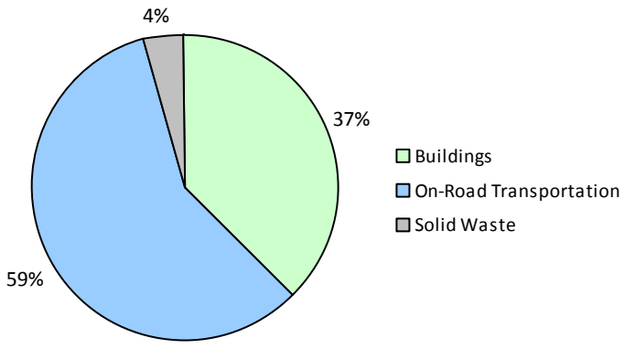
Delta District Municipality

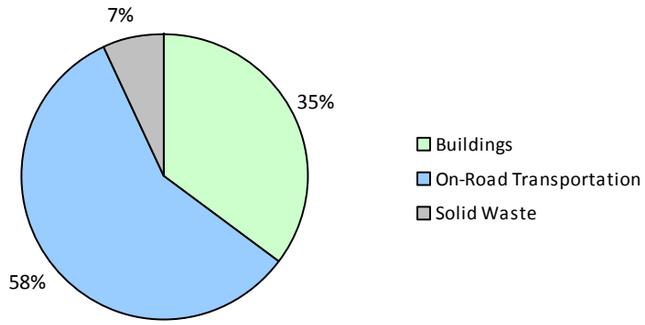
2010 Community Energy and Emissions Inventory

Monitoring and reporting on progress towards greenhouse gas emissions reduction targets

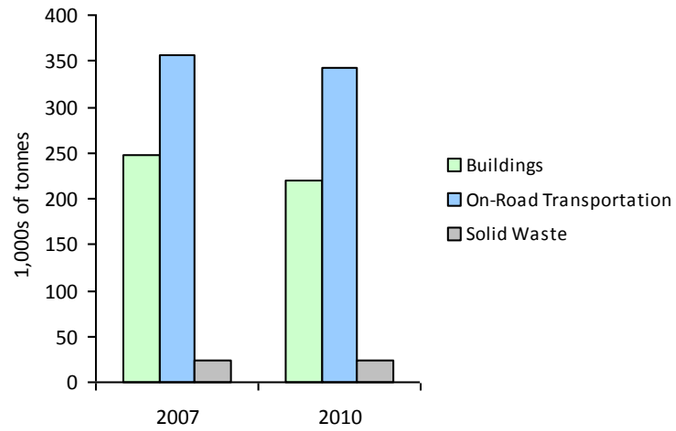
2010 GHG Emissions Sources (Total for this Community)



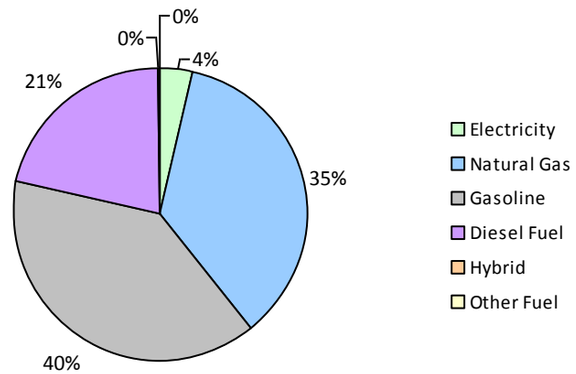
2010 GHG Emissions Sources (Total for BC)



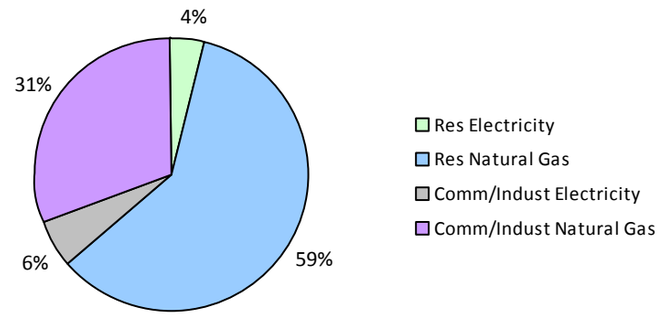
GHG Emissions Comparisons for this Community



