

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** 60 2% 7% 50 27% 40 35% of tonnes Buildings Buildings Buildings 30 On-Road Transportation On-Road Transportation On-Road Transportation 1,000s ( Solid Waste Solid Waste Solid Waste 20 58% 10 71% 0 2007 2010 2010 Total Emissions by Fuel Type 2010 Building Emissions by Subsector 2010 On-Road Transportation Emissions by Vehicle Class -0% 0%-**-**5% 1% т 0%-10% 12% 11% 10% Electricity 15% 24% Small Passenger Cars 5% 🗖 Natural Gas Res Electricity Large Passenger Cars Res Natural Gas Heating Oil Light Trucks, Vans, SUVs Res Heating Oil Propane 14% Commercial Vehicles 25% 🗖 Wood Res Propane 4% Tractor Trailer Trucks 21% Res Wood Gasoline Motorhomes Diesel Fuel Comm/Indust Electricity Motorcycles, Mopeds Comm/Indust Natural Gas 🗖 Hybrid Buses 44% Other Fuel 24% 10% 47%

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## **Core Items**

				2007					2010		
<b>On-Road Transportation</b>		Connections	Consumption	Avg VKT (km)	Energy (GJ)	C02e (t)	Connections	Consumption	Avg VKT (km)	Energy (GJ)	C02e (t)
Small Passenger Cars	Hybrid								24,000	30	2
	Gasoline	1,442	2,350,766 L	18,000	82,276	5,576	1,596	2,664,988 L	19,000	93,275	5,982
	Diesel Fuel	58	106,515 L	27,200	4,079	292	52	98,646 L	26,500	3,779	263
Large Passenger Cars	Hybrid						13	22,247 L	31,700	779	50
	Gasoline	791	1,711,947 L	21,200	59,917	4,054	832	1,841,357 L	21,300	64,446	4,129
	Diesel Fuel			12,700	388	26	13	14,385 L	10,700	551	37
Light Trucks, Vans, SUVs	Hybrid								26,200	510	34
	Gasoline	3,286	8,560,554 L	18,700	299,621	20,470	3,822	10,527,702 L	19,900	368,470	23,871
	Diesel Fuel	162	393,298 L	14,600	15,063	1,071	135	353,603 L	16,600	13,543	937
	Other Fuel	14	27,948 L	12,600	706	42			10,800	329	19
Commercial Vehicles	Gasoline	392	1,144,415 L	18,400	40,055	2,689	463	1,417,317 L	18,900	49,605	3,171
	Diesel Fuel	623	2,413,420 L	22,200	92,435	6,494	767	3,439,096 L	26,600	131,718	8,978
	Other Fuel			10,800	358	22			10,200	121	7
Tractor Trailer Trucks	Diesel Fuel	133	2,846,719 L	48,300	109,030	7,662	151	3,263,029 L	49,800	124,973	8,518
Motorhomes	Gasoline	25	68,076 L	19,600	2,383	159	32	88,891 L	19,500	3,111	198
	Diesel Fuel	29	102,190 L	19,400	3,914	277	32	113,861 L	19,600	4,360	298
Motorcycles, Mopeds	Gasoline	61	12,547 L	4,900	440	30	97	25,363 L	6,000	887	57
Buses	Gasoline	21	73,052 L	18,700	2,556	172	22	61,235 L	18,800	2,143	137
	Diesel Fuel	19	100,793 L	20,800	3,861	271	23	123,870 L	35,700	4,745	323
Totals		7,056	19,912,240 L	19,544	717,082	49,307	8,050	19,912,240 L	20,871	867,375	57,011

