

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** 35 11% 7% 22% 30 25 35% 1,000s of tonn Buildings Buildings 20 Buildings On-Road Transportation On-Road Transportation On-Road Transportation 15 Solid Waste Solid Waste Solid Waste 10 58% 5 67% 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%-3%-2% 20% 15% 19% 5% Electricity Small Passenger Cars -1% Natural Gas Res Electricity Large Passenger Cars Res Natural Gas Heating Oil 1% 39% Light Trucks, Vans, SUVs 21% 10% 39% Res Heating Oil Propane Commercial Vehicles 2% U Wood Res Propane Tractor Trailer Trucks Res Wood Gasoline Motorhomes Comm/Indust Electricity Diesel Fuel Motorcycles, Mopeds Comm/Indust Natural Gas 🗖 Hybrid Buses 2% Other Fuel 4% 8% 45% 6% 56%

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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			15,900	52	3			17,100	83	4
	Gasoline	1,175	1,756,155 L	15,800	61,466	4,146	1,155	1,706,709 L	15,700	59,735	3,809
	Diesel Fuel	32	55,758 L	25,900	2,136	152	40	59,256 L	22,100	2,269	157
	Other Fuel			5,800	16	0					
Large Passenger Cars	Hybrid			22,600	79	5	17	21,456 L	22,500	751	47
	Gasoline	751	1,335,476 L	15,700	46,743	3,161	679	1,185,961 L	15,500	41,509	2,650
	Diesel Fuel	11	18,381 L	18,900	704	50	11	16,531 L	16,700	633	44
Light Trucks, Vans, SUVs	Hybrid			17,500	47	4			19,000	188	12
	Gasoline	1,816	4,960,607 L	19,100	173,622	11,834	1,904	5,024,844 L	18,600	175,869	11,359
	Diesel Fuel	138	339,147 L	13,900	12,990	923	101	270,733 L	15,600	10,368	715
	Other Fuel	23	51,364 L	13,000	1,300	79	14	27,080 L	11,100	685	42
Commercial Vehicles	Gasoline	193	687,088 L	21,200	24,048	1,616	220	700,586 L	18,900	24,520	1,568
	Diesel Fuel	282	1,281,653 L	25,400	49,087	3,448	332	1,609,555 L	27,300	61,647	4,202
	Other Fuel	12	25,833 L	11,300	652	39			10,600	410	25
Tractor Trailer Trucks	Diesel Fuel	64	799,534 L	30,500	30,622	2,151	54	501,813 L	23,200	19,220	1,311
Motorhomes	Gasoline	61	170,473 L	18,900	5,967	398	65	186,077 L	19,300	6,512	414
	Diesel Fuel	46	176,741 L	19,200	6,769	476	47	187,342 L	19,500	7,175	489
	Other Fuel			20,400	156	9			18,900	74	5
Motorcycles, Mopeds	Gasoline	74	19,096 L	6,100	669	45	84	23,639 L	6,600	828	52
Buses	Gasoline			15,100	186	11			18,900	611	39
	Diesel Fuel	14	82,044 L	21,400	3,142	220	13	79,058 L	22,800	3,027	206
	Other Fuel		•	15,000	73	4		-	12,700	62	4
Totals		4,692	11,759,350 L	17,993	420,526	28,774	4,736	11,759,350 L	17,895	416,176	27,154



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			20	07				2010	
Buildings		Connections	Consumption	Energy (GJ)	C02e (t)	Connections	Consumption	Energy (GJ)	C02e (t)
Residential	Wood	N/A	37,425 GJ	37,425	758	N/A	36,023 GJ	36,023	730
	Heating Oil	N/A	5,064 GJ	5,064	357	N/A	4,874 GJ	4,874	333
	Propane	N/A	8,938 GJ	8,938	545	N/A	8,603 GJ	8,603	525
	Natural Gas	1,257	75,593 GJ	75,593	3,792	1,277	68,330 GJ	68,330	3,427
	Electricity	2,653	24,471,908 kWh	88,099	147	2,403	24,327,309 kWh	87,578	146
Commercial/Small-Medium Industrial	Natural Gas	201	74,720 GJ	74,720	3,748	190	68,364 GJ	68,364	3,429
	Electricity	472	22,639,189 kWh	81,501	136	415	23,704,879 kWh	85,337	142
Totals		4,583		371,340	9,483	4,285		359,109	8,732

				2007				2010	
Solid Waste		Connections	Consumption	Energy (GJ)	C02e (t)	Connections	Consumption	Energy (GJ)	C02e (t)
Community Solid Waste	Solid Waste	0	4,458 t	N/A	3,751	0	5,063 t	N/A	4,567
Totals		0			3,751	0			4,567

# Totals for Transportation, Buildings and Solid Waste

	2007 (Po	pulation: 4,450)	2010 (Population: 4,551)				
Fuel Type	Consumption	Energy (GJ)	C02e (t)	Consumption	Energy (GJ)	C02e (t)	
Hybrid	0 L	178	12	21,456 L	1,022	63	
Gasoline	8,928,895 L	312,701	21,211	8,827,816 L	309,584	19,891	
Diesel Fuel	2,753,258 L	105,450	7,420	2,724,288 L	104,339	7,124	
Other Fuel	77,197 L	2,197	131	27,080 L	1,231	76	
Wood	37,425 GJ	37,425	758	36,023 GJ	36,023	730	
Heating Oil	5,064 GJ	5,064	357	4,874 GJ	4,874	333	
Propane	8,938 GJ	8,938	545	8,603 GJ	8,603	525	
Natural Gas	150,313 GJ	150,313	7,540	136,694 GJ	136,694	6,856	
Electricity	47,111,097 kWh	169,600	283	48,032,188 kWh	172,915	288	
Solid Waste	4,458 t	0	3,751	5,063 t	0	4,567	
Grand Totals		791,866	42,008		775,285	40,453	



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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	1996		1	2006	
	Units	%	Units	%	Units	%
Single Detached House	1,305	41	1,240	66	1,350	69
Semi-Detached House	50	2	45	2	30	2
Row House	240	8	225	12	230	12
Apartment, Duplex	30	1	35	2	35	2
Apartment, 5 storeys or higher	0	0	0	0	0	0
Apartment, under 5 storeys	215	7	245	13	245	13
Other Single Attached House	0	0	10	1	15	1
Movable Dwelling	0	0	80	4	50	3

#### 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	1	0	
Local Parks	17	3	
Agricultural Land Reserve	130	22	
Other land use	441	75	
Total Parks and Protected Area	19	3	
Total Land Area	590	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	1	0
Local Parks	17	3
Agricultural Land Reserve	130	22
Other land use	441	75
Total Parks and Protected Area	19	3
Total Land Area	590	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	1996			2006	
	Units	%	Units	%	Units	%
Car, Truck, Van as Driver	1,010	75	880	70	985	72
Car, Truck, Van as Passenger	85	6	115	9	135	10
Public Transit	25	2	10	1	0	0
Walked	175	13	210	17	190	14
Bicycle	10	1	10	1	25	2
Motorcycle	0	0	0	0	10	1
Taxicab	0	0	0	0	0	0
Other Method	40	3	30	2	30	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,