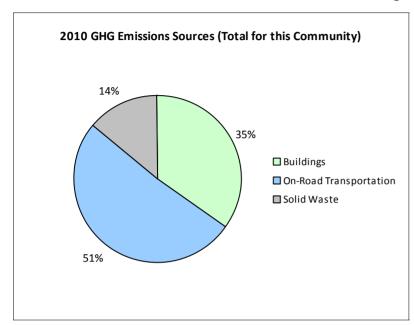
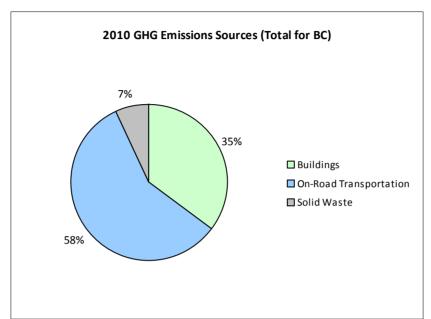
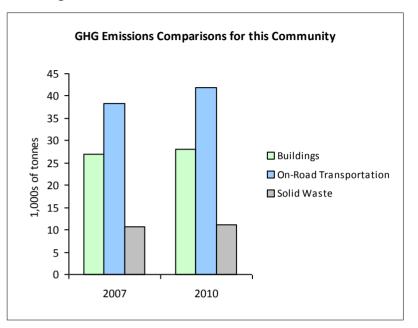


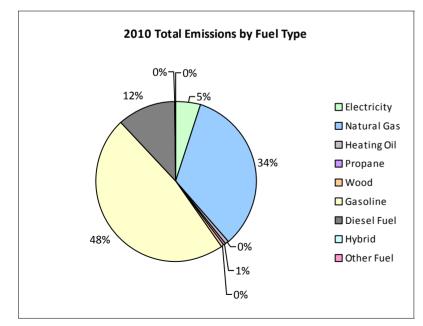
## **2010 Community Energy and Emissions Inventory**

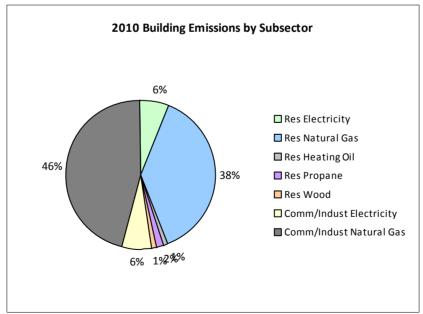
#### Monitoring and reporting on progress towards greenhouse gas emissions reduction targets

