

# Port Alberni

## Environmental Sustainability Progress Report & Plan 2007-2015



BC CLIMATE ACTION  
COMMUNITY 2014

July, 2015

Amar Giri, Waterworks  
Chargehand, at Port Alberni's  
new UV Water Treatment Plant



2013

Alberni Valley  
Bear Smart

**“Sustainability is the long-term responsibility of balancing environmental, social and economic demands, encompassing the concept of stewardship along with the responsible management of resource use.”**

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## **A. Sustainability Commitments**

Starting in 2007, the City of Port Alberni committed in a variety of ways to move toward a more environmentally sustainable community. These commitments are summarized below and details are included in Appendices to this report. Significant progress towards these commitments has been made in the last 8 years.

### **1. Climate Action Charter (CAC)**

The Provincial Government and UBCM jointly entered into the Community Action Charter in 2007 and encouraged all local governments in B.C. to also become signatories to the Charter.

Port Alberni signed on in 2007. By 2011, 95% of B.C. municipalities and regional districts had signed the Charter. Under the Climate Action Charter signatory local governments agree to develop strategies and take actions to achieve the following goals:

- being carbon neutral in respect of their operations by 2012.
- measuring and reporting on their community's GHG emissions profile.
- creating complete, compact, more energy efficient rural and urban communities.

A copy of the signed Climate Action Charter is attached as Appendix 1. Supporting documents published by the Provincial Ministry of Environment are attached as Appendix 13.

By creation of the "Port Alberni Carbon Trust Reserve Fund" and placing offset funding into that reserve for "green community initiatives we have met the CAC commitment to be carbon neutral. More details on the Carbon Trust Reserve are included on page 18.

### **2. International Centre for Sustainable Cities (Now Sustainable Cities International)**

In 2008 the City joined the PLUS Network as a partner and member in the International Centre for Sustainable Cities (ICSC). As part of this the City signed an MOU with the ICSC agreeing to certain sustainability practices and activities. A copy of the MOU is attached as Appendix 2.

### **3. Port Alberni Climate Change Committee (CCC 2007)**

In 2007 in order to identify how best to move forward with our sustainability commitments Council created a Climate Change Committee composed of local stakeholder representatives, staff and a Council representative. In early 2008 the Committee provided its final report to Council (See Appendix 3) which in summary contained seven recommendations as follows:

- Establish a GHG management capability within the City for managing emission reduction and offset activities and accounting and reporting on the commitment to be carbon neutral.
- Establish a Climate Action Team which can network effectively across City Government, Regional District, First Nations and community/business groups, building capacity among stakeholders to address the more strategic adaptation and emission reduction issues.
- Adopt least cost, highest impact measures to reduce City emissions and reduce energy costs.
- Establish a carbon offset/reduction fund internally and earmark sufficient start-up funds.
- Update City purchasing policy, planning and development regulations and bylaws to encourage low carbon development in the community.
- Hold a public forum to discuss this report, develop community priorities for energy saving and energy efficiency and identify groups that would be willing to combine efforts with the City to take on longer term community project development.

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- Take forward infrastructure projects that enable the community at large to reduce GHG emissions, with a priority being to develop and implement a bike and walking trail master plan for the City.

#### 4. Port Alberni Strategic Plan 2015

Port Alberni City Council adopted a new Strategic Plan in 2015 that continues to have a strong focus on community sustainability. The City's corporate Vision created through the public process led by Outlook 20/20 has been re-affirmed in the new Strategic Plan. The first statement in the five point Vision is that the Port Alberni:

***Is sustainable and environmentally responsible,***

- The City of Port Alberni is committed to principles of economic, social and environmental sustainability. The City provides environmentally responsible services and infrastructure that meet our current and future needs.

A definition for Sustainability is adopted:

“Sustainable development is development that meets the needs of the current generation without impairing the ability of future generations to meet their own needs.” The Bruntland Report – United Nations World Commission on Environment and Development, 1987

The Strategic Plan incorporates a ‘Four Pillars’ approach to municipal government that recognizes the need to balance social, environmental, economic and cultural perspectives. There is an emphasis on ‘sustainability’, ensuring that the needs are being met today but also that future requirements are being strategically addressed.

The Strategic Plan includes six Strategic Priorities selected to have the most significant impact on making the vision a reality. While all six Strategic Priorities include components promoting the long term sustainability of Port Alberni, the third, “**Environmental Stewardship**” and its first objective to protect water, air and land quality relates directly to this report. Seven Initiatives have initially been articulated to promote Environmental Stewardship and more may be added as the Plan progresses. These identified initiatives are:

- Ensure Safe and Secure Water (Water and Sewer Systems)
- Increased Control of the Community Watershed
- Improve air quality (emissions)
- Climate Adaptation Planning
- District Heat Initiatives
- Waste Management Plan
- Public Education regarding Environmental Stewardship

A copy of the complete Strategic Plan is available on the City website at [www.portalberni.ca](http://www.portalberni.ca)

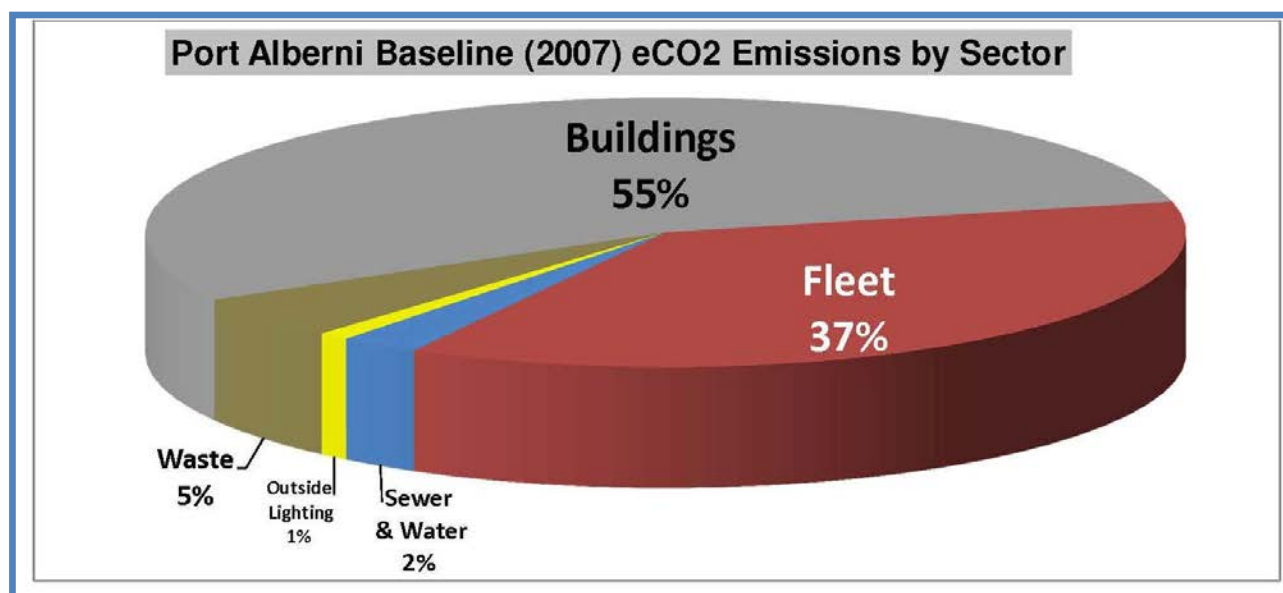
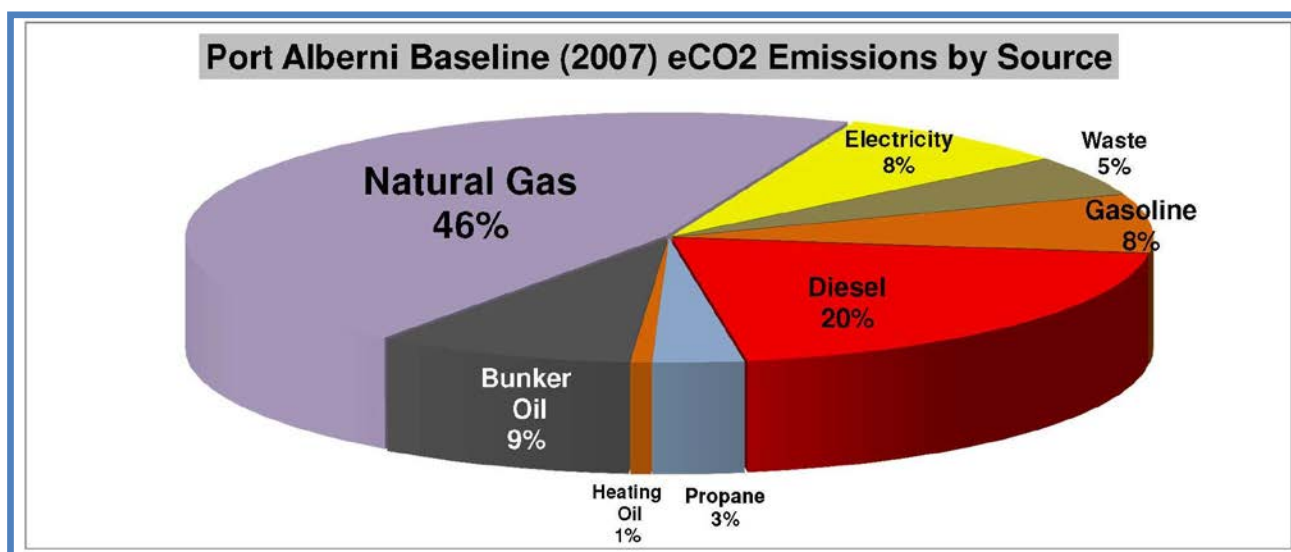


## B. Sustainability Progress

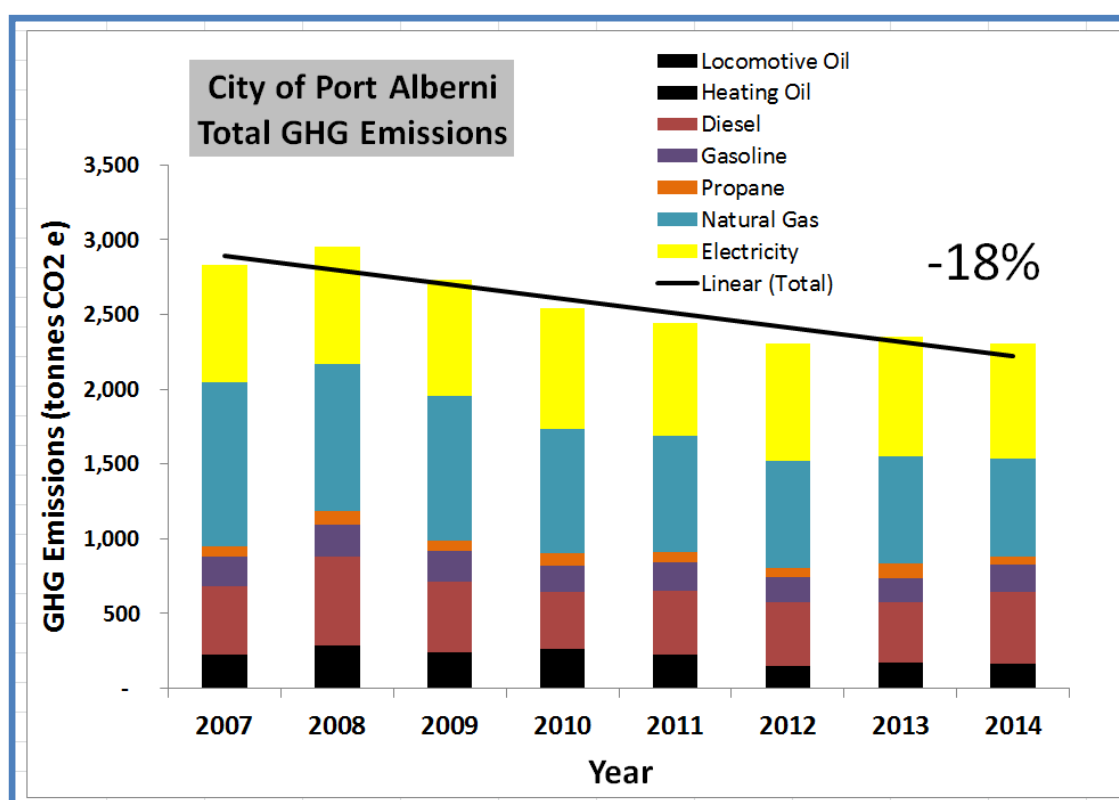
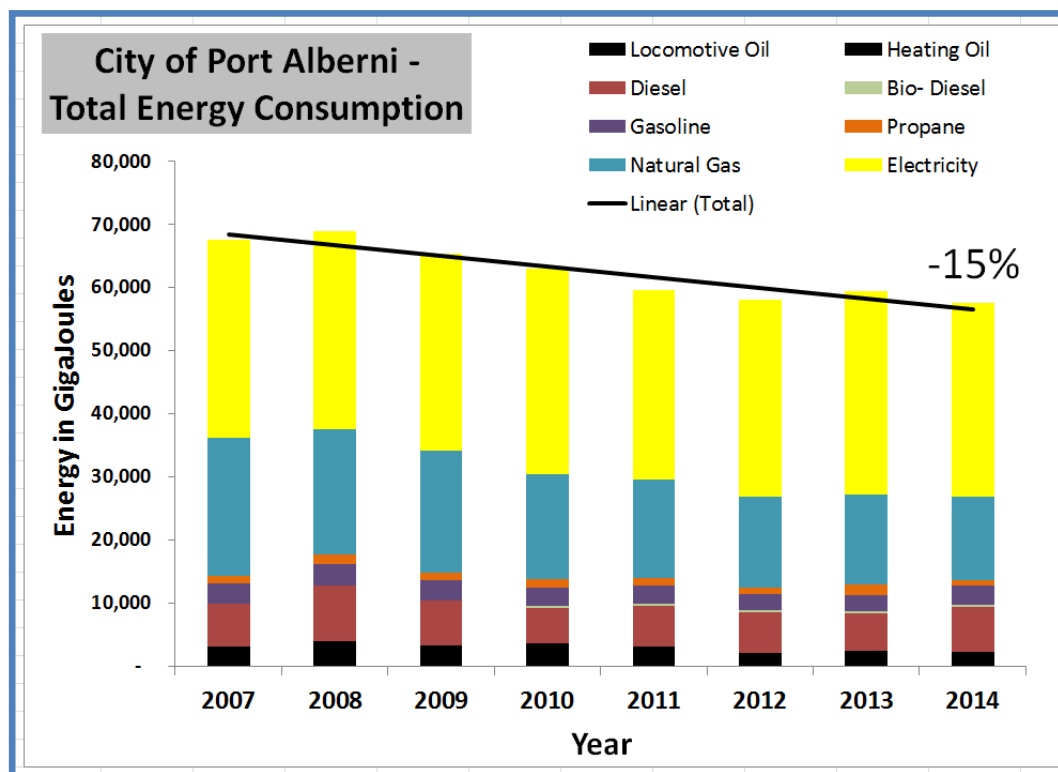
Since 2007, the City has made significant progress on some but not all of our sustainability commitments. Total corporate GHG emissions have been reduced by an estimated 18%. Progress is outlined below to the end of 2014 in terms of the actions recommended by the Climate Change Committee and criteria established by the Province supporting under the Climate Action Charter.

