

2010 Community Energy and Emissions Inventory

Monitoring and reporting on progress towards greenhouse gas emissions reduction targets





2010 Community Energy and Emissions Inventory

Page 2 of 6 February 20, 2014

Monitoring and reporting on progress towards greenhouse gas emissions reduction targets

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			13,200	103	7			13,900	139	8
	Gasoline	1,893	2,531,449 L	14,200	88,600	6,005	1,942	2,685,422 L	14,700	93,989	6,022
	Diesel Fuel	76	133,339 L	25,700	5,106	364	94	166,449 L	25,700	6,375	441
	Other Fuel								16,100	43	4
Large Passenger Cars	Hybrid	15	16,329 L	20,700	572	38	35	39,340 L	20,600	1,377	87
	Gasoline	1,575	2,569,885 L	14,400	89,946	6,081	1,466	2,383,898 L	14,400	83,437	5,346
	Diesel Fuel	19	29,455 L	17,100	1,127	81	13	20,520 L	17,400	786	54
Light Trucks, Vans, SUVs	Hybrid			19,400	160	10			22,500	644	41
	Gasoline	2,231	5,192,807 L	16,600	181,749	12,408	2,458	5,920,205 L	17,300	207,207	13,417
	Diesel Fuel	78	166,940 L	12,600	6,394	455	74	203,612 L	17,600	7,798	540
	Other Fuel	10	18,983 L	11,200	480	28			9,300	202	12
Commercial Vehicles	Gasoline	109	300,562 L	16,500	10,519	707	139	437,340 L	18,700	15,307	979
	Diesel Fuel	165	597,508 L	19,800	22,884	1,608	201	787,351 L	21,500	30,155	2,055
	Other Fuel			13,600	517	31			13,700	316	20
Tractor Trailer Trucks	Diesel Fuel	14	114,119 L	19,900	4,370	307	20	308,610 L	35,600	11,821	806
Motorhomes	Gasoline	69	162,392 L	16,500	5,684	381	75	174,381 L	16,200	6,103	388
	Diesel Fuel	33	100,990 L	16,600	3,869	271	29	94,822 L	16,400	3,632	248
	Other Fuel			13,200	91	6			22,400	77	6
Motorcycles, Mopeds	Gasoline	91	22,516 L	5,600	788	53	116	31,459 L	6,100	1,102	70
Buses	Gasoline			17,800	315	22			14,900	258	17
	Diesel Fuel								16,900	160	11
Totals		6,378	11,957,274 L	15,337	423,274	28,863	6,662	11,957,274 L	16,043	470,928	30,572



Page 3 of 6 February 20, 2014

2010 Community Energy and Emissions Inventory

Monitoring and reporting on progress towards greenhouse gas emissions reduction targets

	2007					2010			
Buildings		Connections	Consumption	Energy (GJ)	C02e (t)	Connections	Consumption	Energy (GJ)	C02e (t)
Residential	Wood	N/A	31,861 GJ	31,861	646	N/A	30,843 GJ	30,843	625
	Heating Oil	N/A	26,581 GJ	26,581	1,874	N/A	25,731 GJ	25,731	1,760
	Propane	N/A	4,582 GJ	4,582	280	N/A	4,436 GJ	4,436	271
	Natural Gas	2,276	137,270 GJ	137,270	6,885	1,963	102,786 GJ	102,786	5,156
	Electricity	4,458	65,047,221 kWh	234,170	1,626	4,541	61,567,908 kWh	221,644	1,539
Commercial/Small-Medium Industrial	Natural Gas	109	53,854 GJ	53,854	2,701	72	52,747 GJ	52,747	2,646
	Electricity	498	21,977,006 kWh	79,117	549	507	20,690,807 kWh	74,487	517
Totals		7,341		567,435	14,561	7,083		512,674	12,514

				2007				2010	
Solid Waste		Connections	Consumption	Energy (GJ)	C02e (t)	Connections	Consumption	Energy (GJ)	C02e (t)
Community Solid Waste	Solid Waste	0	4,520 t	N/A	3,083	0	3,667 t	N/A	3,361
Totals		0			3,083	0			3,361

Totals for Transportation, Buildings and Solid Waste

	2007 (Po	pulation: 8,618)		2010 (Population: 8,729)			
Fuel Type	Consumption	Energy (GJ)	C02e (t)	Consumption	Energy (GJ)	C02e (t)	
Hybrid	16,329 L	835	55	39,340 L	2,160	136	
Gasoline	10,779,611 L	377,601	25,657	11,632,705 L	407,403	26,239	
Diesel Fuel	1,142,351 L	43,750	3,086	1,581,364 L	60,727	4,155	
Other Fuel	18,983 L	1,088	65	0 L	638	42	
Wood	31,861 GJ	31,861	646	30,843 GJ	30,843	625	
Heating Oil	26,581 GJ	26,581	1,874	25,731 GJ	25,731	1,760	
Propane	4,582 GJ	4,582	280	4,436 GJ	4,436	271	
Natural Gas	191,124 GJ	191,124	9,586	155,533 GJ	155,533	7,802	
Electricity	87,024,227 kWh	313,287	2,175	82,258,715 kWh	296,131	2,056	
Solid Waste	4,520 t	0	3,083	3,667 t	0	3,361	
Grand Totals		990,709	46,507		983,602	46,447	



2010 Community Energy and Emissions Inventory

Monitoring and reporting on progress towards greenhouse gas emissions reduction targets

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	2,405	45	2,590	78	3,240	81	
Semi-Detached House	100	2	175	5	125	3	
Row House	195	4	180	5	215	5	
Apartment, Duplex	0	0	10	0	45	1	
Apartment, 5 storeys or higher	0	0	0	0	0	0	
Apartment, under 5 storeys	270	5	325	10	370	9	
Other Single Attached House	15	0	5	0	5	0	
Movable Dwelling	10	0	30	1	5	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	0	0	
Local Parks	5	0	
Agricultural Land Reserve	503	31	
Other land use	1,137	69	
Total Parks and Protected Area	6	0	
Total Land Area	1,645	100	
* 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	0	0
Local Parks	5	0
Agricultural Land Reserve	503	31
Other land use	1,137	69
Total Parks and Protected Area	6	0
Total Land Area	1,645	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		200 1	L	200	6
	Units	%	Units	%	Units	%
Car, Truck, Van as Driver	1,490	79	1,525	83	1,685	76
Car, Truck, Van as Passenger	150	8	85	5	155	7
Public Transit	10	1	20	1	40	2
Walked	150	8	160	9	220	10
Bicycle	10	1	30	2	35	2
Motorcycle	10	1	0	0	10	0
Taxicab	0	0	0	0	0	0
Other Method	55	3	20	1	65	3

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	770 44
5 to 9.9 km	285 16
25 km or more	400 23
15 to 24.9 km	50 3
10 to 14.9 km	235 14



2010 Community Energy and Emissions Inventory

Monitoring and reporting on progress towards greenhouse gas emissions reduction targets

Page 5 of 6 February 20, 2014

This page intentionally left blank



2010 Community Energy and Emissions Inventory

Page 6 of 6 February 20, 2014

Monitoring and reporting on progress towards greenhouse gas emissions reduction targets

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.



2010 Community Energy and Emissions Inventory

Page 7 of 6 February 20, 2014

Monitoring and reporting on progress towards greenhouse gas emissions reduction targets

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,