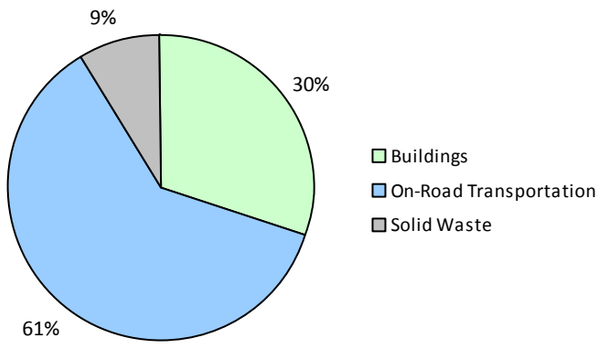
Fraser-Fort George Regional District

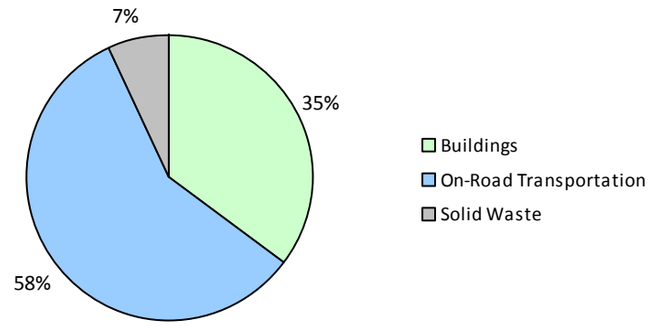
2010 Community Energy and Emissions Inventory

Monitoring and reporting on progress towards greenhouse gas emissions reduction targets

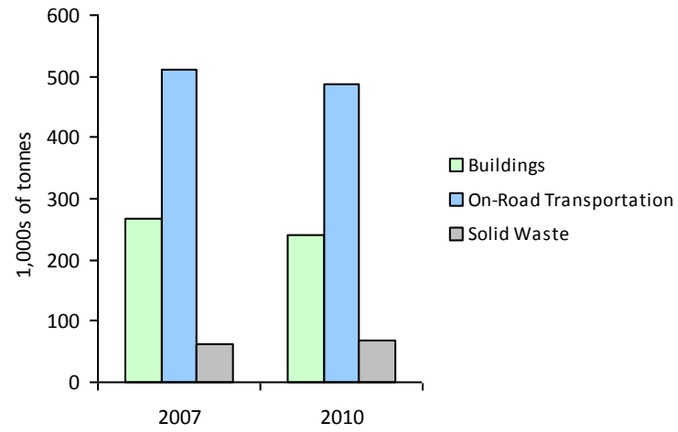
2010 GHG Emissions Sources (Total for this Community)



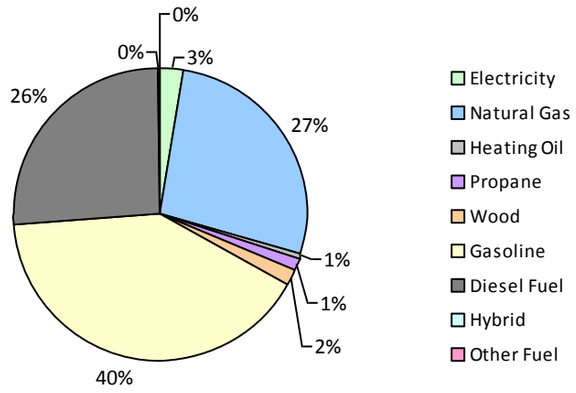
2010 GHG Emissions Sources (Total for BC)



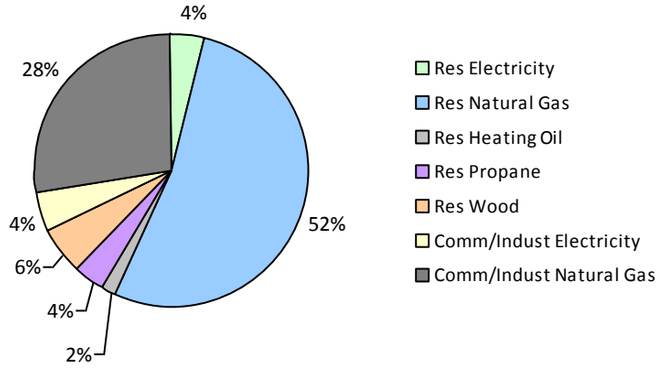
GHG Emissions Comparisons for this Community



