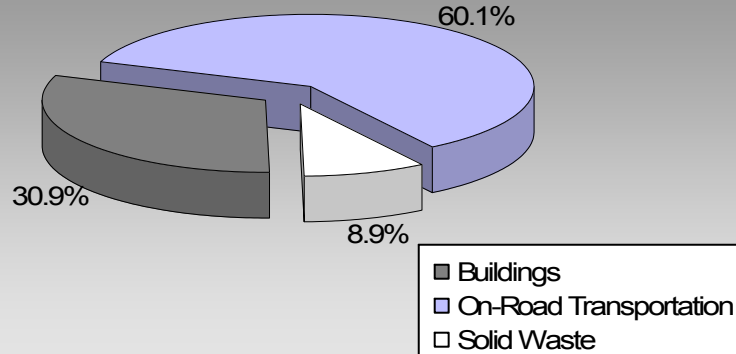


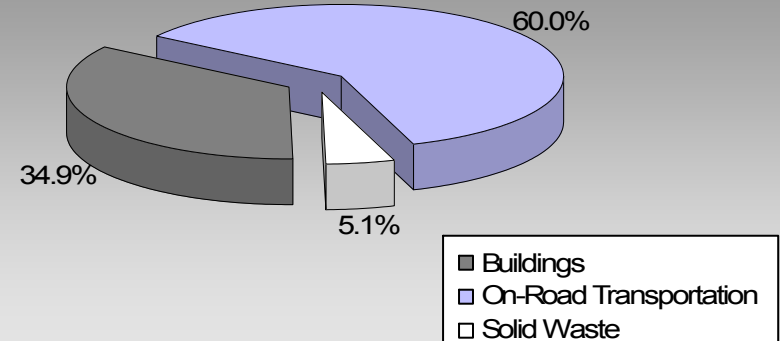
BC's Community Energy and Emission Inventories...supporting efforts towards Complete, Compact, Energy-Efficient Communities

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

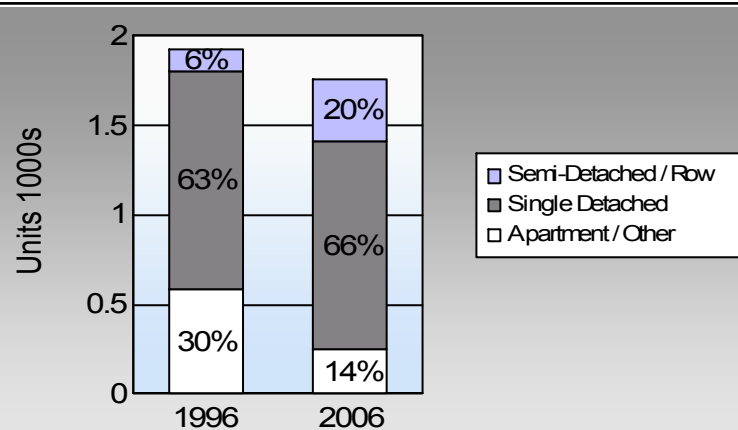
**Mackenzie District Municipality
2007 GHG Emissions Sources**



**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
	79.5%	81.6%
	7.6%	8.1%
	0.0%	0.6%
	9.4%	7.2%
	2.7%	1.9%

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

Residential Density

Mackenzie District Municipality: 1.1 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	522	700,781	Litres	13,234	24,527	1,670
	Diesel Fuel	21	26,352	Litres	14,771	1,009	72
Small Passenger Cars						25,536	1,742
Large Passenger Cars	Gasoline	353	929,583	Litres	20,745	32,535	2,201
	Diesel Fuel	< 10	61,860	Litres	21,792	2,369	169
	Other Fuel	< 10	2,091	Litres		80	3
Large Passenger Cars						34,984	2,373
Light Trucks, Vans, SUVs	Gasoline	1,728	5,621,020	Litres	20,833	196,736	13,440
	Diesel Fuel	264	891,503	Litres	22,360	34,145	2,436
	Other Fuel	11	31,420	Litres	14,090	1,203	48
Light Trucks, Vans, SUVs						232,084	15,924
Commercial Vehicles	Gasoline	16	77,081	Litres	15,915	2,698	181
	Diesel Fuel	55	331,162	Litres	21,466	12,683	891
	Other Fuel	< 10	2,873	Litres	11,356	110	4
Commercial Vehicles						15,491	1,076
Tractor Trailer Trucks	Gasoline	< 10	8,365	Litres	8,298	293	20
	Diesel Fuel	75	2,406,224	Litres	71,498	92,158	6,475
	Other Fuel	< 10	1,785	Litres		68	3
Tractor Trailer Trucks						92,519	6,498
Motorhomes	Gasoline	17	28,628	Litres	2,786	1,002	67
	Diesel Fuel	< 10	2,171	Litres	3,058	83	6
	Other Fuel	< 10	1,246	Litres		48	2
Motorhomes						1,133	75
Motorcycles, Mopeds	Gasoline	20	19,269	Litres	5,219	674	45
Motorcycles, Mopeds						674	45
Bus	Diesel Fuel	< 10	17,492	Litres		670	47
	Other Fuel	< 10	5,852	Litres	15,902	224	9
Bus						894	56