### 1. Baseline Evaluation & Monitoring

As part of the Committee's work a baseline evaluation of corporate GHG emissions was completed in 2007. Corporate emissions in equivalent tonnes of Carbon Dioxide (eCO<sub>2</sub>) were estimated to be about 2800 tonnes. These emissions broken down by source and sector are shown below.



Subsequent years' emissions have been tracked utilizing the Provincial Climate Action Revenue Incentive Program (CARIP) reporting process. Progress has been reported through the City's Annual Reports. Charts showing energy and GHG levels since 2007 are shown below. GHGs have been reduced by approximately 520 tonnes/yr or by 18% since 2007. A spreadsheet of energy consumption and emission levels by fuel type and sector is attached for background as Appendix 4. Also included are the City's CARIP reports for 2007 to 2014; the emission factors utilized in calculating emission totals; and summaries of annual natural gas and electricity consumption.



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## 2. Climate Action Team.

Since 2008 the Climate Action Team has consisted of the City Management group under the City Manager's leadership. The team's focus has been primarily internal to our operations. This group will continue working on corporate emission reductions initiatives.

In 2015 Council directed the formation of a *Food Security and Climate Change Advisory Committee*. This is a standing Committee of Council appointed for the purpose of making recommendations to Council with respect to urban food security and climate change concerns affecting the community.

Members of the Committee include representation from City Council, the Alberni Environmental Coalition, Alberni Valley Transition Town Society, and the community at large. 2015 members are:

Name	Organization
Sam Brownlee (Chair)	AV Transition Town
Chris Alemany	City Council
Gary Swann	Alberni Env. Coalition
John Mayba	Member at Large
Guy Langlois	Member at Large
Bob Haynes	Member at Large
Sandra Gentleman	Member at Large
Rosalind Chapman	Member at Large

Staff members, led by the City Manager will provide support to the Committee as required, and may attend meetings.

The mandate of the Committee is broadly focused. This group will be considering recommendations to Council regarding initiatives community wide. The following specific direction provided to the Committee in their terms of reference:

- review City and community documentation already existing with respect to food security and climate change
- study best practices from other communities world-wide with a view to providing recommendations in regards to preparation of an education strategy in response to rising costs and scarcity of food as well as leadership with regards to climate change awareness and response.
- liaise and build partnerships with community organizations involved in food security and climate change in our community including the ACRD, Alberni Valley Transition Town Society, and the Alberni Environmental Coalition.
- provide reports on a regular basis, at least semi-annually, to City Council



### 3. Measures Adopted to Reduce City GHGs.

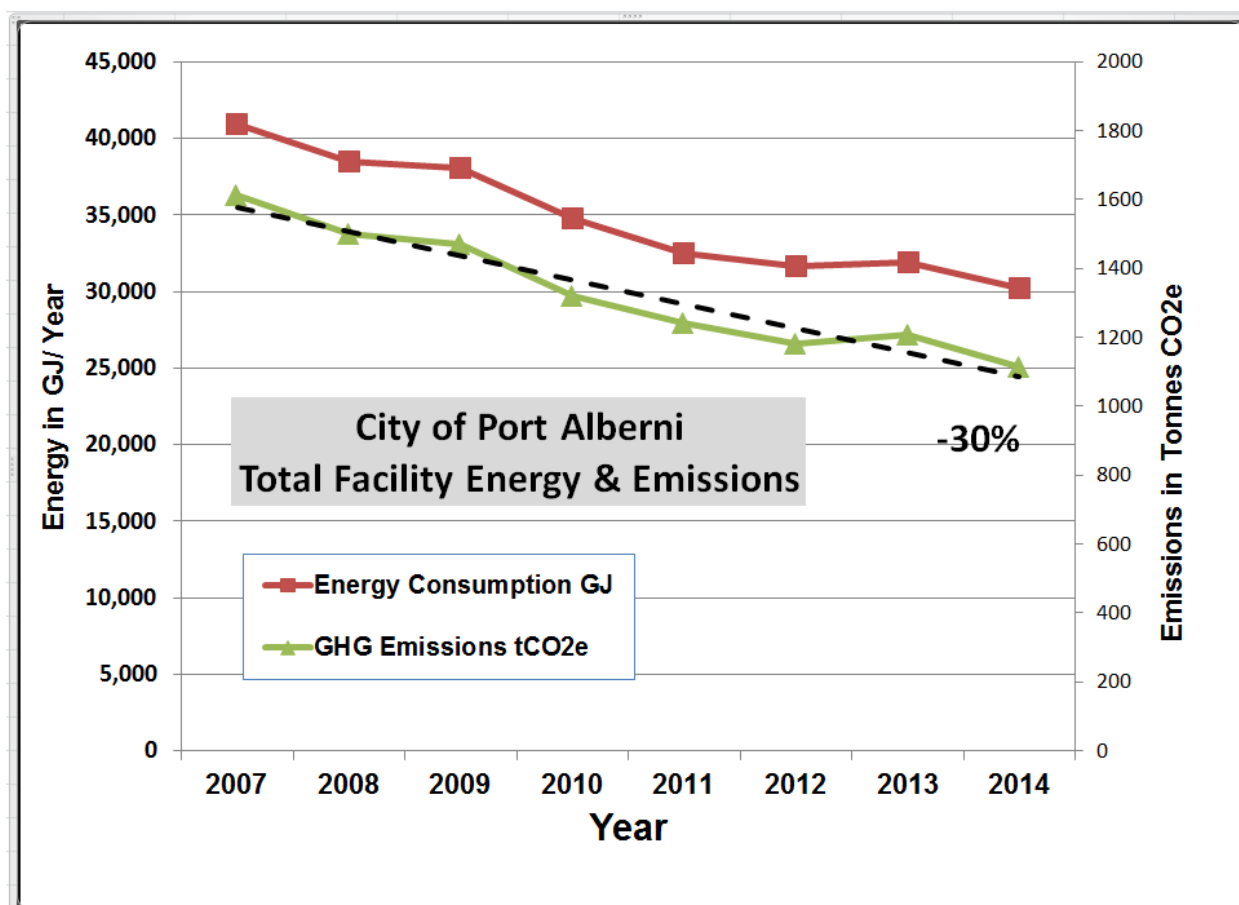
The 2007 CCC report identified that our largest corporate source of GHGs is from our buildings; primarily via natural gas and electricity consumption (55%) followed by our vehicle fleet consumption of diesel, gasoline, propane and locomotive oil (33%). Facility upgrades were identified as the least cost, highest impact measure to reduce City GHG emissions and reduce energy costs.

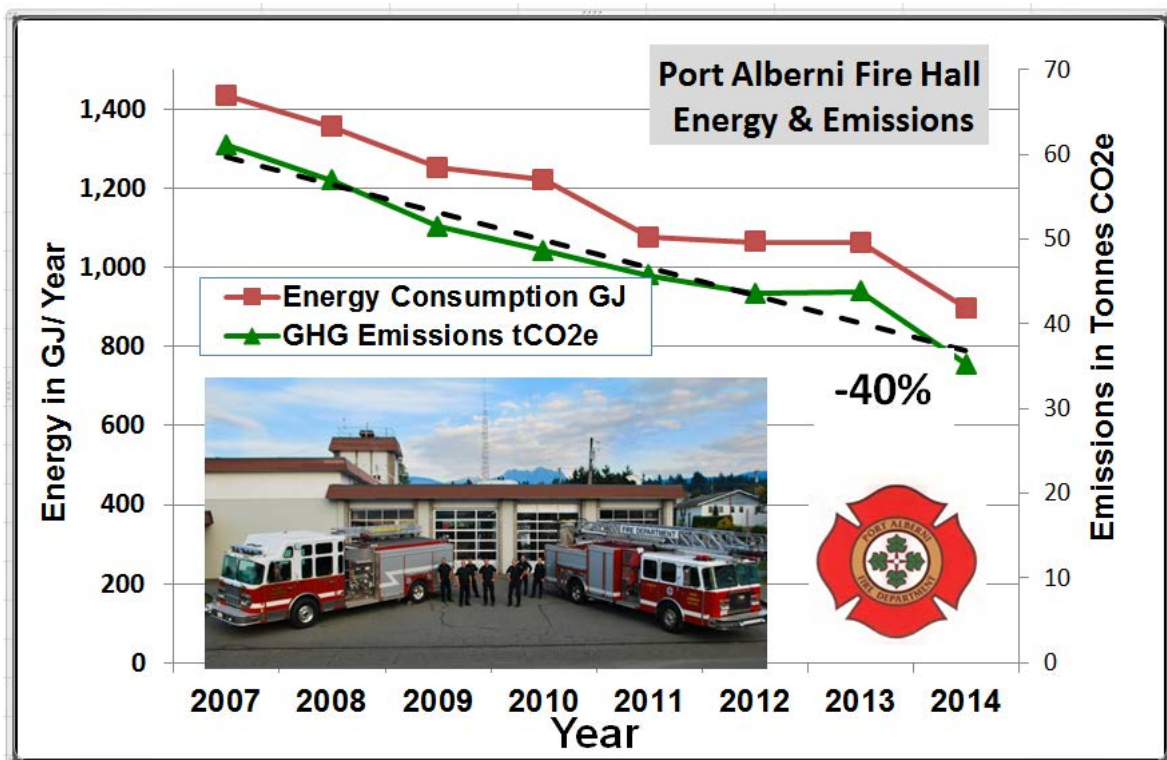
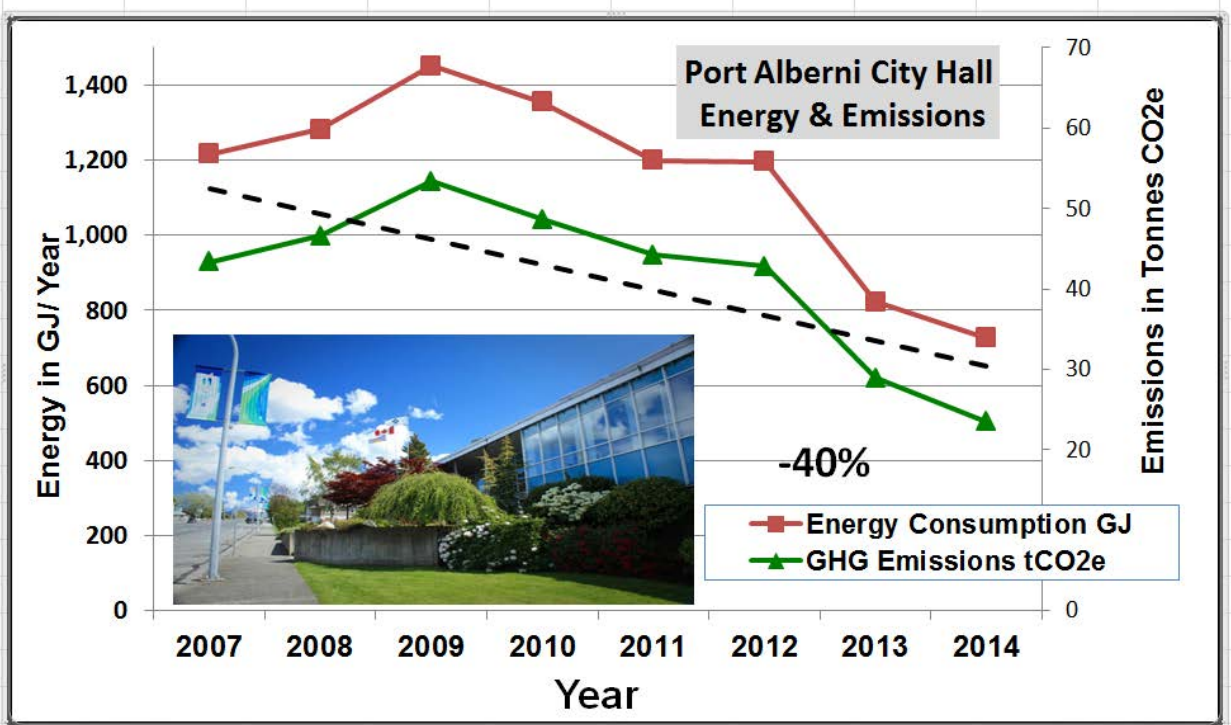
#### 3.1 Facility Upgrades