			2	2007				2010	
Buildings		Connections	Consumption	Energy (GJ)	C02e (t)	Connections	Consumption	Energy (GJ)	C02e (t)
Residential	Wood	N/A	157,731 GJ	157,731	3,196	N/A	147,041 GJ	147,041	2,979
	Heating Oil	N/A	33,229 GJ	33,229	2,342	N/A	30,977 GJ	30,977	2,119
	Propane	N/A	90,526 GJ	90,526	5,523	N/A	84,391 GJ	84,391	5,149
	Natural Gas	1,893	128,141 GJ	128,141	6,428	1,893	107,464 GJ	107,464	5,390
	Electricity	7,253	105,665,465 kWh	380,395	2,642	7,261	101,367,472 kWh	364,923	2,533
Commercial/Small-Medium Industrial	Natural Gas	139	28,000 GJ	28,000	1,404	139	44,032 GJ	44,032	2,209
	Electricity	1,171	41,285,352 kWh	148,627	1,032	1,224	44,861,135 kWh	161,500	1,122
Totals		10,456		966,649	22,567	10,517		940,328	21,501



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				2007				2010	
Solid Waste		Connections	Consumption	Energy (GJ)	C02e (t)	Connections	Consumption	Energy (GJ)	C02e (t)
Community Solid Waste	Solid Waste	0	7,627 t	N/A	11,791	0	9,197 t	N/A	1,741
Totals		0			11,791	0			1,741

# Totals for Transportation, Buildings and Solid Waste

	2007 (Pop	oulation: 16,480)	2010 (Population: 17,133)				
Fuel Type	Consumption	Energy (GJ)	C02e (t)	Consumption	Energy (GJ)	C02e (t)	
Hybrid	0 L	0		22,247 L	1,319	86	
Gasoline	13,921,357 L	487,248	33,150	16,626,853 L	581,937	37,545	
Diesel Fuel	5,962,935 L	228,770	16,093	7,406,490 L	283,669	19,354	
Other Fuel	27,948 L	1,064	64	0 L	450	26	
Wood	157,731 GJ	157,731	3,196	147,041 GJ	147,041	2,979	
Heating Oil	33,229 GJ	33,229	2,342	30,977 GJ	30,977	2,119	
Propane	90,526 GJ	90,526	5,523	84,391 GJ	84,391	5,149	
Natural Gas	156,141 GJ	156,141	7,832	151,496 GJ	151,496	7,599	
Electricity	146,950,817 kWh	529,022	3,674	146,228,607 kWh	526,423	3,655	
Solid Waste	7,627 t	0	11,791	9,197 t	0	1,741	
Grand Totals		1,683,731	83,665		1,807,703	80,253	



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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	4,640	29	4,875	85	5,000	86	
Semi-Detached House	190	1	195	3	235	4	
Row House	110	1	130	2	95	2	
Apartment, Duplex	55	0	20	0	35	1	
Apartment, 5 storeys or higher	0	0	5	0	0	0	
Apartment, under 5 storeys	30	0	45	1	45	1	
Other Single Attached House	0	0	10	0	0	0	
Movable Dwelling	605	4	485	8	400	7	

### Parks and Protected Greenspace

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

2009		
Units	%	
0	0	
1,689,016	16	
12	0	
64,610	1	
8,761,549	83	
1,689,028	16	
10,515,187	100	
	Units 0 1,689,016 12 64,610 8,761,549 1,689,028	

\* 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	1,689,016	16
Local Parks	12	0
Agricultural Land Reserve	64,610	1
Other land use	8,761,549	83
Total Parks and Protected Area	1,689,028	16
Total Land Area	10,515,187	100

#### 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	4,705	70	4,420	74	4,170	74	
Car, Truck, Van as Passenger	710	11	515	9	565	10	
Public Transit	60	1	40	1	55	1	
Walked	925	14	710	12	675	12	
Bicycle	105	2	95	2	60	1	
Motorcycle	5	0	10	0	5	0	
Taxicab	10	0	15	0	5	0	
Other Method	175	3	135	2	125	2	



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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: <a href="http://www.env.gov.bc.ca/cas/mitigation/ceei/index.html">http://www.env.gov.bc.ca/cas/mitigation/ceei/index.html</a> For guidance on target setting and community actions, go to <a href="http://www.toolkit.bc.ca">http://www.toolkit.bc.ca</a> and </a>

#### 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,