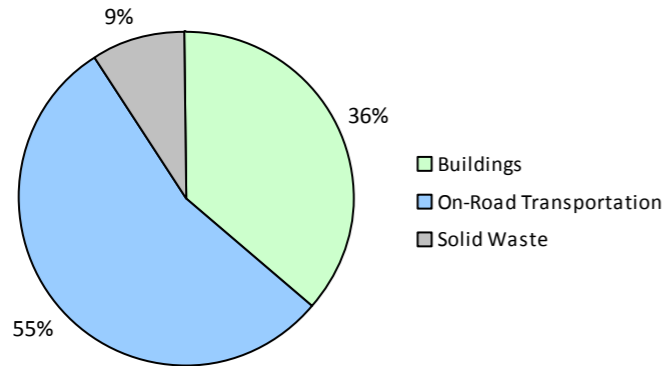


## Monitoring and reporting on progress towards greenhouse gas emissions reduction targets

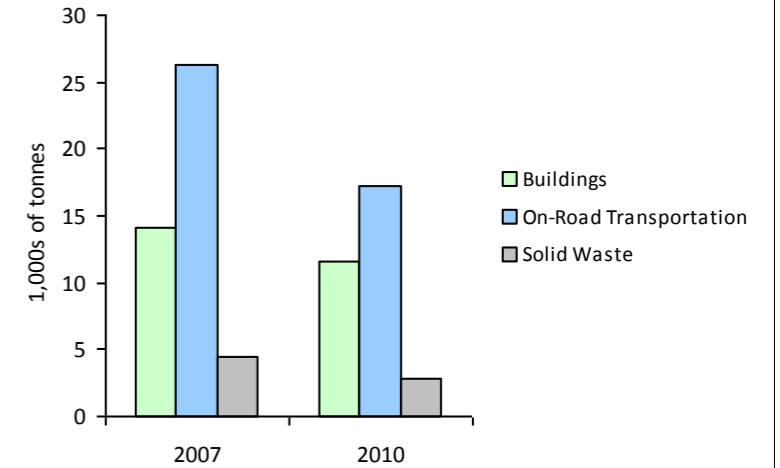
2010 GHG Emissions Sources (Total for this Community)



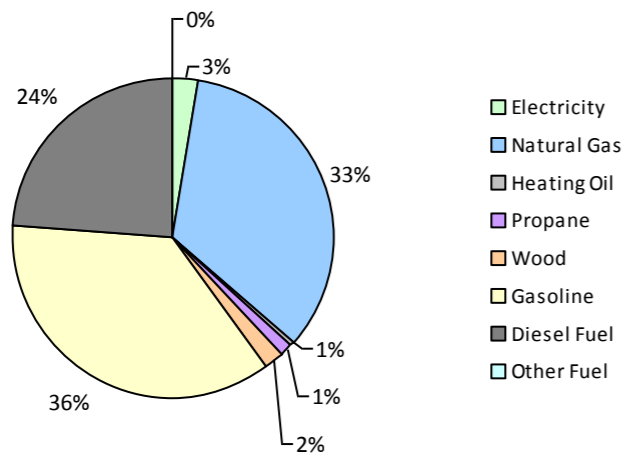
2010 GHG Emissions Sources (Total for BC)



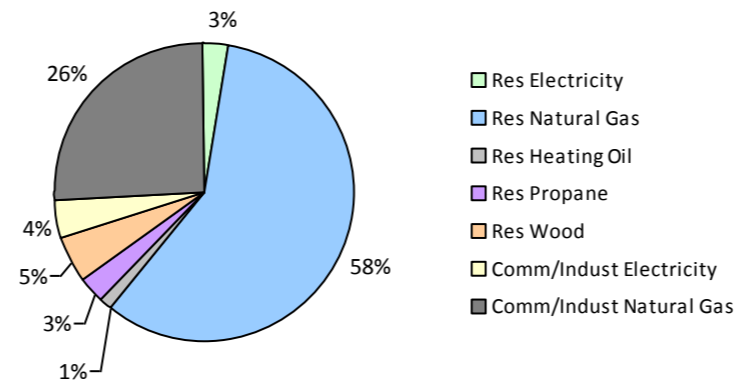
GHG Emissions Comparisons for this Community



