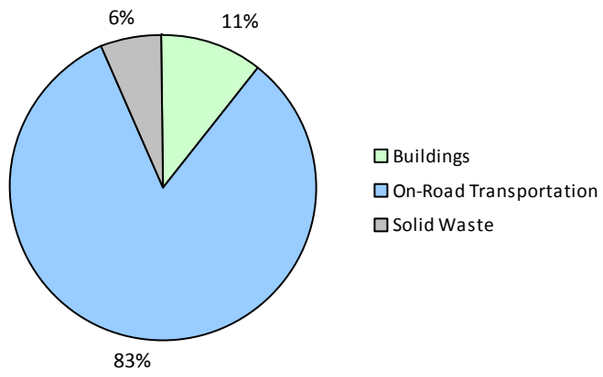
# Pemberton Village

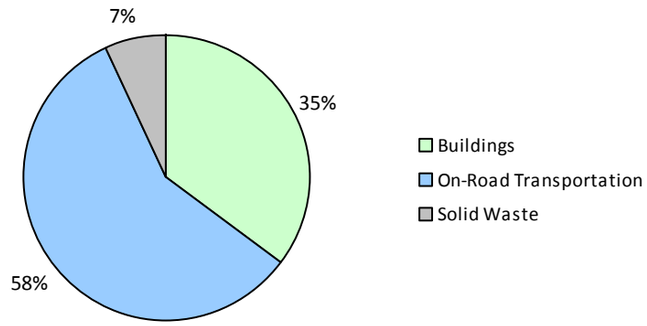
## 2010 Community Energy and Emissions Inventory

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

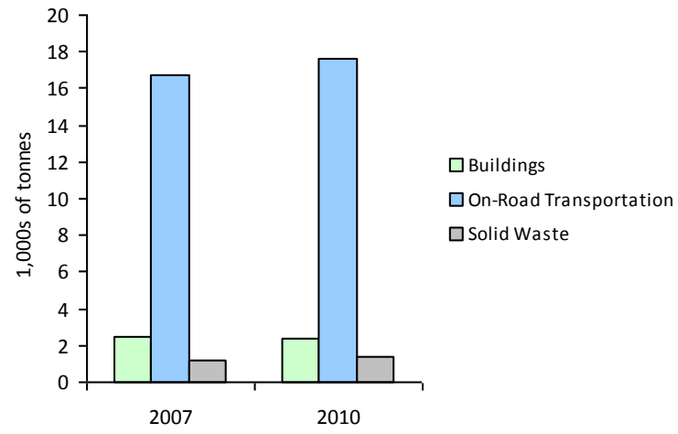
### 2010 GHG Emissions Sources (Total for this Community)



