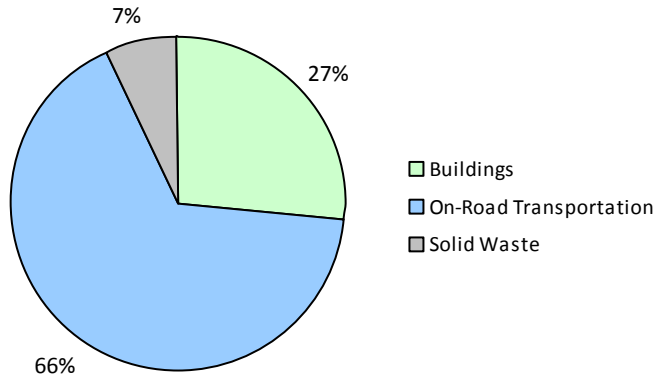
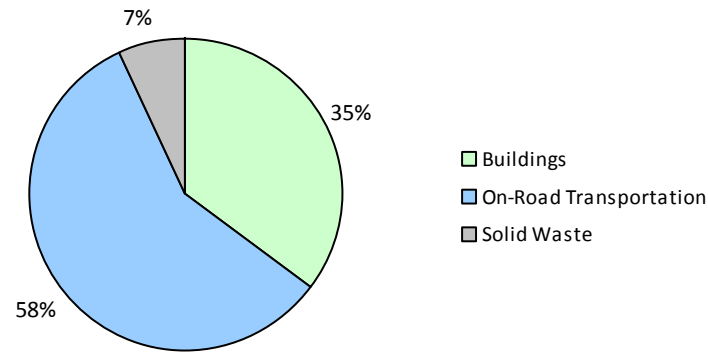


## Monitoring and reporting on progress towards greenhouse gas emissions reduction targets

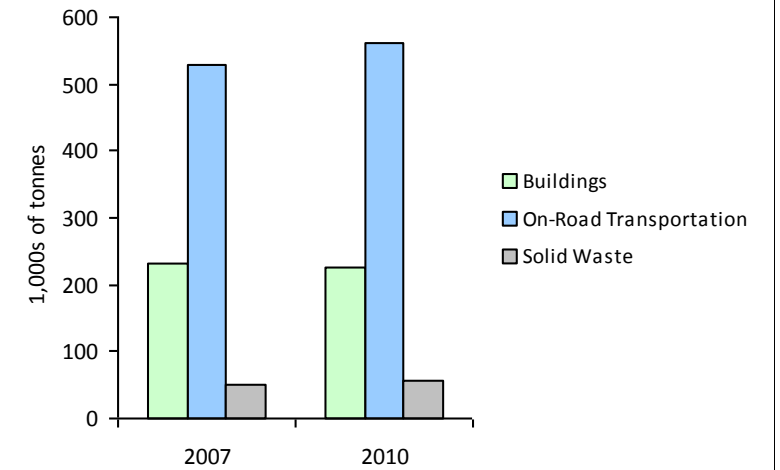
2010 GHG Emissions Sources (Total for this Community)



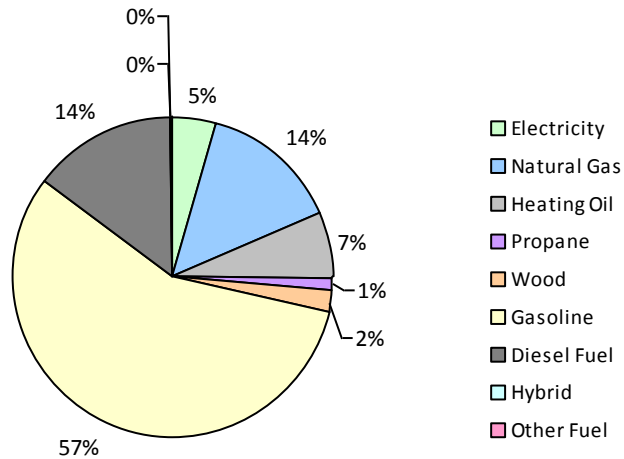
2010 GHG Emissions Sources (Total for BC)



