803,099	L	273,108	18,723
	Heating Oil	10,281	GJ	10,281	725
	Natural Gas	180,511	GJ	180,511	9,205
	Other Fuel	64,729	L	2,480	100
	Propane	18,096	GJ	18,096	1,104
	Solid Waste	2,037	T	0	3,327
	Wood	21,550	GJ	21,550	8
Total of Transportation / Buildings / Solid Waste:				**820,521** GJ	**37,838** tonnes

Memo Items

Buildings	Type	Connections	Consumption	Measurement	Energy (GJ)	CO2e (t)
Large Industrial	Electricity	3	31,514,100	Kilowatt Hours	113,451	189
	Natural Gas	3	withheld	GigaJoules	-	-
				Large Industrial	**113,451**	**189**

Grand Forks City
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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	1,315	44	1,390	77	1,375	77
Semi-Detached House	50	2	65	4	55	3
Row House	70	2	100	6	105	6
Apartment, Duplex	30	1	35	2	15	1
Apartment, 5 storeys or higher	0	0	0	0	0	0
Apartment, under 5 storeys	130	4	165	9	175	10
Other Single Attached House	50	2	10	1	10	1
Movable Dwelling	55	2	40	2	50	3

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	4,150.0
Net Land Area (ha) *	835.9
Residential Density (people per net ha)	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	1,115	73	1,110	73	1,045	70
Car, Truck,Van as Passenge	90	6	80	5	175	12
Public Transit	0	0	0	0	0	0
Walked	245	16	230	15	205	14
Bicycle	75	5	85	6	50	3
Motorcycle	0	0	0	0	0	0
Taxicab	0	0	0	0	0	0
Other Method	10	1	10	1	10	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	0.0	0.0
Provincial Parks / Protected Areas	0.0	0.0
Local Parks	15.5	1.5
Agricultural Land Reserve	194.1	18.2
Other land use	854.5	80.3
Total Land Area	1,064.0	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