Mackenzie District Municipality

Updated 2007 Community Energy and Emissions Inventory

	Gasoline:	258,465	17,624
	Diesel:	143,117	10,096
	Other Fuel:	1,733	69
On Road Transportation Totals	All Fuels:	403,315	27,789

Buildings	<u>Type</u>	<u>Connections</u>	<u>Consumption</u>	<u>Measurement</u>	<u>Energy (GJ)</u>	<u>CO2e (t)</u>	
Residential	Electricity	1,999	18,216,102	Kilowatt Hours	65,578	449	
	Natural Gas	1,632	162,365	GigaJoules	162,365	8,281	
	Heating Oil		4,724	GigaJoules	4,724	333	
	Propane		12,843	GigaJoules	12,843	784	
	Wood		35,009	GigaJoules	35,009	13	
Residential					280,519	9,860	
Commercial/Small-Medium Industrial	Electricity	278	23,086,200	Kilowatt Hours	83,110	569	
	Natural Gas	137	75,605	GigaJoules	75,605	3,856	
Commercial/Small-Medium Industrial					158,715	4,425	
					Electricity:	148,688	1,018
					Natural Gas:	237,970	12,137
					Propane:	12,843	784
					Wood:	35,009	13
					Heating Oil:	4,724	333
Buildings Totals	Buildings:				439,234	14,285	

Solid Waste	<u>Mass (t)</u>	<u>CO2e (t)</u>
Community Solid Waste	4,318	4,127

Mackenzie District Municipality

Updated 2007 Community Energy and Emissions Inventory

Grand Total	CONSUMPTION		ENERGY (GJ)	CO2e (t)
Diesel Fuel	3,736,764	L	143,117	10,096
Electricity	41,302,302	kWh	148,688	1,018
Gasoline	7,384,727	L	258,465	17,624
Heating Oil	4,724	GJ	4,724	333
Natural Gas	237,970	GJ	237,970	12,137
Other Fuel	45,267	L	1,733	69
Propane	12,843	GJ	12,843	784
Solid Waste	4,318	T	0	4,127
Wood	35,009	GJ	35,009	13
Total of Transportation / Buildings / Solid Waste:			842,549 GJ	46,201 tonnes

Memo Items

Buildings	Type	Connections	Consumption	Measurement	Energy (GJ)	CO2e (t)
Large Industrial	Electricity	3	withheld	Kilowatt Hours	-	-
	Natural Gas	5	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	1,215	39	1,200	65	1,165	66
Semi-Detached House	0	0	5	0	160	9
Row House	125	4	130	7	185	11
Apartment, Duplex	0	0	5	0	0	0
Apartment, 5 storeys or higher	0	0	0	0	0	0
Apartment, under 5 storeys	200	6	160	9	140	8
Other Single Attached House	0	0	5	0	20	1
Movable Dwelling	385	12	350	19	90	5

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	2,500	79	2,155	80	1,925	82
Car, Truck, Van as Passenger	240	8	260	10	190	8
Public Transit	0	0	0	0	15	1
Walked	295	9	205	8	170	7
Bicycle	85	3	60	2	45	2
Motorcycle	0	0	0	0	0	0
Taxicab	10	0	10	0	0	0
Other Method	15	0	10	0	15	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	3,827.0
Net Land Area (ha) *	3,536.4
Residential Density (people per net ha)	1.1

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	12.8	0.1
Agricultural Land Reserve	0.0	0.0
Other land use	21,249.0	99.9
Total Land Area	21,261.7	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.