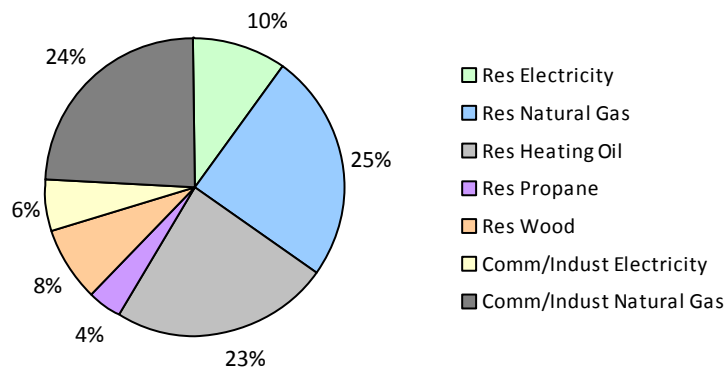
GHG Emissions Comparisons for this Community



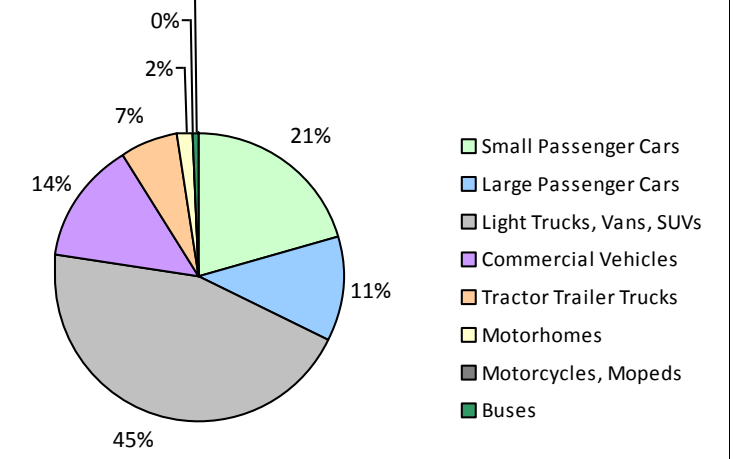
2010 Total Emissions by Fuel Type



2010 Building Emissions by Subsector



2010 On-Road Transportation Emissions by Vehicle Class



## Nanaimo Regional District 2010 Community Energy and Emissions Inventory

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

### Core Items

On-Road Transportation		2007					2010				
		Connections	Consumption	Avg VKT (km)	Energy (GJ)	CO2e (t)	Connections	Consumption	Avg VKT (km)	Energy (GJ)	CO2e (t)
Small Passenger Cars	Hybrid	30	24,374 L	17,600	853	58	85	90,555 L	20,500	3,169	201
	Gasoline	31,229	46,138,327 L	15,700	1,614,841	109,692	32,498	49,832,135 L	16,400	1,744,124	111,913
	Diesel Fuel	1,146	2,093,857 L	26,900	80,195	5,719	1,147	2,013,964 L	25,800	77,135	5,340
	Other Fuel			21,600	54	3	11	23,632 L	21,400	598	36
Large Passenger Cars	Hybrid	141	153,349 L	21,200	5,367	359	427	595,736 L	25,500	20,851	1,327
	Gasoline	16,333	28,574,024 L	15,400	1,000,090	67,872	15,511	27,560,133 L	15,700	964,605	61,886
	Diesel Fuel	244	328,178 L	14,400	12,569	893	255	311,069 L	13,200	11,914	824
	Other Fuel	36	81,867 L	17,100	2,071	125	12	28,268 L	18,900	716	44
Light Trucks, Vans, SUVs	Hybrid	32	54,719 L	21,600	1,914	130	106	222,754 L	23,500	7,796	502
	Gasoline	37,953	92,649,335 L	17,300	3,242,726	221,768	42,146	106,442,385 L	18,100	3,725,485	241,457
	Diesel Fuel	1,751	3,798,751 L	12,500	145,491	10,344	1,378	3,549,767 L	15,700	135,956	9,393
	Other Fuel	298	598,052 L	11,800	15,131	916	184	364,265 L	11,500	9,216	559
Commercial Vehicles	Hybrid								23,000	96	7
	Gasoline	2,700	7,932,616 L	17,600	277,642	18,640	3,178	9,842,869 L	18,500	344,500	22,021
	Diesel Fuel	4,051	15,893,636 L	21,000	608,727	42,769	5,000	21,270,198 L	23,100	814,648	55,535
	Other Fuel	147	341,298 L	12,600	8,634	523	98	226,791 L	12,600	5,739	347
Tractor Trailer Trucks	Gasoline			12,500	1,263	83			15,800	1,238	79
	Diesel Fuel	801	13,010,041 L	37,100	498,285	35,011	887	14,283,549 L	37,300	547,060	37,294
	Other Fuel			23,000	524	32			18,900	421	26
Motorhomes	Gasoline	953	2,223,719 L	16,400	77,829	5,194	961	2,252,103 L	16,400	78,823	5,012