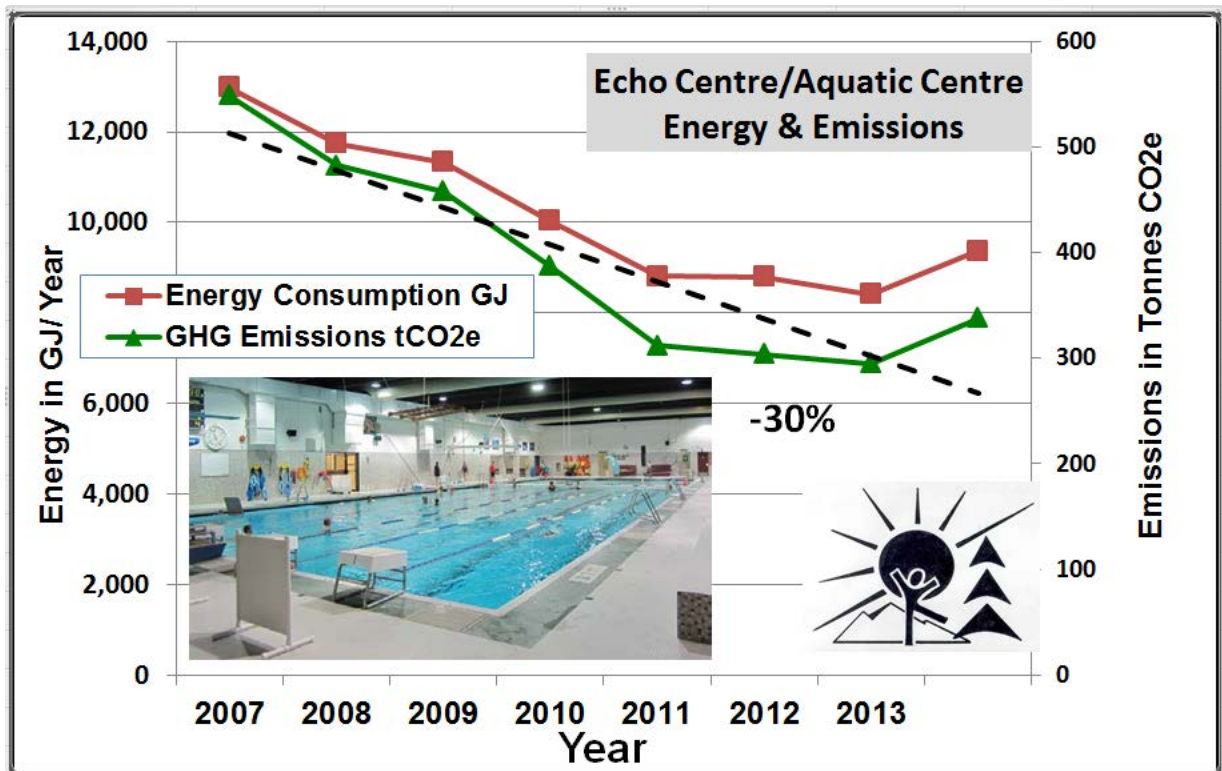
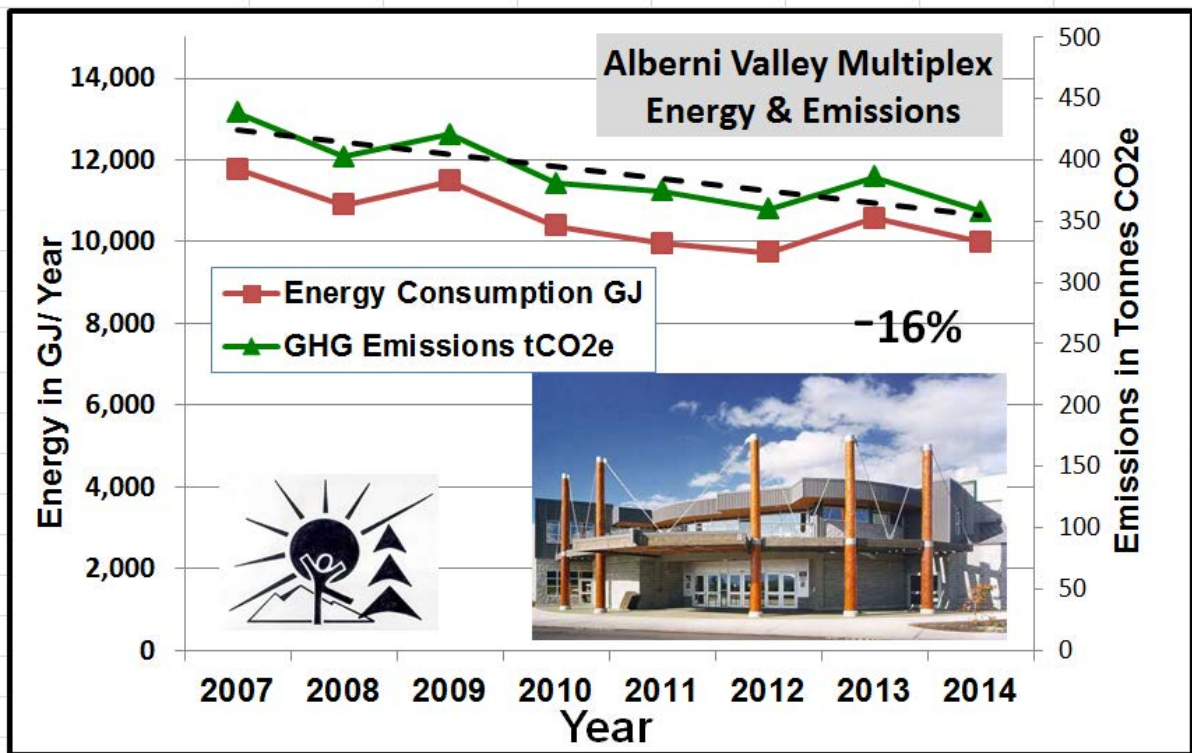
The City's operations are housed in fifteen major facilities and several smaller buildings. Together their heating and lighting in 2007 consumed 40,000 GJ of energy and accounted for 1550 tonnes of GHG emissions. This was 59% of the City's total energy consumption and 55% of our total GHG emissions. A facilities listing is attached in Appendix 5.

Several energy and efficiency retrofit projects have been completed since 2007 including most notably the Echo Centre/Aquatic Centre, Fire Hall, City Hall and the Multiplex. As of the end of 2014 reductions of 500 tonnes of GHG reductions have been realized through facility upgrades. GHG emissions have been reduced by 30% at the Echo Centre/Aquatic Centre; by 40% at the Fire Hall and at City Hall; and by 16% at the Multiplex.

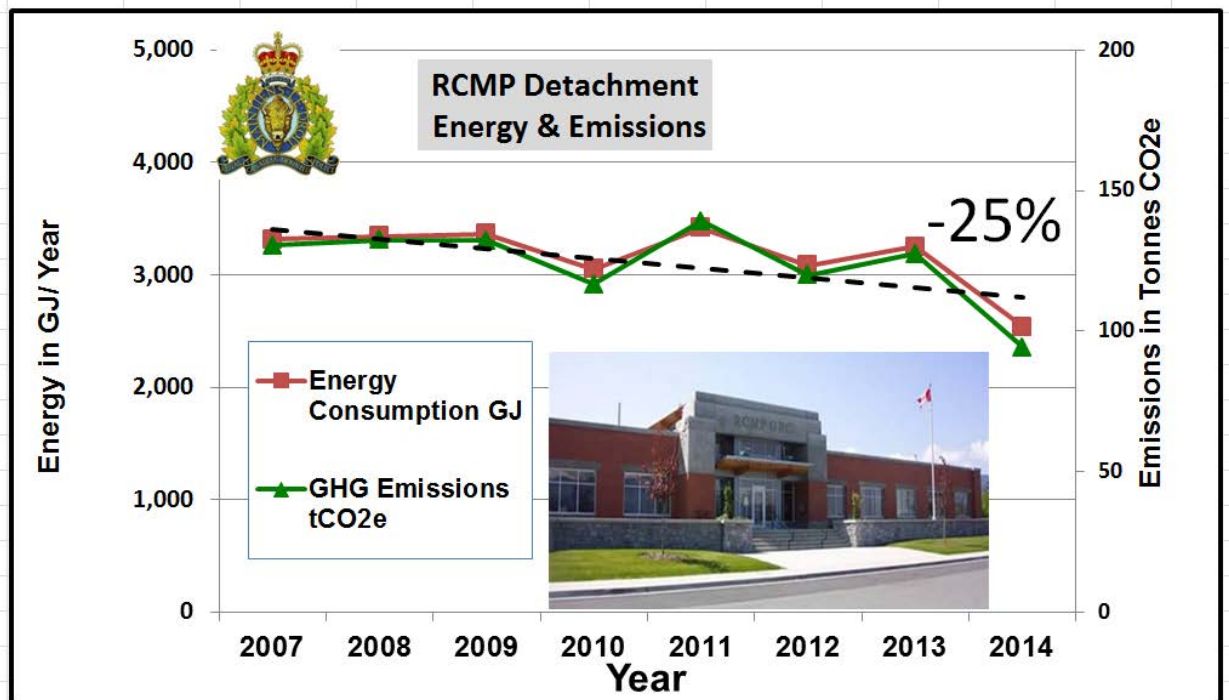
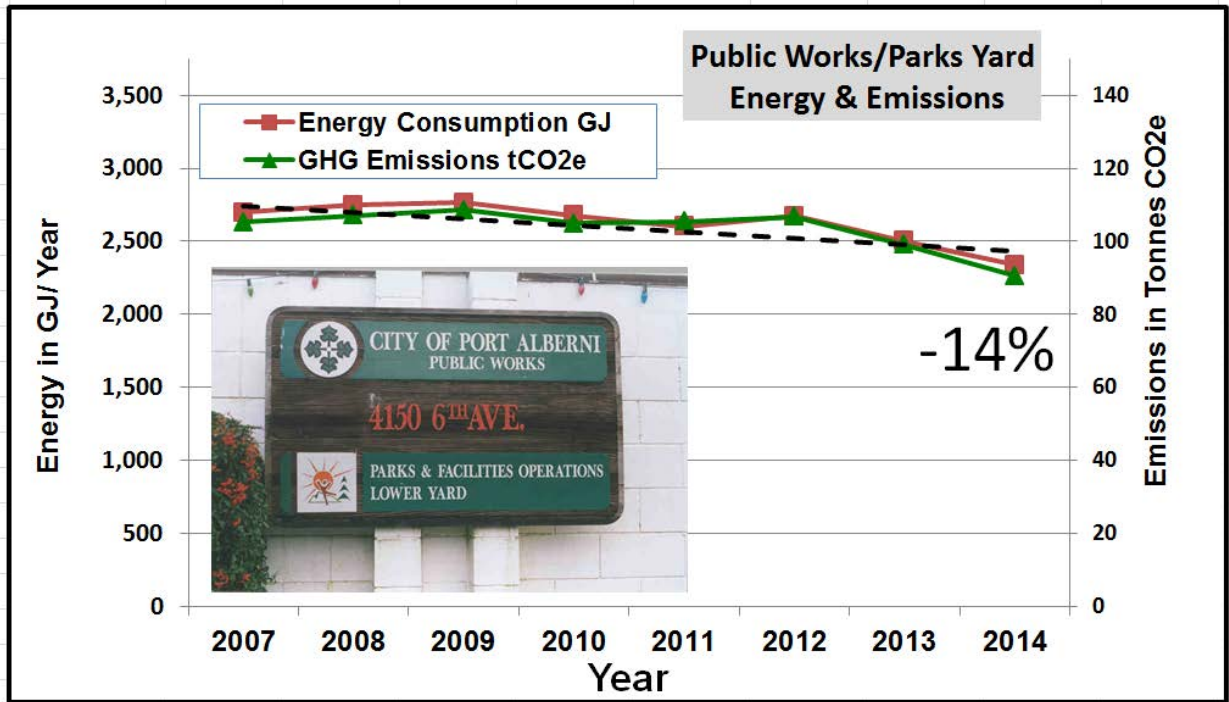
Energy Plans developed to support HVAC upgrades for City facilities are attached in Appendix 5. Funding for facility upgrades completed and those proposed in our current 5 year plan come primarily from Federal Gas Tax Transfer revenues.