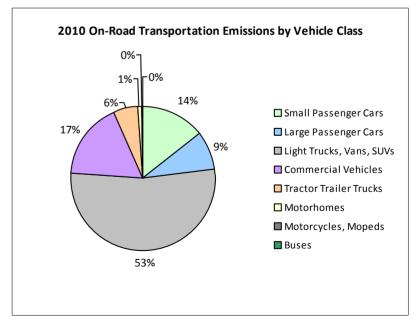














Page 2 of 7 February 20, 2014

# 2010 Community Energy and Emissions Inventory

## 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								23,500	132	8
	Gasoline	1,495	2,514,630 L	18,000	88,013	5,965	1,464	2,597,370 L	19,100	90,908	5,824
	Diesel Fuel	37	65,113 L	26,500	2,494	178	40	64,983 L	24,000	2,488	171
	Other Fuel								30,100	80	4
Large Passenger Cars	Hybrid			38,800	82	6	15	26,328 L	33,000	921	59
	Gasoline	775	1,741,110 L	19,700	60,939	4,136	700	1,628,271 L	20,400	56,990	3,656
	Diesel Fuel			12,100	171	12			6,700	198	13
	Other Fuel	20	50,591 L	16,900	1,279	77			16,200	371	23
Light Trucks, Vans, SUVs	Hybrid			27,900	77	5			24,800	366	24
	Gasoline	2,914	8,153,709 L	19,200	285,381	19,480	3,183	9,521,165 L	20,800	333,241	21,569
	Diesel Fuel	90	234,833 L	15,300	8,993	640	72	226,977 L	19,400	8,693	601
	Other Fuel	19	37,080 L	11,300	938	57			9,700	200	12
Commercial Vehicles	Gasoline	270	824,719 L	18,000	28,866	1,938	312	1,018,016 L	19,300	35,630	2,277
	Diesel Fuel	294	1,182,461 L	22,700	45,288	3,181	382	1,885,753 L	27,900	72,225	4,924
	Other Fuel			10,000	234	14			14,500	206	13
Tractor Trailer Trucks	Diesel Fuel	57	833,369 L	39,300	31,918	2,242	62	886,180 L	38,300	33,940	2,314
Motorhomes	Gasoline	28	76,552 L	19,000	2,679	178	27	71,077 L	18,800	2,487	158
	Diesel Fuel	18	64,941 L	19,600	2,487	175	20	68,236 L	19,100	2,613	178
	Other Fuel			24,300	98	6					
Motorcycles, Mopeds	Gasoline	102	22,922 L	5,500	802	54	119	31,125 L	6,300	1,090	68
Buses	Gasoline			21,600	253	18			24,000	540	34
	Diesel Fuel								16,300	134	8
Totals		6,119	15,802,030 L	18,999	560,992	38,362	6,396	15,802,030 L	20,637	643,453	41,938



# 2010 Community Energy and Emissions Inventory

## Monitoring and reporting on progress towards greenhouse gas emissions reduction targets

			20	007				2010	
Buildings		Connections	Consumption	Energy (GJ)	C02e (t)	Connections	Consumption	Energy (GJ)	C02e (t)
Residential	Wood	N/A	15,058 GJ	15,058	305	N/A	14,038 GJ	14,038	284
	Heating Oil	N/A	3,184 GJ	3,184	224	N/A	2,969 GJ	2,969	203
	Propane	N/A	8,703 GJ	8,703	531	N/A	8,113 GJ	8,113	495
	Natural Gas	2,688	263,520 GJ	263,520	13,218	2,688	210,540 GJ	210,540	10,561
	Electricity	5,957	75,857,730 kWh	273,088	1,897	5,918	72,199,500 kWh	259,918	1,805
Commercial/Small-Medium Industrial	Natural Gas	380	162,420 GJ	162,420	8,147	380	260,548 GJ	260,548	13,069
	Electricity	989	104,468,201 kWh	376,085	2,612	961	68,250,362 kWh	245,701	1,706
Totals		10,014		1,102,058	26,934	9,947		1,001,827	28,123

			2007					2010	
Solid Waste		Connections	Consumption	Energy (GJ)	C02e (t)	Connections	Consumption	Energy (GJ)	C02e (t)
Community Solid Waste	Solid Waste	0	9,669 t	N/A	10,670	0	10,469 t	N/A	11,195
Totals		0			10,670	0			11,195

## **Memo Items**

			7	2007				2010	
Buildings		Connections	Consumption	Energy (GJ)	C02e (t)	Connections	Consumption	Energy (GJ)	C02e (t)
Large Industrial	Natural Gas	9	263,295 GJ	263,295	13,207	9	128,168 GJ	128,168	6,429
	Electricity	1		0	0	2		0	0
Totals		10		263,295	13,207	11		128,168	6,429

Page 4 of 7 February 20, 2014

# **2010 Community Energy and Emissions Inventory**

Monitoring and reporting on progress towards greenhouse gas emissions reduction targets