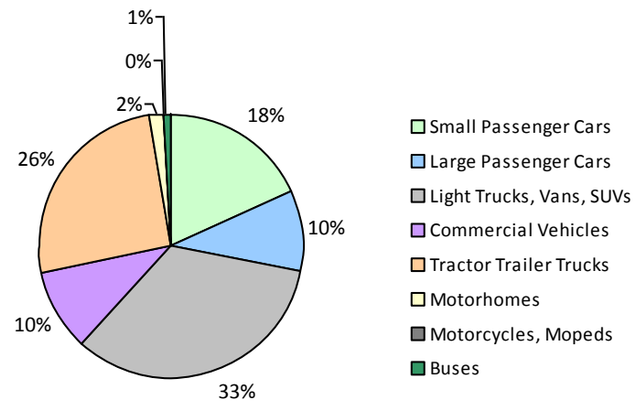
2010 Total Emissions by Fuel Type



2010 Building Emissions by Subsector



2010 On-Road Transportation Emissions by Vehicle Class



Delta District Municipality

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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	31	22,712 L	15,700	795	53	76	62,363 L	15,800	2,183	139
	Gasoline	21,839	28,221,708 L	13,600	987,760	66,975	21,452	27,368,591 L	13,400	957,900	61,390
	Diesel Fuel	443	504,194 L	17,000	19,310	1,377	455	518,484 L	16,800	19,858	1,375
	Other Fuel			17,500	81	5	10	14,844 L	15,500	375	23
Large Passenger Cars	Hybrid	66	56,752 L	16,200	1,985	133	191	176,782 L	16,100	6,188	393
	Gasoline	10,890	15,898,280 L	12,800	556,439	37,695	10,184	14,453,440 L	12,400	505,870	32,419
	Diesel Fuel	115	146,420 L	13,300	5,609	398	94	119,159 L	13,600	4,564	315
	Other Fuel			11,000	324	20			9,000	89	6
Light Trucks, Vans, SUVs	Hybrid	35	46,074 L	16,900	1,613	109	104	148,188 L	16,800	5,187	335
	Gasoline	22,831	47,646,621 L	15,000	1,667,633	113,675	24,437	49,594,342 L	14,700	1,735,802	112,236
	Diesel Fuel	421	985,714 L	13,800	37,753	2,685	364	949,541 L	16,800	36,366	2,516
	Other Fuel	130	278,260 L	12,800	7,040	427	75	151,006 L	12,000	3,820	231
Commercial Vehicles	Gasoline	1,687	4,367,233 L	15,600	152,853	10,262	1,756	4,505,250 L	15,400	157,684	10,078
	Diesel Fuel	2,386	8,949,724 L	18,800	342,775	24,083	2,489	9,133,448 L	18,800	349,812	23,848
	Other Fuel	122	260,670 L	11,700	6,596	398	62	120,452 L	10,800	3,048	184
Tractor Trailer Trucks	Gasoline	13	101,431 L	26,500	3,551	238	15	103,105 L	23,300	3,609	230
	Diesel Fuel	1,670	32,958,871 L	49,900	1,262,324	88,691	1,736	34,053,685 L	49,900	1,304,257	88,912
	Other Fuel			11,000	150	8			9,700	136	8
Motorhomes	Gasoline	548	1,333,852 L	17,600	46,685	3,124	709	1,766,920 L	17,900	61,842	3,946
	Diesel Fuel	175	547,621 L	17,000	20,974	1,473	145	469,042 L	16,800	17,965	1,225
	Other Fuel								15,800	181	11
Motorcycles, Mopeds	Gasoline	948	221,685 L	5,200	7,758	518	1,058	285,952 L	6,100	10,008	634
Buses	Gasoline	73	345,478 L	30,000	12,092	812	73	322,571 L	27,900	11,290	721
	Diesel Fuel	120	889,841 L	27,100	34,081	2,395	100	661,470 L	26,400	25,335	1,727
	Other Fuel			22,300	115	6			16,400	253	16
Totals		**64,543**	**143,783,141 L**	**15,134**	**5,176,296**	**355,560**	**65,585**	**143,783,141 L**	**14,985**	**5,223,622**	**342,918**