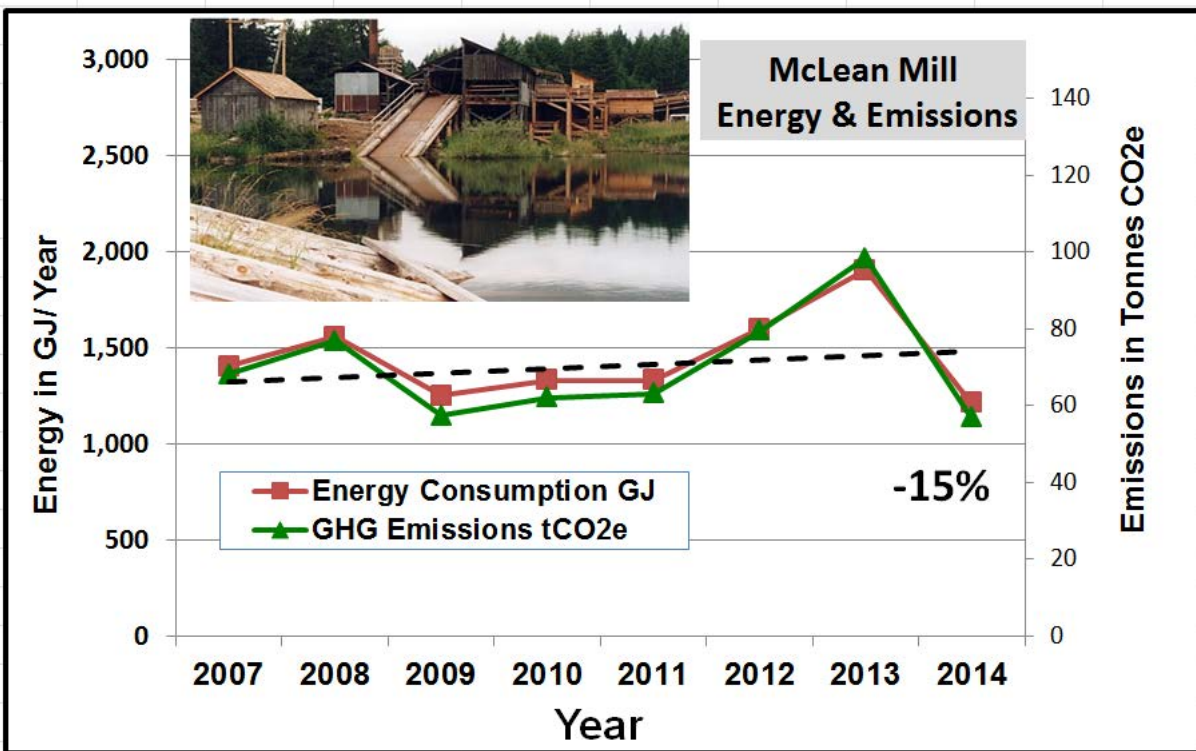












## **Fleet Modifications and Upgrades**

In order to supply services and maintain infrastructure the City operates a fleet of about 80 vehicles (ranging from heavy construction equipment to small sedans) plus a variety of non-vehicular powered units such as compressors and generators. The majority of these units are powered by gasoline (41) or diesel fuel (35). Propane is used in only five units; two Zambonis, two forklifts and the Asphalt Patch Truck which utilizes propane to heat asphalt.

In addition to fuel used by the City fleet, an estimated amount is included for fuel used in private vehicles by employees engaged in City business as well as fuel used by contractors engaged in work for the City.

In 2007 about 337,000 litres of fuel was consumed representing energy consumption of 14,000 GJ and 936 tonnes of GHG emissions. In addition to fuel for fleet operations this includes about 67,000 litres of bunker fuel used in operation of the City's Alberni Pacific Tourist Railway, about 12,000 litres used by contractors and 3000 litres used by City staff in their own vehicles on City business.

In 2008 the City adopted an anti-idling policy for our fleet restricting idling times to 2 minutes for most units. Starting in 2010 all diesel fuel used by the City contains 5% Bio-Diesel reducing the GHG output of diesel powered units by 5%.

Since 2007 scheduled fleet upgrades have replaced 25 old units with new and more fuel efficient ones. Replacements range from light pickup trucks to construction equipment and fire engines. 2015 planned replacements include a pickup, tandem dumptruck, and bylaw enforcement unit. For future replacements, including the bylaw vehicle, electric format vehicles will be considered where practical. Fleet upgrades are funded by the Equipment Replacement Reserve Fund (ERRF) with additional costs for more environmentally beneficial fuel types being eligible for contributions from the Carbon Fund.

Total fleet fuel consumption varies annually due to fluctuations in mileage and hours of use. The fluctuations are caused by variability in construction project locations and duration as well as weather. Notwithstanding this, fuel consumption has been trending slightly downwards since 2007 as shown on the attached graph and generally as follows:

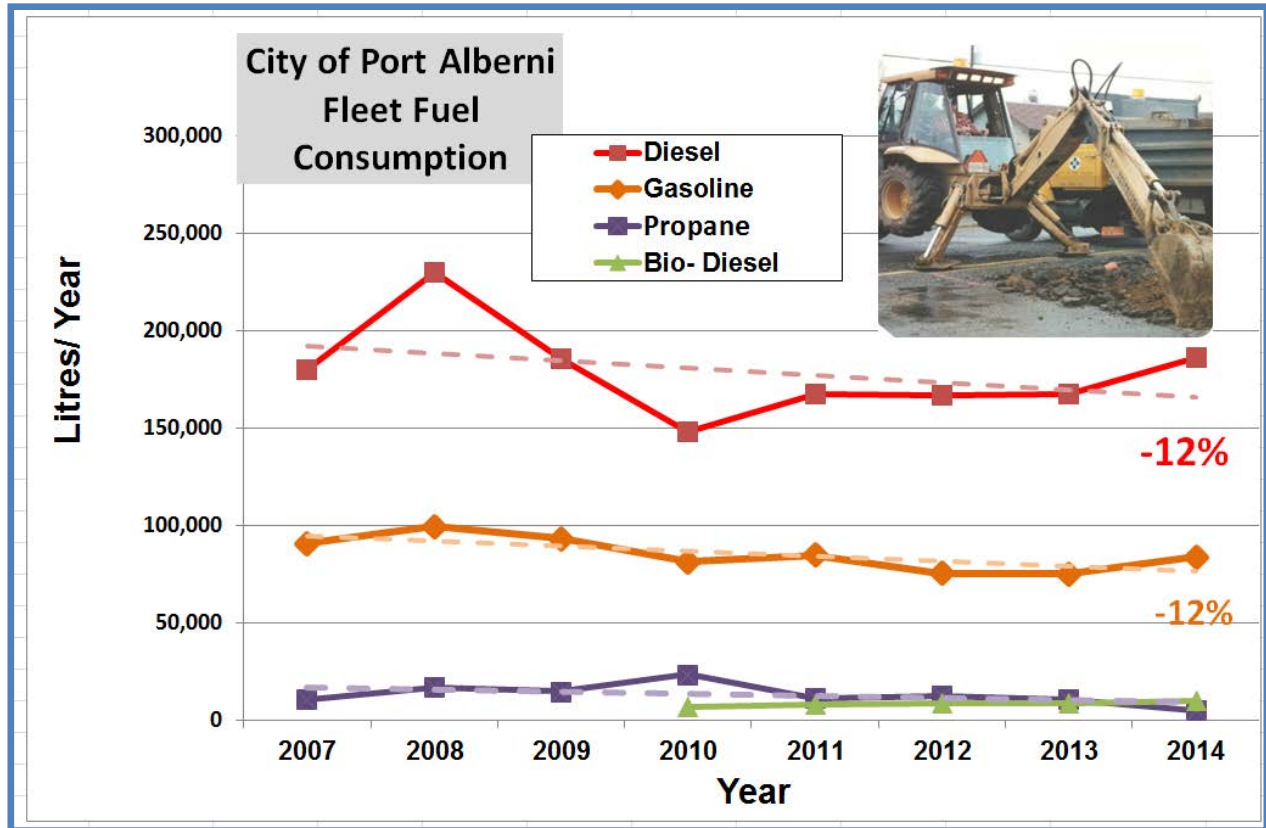
- Average Diesel consumption has reduced by about 20,000 litres/yr (12%).
- Average Gasoline consumption has reduced by about 15,000 litres/yr (12%)
- Fleet Propane consumption has fluctuated somewhat but remained fairly constant on average.
- Locomotive Oil used in operation of the Alberni Pacific Railway has reduced by about 25,000 litres/yr (30%).

In aggregate these reductions in fleet fuel consumption represent a GHG reduction of about 53 tonnes or a 6% reduction in corporate emissions.

Appendix 6 includes a copy of the anti-idling policy, equipment listing, estimated fuel savings by new units, and estimated fuel use by private vehicles and contractors.







### 3.3 Water and Sewer Conservation Measures

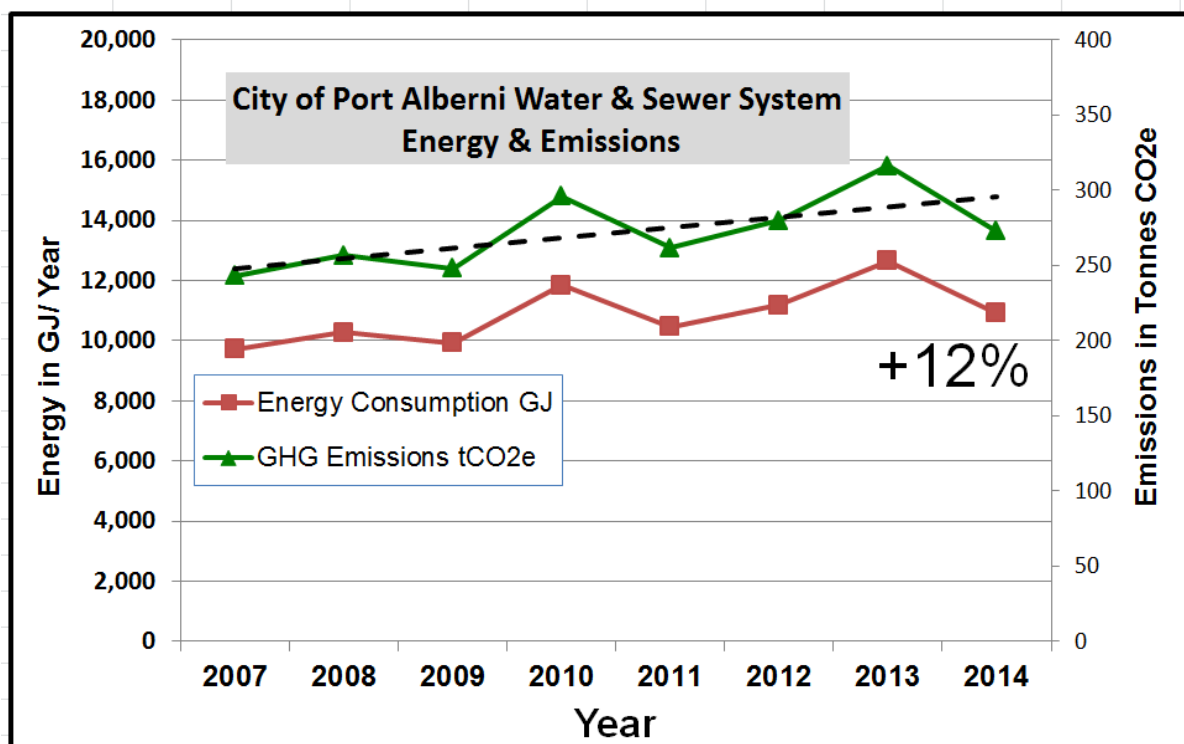
The City waterworks system includes nine significant facilities including three dams, five reservoirs, six pumpstations and two treatment sites. The sewer system has seven significant facilities including five sewer pumpstations, a storm pumpstation, and the treatment lagoons. Altogether these facilities incorporate about 2000 Horsepower of pumps and related equipment which is powered almost completely by electricity. Appendix 7 includes a listing of sewer and water infrastructure.