	Diesel Fuel	523	1,586,425 L	16,400	60,760	4,269	494	1,554,950 L	16,400	59,555	4,059
	Other Fuel	25	60,457 L	16,700	1,530	93	16	39,489 L	16,700	999	60
Motorcycles, Mopeds	Gasoline	2,032	480,838 L	5,300	16,829	1,123	2,336	635,500 L	6,100	22,242	1,411
Buses	Gasoline	142	445,178 L	19,800	15,582	1,047	144	469,176 L	20,300	16,421	1,050
	Diesel Fuel	123	440,494 L	69,200	16,871	1,186	136	478,756 L	73,000	18,336	1,251
	Other Fuel	14	37,014 L	12,700	937	56	12	33,286 L	13,300	843	51
<b>Totals</b>		<b>100,704</b>	<b>216,946,549 L</b>	<b>16,623</b>	<b>7,706,715</b>	<b>527,905</b>	<b>107,022</b>	<b>216,946,549 L</b>	<b>17,488</b>	<b>8,612,486</b>	<b>561,685</b>

## Nanaimo Regional District 2010 Community Energy and Emissions Inventory

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

Buildings		2007				2010			
		Connections	Consumption	Energy (GJ)	C02e (t)	Connections	Consumption	Energy (GJ)	C02e (t)
Residential	Wood	N/A	950,343 GJ	950,343	19,254	N/A	919,967 GJ	919,967	18,639
	Heating Oil	N/A	793,335 GJ	793,335	55,922	N/A	767,977 GJ	767,977	52,522
	Propane	N/A	136,836 GJ	136,836	8,348	N/A	132,462 GJ	132,462	8,082
	Natural Gas	18,160	1,081,681 GJ	1,081,681	54,256	21,433	1,108,966 GJ	1,108,966	55,625
	Electricity	65,997	940,238,806 kWh	3,384,857	23,507	69,467	940,715,401 kWh	3,386,573	23,519
Commercial/Small-Medium Industrial	Natural Gas	2,211	1,137,567 GJ	1,137,567	57,060	1,959	1,102,051 GJ	1,102,051	55,279
	Electricity	7,477	506,203,158 kWh	1,822,330	12,656	8,026	508,163,559 kWh	1,829,387	12,705
<b>Totals</b>		<b>93,845</b>		<b>9,306,949</b>	<b>231,003</b>	<b>100,885</b>		<b>9,247,383</b>	<b>226,371</b>

Solid Waste		2007				2010			
		Connections	Consumption	Energy (GJ)	C02e (t)	Connections	Consumption	Energy (GJ)	C02e (t)
Community Solid Waste	Solid Waste	0	75,000 t	N/A	51,146	0	62,889 t	N/A	57,639
<b>Totals</b>		<b>0</b>			<b>51,146</b>	<b>0</b>			<b>57,639</b>

### Memo Items

Buildings		2007				2010			
		Connections	Consumption	Energy (GJ)	C02e (t)	Connections	Consumption	Energy (GJ)	C02e (t)
Large Industrial	Natural Gas	1		0	0				
	Electricity	5	262,931,073 kWh	946,551	6,574	3		0	0
<b>Totals</b>		<b>6</b>		<b>946,551</b>	<b>6,574</b>	<b>3</b>			<b>0</b>