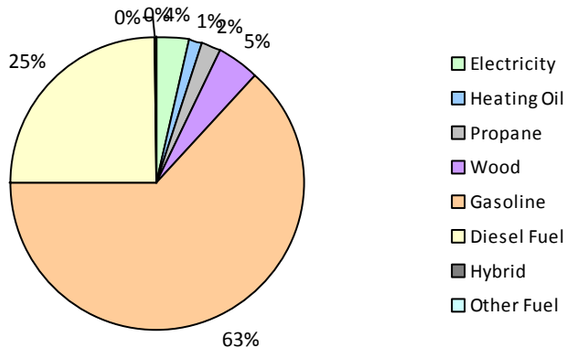

### 2010 GHG Emissions Sources (Total for BC)



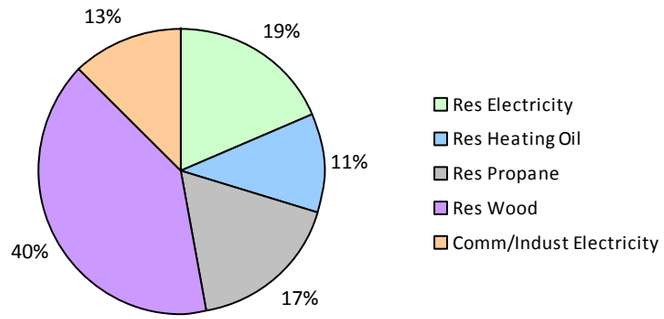

### GHG Emissions Comparisons for this Community



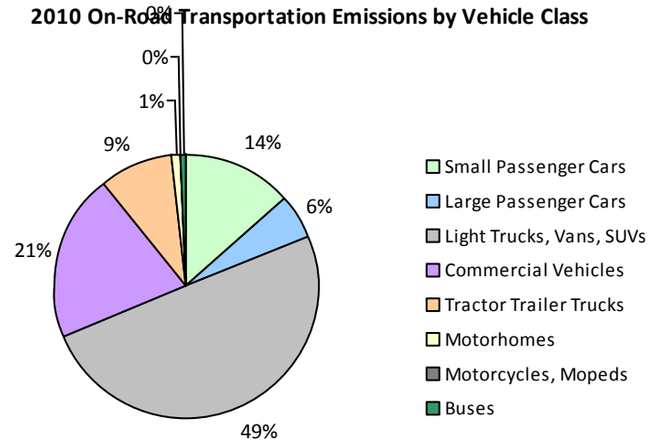

### 2010 Total Emissions by Fuel Type




### 2010 Building Emissions by Subsector




### 2010 On-Road Transportation Emissions by Vehicle Class



# Pemberton Village

## 2010 Community Energy and Emissions Inventory

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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 | | | 15,100 | 25 | 3 | | | | | |
| | Gasoline | 551 | 936,934 L | 17,800 | 32,793 | 2,223 | 581 | 1,004,015 L | 18,200 | 35,140 | 2,248 |
| | Diesel Fuel | 36 | 74,448 L | 30,600 | 2,851 | 203 | 34 | 64,953 L | 28,200 | 2,488 | 173 |
| Large Passenger Cars | Hybrid | | | | | | | | 31,100 | 245 | 15 |
| | Gasoline | 219 | 428,852 L | 17,200 | 15,011 | 1,015 | 215 | 411,726 L | 16,900 | 14,410 | 925 |
| | Diesel Fuel | | | 9,900 | 113 | 9 | 11 | 14,151 L | 14,200 | 543 | 38 |
| | Other Fuel | | | 9,900 | 35 | 2 | | | 8,400 | 30 | 2 |
| Light Trucks, Vans, SUVs | Hybrid | | | 36,400 | 97 | 7 | | | 26,500 | 329 | 20 |
| | Gasoline | 1,063 | 3,296,791 L | 21,200 | 115,388 | 7,882 | 1,129 | 3,625,637 L | 22,100 | 126,897 | 8,215 |
| | Diesel Fuel | 61 | 168,058 L | 16,200 | 6,437 | 458 | 54 | 173,616 L | 20,900 | 6,649 | 461 |
| | Other Fuel | | | 15,400 | 397 | 24 | | | 11,200 | 144 | 9 |
| Commercial Vehicles | Gasoline | 101 | 365,606 L | 21,300 | 12,797 | 860 | 133 | 478,628 L | 21,300 | 16,753 | 1,072 |
| | Diesel Fuel | 166 | 723,339 L | 24,500 | 27,704 | 1,947 | 204 | 980,100 L | 26,900 | 37,538 | 2,558 |
| | Other Fuel | | | 7,800 | 182 | 11 | | | 10,100 | 181 | 11 |
| Tractor Trailer Trucks | Diesel Fuel | 42 | 693,917 L | 36,900 | 26,577 | 1,867 | 46 | 615,320 L | 30,300 | 23,567 | 1,607 |
| Motorhomes | Gasoline | 13 | 33,978 L | 19,000 | 1,189 | 79 | 14 | 38,466 L | 20,400 | 1,347 | 85 |
| | Diesel Fuel | | | 18,100 | 1,139 | 81 | 11 | 41,407 L | 18,700 | 1,586 | 107 |
| | Other Fuel | | | | | | | | 20,900 | 76 | 5 |
| Motorcycles, Mopeds | Gasoline | 46 | 10,653 L | 5,000 | 373 | 25 | 56 | 14,952 L | 5,900 | 523 | 33 |
| Buses | Gasoline | | | 18,700 | 429 | 28 | | | 18,100 | 305 | 19 |
| | Diesel Fuel | | | 14,500 | 292 | 20 | | | 17,700 | 987 | 67 |
| **Totals** | | **2,298** | **6,732,576 L** | **20,211** | **243,829** | **16,744** | **2,488** | **6,732,576 L** | **20,875** | **269,738** | **17,670** |