2015 consumption for water and sewer operations was 3.0 GWh (10900 GJ) representing about 270 tonnes of GHG emissions. About two thirds of all the energy required to power our water and sewer system is consumed at the sewer treatment lagoon alone which consumes about 2.0 GWh annually. Close attention to operation sequences of the aerators at the sewer lagoon resulted in a significant reduction in consumption in 2014 of about 0.5 GWh (1800 GJ)

Since 2007 the City has implemented a number of system improvements in our water and sewer systems. These improvements, including the Argyle Pumpstation replacement and Sewer Lagoon Aerator upgrades, have increased total sewer pumping and treatment capacity. This has generally resulted in increased electrical energy consumption of about 1200 GJ and increased GHG emissions of about 30 tonnes.

Planned implementation of a water conservation program and further technical upgrades in the water pumping area are anticipated to somewhat offset these increases in future years. The City's Water Conservation Plan prepared by the Engineering Department is attached as part of Appendix 7. There will be a focus on implementation of this plan in 2015 including adoption of a more conservation oriented rate structure.

Significant expansion and upgrade of our sewage treatment lagoon will increase power consumption of this facility considerably over the next few years. Notwithstanding equipment efficiency upgrades and conservation measures, the sewage treatment upgrades are expected to result in continued increases in power consumption overall for water and sewer facilities in coming years. While these improvements will increase our power consumption significantly they also improve the City's environmental sustainability by reducing impacts of effluent discharged to the Somass River Estuary.



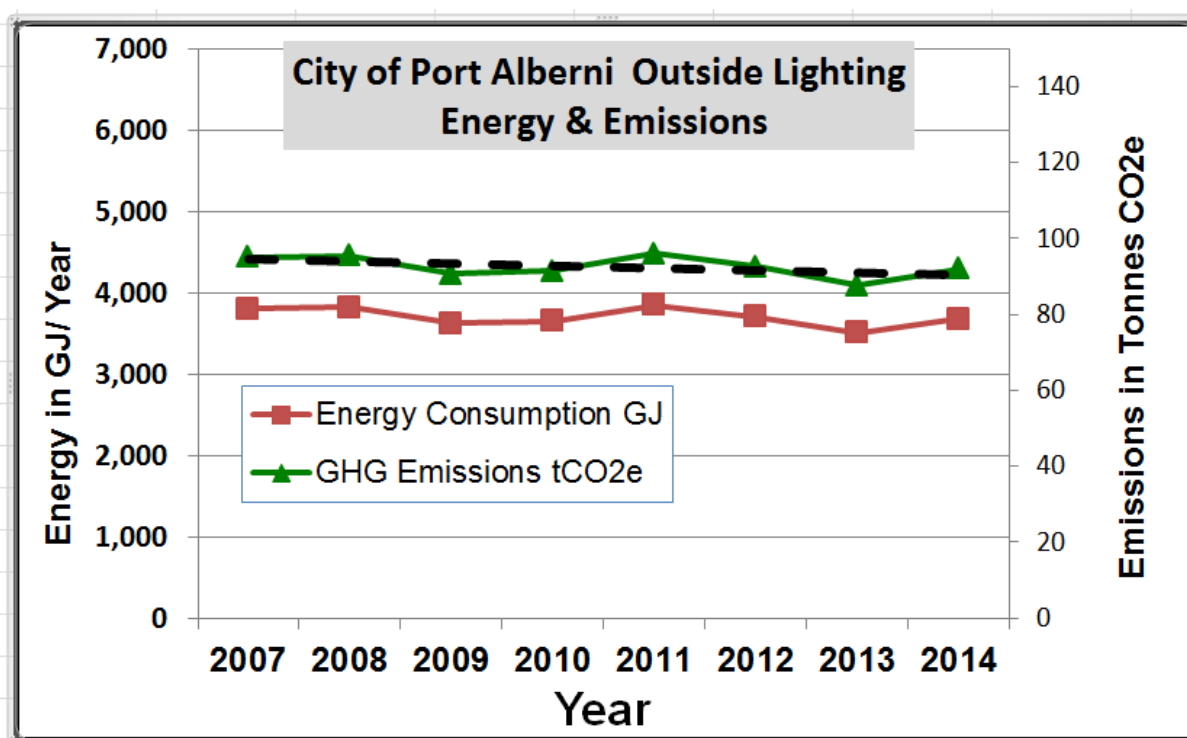
### 3.4 Streetlight/Signal Upgrades

The City operates a total of 1450 streetlights about 65% of which are rented from B.C Hydro (mounted on hydro poles) with the remainder being City owned (steel poles). Streetlights are 150W or 100W high pressure sodium format. In addition there are seven fully signalized intersections and two pedestrian crossing signals all of which are LED format. The City also provides outside lighting at eight park facilities and two City owned parking lots as well as seasonal Christmas lighting (LED format) in commercial areas. Appendix 7 includes a listing of street light and traffic signal infrastructure.

All the lighting described above consumes about 1.0 GWh (3850 GJ) per year accounting for about 90 tonnes of GHG emissions. This consumption has been relatively consistent since the baseline year of 2007

All City traffic signals were converted to LED technology prior to the 2007 baseline year. Two traffic signals were eliminated in favour of passive traffic control as part of 3<sup>rd</sup> Avenue upgrades in 2010. A solar powered LED pedestrian crossing signal was installed on 10<sup>th</sup> Avenue in 2011 and is functioning well. Sample installations of both LED and induction streetlights have been installed to monitor performance and lifespan.

Costs and lifespans of new lighting formats are improved steadily over the past several years. This technology appears to be stabilizing and a 2 year program involving change-out of City owned streetlights to LED technology is proposed in Financial Plan for 2016 and 2017. LED conversion of all City owned streetlights is estimated to save about 0.2 GWh (720 GJ) equating to about 18 tonnes of GHG emissions.



### 3.5 Paper Use and Recycling

The City, in all its facilities, uses about 1 million sheets of office paper per year. If not recycled, this equates to about 12 tonnes of GHG emissions/yr. Details of paper use by facility are included in Appendix 8.

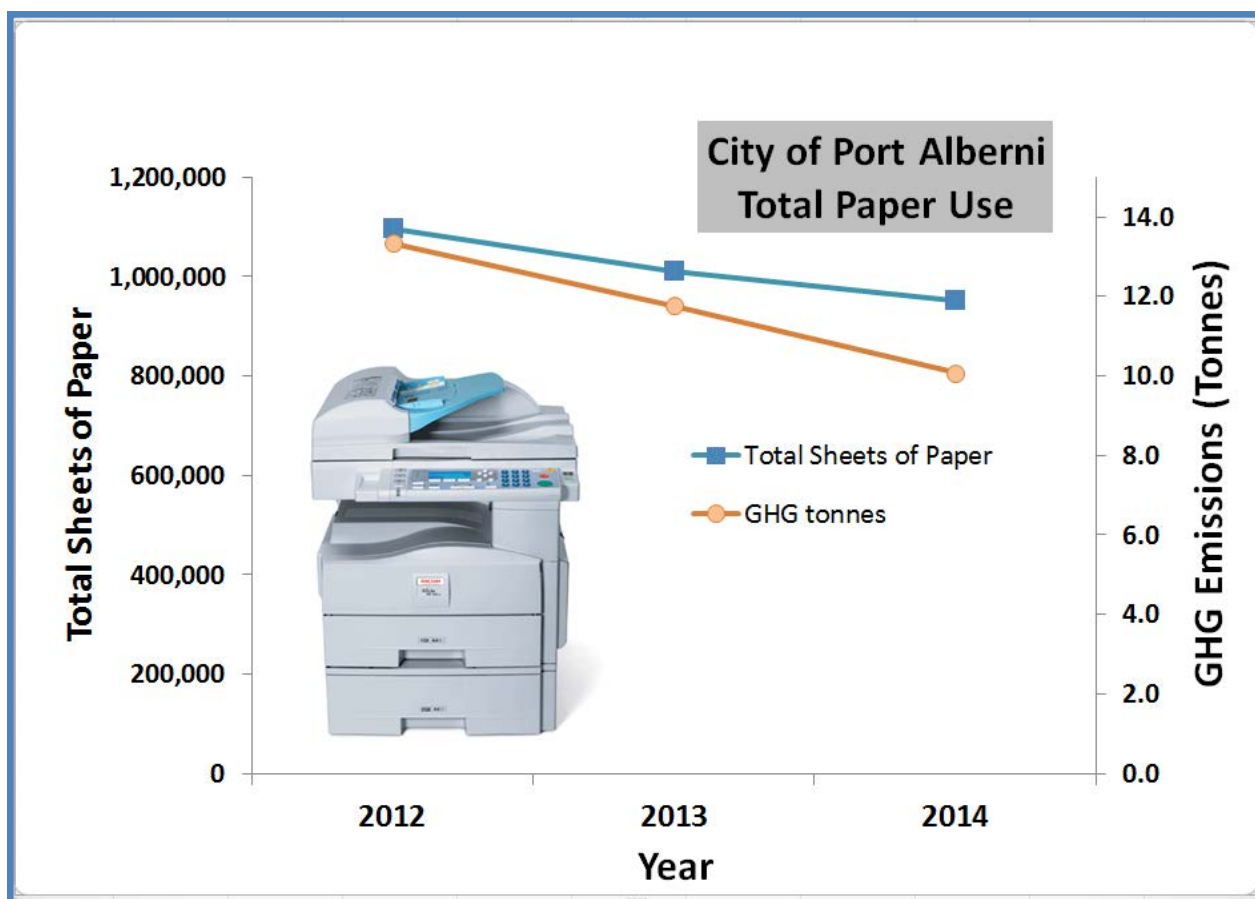
In 2009 the City implemented a recycling program for both cardboard and office paper at all of our facilities. The amount of paper and cardboard diverted annually is approximately 7 tonnes. This equates to about 28 tonnes of GHG emissions avoided compared to landfilling.

City Hall has been using paper with recycled content since 2011 and in 2014 moved to use of 100% recycled content paper.

In 2013 the City entered into a new contract or supply of printers/copiers with Ricoh. This change saved about 40% on power consumption of all our printers and copiers.

In 2013 Council Agendas became “paperless” with Council, staff and the press receiving these formerly thick packages digitally. It is estimated this change saved 100,000 sheets of paper and about one tonne of GHG per year.

In 2015 the City will begin offering e-billing as an option to our customers for their tax and utility bills. The City currently prints and mails about 29,000 bills per year. Goals for participation in paperless billing are 30% in the first year, 80% in the second year and 90% in the third year and going forward. This initiative is projected to save printing and postage costs and about 25,000 sheets of paper per year by 2018.





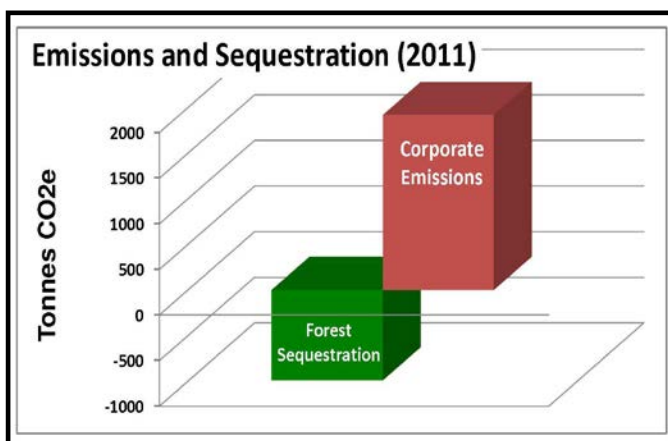
### 3.6 Concrete and Asphalt Recycling.

The concrete panels and asphalt removed by our Public Works crews during street improvements are stockpiled and then crushed for reuse as construction and road surface aggregate. The cost of the recycled aggregate is 50% of new material. In early 2014 we crushed 7,000 tonnes of stockpiled material.