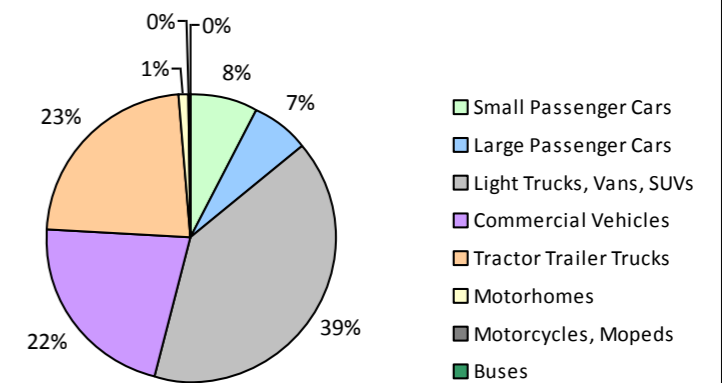
2010 Total Emissions by Fuel Type



2010 Building Emissions by Subsector



2010 On-Road Transportation Emissions by Vehicle Class



## Mackenzie District Municipality 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	Gasoline	523	924,384 L	18,900	32,354	2,189	348	559,292 L	17,200	19,575	1,256
	Diesel Fuel	24	51,400 L	31,100	1,968	140	19	32,914 L	25,000	1,261	87
Large Passenger Cars	Gasoline	321	768,898 L	21,300	26,911	1,818	237	500,692 L	18,700	17,524	1,123
	Diesel Fuel			10,500	150	12			11,400	80	5
	Other Fuel			14,000	46	4			7,500	21	0
Light Trucks, Vans, SUVs	Gasoline	1,509	4,385,670 L	19,800	153,499	10,476	1,094	2,898,929 L	18,100	101,463	6,580
	Diesel Fuel	64	187,628 L	17,100	7,186	511	32	93,419 L	17,100	3,578	248
	Other Fuel			12,900	505	30			11,000	196	12
Commercial Vehicles	Gasoline	233	737,786 L	18,600	25,823	1,734	192	576,268 L	17,700	20,170	1,289
	Diesel Fuel	359	1,568,469 L	24,200	60,072	4,220	220	964,641 L	24,500	36,945	2,519
	Other Fuel			12,000	171	11			11,100	107	6
Tractor Trailer Trucks	Gasoline			11,200	218	16			10,100	88	4
	Diesel Fuel	70	1,793,207 L	56,900	68,680	4,825	59	1,493,184 L	55,200	57,189	3,899
Motorhomes	Gasoline	17	48,031 L	19,600	1,681	112	16	45,131 L	19,600	1,580	101
	Diesel Fuel	15	55,363 L	20,100	2,120	149	11	42,759 L	21,100	1,638	113
Motorcycles, Mopeds	Gasoline	47	11,147 L	5,100	390	27	39	9,992 L	5,500	349	22
Buses	Gasoline			19,400	126	7			12,300	74	4
	Diesel Fuel								17,000	170	12
	Other Fuel			6,700	37	3					
<b>Totals</b>		<b>3,182</b>	<b>10,531,983 L</b>	<b>20,842</b>	<b>381,937</b>	<b>26,284</b>	<b>2,267</b>	<b>10,531,983 L</b>	<b>19,429</b>	<b>262,008</b>	<b>17,280</b>