| Buildings | | 2007 | | | | 2010 | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Connections | Consumption | Energy (GJ) | C02e (t) | Connections | Consumption | Energy (GJ) | C02e (t) |
| Residential | Wood | N/A | 49,181 GJ | 49,181 | 996 | N/A | 47,339 GJ | 47,339 | 959 |
| | Heating Oil | N/A | 4,010 GJ | 4,010 | 283 | N/A | 3,860 GJ | 3,860 | 264 |
| | Propane | N/A | 7,075 GJ | 7,075 | 432 | N/A | 6,810 GJ | 6,810 | 415 |
| | Electricity | 1,080 | 18,656,868 kWh | 67,165 | 466 | 1,147 | 17,893,372 kWh | 64,416 | 447 |
| Commercial/Small-Medium Industrial | Electricity | 243 | 11,603,479 kWh | 41,772 | 290 | 257 | 12,001,137 kWh | 43,204 | 300 |
| **Totals** | | **1,323** | | **169,203** | **2,467** | **1,404** | | **165,629** | **2,385** |

| Solid Waste | | 2007 | | | | 2010 | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Connections | Consumption | Energy (GJ) | C02e (t) | Connections | Consumption | Energy (GJ) | C02e (t) |
| Community Solid Waste | Solid Waste | 0 | 1,365 t | N/A | 1,157 | 0 | 1,677 t | N/A | 1,378 |
| **Totals** | | **0** | | | **1,157** | **0** | | | **1,378** |

## Totals for Transportation, Buildings and Solid Waste

| Fuel Type | 2007 (Population: 2,358) | | | 2010 (Population: 2,437) | | |
|---|---|---|---|---|---|---|
| | Consumption | Energy (GJ) | C02e (t) | Consumption | Energy (GJ) | C02e (t) |
| Hybrid | 0 L | 122 | 10 | 0 L | 574 | 35 |
| Gasoline | 5,072,814 L | 177,980 | 12,112 | 5,573,424 L | 195,375 | 12,597 |
| Diesel Fuel | 1,659,762 L | 65,113 | 4,585 | 1,889,547 L | 73,358 | 5,011 |
| Other Fuel | 0 L | 614 | 37 | 0 L | 431 | 27 |
| Wood | 49,181 GJ | 49,181 | 996 | 47,339 GJ | 47,339 | 959 |
| Heating Oil | 4,010 GJ | 4,010 | 283 | 3,860 GJ | 3,860 | 264 |
| Propane | 7,075 GJ | 7,075 | 432 | 6,810 GJ | 6,810 | 415 |
| Electricity | 30,260,347 kWh | 108,937 | 756 | 29,894,509 kWh | 107,620 | 747 |
| Solid Waste | 1,365 t | 0 | 1,157 | 1,677 t | 0 | 1,378 |
| **Grand Totals** | | **413,032** | **20,368** | | **435,367** | **21,433** |

# Pemberton Village

## 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 | 165 | 34 | 285 | 44 | 105 | 11 |
| Semi-Detached House | 10 | 2 | 5 | 1 | 120 | 13 |
| Row House | 90 | 18 | 265 | 40 | 275 | 29 |
| Apartment, Duplex | 40 | 8 | 30 | 5 | 225 | 24 |
| Apartment, 5 storeys or higher | 0 | 0 | 0 | 0 | 0 | 0 |
| Apartment, under 5 storeys | 10 | 2 | 25 | 4 | 160 | 17 |
| Other Single Attached House | 10 | 2 | 0 | 0 | 0 | 0 |
| Movable Dwelling | 0 | 0 | 45 | 7 | 50 | 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 | 370 | 76 | 705 | 70 | 1,005 | 75 |
| Car, Truck,Van as Passenger | 55 | 11 | 70 | 7 | 100 | 7 |
| Public Transit | 10 | 2 | 45 | 4 | 45 | 3 |
| Walked | 45 | 9 | 160 | 16 | 145 | 11 |
| Bicycle | 10 | 2 | 15 | 1 | 30 | 2 |
| Motorcycle | 0 | 0 | 0 | 0 | 10 | 1 |
| Taxicab | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Method | 0 | 0 | 10 | 1 | 10 | 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 | 2 | 0 |
| Agricultural Land Reserve | 185 | 17 |
| Other land use | 915 | 83 |
| Total Parks and Protected Area | 2 | 0 |
| Total Land Area | 1,102 | 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 | 2 | 0 |
| Agricultural Land Reserve | 185 | 17 |
| Other land use | 915 | 83 |
| Total Parks and Protected Area | 2 | 0 |
| Total Land Area | 1,102 | 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,