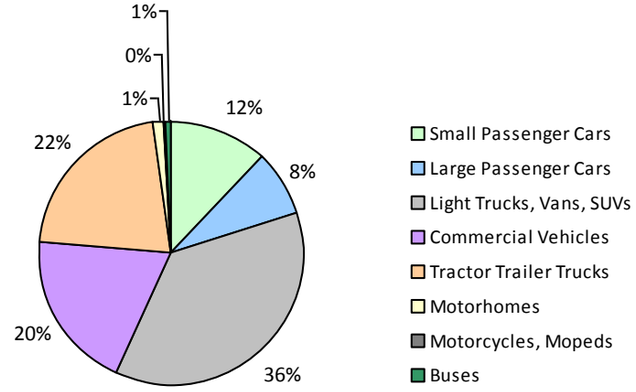
2010 Total Emissions by Fuel Type



2010 Building Emissions by Subsector



2010 On-Road Transportation Emissions by Vehicle Class



Fraser-Fort George 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)	C02e (t)	Connections	Consumption	Avg VKT (km)	Energy (GJ)	C02e (t)
Small Passenger Cars	Hybrid	10	11,236 L	24,000	393	26	24	29,854 L	23,900	1,045	65
	Gasoline	15,759	27,372,695 L	18,500	958,044	64,908	14,714	24,988,929 L	18,200	874,612	56,027
	Diesel Fuel	685	1,314,307 L	27,900	50,337	3,590	690	1,237,353 L	25,900	47,391	3,281
	Other Fuel			11,200	33	3			18,700	50	4
Large Passenger Cars	Hybrid	33	53,880 L	29,700	1,885	125	85	146,665 L	29,900	5,134	327
	Gasoline	8,151	18,551,284 L	20,100	649,294	43,968	7,732	17,076,823 L	19,600	597,690	38,286
	Diesel Fuel	86	101,629 L	12,600	3,892	276	75	80,050 L	11,700	3,066	212
	Other Fuel	32	103,429 L	20,800	2,616	159	15	41,715 L	17,200	1,056	63
Light Trucks, Vans, SUVs	Hybrid	12	25,494 L	26,400	892	60	53	141,479 L	27,700	4,953	318
	Gasoline	25,691	71,874,291 L	19,000	2,515,600	171,829	26,606	75,045,876 L	19,300	2,626,606	170,076
	Diesel Fuel	1,312	3,418,552 L	14,800	130,931	9,310	929	2,675,939 L	17,000	102,489	7,080
	Other Fuel	250	527,592 L	12,300	13,349	808	142	268,931 L	10,900	6,803	411
Commercial Vehicles	Gasoline	3,554	11,309,599 L	18,700	395,836	26,584	3,840	11,960,345 L	18,400	418,612	26,763
	Diesel Fuel	5,072	21,649,746 L	23,600	829,185	58,259	5,472	26,190,844 L	26,800	1,003,109	68,383
	Other Fuel	103	242,530 L	12,900	6,136	372	68	141,718 L	11,400	3,586	217
Tractor Trailer Trucks	Gasoline	16	111,941 L	20,900	3,918	264	12	128,912 L	31,600	4,511	288
	Diesel Fuel	1,582	45,506,120 L	62,100	1,742,884	122,455	1,422	40,736,220 L	61,400	1,560,197	106,361
	Other Fuel			33,200	1,205	73			9,100	185	11
Motorhomes	Gasoline	350	993,594 L	19,700	34,776	2,319	370	1,061,584 L	19,700	37,156	2,359
	Diesel Fuel	261	970,201 L	19,900	37,158	2,609	245	928,348 L	19,900	35,556	2,423
	Other Fuel	17	51,119 L	19,900	1,293	79	14	43,281 L	20,400	1,096	66
Motorcycles, Mopeds	Gasoline	850	199,306 L	5,000	6,976	466	1,069	298,552 L	6,000	10,449	662
Buses	Gasoline	61	177,803 L	17,600	6,223	418	83	305,454 L	22,500	10,692	684
	Diesel Fuel	165	989,707 L	35,300	37,906	2,663	190	1,012,541 L	52,000	38,779	2,644
	Other Fuel			11,400	249	15			10,700	169	11
Totals		**64,052**	**205,556,055 L**	**20,265**	**7,431,011**	**511,638**	**63,850**	**205,556,055 L**	**20,519**	**7,394,992**	**487,022**