### 3.7 Street Trees and Urban Forest

The City maintains an inventory of approximately 3100 street trees. On average these trees are estimated to sequester the equivalent of about 30kg each of CO<sub>2</sub> for a total of about 90 tonnes annually. In addition the City owns approximately 740 Acres (300 Hectares) of forested land in the form of parks, ravine lands, and lands retained for future development. The area of this land has remained static since 2007. Literature review indicates that temperate rainforests of intermediate age in our climactic zone sequester carbon at approximately 3.0 tonnes/ha annually.

Based on this estimate, City owned forest lands sequester approximately 990 tonnes of CO<sub>2</sub> per year. This conceptually "offsets" about 40% of our current (2012) corporate emissions estimated to be 2250 tonnes. Appendix 9 provides background regarding this forest land carbon sequestration estimate.

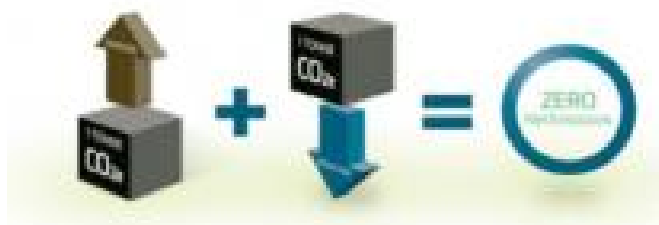


Lands included in the Alberni Valley Community Forest tenure were not included in this calculation as these lands are not "owned" by the City.

Notwithstanding the estimated carbon sequestration of City owned forests and urban trees, these offsets are not included in our balance calculation as the provincial guidelines to carbon neutrality indicate that offsets can only be generated from emissions reductions that go beyond (or are "additional" to) a company's business-as-usual approach.



In meeting our first two commitments under the Climate Action Charter, we have measured our total corporate GHG emissions and are reducing them where possible. The third part of this commitment is to balance the remaining net emissions through the purchase of carbon offsets and / or through investments in local GHG reduction projects.




To accomplish this the CCC(2007) recommended establishment of a carbon offset/reduction fund as an internal account with sufficient startup funds.

In 2007 the City created the “Green Energy Reserve”. This was an operational reserve account which has accrued dividends from the City’s shares in the Upnit Power Corp and carbon tax rebates from the Climate Action Review Incentive Program.

In 2013, the City strengthened this recommendation by creation of a statutory reserve, the “Carbon Trust Reserve”. Funds were transferred from the former Green Energy Reserve and contributions will be made annually of any Upnit dividends, CARIP rebates as well as carbon offset contributions.

In order to be carbon neutral the City has committed to make carbon offset contributions to this fund based on accepted offset cost per tonne times the City's estimated annual GHG tonnages emitted. GHG offsets are currently valued at about \$25/tonne and the City's emission total is currently estimated to be 2306 tonnes. Based on this, an annual contribution to the fund of about \$57,800/yr will be made to offset our GHG emissions. Annual CARIP rebates of fuel surcharges from the Provincial Government of approximately \$38,000 also accrue to the Carbon Fund providing a total annual contribution estimated at \$95,800.

4/7/2015

	A	B	C	D	E	F	G	H	I
1		<b>CITY OF PORT ALBERNI</b>							
2		<b>CARBON TRUST RESERVE FUND-5 YEAR PLAN</b>							
3									
4									
5									
6			<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>
7			<i>Actual</i>						
8		RECEIPTS							
9		Contributions	196,068	95,800	95,800	95,800	95,800	95,800	95,800
10		Investment Income	-	1,000	2,000	3,000	4,000	5,000	5,000
11			196,068	96,800	97,800	98,800	99,800	100,800	100,800
12									
13		EXPENSES							
14		Transfer to Other Funds	-	-	-	-	-	-	-
15		Projects and Expenses	-	70,000	-	50,000	50,000	-	-
16			-	70,000	-	50,000	50,000	-	-
17									
18		REVENUE OVER EXPENSES	196,068	26,800	97,800	48,800	49,800	100,800	100,800
19									
20		FUND EQUITY - ENDING	196,068	222,868	320,668	369,468	419,268	520,068	620,868



The fund balance by the end of 2015 is projected to be \$290,000. Funds accrued could be dispersed to support local projects, either internal, partnerships or external as approved by Council. Projects which might be supported by this fund are:

Internal:

- Energy Efficient Building Upgrades
- Low Emission Vehicles (difference between conventional and LEV)
- Residential Organic Waste Composting Service implementation

Partnerships or External

- District Energy Project design and construction
- Woodstove change-out subsidy – Air Quality Council
- Development of walking trails or bikeways – Alberni Environmental Coalition
- Support of industrial energy or GHG reduction projects – Catalyst or WFP

In 2014 a contribution of \$70,000 was approved from the Carbon Trust Reserve toward purchase of an electric “zamboni” to replace a current propane fueled unit. This electric unit was received in 2015. In 2015 a contribution of \$30,000 was approved for purchase of e-billing software which will provide for a reduction in the volume of paper bills the City currently sends out.



Electric Zamboni purchased in 2014 partly funded by Port Alberni Carbon Trust Reserve.

## 5. Environmental Sustainability in Regulations & Bylaws.

The Climate Change Committee recommended updates to the City purchasing policy, planning and development regulations and bylaws to encourage low carbon development in the community. Specific Policies and Bylaws that should be updated with sustainability and climate change issues in mind include the following:

**Strategic Plan** - A new plan adopted in 2015 continues to incorporate sustainability and environmental responsibility as part of the City's Vision. The Plan also incorporates a Strategic Priority of "Environmental Stewardship" with a number of initiatives the first being to protect water, air and land quality.

**Purchasing Policy** – This policy was amended in 2010 to include a local vendor preference provision which provides an advantage to local bidders. Provisions promoting sustainable options should also consider for inclusion in this policy.

**Official Community Plan (OCP)** – A new OCP (Bylaw #4602) was adopted in 2007 which includes direction on several sustainability issues. These include: Economic Diversification, Compact Development, Environmental Stewardship, Natural Environment Protection, Parks Protection, Urban Agriculture, Bike & Walking Trails connectivity, Solid Waste Reduction and Recycling. Specific reference to GHG reduction targets was not included in the 2007 update; this should be incorporated via OCP amendment.

**Zoning Bylaw** - The City adopted a new Zoning Bylaw (#4832) in March, 2014. As part of the review and public input that went into the new bylaw, sustainability issues were considered and the following new provisions were adopted in the new bylaw:

- Residential lot sizes were reduced to allow future subdivisions to increase density .
- Secondary suites are now a permitted use in single family dwellings.
- Supportive housing regulations were added.
- Community and Urban Market Gardens are now permitted in all zones. Urban Market Gardens will allow for on-site sales of the products grown.
- The keeping of chickens and honeybees shall be permitted in single family zones.

**Subdivision & Development Bylaw** – The current Subdivision and Development Bylaw (#4551) was adopted in 1994 and Schedule B to the Bylaw (Engineering Department Standards and Specifications) was updated in 2004. At the time of drafting these documents did not consider sustainability principles or accommodate climate change issues. Review and updating to consider sustainability and climate change issues should be undertaken.

**Floodplain Bylaw** – The current floodplain bylaw (#4288) was adopted in 1996 and it sets a minimum flood construction level of 3.65m Geodetic elevation for all building within the area of the City identified as floodplain. This bylaw needs to be reviewed and updated to incorporate climate change issues such as predicted sea level rise and increasing rainfall and storm intensity.



## 6. Public Engagement

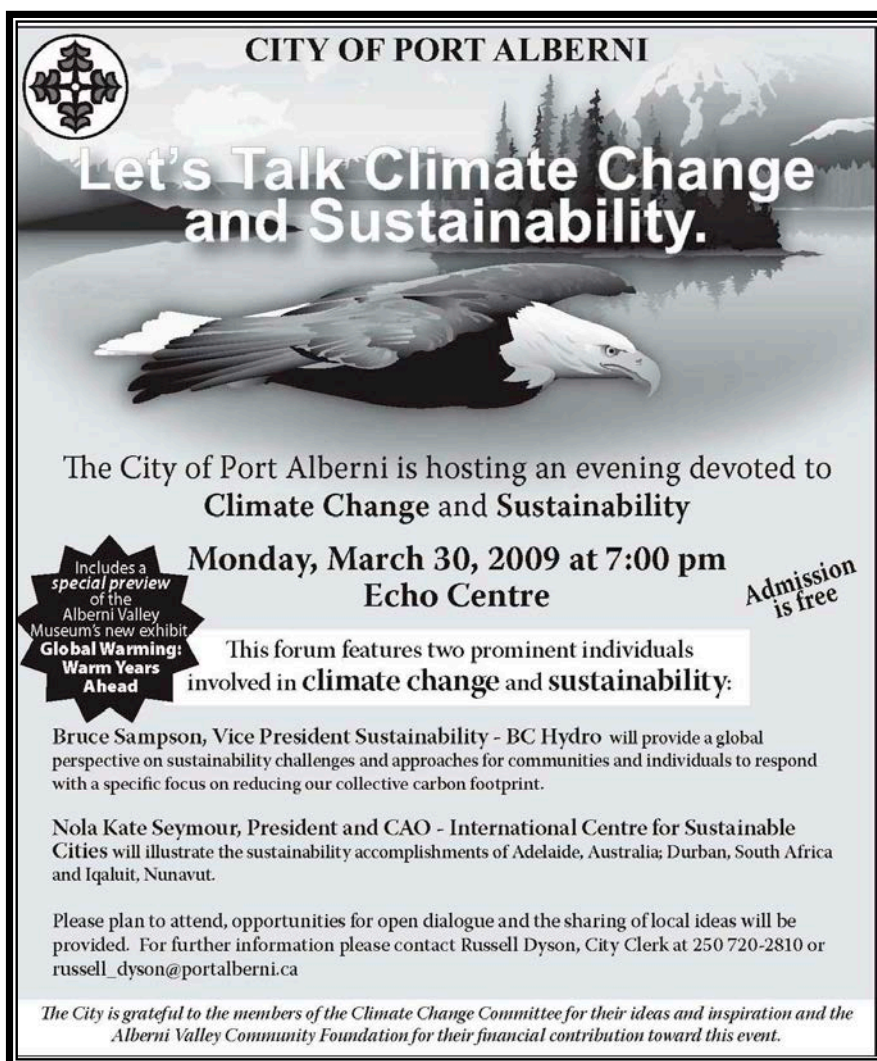
The Climate Change Committee recommended that the City hold a public forum to develop community priorities for energy efficiency and identify stakeholder groups. The City held a community sustainability forum in March 2009 with featured speakers Bruce Sampson and Nola Kate Seymour. The forum focus was primarily on global climate change issues. A grant from the Alberni Valley Community Foundation was received supporting this forum. A copy of the forum poster is shown. Additional community forums with more focus on local initiatives and partnerships would be useful.

Initially, the City should become more actively involved in hosting or participating in community forums, workshops and events that relate directly to the service areas that the City is involved in. These could include a focus on:

- Solid Waste reduction/recycling
- Water Conservation
- Woodstoves and Burning
- Emergency Preparedness and Climate Change
- Sustainable Transportation
- Active Living

Where appropriate, the City should partner with local stakeholder groups and organizations that share a common objective that connects to the City's Strategic Plan.

As the City moves forward on its Sustainability initiatives, it should take more of a leadership role within the community and facilitate broader community engagement processes related to community sustainability issues.



**CITY OF PORT ALBERNI**

# Let's Talk Climate Change and Sustainability.

The City of Port Alberni is hosting an evening devoted to  
**Climate Change and Sustainability**

**Monday, March 30, 2009 at 7:00 pm**  
**Echo Centre**

**Admission is free**

Includes a special preview of the Alberni Valley Museum's new exhibit  
**Global Warming: Warm Years Ahead**

This forum features two prominent individuals involved in **climate change and sustainability**:

**Bruce Sampson, Vice President Sustainability - BC Hydro** will provide a global perspective on sustainability challenges and approaches for communities and individuals to respond with a specific focus on reducing our collective carbon footprint.

**Nola Kate Seymour, President and CAO - International Centre for Sustainable Cities** will illustrate the sustainability accomplishments of Adelaide, Australia; Durban, South Africa and Iqaluit, Nunavut.

Please plan to attend, opportunities for open dialogue and the sharing of local ideas will be provided. For further information please contact Russell Dyson, City Clerk at 250 720-2810 or [russell\\_dyson@portalberni.ca](mailto:russell_dyson@portalberni.ca)

*The City is grateful to the members of the Climate Change Committee for their ideas and inspiration and the Alberni Valley Community Foundation for their financial contribution toward this event.*



## 7. Reducing Community GHG

The Climate Change Committee recommended that the City take forward infrastructure projects that enable the community at large to reduce GHG emissions, with a priority being to develop and implement a bike and walking trail master plan for the City.