# **Totals for Transportation, Buildings and Solid Waste**

	2007 (Pop	oulation: 12,906)		2010 (Population: 12,994)			
Fuel Type	Consumption	Energy (GJ)	C02e (t)	Consumption	Energy (GJ)	C02e (t)	
Hybrid	0 L	159	11	26,328 L	1,419	91	
Gasoline	13,333,642 L	466,933	31,769	14,867,024 L	520,886	33,586	
Diesel Fuel	2,380,717 L	91,351	6,428	3,132,129 L	120,291	8,209	
Other Fuel	87,671 L	2,549	154	0 L	857	52	
Wood	15,058 GJ	15,058	305	14,038 GJ	14,038	284	
Heating Oil	3,184 GJ	3,184	224	2,969 GJ	2,969	203	
Propane	8,703 GJ	8,703	531	8,113 GJ	8,113	495	
Natural Gas	425,940 GJ	425,940	21,365	471,088 GJ	471,088	23,630	
Electricity	180,325,931 kWh	649,173	4,509	140,449,862 kWh	505,619	3,511	
Solid Waste	9,669 t	0	10,670	10,469 t	0	11,195	
<b>Grand Totals</b>		1,663,050	75,966		1,645,280	81,256	

Page 5 of 7 February 20, 2014

#### **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		2001		2006		
	Units	%	Units	%	Units	%	
Single Detached House	3,140	35	3,140	58	2,860	57	
Semi-Detached House	255	3	280	5	205	4	
Row House	475	5	350	6	310	6	
Apartment, Duplex	660	7	610	11	755	15	
Apartment, 5 storeys or higher	130	1	75	1	25	0	
Apartment, under 5 storeys	1,015	11	865	16	795	16	
Other Single Attached House	25	0	10	0	5	0	
Movable Dwelling	180	2	130	2	105	2	

#### **Parks and Protected Greenspace**

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

	200	9
	Units	%
National Parks	0	0
Provincial Parks / Protected Areas	0	0
Local Parks	30	1
Agricultural Land Reserve	0	0
Other land use	5,495	99
Total Parks and Protected Area	30	1
Total Land Area	5,525	100

<sup>\*</sup> Total is net of Indian Reserves

### **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	9
	Units	%
National Parks	0	0
Provincial Parks / Protected Areas	0	0
Local Parks	30	1
Agricultural Land Reserve	0	0
Other land use	5,495	99
Total Parks and Protected Area	30	1
Total Land Area	5,525	100

<sup>\*</sup> 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	4,730	64	4,485	68	3,570	62
Car, Truck, Van as Passenger	925	13	780	12	805	14
Public Transit	195	3	200	3	195	3
Walked	1,135	15	890	13	960	17
Bicycle	140	2	55	1	65	1
Motorcycle	10	0	15	0	10	0
Taxicab	100	1	85	1	85	1
Other Method	160	2	125	2	110	2

#### **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	4,675	94	
5 to 9.9 km	40	1	
25 km or more	215	4	
15 to 24.9 km	0	0	
10 to 14.9 km	20	0	

<sup>\*\*</sup> Quantity of parkland may be underestimated

Page 6 of 7 February 20, 2014

# 2010 Community Energy and Emissions Inventory

Monitoring and reporting on progress towards greenhouse gas emissions reduction targets

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Page 7 of 7 February 20, 2014

#### **2010 Community Energy and Emissions Inventory**

#### 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) <a href="http://www.cscd.gov.bc.ca/lgd/greencommunities/carip.htm">http://www.cscd.gov.bc.ca/lgd/greencommunities/carip.htm</a>, and on the <a href="http://toolkit.bc.ca">http://toolkit.bc.ca</a> 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.



Page 8 of 7 February 20, 2014

### **2010 Community Energy and Emissions Inventory**

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 (<a href="http://www.toolkit.bc.ca">http://www.toolkit.bc.ca</a>), 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 href="http://www.cd.gov.bc.ca/lgd/greencommunities/targets.htm">http://www.cd.gov.bc.ca/lgd/greencommunities/targets.htm</a>

#### We Need Your Feedback

To continue to guide us on CEEI, please take the time to contact us directly at <a href="mailto:CEEIRPT@gov.bc.ca">CEEIRPT@gov.bc.ca</a>

#### 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,