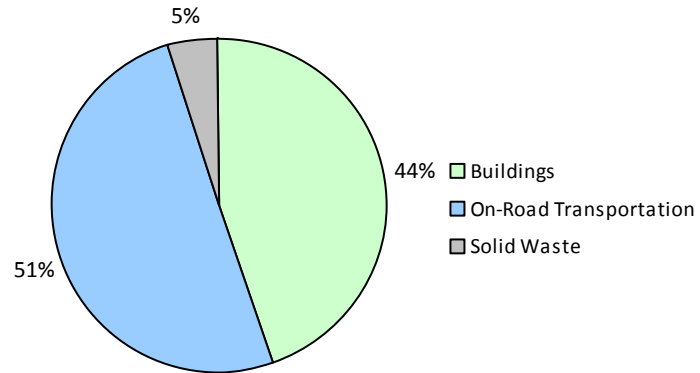
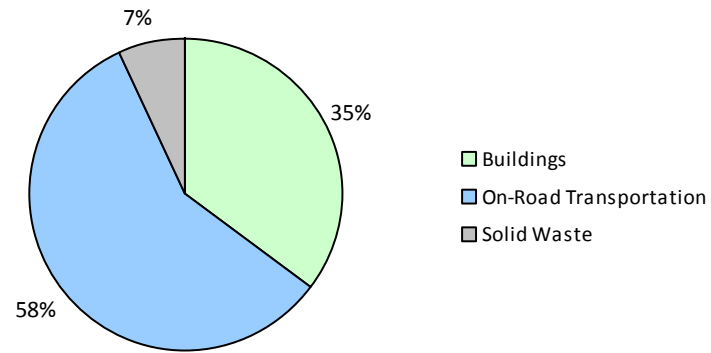


Monitoring and reporting on progress towards greenhouse gas emissions reduction targets

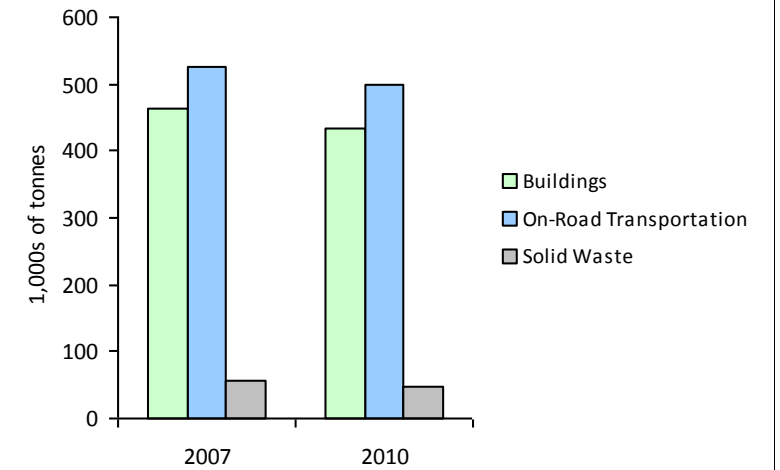
2010 GHG Emissions Sources (Total for this Community)



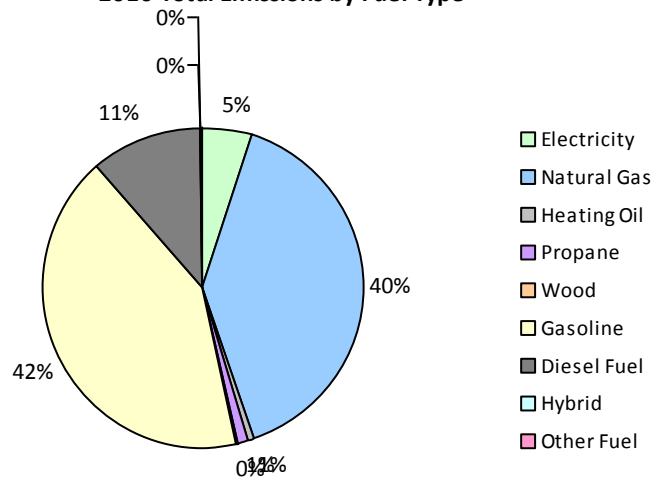
2010 GHG Emissions Sources (Total for BC)



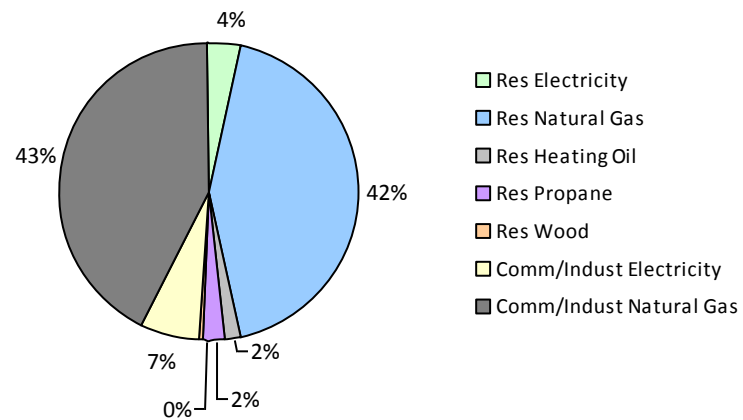
GHG Emissions Comparisons for this Community



