

2010 Community Energy and Emissions Inventory

Monitoring and reporting on progress towards greenhouse gas emissions reduction targets

2010 GHG Emissions Sources (Total for this Community) 2010 GHG Emissions Sources (Total for BC) **GHG Emissions Comparisons for this Community** 180 5% 7% 160 140 1,000s of tonnes 1,000s of tonnes 0 0 0 0 0 37% 35% Buildings Buildings Buildings On-Road Transportation On-Road Transportation On-Road Transportation Solid Waste Solid Waste Solid Waste 40 58% 58% 20 0 2007 2010 2010 Total Emissions by Fuel Type 2010 Building Emissions by Subsector 2010 On-Road Transportation Emissions by Vehicle Class 0%-0%¬-0% 1%₇ 5% 13% 12% Small Passenger Cars 25% Electricity Large Passenger Cars 33% 12% Natural Gas Res Electricity Light Trucks, Vans, SUVs 35% □ Gasoline Commercial Vehicles Res Natural Gas Diesel Fuel Comm/Indust Electricity Tractor Trailer Trucks 10% Hybrid Comm/Indust Natural Gas Motorhomes 57% Other Fuel Motorcycles, Mopeds 5% Buses 48% 40%

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Core Items

				2007					2010		
On-Road Transportation		Connections	Consumption	Avg VKT (km)	Energy (GJ)	C02e (t)	Connections	Consumption	Avg VKT (km)	Energy (GJ)	C02e (t)
Small Passenger Cars	Hybrid			16,900	246	17	25	23,944 L	17,600	838	53
	Gasoline	12,651	17,052,515 L	14,200	596,838	40,366	12,830	16,896,563 L	13,800	591,379	37,849
	Diesel Fuel	200	227,647 L	16,900	8,719	622	203	227,912 L	16,500	8,728	605
	Other Fuel			15,900	36	2			16,300	128	8
Large Passenger Cars	Hybrid	22	19,698 L	16,900	690	47	84	80,658 L	16,500	2,822	179
	Gasoline	4,799	7,293,869 L	13,300	255,285	17,260	4,519	6,734,501 L	13,100	235,708	15,079
	Diesel Fuel	36	47,982 L	14,200	1,838	130	36	45,122 L	13,700	1,728	120
	Other Fuel			10,800	216	13			16,200	56	4
Light Trucks, Vans, SUVs	Hybrid	18	23,465 L	16,800	821	55	54	79,842 L	17,400	2,795	180
	Gasoline	12,008	25,544,013 L	15,300	894,040	60,894	12,891	26,804,212 L	15,100	938,147	60,637
	Diesel Fuel	183	451,350 L	14,600	17,287	1,230	195	546,631 L	18,100	20,935	1,448
	Other Fuel	39	75,354 L	11,500	1,906	115	23	41,139 L	10,900	1,041	63
Commercial Vehicles	Gasoline	999	2,722,523 L	16,400	95,288	6,398	1,113	3,068,945 L	16,500	107,414	6,866
	Diesel Fuel	916	3,373,521 L	18,700	129,206	9,078	1,144	4,194,974 L	18,900	160,667	10,954
	Other Fuel	52	109,832 L	11,600	2,778	168	33	61,036 L	10,300	1,544	93
Tractor Trailer Trucks	Gasoline			14,900	443	30			20,300	561	36
	Diesel Fuel	367	5,513,079 L	37,700	211,150	14,836	468	7,078,963 L	38,300	271,124	18,482
Motorhomes	Gasoline	124	291,953 L	16,900	10,218	683	123	289,650 L	16,900	10,138	646
	Diesel Fuel	70	214,879 L	16,700	8,230	578	54	174,905 L	17,000	6,699	457
	Other Fuel			15,900	122	8			19,500	74	4
Motorcycles, Mopeds	Gasoline	542	133,830 L	5,500	4,684	312	624	177,987 L	6,400	6,230	394
Buses	Gasoline	31	134,372 L	26,300	4,703	315	36	144,975 L	25,300	5,074	325
	Diesel Fuel			27,000	1,614	114	13	87,137 L	28,500	3,338	228
	Other Fuel			18,200	94	4					
Totals		33,057	63,229,882 L	14,820	2,246,452	153,275	34,468	63,229,882 L	14,733	2,377,168	154,710