### 7.1 Community Emissions Inventory

The Provincial Ministry of Environment, Climate Action Secretariat has undertaken estimates of emissions from all urban areas in B.C. and published these in their "Community Energy and Emissions Inventory". This information is available on their website

<http://www.env.gov.bc.ca/cas/mitigation/ceei/>. The information for the City of Port Alberni for is attached in Appendix 10

2007 baseline emissions for the community were calculated to be equivalent to 97,347 tonnes of CO<sub>2</sub> (excluding industrial). For 2010 total emissions were estimated to be 106,795 tonnes, a 9.7% increase. This estimated increase arises from an increase in estimated commercial vehicle emissions as well as increases in estimated emissions from tractor trailers and light trucks, vans and SUVs. These increases were partially offset by estimated decreases in emissions from both residential and commercial properties. This is shown by sector on the attached chart. This data has not yet been updated by the Province beyond 2010.

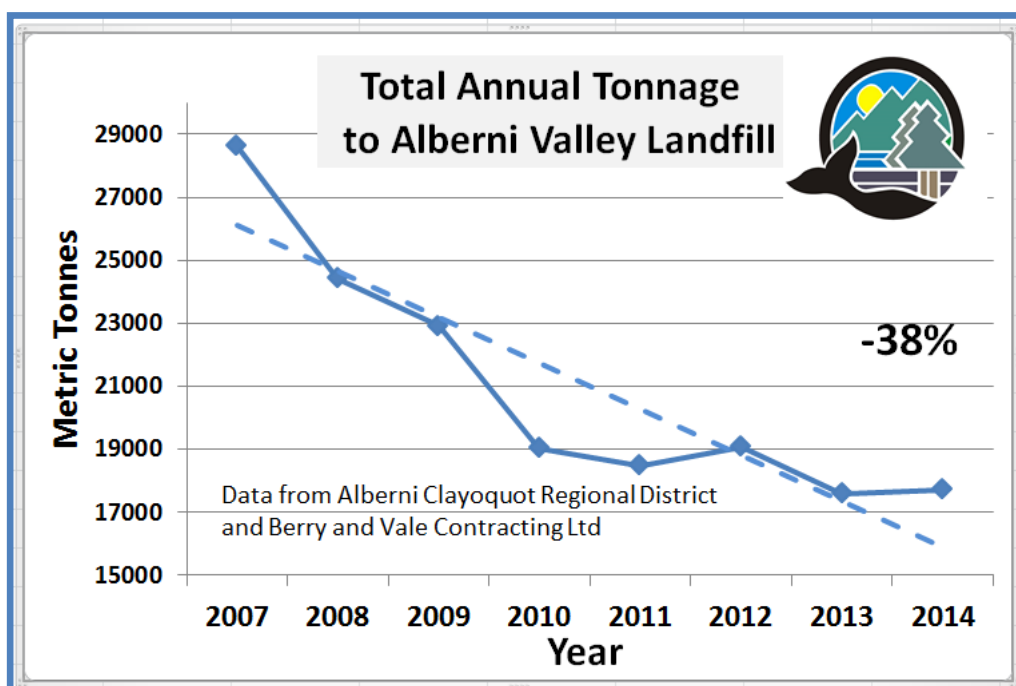
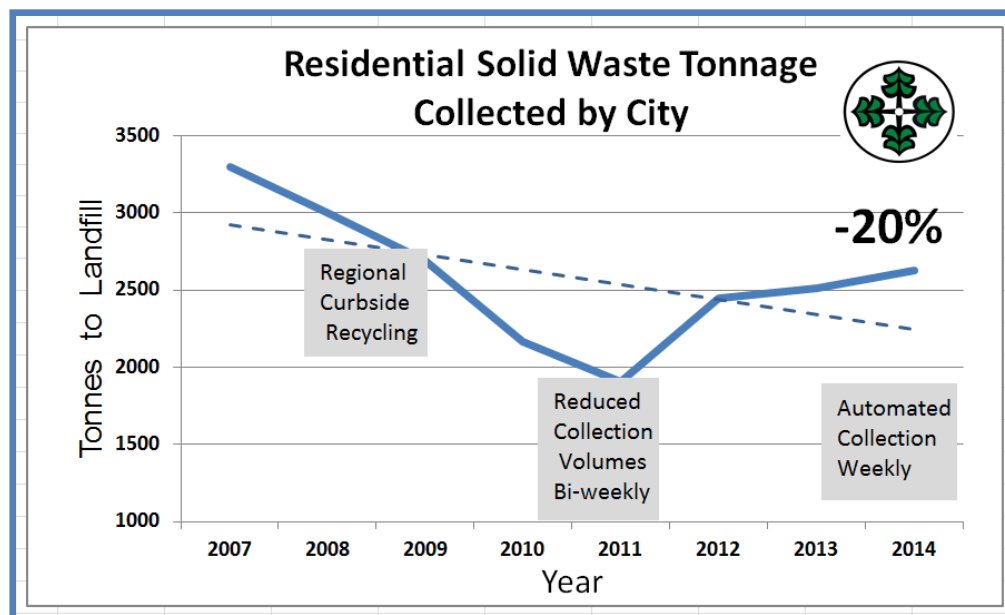
PORT ALBERNI COMMUNITY ENERGY & EMISSIONS BY SECTOR *				2007			2010			% CHANGE		
Subsector Description	Estimated Number	Energy (GJ)	CO <sub>2</sub> E (t)	Estimated Number	Energy (GJ)	CO <sub>2</sub> E (t)	% Change Number	% Change Energy	% Change CO <sub>2</sub> E (t)			
Small Cars	3138	122834	8360	3336	139087	9390	6.3%	13.2%	12.3%			
Large Cars	1761	80877	5526	1759	82678	5628	-0.1%	2.2%	1.8%			
Light Trucks, Vans SUVs	5241	351787	24099	5804	411050	28030	10.7%	16.8%	16.3%			
Commercial Vehicles	903	70456	4822	1275	132121	9070	41.2%	87.5%	88.1%			
Tractor Trailers	112	43267	3039	119	65060	4571	6.3%	50.4%	50.4%			
Motorhomes	146	6101	416	144	5544	379	-1.4%	-9.1%	-8.9%			
Motorcycles	170	2069	138	206	2769	185	21.2%	33.8%	34.1%			
Buses	55	5504	380	57	7231	498	3.6%	31.4%	31.1%			
Solid Waste	14097		15973	13838		16689	-1.8%		4.5%			
Residential Properties	10294	861202	21581	10504	826420	20427	2.0%	-4.0%	-5.3%			
Commercial Properties	1448	485770	13013	1333	455602	11928	-7.9%	-6.2%	-8.3%			
TOTALS		2029867	97347		2127562	106795		4.8%	9.7%			

\* Data from Ministry of Environment Climate Change Secretariat - CEEI

## 7.2 Solid Waste Reductions

Since 2007 Community GHG emissions have been reduced significantly in the area of Community Waste. Tonnages of residential solid waste transported from the City to the Alberni Valley Regional Landfill have been reduced by about 850 tonnes per year. This translates to an equivalent CO<sub>2</sub> reduction of about 425 tonnes or 26% reduction in emissions from Residential Waste. Data from the Alberni Clayoquot Regional District supports this showing a decline in tonnage accepted at the landfill of 9500 tonnes (33%) between 2007 and 2014.

These reductions resulted from the Alberni Clayoquot Regional District's implementation of blue box curbside recycling service coupled with City's reductions in the permitted waste collection volumes per residence. Future reductions are hoped to be achieved by implementation of a kitchen/yard waste separation and collection program. This is included in the current 5 Year Financial Plan and details are under investigation by the Engineering Department.



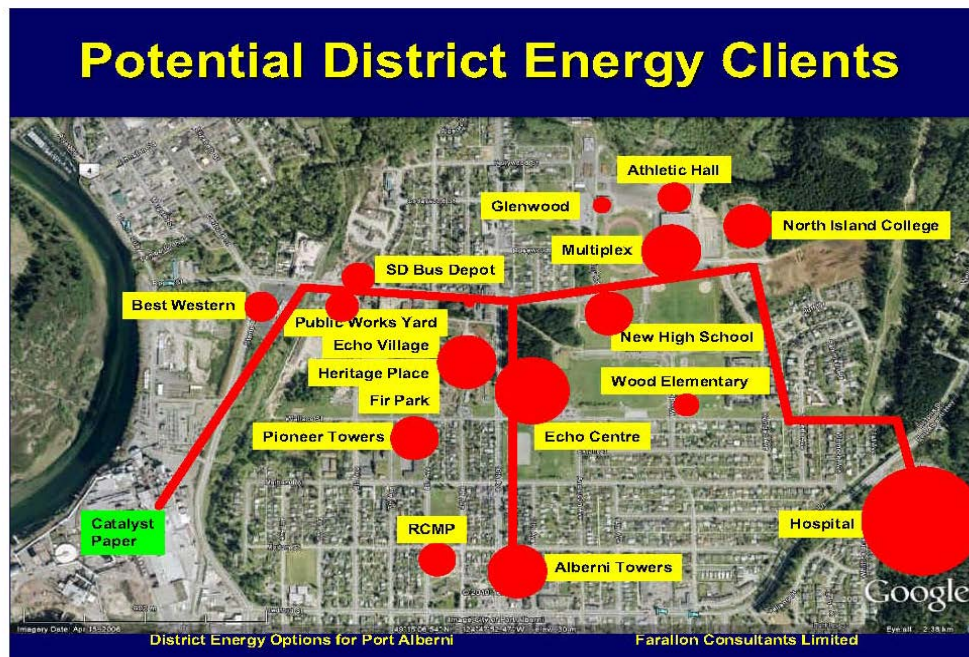
### 7.3 District Energy System

In early 2010 the City retained Stephen Salter P.Eng of Farallon Consulting to undertake an evaluation of Integrated Resource Recovery Options for Port Alberni. This evaluation was completed in mid-2010 and indicated that there were two very viable options to convert biomass to energy and circulate it to institutional, civic and large private sector residential facilities. These options had the potential to reduce GHG emissions by 4000 to 13,000 tonnes/yr, create cost savings for customers and provide new non-tax revenue for the City. The executive summary of the Farallon report is included in Appendix 12.

In 2015 City Council directed that an operational partner be recruited to undertake construction and operation of the system. A request for proposals will be issued in mid-2015 to companies with expertise in this field. The City's will contribute \$1.5 million towards development of this project. These funds are in the form of a grant from the Federal Gas Tax Innovation Fund.

Once constructed this project, as currently envisaged, would:

- conserve 60,000 GJ/year of natural gas,
- conserve 122 MWh/year of electricity,
- divert 2,800 tonnes/year of wood waste from landfilling,
- reduce greenhouse gas emissions by 5,100 tonnes/year
- reduce the City's corporate emissions by a further 38% and, retain greenhouse gas offsets of \$65,000/year currently paid by public organizations in Port Alberni to the Pacific Carbon Trust.





## 7.4 Bike and Walking Trails

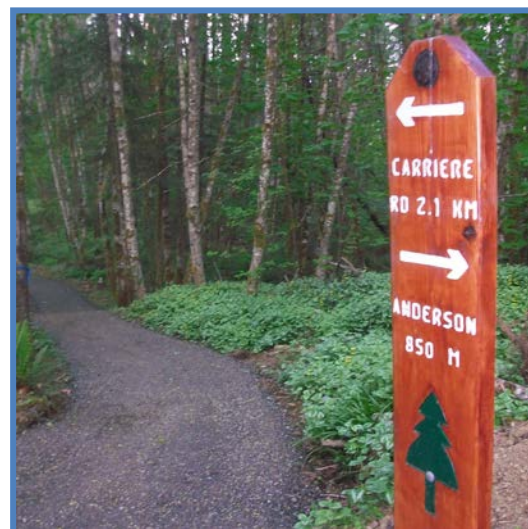
The CCC placed a priority on drafting and implementing a bike and trails network master plan. A number of trail network projects have been completed since 2007 in the Alberni Valley, most with support from the City.

- Job Opportunity Program (JOP) Grant Trails Program (2008) – Roger Creek and South Port Trail network expansion/upgrades. Undertaken by the City employing displaced forestry workers. The bulk of the work linked the Log Train Trail and the Historic CNPR Alberni Inlet Trail. The section itself is well-used and much enjoyed by residents.
- Runners Trail Project (2009) - undertaken with Island Coastal Economic Trust (ICET) funding leveraging JOP funding. The project was undertaken jointly by the City, Tseshah FN and Alberni Clayoquot RD. The work was contracted to the Tseshah as it was within their traditional territory. The trail covers half the distance between Headquarters Bay on the Inlet and Lake Cowichan, currently ending at Frances Lake.
- Stamp Long River Trail (2010) – this is a 7.5 kilometer trail along the River and through some old growth forest that ends near Somers Road and the southern boundary of the Stamp River Provincial Park
- Greenmax Anglers' Trail (2010) – this is a 4.1 kilometer trail that starts in the Greenmax woodlot and ends at a popular fishing spot on the Stamp River called Eagle Rock
- Historic CNPR Inlet Trail (2011) - this is a 3-phase project starting near the City's boundary at Ship Creek and ending at Headquarters Bay on the Inlet. The trail is (being) constructed primarily on Island Timberlands property. Phase 1 requires a bridge at China Creek before the remaining phases can be completed.