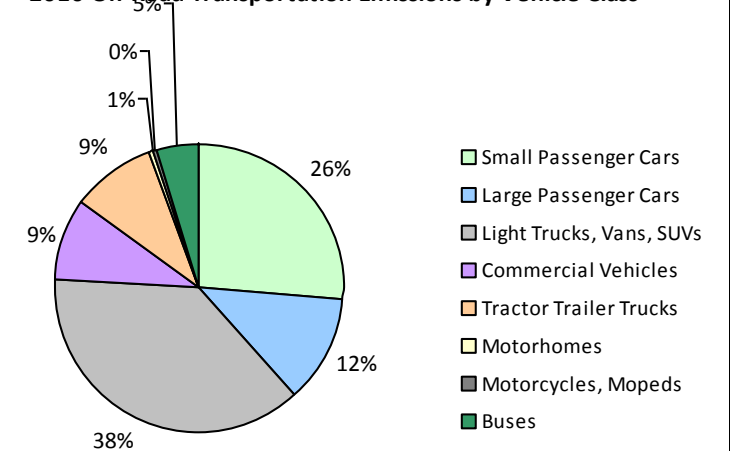
2010 Total Emissions by Fuel Type



2010 Building Emissions by Subsector



2010 On-Road Transportation Emissions by Vehicle Class



Burnaby City 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	83	61,905 L	16,200	2,166	145	165	132,276 L	15,400	4,630	294
	Gasoline	45,815	59,476,108 L	13,600	2,081,663	140,863	45,085	57,472,302 L	13,400	2,011,531	128,785
	Diesel Fuel	600	665,199 L	16,500	25,476	1,817	576	632,246 L	16,200	24,214	1,676
	Other Fuel			14,900	242	14	15	22,746 L	16,100	576	34
Large Passenger Cars	Hybrid	164	180,176 L	20,600	6,306	422	502	634,268 L	22,000	22,199	1,413
	Gasoline	18,862	28,551,475 L	13,300	999,301	67,543	17,744	25,924,552 L	12,800	907,359	58,077
	Diesel Fuel	173	214,467 L	12,900	8,214	583	159	196,754 L	13,100	7,535	521
	Other Fuel	18	24,276 L	10,000	615	37	14	18,763 L	10,000	474	28
Light Trucks, Vans, SUVs	Hybrid	75	103,365 L	17,500	3,618	245	232	341,671 L	17,200	11,958	770
	Gasoline	35,605	75,710,839 L	15,300	2,649,879	180,431	38,938	80,217,478 L	15,000	2,807,612	181,440
	Diesel Fuel	537	1,305,194 L	14,500	49,990	3,557	586	1,586,472 L	18,300	60,762	4,203
	Other Fuel	238	500,444 L	12,600	12,660	766	157	309,916 L	11,900	7,841	474
Commercial Vehicles	Hybrid								20,600	168	9
	Gasoline	2,576	7,370,689 L	17,200	257,974	17,325	2,743	7,834,219 L	17,100	274,198	17,530
	Diesel Fuel	2,502	9,585,617 L	19,100	367,128	25,795	2,773	10,514,634 L	19,300	402,710	27,452
	Other Fuel	294	676,829 L	12,700	17,124	1,037	193	414,421 L	11,900	10,485	635
Tractor Trailer Trucks	Gasoline			55,600	4,600	309	11	107,465 L	35,800	3,761	240
	Diesel Fuel	1,054	17,668,528 L	42,300	676,705	47,545	1,003	17,955,913 L	45,600	687,711	46,882
	Other Fuel			12,900	89	4		10,700	73	4	
Motorhomes	Gasoline	367	867,436 L	16,900	30,360	2,026	323	766,060 L	16,900	26,813	1,705
	Diesel Fuel	142	426,622 L	16,700	16,340	1,148	129	401,304 L	16,600	15,370	1,047
	Other Fuel			17,800	407	24		15,900	306	18	
Motorcycles, Mopeds	Gasoline	1,155	279,030 L	5,400	9,766	652	1,403	392,071 L	6,300	13,721	870
Buses	Gasoline	227	1,043,103 L	29,400	36,509	2,452	443	1,190,613 L	76,500	41,672	2,664
	Diesel Fuel	1,178	10,625,185 L	39,300	406,945	28,593	1,121	7,936,590 L	66,400	303,971	20,722
	Other Fuel	233	694,709 L	48,200	17,575	1,064	66	66,448 L	119,100	1,681	102
Totals		111,898	216,031,196 L	14,900	7,681,652	524,397	114,381	216,031,196 L	15,202	7,649,331	497,595