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			2	2007				2010	
Buildings		Connections	Consumption	Energy (GJ)	C02e (t)	Connections	Consumption	Energy (GJ)	C02e (t)
Residential	Natural Gas	13,356	1,256,415 GJ	1,256,415	63,021	13,320	1,090,047 GJ	1,090,047	54,677
	Electricity	18,387	183,400,034 kWh	660,240	4,585	19,307	183,400,139 kWh	660,240	4,585
Commercial/Small-Medium Industrial	Natural Gas	1,532	707,889 GJ	707,889	35,508	1,507	637,093 GJ	637,093	31,957
	Electricity	2,441	190,696,728 kWh	686,508	4,768	2,521	183,572,661 kWh	660,861	4,589
Totals		35,716		3,311,052	107,882	36,655		3,048,241	95,808

				2007				2010	
Solid Waste		Connections	Consumption	Energy (GJ)	C02e (t)	Connections	Consumption	Energy (GJ)	C02e (t)
Community Solid Waste	Solid Waste	0	34,344 t	N/A	10,406	0	25,149 t	N/A	11,929
Totals		0			10,406	0			11,929

Memo Items

		2007					2010		
Buildings		Connections	Consumption	Energy (GJ)	C02e (t)	Connections	Consumption	Energy (GJ)	C02e (t)
Large Industrial	Natural Gas	13	494,337 GJ	494,337	24,796	12	333,319 GJ	333,319	16,719
	Electricity	2		0	0	2		0	0
Totals		15		494,337	24,796	14		333,319	16,719



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Totals for Transportation, Buildings and Solid Waste

	2007 (Pop	oulation: 54,971)	2010 (Population: 57,431)			
Fuel Type	Consumption	Energy (GJ)	C02e (t)	Consumption	Energy (GJ)	C02e (t)
Hybrid	43,163 L	1,757	119	184,444 L	6,455	412
Gasoline	53,173,075 L	1,861,499	126,258	54,116,833 L	1,894,651	121,832
Diesel Fuel	9,828,458 L	378,044	26,588	12,355,644 L	473,219	32,294
Other Fuel	185,186 L	5,152	310	102,175 L	2,843	172
Natural Gas	1,964,304 GJ	1,964,304	98,529	1,727,140 GJ	1,727,140	86,634
Electricity	374,096,762 kWh	1,346,748	9,353	366,972,800 kWh	1,321,101	9,174
Solid Waste	34,344 t	0	10,406	25,149 t	0	11,929
Grand Totals		5,557,504	271,563		5,425,409	262,447



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Supporting Indicators

No new supporting indicator data have been provided in the 2010 reports. Work is currently underway to produce a complete second round of data for the indicators below in the 2012 reports (available in 2014). In the interim, we are including the same supporting indicator data that was provided in the 2007 reports. Feedback is requested on all supporting indicators; please contact us directly at

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		200	1	2006		
	Units	%	Units	%	Units	%	
Single Detached House	8,805	36	9,270	52	8,725	47	
Semi-Detached House	495	2	670	4	605	3	
Row House	2,135	9	2,450	14	2,755	15	
Apartment, Duplex	1,600	6	1,935	11	2,765	15	
Apartment, 5 storeys or higher	10	0	0	0	0	0	
Apartment, under 5 storeys	2,825	11	3,365	19	3,800	20	
Other Single Attached House	10	0	15	0	15	0	
Movable Dwelling	55	0	45	0	45	0	

Parks and Protected Greenspace

Parks and protected greenspaces are important for the protection and enhancement of community carbon sinks.

