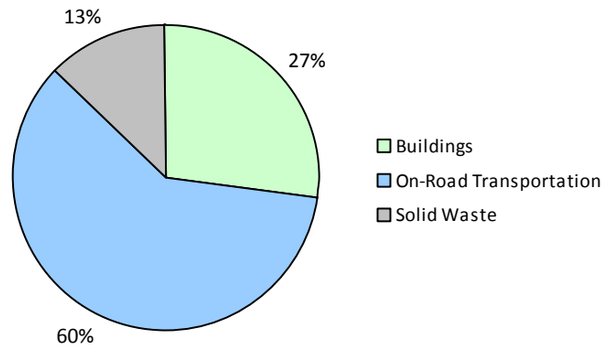
Courtenay City

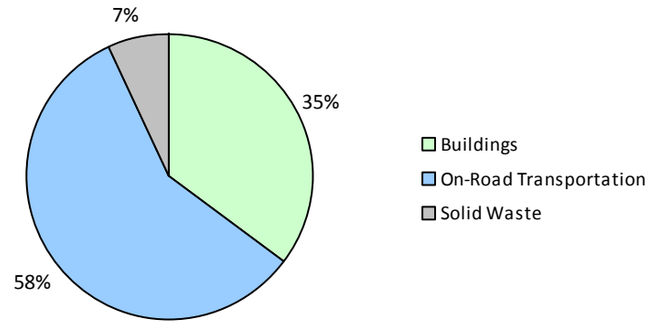
2010 Community Energy and Emissions Inventory

Monitoring and reporting on progress towards greenhouse gas emissions reduction targets

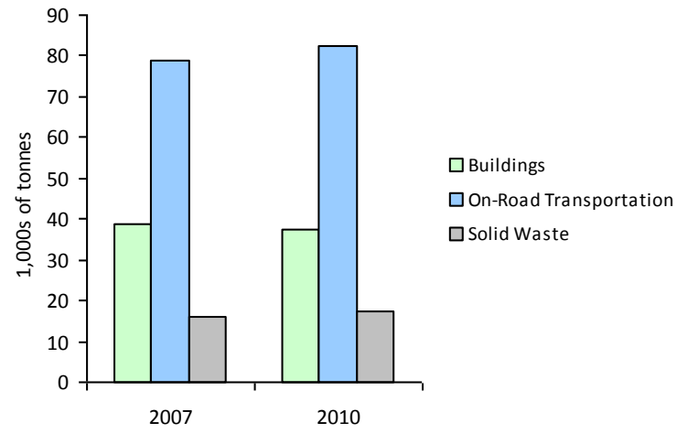
2010 GHG Emissions Sources (Total for this Community)



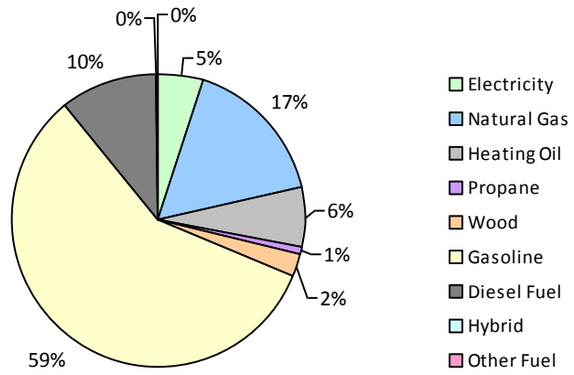
2010 GHG Emissions Sources (Total for BC)



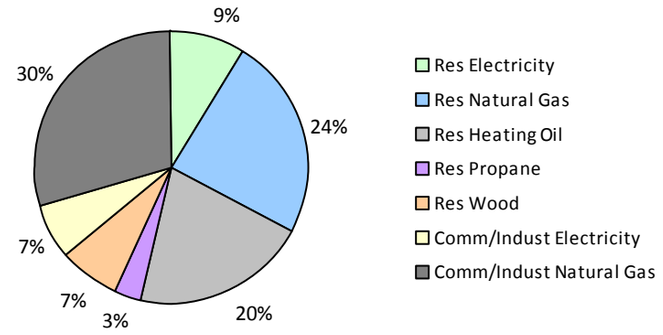
GHG Emissions Comparisons for this Community