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Buildings		2007				2010			
		Connections	Consumption	Energy (GJ)	CO2e (t)	Connections	Consumption	Energy (GJ)	CO2e (t)
Residential	Wood	N/A	68,565 GJ	68,565	1,389	N/A	63,869 GJ	63,869	1,294
	Heating Oil	N/A	115,340 GJ	115,340	8,130	N/A	107,440 GJ	107,440	7,348
	Propane	N/A	171,013 GJ	171,013	10,434	N/A	159,300 GJ	159,300	9,719
	Natural Gas	36,916	4,103,377 GJ	4,103,377	205,825	36,986	3,691,788 GJ	3,691,788	185,180
	Electricity	76,863	640,886,965 kWh	2,307,191	16,023	81,305	641,539,727 kWh	2,309,541	16,039
Commercial/Small-Medium Industrial	Natural Gas	4,981	3,767,674 GJ	3,767,674	188,987	4,878	3,688,999 GJ	3,688,999	185,040
	Electricity	8,702	1,261,681,113 kWh	4,542,048	31,543	8,764	1,170,443,726 kWh	4,213,594	29,262
Totals		127,462		15,075,208	462,331	131,933		14,234,531	433,882

Solid Waste		2007				2010			
		Connections	Consumption	Energy (GJ)	CO2e (t)	Connections	Consumption	Energy (GJ)	CO2e (t)
Community Solid Waste	Solid Waste	0	125,314 t	N/A	56,232	0	99,641 t	N/A	47,262
Totals		0			56,232	0			47,262

Memo Items

Buildings		2007				2010			
		Connections	Consumption	Energy (GJ)	CO2e (t)	Connections	Consumption	Energy (GJ)	CO2e (t)
Large Industrial	Natural Gas	106	2,972,890 GJ	2,972,890	149,120	97		0	0
	Electricity	7		0	0	11	348,430,782 kWh	1,254,350	8,711
Totals		113		2,972,890	149,120	108		1,254,350	8,711

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Monitoring and reporting on progress towards greenhouse gas emissions reduction targets

Totals for Transportation, Buildings and Solid Waste

Fuel Type	2007 (Population: 214,919)			2010 (Population: 227,389)		
	Consumption	Energy (GJ)	CO2e (t)	Consumption	Energy (GJ)	CO2e (t)
Hybrid	345,446 L	12,090	812	1,108,215 L	38,955	2,486
Gasoline	173,298,680 L	6,070,052	411,601	173,904,760 L	6,086,667	391,311
Diesel Fuel	40,490,812 L	1,550,798	109,038	39,223,913 L	1,502,273	102,503
Other Fuel	1,896,258 L	48,712	2,946	832,294 L	21,436	1,295
Wood	68,565 GJ	68,565	1,389	63,869 GJ	63,869	1,294
Heating Oil	115,340 GJ	115,340	8,130	107,440 GJ	107,440	7,348
Propane	171,013 GJ	171,013	10,434	159,300 GJ	159,300	9,719
Natural Gas	7,871,051 GJ	7,871,051	394,812	7,380,787 GJ	7,380,787	370,220
Electricity	1,902,568,078 kWh	6,849,239	47,566	1,811,983,453 kWh	6,523,135	45,301
Solid Waste	125,314 t	0	56,232	99,641 t	0	47,262
Grand Totals		22,756,860	1,042,960		21,883,862	978,739

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	26,615	28	26,550	36	21,280	27
Semi-Detached House	1,905	2	2,650	4	2,680	3
Row House	5,120	5	6,030	8	7,255	9
Apartment, Duplex	5,125	5	6,445	9	11,050	14
Apartment, 5 storeys or higher	11,485	12	12,705	17	14,615	19
Apartment, under 5 storeys	18,355	19	19,515	26	21,065	27
Other Single Attached House	105	0	90	0	65	0
Movable Dwelling	40	0	20	0	25	0

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	56,045	70	59,640	70	58,815	63
Car, Truck, Van as Passenger	5,175	6	6,075	7	5,520	6
Public Transit	13,415	17	14,160	17	23,440	25
Walked	3,645	5	3,755	4	4,285	5
Bicycle	820	1	805	1	720	1
Motorcycle	130	0	115	0	175	0
Taxicab	90	0	105	0	50	0
Other Method	410	1	450	1	650	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	0	0
Local Parks	1,339	15
Agricultural Land Reserve	235	3
Other land use	7,608	83
Total Parks and Protected Area	1,339	15
Total Land Area	9,181	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	1,339	15
Agricultural Land Reserve	235	3
Other land use	7,608	83
Total Parks and Protected Area	1,339	15
Total Land Area	9,181	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	24,735	30
5 to 9.9 km	25,895	32
25 km or more	1,870	2
15 to 24.9 km	8,430	10
10 to 14.9 km	21,040	26

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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,