	2009		
	Units	%	
National Parks	0	0	
Provincial Parks / Protected Areas	12	0	
Local Parks	476	14	
Agricultural Land Reserve	600	18	
Other land use	2,288	68	
Total Parks and Protected Area	488	14	
Total Land Area	3,376	100	
* Total is not of Indian Pesenves			

* Total is net of Indian Reserves
** Quantity of parkland may be underestimated

Residential Density

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	
	Units	%
National Parks	0	0
Provincial Parks / Protected Areas	12	0
Local Parks	476	14
Agricultural Land Reserve	600	18
Other land use	2,288	68
Total Parks and Protected Area	488	14
Total Land Area	3,376	100

* Net of Crown land, parks, Indian Reserves, water features, airports, ALR,waste disposal site

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		
	Units	%	Units	%	Units	%	
Car, Truck, Van as Driver	18,250	81	20,255	81	20,650	76	
Car, Truck, Van as Passenger	1,380	6	1,720	7	2,110	8	
Public Transit	1,795	8	1,900	8	2,890	11	
Walked	725	3	840	3	735	3	
Bicycle	180	1	185	1	275	1	
Motorcycle	40	0	30	0	100	0	
Taxicab	20	0	10	0	35	0	
Other Method	110	0	125	1	210	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
	Units %
Less than 5 km	6,865 30
5 to 9.9 km	3,575 16
25 km or more	3,460 15
15 to 24.9 km	6,195 27
10 to 14.9 km	2,925 13



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Supporting Indicators Under Consideration

Work is currently underway to produce a complete second round of supporting indicators for the 2012 reports (available in 2014). These reports will new data for the five supporting indicators included in the 2007 and 2010 Reports:

- Housing Type: Private dwellings by structural type
- Commute to Work: Employed labour force by mode of commute
- Commute Distance
- Residential Density
- Parks and Protected Greenspace

And in addition, the 2012 reports we are working to be able to include:

- Proximity to Transit
- Building Energy Intensity
- Building Floor Space
- Waste Diversion

We are continuing to work towards reporting on even more supporting indicators in the future including:

- Proximity to Services (e.g destinations such as grocery store, school, other retail etc.)
- Transit Ridership
- Water Use
- Impervious Surface Cover: % change in impervious surface cover
- Tree Canopy Cover: % change in tree canopy cover
- 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)

Please give us feedback by contacting us directly at CEEIRPT@gov.bc.ca

Many local governments have been undertaking a significant amount of climate action in both the corporate and community-wide spheres, as demonstrated in both the public reports from the Climate Action Revenue Incentive Program (CARIP) <u>http://www.cscd.gov.bc.ca/lgd/greencommunities/carip.htm</u>, and on the <u>http://toolkit.bc.ca</u> website. These two resources may be helpful to those who are interested in learning from other BC local governments. The toolkit also contains additional information and resources including decision-support/planning frameworks and tools for undertaking actions to reduce GHG emissions and energy consumption.



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This is your local government's 2010 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 as well as supporting indicators every two years. CEEI Reports are one of the many resources available through the Climate Action Toolkit (<u>http://www.toolkit.bc.ca</u>), 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, fulfill Milestone One requirements for those local government members of the Federation of Canadian Municipalities' (FCM's) Partners in Climate Protection (PCP) program, as well as supporting local government efforts to monitor progress towards Regional Growth Strategy objectives.

A first in North America!

CEEI is a first in North America and a first step for BC communities. The 2010 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 from large industrial buildings, including updated land-use change and new agricultural sectors as 'memo items'. 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.

For More Information

The full list of all BC local government 2010 CEEI Reports, User Guide, Technical Methods and Guidance Document, and additional information on the Supporting 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

We Need Your Feedback

To continue to guide us on CEEI, please take the time to 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,