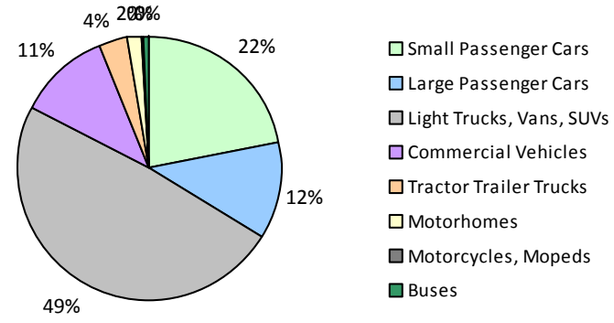
2010 Total Emissions by Fuel Type



2010 Building Emissions by Subsector



2010 On-Road Transportation Emissions by Vehicle Class



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Core Items

On-Road Transportation		2007					2010				
		Connections	Consumption	Avg VKT (km)	Energy (GJ)	C02e (t)	Connections	Consumption	Avg VKT (km)	Energy (GJ)	C02e (t)
Small Passenger Cars	Hybrid			16,900	186	12	19	17,210 L	18,100	602	39
	Gasoline	5,170	7,468,835 L	15,400	261,410	17,767	5,221	7,724,001 L	15,900	270,340	17,353
	Diesel Fuel	202	360,363 L	26,300	13,802	984	203	346,327 L	24,900	13,265	918
	Other Fuel			8,000	18	0			27,600	73	4
Large Passenger Cars	Hybrid	23	25,078 L	20,900	878	59	72	84,202 L	21,000	2,947	187
	Gasoline	2,369	4,022,746 L	14,900	140,796	9,588	2,338	4,071,183 L	15,400	142,492	9,152
	Diesel Fuel	33	43,825 L	14,100	1,678	119	51	54,510 L	11,400	2,088	145
	Other Fuel			14,400	46	4			14,500	45	3
Light Trucks, Vans, SUVs	Hybrid			25,500	213	14	16	33,982 L	24,100	1,189	77
	Gasoline	5,935	14,502,929 L	17,000	507,603	34,756	6,638	16,972,149 L	17,900	594,024	38,508
	Diesel Fuel	254	541,412 L	12,100	20,736	1,473	195	484,615 L	15,000	18,561	1,282
	Other Fuel	44	91,646 L	12,200	2,318	140	19	36,233 L	11,100	917	56
Commercial Vehicles	Gasoline	389	1,119,323 L	17,000	39,176	2,630	475	1,418,992 L	17,800	49,663	3,174
	Diesel Fuel	544	1,855,562 L	19,100	71,069	4,993	625	2,378,607 L	21,600	91,100	6,211
	Other Fuel	26	60,714 L	13,300	1,537	93	18	40,128 L	12,600	1,015	61
Tractor Trailer Trucks	Gasoline			21,100	206	13			16,300	160	10
	Diesel Fuel	109	1,575,242 L	34,400	60,331	4,239	86	1,104,212 L	31,700	42,291	2,884
Motorhomes	Gasoline	156	363,746 L	16,500	12,731	850	153	360,030 L	16,700	12,601	802
	Diesel Fuel	73	225,223 L	16,800	8,626	605	83	261,009 L	16,700	9,996	681
	Other Fuel			15,600	179	10			18,600	145	9
Motorcycles, Mopeds	Gasoline	402	96,458 L	5,400	3,376	225	444	120,472 L	6,100	4,217	268
Buses	Gasoline	14	37,309 L	16,800	1,306	87	17	40,357 L	15,300	1,413	90
	Diesel Fuel			20,800	1,528	107	22	108,955 L	20,900	4,172	285
	Other Fuel			15,800	86	5			11,800	65	5
Totals		**15,743**	**32,390,411 L**	**16,070**	**1,149,835**	**78,773**	**16,695**	**32,390,411 L**	**16,839**	**1,263,381**	**82,204**