Delta District Municipality

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	Natural Gas	26,162	2,940,027 GJ	2,940,027	147,472	26,375	2,597,326 GJ	2,597,326	130,282
	Electricity	32,493	361,214,350 kWh	1,300,371	9,031	33,128	356,507,932 kWh	1,283,428	8,913
Commercial/Small-Medium Industrial	Natural Gas	2,456	1,513,861 GJ	1,513,861	75,935	2,353	1,363,733 GJ	1,363,733	68,405
	Electricity	4,150	594,711,676 kWh	2,140,960	14,868	4,338	495,375,774 kWh	1,783,351	12,385
Totals		**65,261**		**7,895,219**	**247,306**	**66,194**		**7,027,838**	**219,985**

Solid Waste		2007				2010			
		Connections	Consumption	Energy (GJ)	C02e (t)	Connections	Consumption	Energy (GJ)	C02e (t)
Community Solid Waste	Solid Waste	0	68,059 t	N/A	23,867	0	51,869 t	N/A	24,603
Totals		**0**			**23,867**	**0**			**24,603**

Memo Items

Buildings		2007				2010			
		Connections	Consumption	Energy (GJ)	C02e (t)	Connections	Consumption	Energy (GJ)	C02e (t)
Large Industrial	Natural Gas	65	4,681,066 GJ	4,681,066	234,802	55	4,938,540 GJ	4,938,540	247,717
	Electricity	16		0	0	18	439,686,928 kWh	1,582,872	10,993
Totals		**81**		**4,681,066**	**234,802**	**73**		**6,521,412**	**258,710**

Delta District Municipality

2010 Community Energy and Emissions Inventory

Monitoring and reporting on progress towards greenhouse gas emissions reduction targets

Totals for Transportation, Buildings and Solid Waste

Fuel Type	2007 (Population: 99,293)			2010 (Population: 100,000)		
	Consumption	Energy (GJ)	C02e (t)	Consumption	Energy (GJ)	C02e (t)
Hybrid	125,538 L	4,393	295	387,333 L	13,558	867
Gasoline	98,136,288 L	3,434,771	233,299	98,400,171 L	3,444,005	221,654
Diesel Fuel	44,982,385 L	1,722,826	121,102	45,904,829 L	1,758,157	119,918
Other Fuel	538,930 L	14,306	864	286,302 L	7,902	479
Natural Gas	4,453,888 GJ	4,453,888	223,407	3,961,059 GJ	3,961,059	198,687
Electricity	955,926,026 kWh	3,441,331	23,899	851,883,706 kWh	3,066,779	21,298
Solid Waste	68,059 t	0	23,867	51,869 t	0	24,603
Grand Totals		**13,071,515**	**626,733**		**12,251,460**	**587,506**

Delta District Municipality

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	23,210	42	23,360	71	21,590	64
Semi-Detached House	870	2	780	2	825	2
Row House	1,110	2	1,375	4	1,415	4
Apartment, Duplex	1,890	3	2,370	7	4,320	13
Apartment, 5 storeys or higher	275	1	200	1	400	1
Apartment, under 5 storeys	3,950	7	4,495	14	4,750	14
Other Single Attached House	110	0	40	0	40	0
Movable Dwelling	75	0	170	1	205	1

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	36,715	81	37,685	83	35,865	78
Car, Truck,Van as Passenger	2,645	6	2,735	6	3,380	7
Public Transit	4,025	9	3,155	7	4,190	9
Walked	1,520	3	1,310	3	1,680	4
Bicycle	395	1	425	1	300	1
Motorcycle	50	0	50	0	115	0
Taxicab	0	0	35	0	25	0
Other Method	235	1	230	1	450	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	254	1
Local Parks	2,632	14
Agricultural Land Reserve	9,476	49
Other land use	6,979	36
Total Parks and Protected Area	2,879	15
Total Land Area	19,341	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	254	1
Local Parks	2,632	14
Agricultural Land Reserve	9,476	49
Other land use	6,979	36
Total Parks and Protected Area	2,879	15
Total Land Area	19,341	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	9,950	25
5 to 9.9 km	6,400	16
25 km or more	3,430	9
15 to 24.9 km	12,465	32
10 to 14.9 km	6,930	18

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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,