Agriculture		2007				2010			
		Connections	Consumption	Energy (GJ)	C02e (t)	Connections	Consumption	Energy (GJ)	C02e (t)
Enteric Fermentation	Methane	6,039	268 t	0	5,628				
<b>Totals</b>		<b>6,039</b>			<b>5,628</b>	<b>0</b>			

## Nanaimo Regional District 2010 Community Energy and Emissions Inventory

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

Land-use Change - Deforestation		2007				2010			
		Connections	Consumption	Energy (GJ)	C02e (t)	Connections	Consumption	Energy (GJ)	C02e (t)
Agriculture	Deforestation	18	0 ha	0	12,482				
Settlement	Deforestation	95	0 ha	0	83,158				
<b>Totals</b>		<b>113</b>			<b>95,640</b>	<b>0</b>			

### Totals for Transportation, Buildings and Solid Waste

Fuel Type	2007 (Population: 142,996)			2010 (Population: 149,686)		
	Consumption	Energy (GJ)	C02e (t)	Consumption	Energy (GJ)	C02e (t)
Hybrid	232,442 L	8,134	547	909,045 L	31,912	2,037
Gasoline	178,444,037 L	6,246,802	425,419	197,034,301 L	6,897,438	444,829
Diesel Fuel	37,151,382 L	1,422,898	100,191	43,462,253 L	1,664,604	113,696
Other Fuel	1,118,688 L	28,881	1,748	715,731 L	18,532	1,123
Wood	950,343 GJ	950,343	19,254	919,967 GJ	919,967	18,639
Heating Oil	793,335 GJ	793,335	55,922	767,977 GJ	767,977	52,522
Propane	136,836 GJ	136,836	8,348	132,462 GJ	132,462	8,082
Natural Gas	2,219,248 GJ	2,219,248	111,316	2,211,017 GJ	2,211,017	110,904
Electricity	1,446,441,964 kWh	5,207,187	36,163	1,448,878,960 kWh	5,215,960	36,224
Solid Waste	75,000 t	0	51,146	62,889 t	0	57,639
<b>Grand Totals</b>		<b>17,013,664</b>	<b>810,054</b>		<b>17,859,869</b>	<b>845,695</b>

*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	35,135	42	38,015	70	40,720	68
Semi-Detached House	1,605	2	1,835	3	2,260	4
Row House	2,125	3	2,370	4	2,405	4
Apartment, Duplex	1,575	2	1,610	3	3,230	5
Apartment, 5 storeys or higher	800	1	850	2	1,050	2
Apartment, under 5 storeys	6,050	7	6,955	13	7,960	13
Other Single Attached House	90	0	200	0	165	0
Movable Dwelling	2,085	2	2,425	4	2,075	3

**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	37,795	80	39,085	82	44,975	80
Car, Truck, Van as Passenger	3,300	7	2,950	6	3,960	7
Public Transit	1,100	2	1,055	2	1,475	3
Walked	3,110	7	3,045	6	3,690	7
Bicycle	825	2	885	2	1,020	2
Motorcycle	105	0	105	0	200	0
Taxicab	20	0	50	0	30	0
Other Method	830	2	575	1	715	1

**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	3,069	1
Local Parks	2,005	1
Agricultural Land Reserve	18,720	9
Other land use	184,312	89
Total Parks and Protected Area	5,071	2
Total Land Area	208,107	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	3,069	1
Local Parks	2,005	1
Agricultural Land Reserve	18,720	9
Other land use	184,312	89
Total Parks and Protected Area	5,071	2
Total Land Area	208,107	100

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

**Nanaimo Regional District**  
**2010 Community Energy and Emissions Inventory**  
*Monitoring and reporting on progress towards greenhouse gas emissions reduction targets*

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*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](mailto: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) <http://www.cscd.gov.bc.ca/lgd/greencommunities/carip.htm>, and on the <http://toolkit.bc.ca> 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.

## **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 (<http://www.toolkit.bc.ca>), 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 <http://www.cd.gov.bc.ca/lgd/greencommunities/targets.htm>

### **We Need Your Feedback**

To continue to guide us on CEEI, please take the time to contact us directly at [CEEIRPT@gov.bc.ca](mailto: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,