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Buildings		2007				2010			
		Connections	Consumption	Energy (GJ)	C02e (t)	Connections	Consumption	Energy (GJ)	C02e (t)
Residential	Wood	N/A	138,003 GJ	138,003	2,796	N/A	133,592 GJ	133,592	2,707
	Heating Oil	N/A	115,327 GJ	115,327	8,129	N/A	111,641 GJ	111,641	7,635
	Propane	N/A	19,910 GJ	19,910	1,215	N/A	19,274 GJ	19,274	1,176
	Natural Gas	4,154	189,777 GJ	189,777	9,519	4,380	177,935 GJ	177,935	8,926
	Electricity	10,841	135,818,774 kWh	488,947	3,396	11,220	135,689,746 kWh	488,483	3,392
Commercial/Small-Medium Industrial	Natural Gas	559	222,298 GJ	222,298	11,150	560	221,058 GJ	221,058	11,088
	Electricity	1,738	99,430,502 kWh	357,950	2,486	1,768	100,161,897 kWh	360,583	2,504
Totals		**17,292**		**1,532,212**	**38,691**	**17,928**		**1,512,566**	**37,428**

Solid Waste		2007				2010			
		Connections	Consumption	Energy (GJ)	C02e (t)	Connections	Consumption	Energy (GJ)	C02e (t)
Community Solid Waste	Solid Waste	0	15,475 t	N/A	15,888	0	16,822 t	N/A	17,393
Totals		**0**			**15,888**	**0**			**17,393**

Totals for Transportation, Buildings and Solid Waste

Fuel Type	2007 (Population: 23,367)			2010 (Population: 24,589)		
	Consumption	Energy (GJ)	C02e (t)	Consumption	Energy (GJ)	C02e (t)
Hybrid	25,078 L	1,277	85	135,394 L	4,738	303
Gasoline	27,611,346 L	966,604	65,916	30,707,184 L	1,074,910	69,357
Diesel Fuel	4,601,627 L	177,770	12,520	4,738,235 L	181,473	12,406
Other Fuel	152,360 L	4,184	252	76,361 L	2,260	138
Wood	138,003 GJ	138,003	2,796	133,592 GJ	133,592	2,707
Heating Oil	115,327 GJ	115,327	8,129	111,641 GJ	111,641	7,635
Propane	19,910 GJ	19,910	1,215	19,274 GJ	19,274	1,176
Natural Gas	412,075 GJ	412,075	20,669	398,993 GJ	398,993	20,014
Electricity	235,249,276 kWh	846,897	5,882	235,851,643 kWh	849,066	5,896
Solid Waste	15,475 t	0	15,888	16,822 t	0	17,393
Grand Totals		**2,682,047**	**133,352**		**2,775,947**	**137,025**

Courtenay City

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	3,955	36	4,220	53	5,140	53
Semi-Detached House	905	8	1,185	15	1,340	14
Row House	515	5	615	8	715	7
Apartment, Duplex	165	1	105	1	275	3
Apartment, 5 storeys or higher	0	0	5	0	5	0
Apartment, under 5 storeys	1,505	14	1,615	20	1,920	20
Other Single Attached House	30	0	55	1	10	0
Movable Dwelling	105	1	200	3	340	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	4,965	76	5,395	76	6,745	74
Car, Truck,Van as Passenger	600	9	570	8	690	8
Public Transit	85	1	75	1	125	1
Walked	510	8	620	9	890	10
Bicycle	220	3	270	4	415	5
Motorcycle	15	0	35	0	55	1
Taxicab	0	0	0	0	15	0
Other Method	180	3	165	2	165	2

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	79	3
Agricultural Land Reserve	589	20
Other land use	2,291	77
Total Parks and Protected Area	79	3
Total Land Area	2,959	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	79	3
Agricultural Land Reserve	589	20
Other land use	2,291	77
Total Parks and Protected Area	79	3
Total Land Area	2,959	100

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

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	5,260	70
5 to 9.9 km	1,100	15
25 km or more	885	12
15 to 24.9 km	125	2
10 to 14.9 km	100	1

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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) 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

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,