Fraser-Fort George 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	741,347 GJ	741,347	15,020	N/A	691,103 GJ	691,103	14,002
	Heating Oil	N/A	59,160 GJ	59,160	4,170	N/A	55,151 GJ	55,151	3,772
	Propane	N/A	160,821 GJ	160,821	9,812	N/A	149,921 GJ	149,921	9,147
	Natural Gas	28,668	2,760,721 GJ	2,760,721	138,477	28,723	2,515,835 GJ	2,515,835	126,195
	Electricity	39,034	411,515,856 kWh	1,481,456	10,288	39,499	408,797,813 kWh	1,471,671	10,220
Commercial/Small-Medium Industrial	Natural Gas	2,649	1,560,500 GJ	1,560,500	78,274	2,587	1,354,907 GJ	1,354,907	67,962
	Electricity	5,448	434,055,876 kWh	1,562,600	10,852	5,570	426,998,516 kWh	1,537,193	10,675
Totals		**75,799**		**8,326,605**	**266,893**	**76,379**		**7,775,781**	**241,973**

Solid Waste		2007				2010			
		Connections	Consumption	Energy (GJ)	C02e (t)	Connections	Consumption	Energy (GJ)	C02e (t)
Community Solid Waste	Solid Waste	0	95,998 t	N/A	61,634	0	80,001 t	N/A	68,966
Totals		**0**			**61,634**	**0**			**68,966**

Memo Items

Buildings		2007				2010			
		Connections	Consumption	Energy (GJ)	C02e (t)	Connections	Consumption	Energy (GJ)	C02e (t)
Large Industrial	Natural Gas	36	6,306,994 GJ	6,306,994	316,359	31	5,302,912 GJ	5,302,912	265,994
	Electricity	22	2,119,845,016 kWh	7,631,436	52,998	18	1,513,526,583 kWh	5,448,691	37,840
Totals		**58**		**13,938,430**	**369,357**	**49**		**10,751,603**	**303,834**

Agriculture		2007				2010			
		Connections	Consumption	Energy (GJ)	C02e (t)	Connections	Consumption	Energy (GJ)	C02e (t)
Enteric Fermentation	Methane	32,956	1,904 t	0	39,984				
Totals		**32,956**			**39,984**	**0**			

Fraser-Fort George 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	241	0 ha	0	110,138				
Settlement	Deforestation	55	0 ha	0	26,457				
Totals		**296**			**136,595**	**0**			

Totals for Transportation, Buildings and Solid Waste

Fuel Type	2007 (Population: 94,911)			2010 (Population: 96,575)		
	Consumption	Energy (GJ)	C02e (t)	Consumption	Energy (GJ)	C02e (t)
Hybrid	90,610 L	3,170	211	317,998 L	11,132	710
Gasoline	130,590,513 L	4,570,667	310,756	130,866,475 L	4,580,328	295,145
Diesel Fuel	73,950,262 L	2,832,293	199,162	72,861,295 L	2,790,587	190,384
Other Fuel	924,670 L	24,881	1,509	495,645 L	12,945	783
Wood	741,347 GJ	741,347	15,020	691,103 GJ	691,103	14,002
Heating Oil	59,160 GJ	59,160	4,170	55,151 GJ	55,151	3,772
Propane	160,821 GJ	160,821	9,812	149,921 GJ	149,921	9,147
Natural Gas	4,321,221 GJ	4,321,221	216,751	3,870,742 GJ	3,870,742	194,157
Electricity	845,571,732 kWh	3,044,056	21,140	835,796,329 kWh	3,008,864	20,895
Solid Waste	95,998 t	0	61,634	80,001 t	0	68,966
Grand Totals		**15,757,616**	**840,165**		**15,170,773**	**797,961**

Fraser-Fort George Regional District

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	23,825	41	24,500	68	24,350	67
Semi-Detached House	1,630	3	1,515	4	1,485	4
Row House	1,340	2	1,640	5	1,670	5
Apartment, Duplex	1,155	2	1,065	3	1,800	5
Apartment, 5 storeys or higher	395	1	365	1	410	1
Apartment, under 5 storeys	3,905	7	3,555	10	4,440	12
Other Single Attached House	95	0	50	0	40	0
Movable Dwelling	2,495	4	3,270	9	2,260	6

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	37,095	81	36,670	82	37,535	81
Car, Truck,Van as Passenger	4,055	9	3,515	8	3,905	8
Public Transit	740	2	635	1	775	2
Walked	2,525	6	2,450	6	2,890	6
Bicycle	675	1	580	1	585	1
Motorcycle	90	0	50	0	60	0
Taxicab	135	0	80	0	85	0
Other Method	560	1	550	1	655	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	516,683	10
Local Parks	1,034	0
Agricultural Land Reserve	405,669	8
Other land use	4,272,398	82
Total Parks and Protected Area	517,717	10
Total Land Area	5,195,783	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	516,683	10
Local Parks	1,034	0
Agricultural Land Reserve	405,669	8
Other land use	4,272,398	82
Total Parks and Protected Area	517,717	10
Total Land Area	5,195,783	100

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

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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,