Buildings		2007				2010			
		Connections	Consumption	Energy (GJ)	CO2e (t)	Connections	Consumption	Energy (GJ)	CO2e (t)
Residential	Wood	N/A	29,998 GJ	29,998	608	N/A	27,965 GJ	27,965	567
	Heating Oil	N/A	2,394 GJ	2,394	169	N/A	2,232 GJ	2,232	153
	Propane	N/A	6,507 GJ	6,507	397	N/A	6,066 GJ	6,066	370
	Natural Gas	1,632	162,365 GJ	162,365	8,144	1,500	131,563 GJ	131,563	6,600
	Electricity	1,999	18,216,102 kWh	65,578	455	1,855	14,176,640 kWh	51,036	354
Commercial/Small-Medium Industrial	Natural Gas	137	75,605 GJ	75,605	3,792	129	60,433 GJ	60,433	3,031
	Electricity	278	23,086,200 kWh	83,110	577	277	18,501,575 kWh	66,606	463
<b>Totals</b>		<b>4,046</b>		<b>425,557</b>	<b>14,142</b>	<b>3,761</b>		<b>345,901</b>	<b>11,538</b>

## Mackenzie District Municipality 2010 Community Energy and Emissions Inventory

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

Solid Waste	2007				2010			
	Connections	Consumption	Energy (GJ)	CO2e (t)	Connections	Consumption	Energy (GJ)	CO2e (t)
Community Solid Waste      Solid Waste	0	4,586 t	N/A	4,386	0	1,763 t	N/A	2,892
<b>Totals</b>	<b>0</b>			<b>4,386</b>	<b>0</b>			<b>2,892</b>

### Memo Items

Buildings	2007				2010			
	Connections	Consumption	Energy (GJ)	CO2e (t)	Connections	Consumption	Energy (GJ)	CO2e (t)
Large Industrial      Natural Gas	5		0	0	4		0	0
Electricity	3		0	0	3		0	0
<b>Totals</b>	<b>8</b>			<b>0</b>	<b>7</b>			<b>0</b>

### Totals for Transportation, Buildings and Solid Waste

Fuel Type	2007 (Population: 4,534)			2010 (Population: 3,706)		
	Consumption	Energy (GJ)	CO2e (t)	Consumption	Energy (GJ)	CO2e (t)
Gasoline	6,875,916 L	241,002	16,379	4,590,304 L	160,823	10,379
Diesel Fuel	3,656,067 L	140,176	9,857	2,626,917 L	100,861	6,883
Other Fuel	0 L	759	48	0 L	324	18
Wood	29,998 GJ	29,998	608	27,965 GJ	27,965	567
Heating Oil	2,394 GJ	2,394	169	2,232 GJ	2,232	153
Propane	6,507 GJ	6,507	397	6,066 GJ	6,066	370
Natural Gas	237,970 GJ	237,970	11,936	191,996 GJ	191,996	9,631
Electricity	41,302,302 kWh	148,688	1,032	32,678,215 kWh	117,642	817
Solid Waste	4,586 t	0	4,386	1,763 t	0	2,892
<b>Grand Totals</b>		<b>807,494</b>	<b>44,812</b>		<b>607,909</b>	<b>31,710</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	1,215	39	1,200	65	1,165	66
Semi-Detached House	0	0	5	0	160	9
Row House	125	4	130	7	185	11
Apartment, Duplex	0	0	5	0	0	0
Apartment, 5 storeys or higher	0	0	0	0	0	0
Apartment, under 5 storeys	200	6	160	9	140	8
Other Single Attached House	0	0	5	0	20	1
Movable Dwelling	385	12	350	19	90	5

**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	2,500	79	2,155	80	1,925	82
Car, Truck, Van as Passenger	240	8	260	10	190	8
Public Transit	0	0	0	0	15	1
Walked	295	9	205	8	170	7
Bicycle	85	3	60	2	45	2
Motorcycle	0	0	0	0	0	0
Taxicab	10	0	10	0	0	0
Other Method	15	0	10	0	15	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	13	0
Agricultural Land Reserve	0	0
Other land use	21,249	100
Total Parks and Protected Area	13	0
Total Land Area	21,262	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	13	0
Agricultural Land Reserve	0	0
Other land use	21,249	100
Total Parks and Protected Area	13	0
Total Land Area	21,262	100

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

**Mackenzie District Municipality**  
**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 [CCEIRPT@gov.bc.ca](mailto:CCEIRPT@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,