Significant trail developments and interconnections have been constructed in both the City and Alberni Clayoquot Regional District since 2007. Both the City and Region have trail system mapping on their respective websites but they are not “connected”. Information on more than 100 trails in the Alberni Valley has been compiled. Trail maintenance and liabilities are often cited as barriers to further development and use.

Biking lanes and trails remain a significant opportunity to reduce car use. A 1983 Bicycle Route proposal undertaken by our Parks and Recreation Department still has many valid conclusions and recommendations. In 2014 the City's Engineering Department completed and undertook an “Active Transportation Plan” which evaluates opportunities to increase cycling compatibility on City Streets. This plan is attached as Appendix 15.

A Master plan (for biking lanes and walking trails), plus a coordinated, easily accessible and downloadable mapping system for all bike lanes and trails and some marketing would increase local awareness and use. In addition these improvements could extend the stay of visitors and increase the attractiveness of the community to potential new residents.



## 7.5 Air Emission Reductions from Vehicles, Woodstoves, and Open Burning.

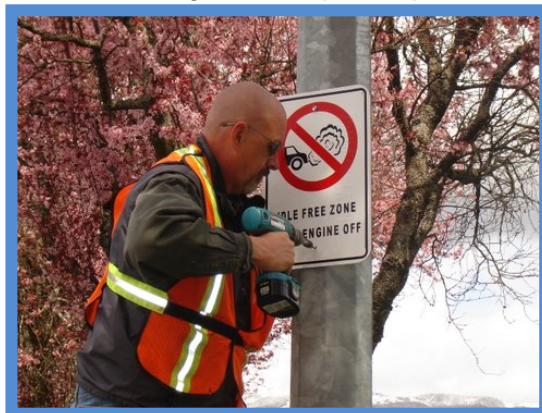
The City has a longstanding woodstove inspection program through our Fire Department and supports the local Air Quality Council's woodstove exchange program which receives funding from the Provincial Ministry of Environment.

In 2012 in consultation with the Air Quality Council and Ministry of Environment, the City adopted a bylaw (#4802) to tighten regulation of emissions from solid fuel burning appliances. The new bylaw requires that effective 2013 upon sale of a property woodstoves be made compliant with CSA/EPA emission standards. By 2017 all woodstoves in the City must be compliant. The bylaw also provides regulation and enforcement provisions for use of appropriate fuels for woodstoves



The City also has a longstanding bylaw which regulates the size and timing of open burning. In 2008 Council adopted a new bylaw #4697 which prohibits the burning of land clearing debris within the City entirely. Review of this bylaw to consider banning open burning completely should be undertaken, once alternatives such as organics drop off depots or garden waste collection service is implemented.

The City has a longstanding "anti- Idling" policy with respect to the use of City vehicles. In addition and in partnership with the Alberni Valley Air Quality Council the City has installed Idle free signs around elementary schools and in commercial areas where idling is prevalent. This was part of an idle free education campaign undertaken by the Air Quality Council.



In 2013 the City installed two double pedestal commercial grade electric vehicle charging stations.

Both were installed in tourist shopping areas, one at Harbour Quay and one at Victoria Quay. These are now available at for free public use in charging electric vehicles. It is anticipated that convenient access to charging stations will promote use of electric vehicles and thus reduce greenhouse gas emissions community wide.

The City was successful in receiving funding for these installations from the Fraser Basin Council's Climate Change & Air Quality Program

In the first year of use the stations saw limited use with 21 vehicles charged consuming 95 kWh. Use increased in 2014 to 97 vehicles charged consuming 390 kWh.





## 8. Other Initiatives Supporting Environmental Sustainability

Through a variety of partnerships the City of Port Alberni has engaged in other initiatives which support the environmental sustainability of our community but which may not directly reduce emissions.

### 8.1 Upnit Power Corporation



Starting in 2005 the City partnered with the Hupacasath First Nation and Synex Energy in development of a 6.5 MW, run-of-river, green hydroelectric project on China Creek which is also the City's main water supply. Available flows in China Creek are shared between the City's water supply and Upnit Power. During peak operation the plant produces enough electricity to power 6000 homes. Total production of electricity is about 26 GWh/yr. The City is a 5% shareholder in this Corporation and the Mayor is a member of the Board of Directors. In 2008 this project received a Canadian Environment Award in the Climate Change category. Dividends received by the City from the Upnit Power Corporation are deposited in the Port Alberni Carbon Fund Reserve.



### 8.2 Alberni Valley Community Forest Corporation



The City's Community Forest tenure is held and operated by the "Alberni Valley Community Forest Corporation" (AVCF) which is 100% owned by the City of Port Alberni. In 2009 the AVCF entered into a 25 year Community Forest Agreement with the Provincial Ministry of Forest and Range. The Agreement provides the rights to harvest Crown timber and non-timber resources from a land base area encompassing 6378 hectares with an Annual Allowable Cut (AAC) of 18,156 m<sup>3</sup>. The AVCF is located in the Alberni Clayoquot Regional District (ACRD) in close proximity to the City of Port Alberni and located north and west of Sproat Lake. The AVCF undertakes sustainable harvesting with high standards of environmental stewardship.



The AVCF goals include:

- Demonstrate forestry practices based on community values.
- Safeguard the domestic water supply to Sproat Lake from the effects of harvesting.
- Promote a diverse use of the land base.
- Provide opportunities for meaningful public participation.
- Create a viable self-sustaining business which will not be a burden to local taxpayers.

- Manage for a variety of timber and non-timber products while protecting other values that provide community benefits, such as water, recreation and trails, views, wildlife and biodiversity, carbon sequestration, and spirituality.

Since beginning operations up to the end of 2014 the AVCF has harvested 80,566 m<sup>3</sup> of timber and replanted 138,000 trees.

### 8.3 Bear Smart Port Alberni.



In 2013 Port Alberni became the province's fifth community and the first on Vancouver Island to achieve Bear Smart status. This is an honour bestowed by the Provincial Ministry of Environment recognizing the community for "their exceptional collaborative approach to reducing human-bear conflicts" thus promoting environmental sustainability.

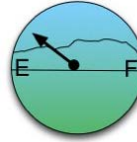
The Bear Smart Community program is a voluntary, preventative conservation measure encouraging communities, businesses and individuals to work together to address the root causes of human-bear conflicts, reducing the risks to human safety and private property, as well as the number of bears that have to be destroyed each year.

As part of our automated residential collection service, the City of Port Alberni implemented a bear-proof municipal waste management system to reduce human-bear conflicts. In addition, working in conjunction with the Alberni Clayoquot Regional District, B.C. Conservation Service, Bear Smart BC, and the AV Bear Smart Committee, a program of public education regarding bear/human interaction was prepared and released. This information is available on the ACRD website and in pamphlet form at City and ACRD facilities.





## 8.4 Food Security Initiative.



### Alberni Valley Transition Town Society

The Alberni Valley Gleaning Project is a community project run by the Alberni Valley Transition Town Society where volunteers

harvest unwanted fruit from trees throughout the Alberni Valley. The resulting harvest is shared, with the homeowner (where they desire it), the volunteer pickers, and local charities.

The Gleaning Project improves food security in the region by increasing the amount of local food available and in use. The project supports homeowners who cannot manage their fruit trees and reduces poverty impacts through donations of food to charitable groups. The project also significantly reduces bear/human conflict supporting the Bear Smart Community Program. Finally, the project offers a forum for community collaboration, education and the celebration of our local resources.

The project has grown steadily since its inception in 2012. In 2014 over 9000 pounds of fruit was harvested. Over three seasons, between 2012 and 2014, over 4300 lbs of fruit was donated to local charities and over 3000 lbs of spoiled fruit waste was cleaned up from under trees around the Alberni Valley.

In 2014, 40 community members volunteered to assist with harvesting, and while they worked, often in groups of 5-6 people, they shared valuable perspectives with each other and cemented a sense a community spirit.

The groups also created a spontaneous and accessible method of education about food and agricultural skills. Each contributed in some way to the collective's knowledge of fruit tree cultivation and management. They learned other valuable food and agricultural related skills, including methods of preservation and cooking, cultivation of plants and management of wildlife.

Another food security related initiative was included as part of the City's 2014 update of the Zoning Bylaw. Community and Urban Market Gardens are now permitted in all zones allow residential gardens to legally sell on-site the produce they grow. In additions the keeping of chickens and honeybees is now permitted in single family zones.



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## **C. Moving Forward Sustainably- Recommendations**

Some progress has been made on each of the recommendations made by the Climate Change Committee in 2008 but none could be said to be “completed”. The nature of becoming sustainable in a changing world means that we will likely never finish becoming “sustainable”. Notwithstanding that, following recommendations are made to continuing to move us forward on the Climate Change Committee’s sustainability directions.

### **1. Baseline Evaluation & Monitoring Recommendations**

Continue with monitoring of energy consumption and GHG emissions and refine this monitoring to include by department amounts. Enhance monitoring accuracy if possible.

### **2. Climate Action Team Recommendations**

- Implement the Sustainability Leadership Program based on the curriculum developed at the Key Leaders Workshop.
- Develop a corporate Green Team to undertake sustainability initiatives.
- Format for staff reports to Council should be modified to include analysis of environmental sustainability objectives reflected in the Strategic Plan.

### **3. Measures to Reduce City GHGs Recommendations**

- Continue with planned facility upgrades at the Multiplex and Glenwood Centre and develop plans for additional facility upgrades to continue reducing our building’s energy consumption and GHG emissions.
- Identify objectives and a plan of further reductions of energy consumption and GHG emissions from our fleet operations. This should include investigation more fuel efficient replacement units and of alternate fleet fuels such as natural gas and electric vehicles where there is appropriate technology in the marketplace.
- Promote water conservation via public education and by adoption of conservation oriented utilities billing rate structure which has been developed by the Engineering Department.
- Implement the change out of City streetlights and Park lighting systems to LED technology as proposed in the Financial Plan for 2016 and 2017. Pursue other energy efficient technology when efficient and effective.
- Pursue a more comprehensive corporate recycling and paper reduction program and increase the recycled content of office paper used at all facilities.
- Promote installation and preservation of appropriate species of street trees through our subdivision and development regulations and our Parks and Recreation department policies and practices.



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#### **4. Carbon Offset Fund Recommendations**

- Continue contributions to the Port Alberni Carbon fund from UPNIT dividends, CARIP rebates, Community donations and annual contributions based on carbon emission from the previous year at the prevailing carbon credit rate.
- Funds accrued to be expended only on projects approved by Council which reduce the corporate or community carbon emissions and meet sustainability criteria.

#### **5. Sustainability in Regulations & Bylaws Recommendations.**

- Undertake amendment of the City OCP to include objectives for reduction of corporate GHG emissions by 70% by 2020.
- Revise Engineering Standards to require boulevard trees for new subdivisions and developments and make adjustments to specifications to accommodate predicted climate change and sea level change.
- Investigate revision of Floodplain Bylaws to accommodate predicted climate change and sea level change.

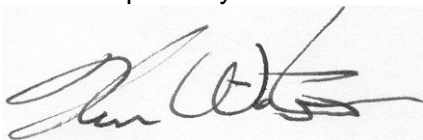
#### **6. Public Engagement Recommendations:**

- Facilitate public education workshops/engagement in areas directly related to the provision of city services i.e. water conservation, solid waste reduction, active living, sustainable transportation, etc.
- Partner with stakeholders and organizations engaged in sustainability initiatives that are related to the City's Strategic Plan.

#### **7. Projects to Reduce Community GHG Recommendations**

- Provide a kitchen and yard waste collection and composting service in partnership with the Alberni Clayoquot Regional District .
- Consider provision of a program to support residential energy and water conservation through a pilot including free home retrofit assessments and "on-bill financing" to pay upfront costs of approved retrofits with recovery over time via City utility bills.
- Support the Alberni Valley Transition Town Society in their efforts towards building a resilient food system for the Alberni Valley including support of the current Gleaning Project and development of a Food Security Action Framework based on the 2013 Community Food Assessment.
- Develop proposals for implementation of projects which reduce community GHG emissions based on initiatives identified and prioritized by Council within the City's Strategic Plan.

Respectfully submitted



Ken Watson – City Manager

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## **List of Appendices**

- 1. Climate Action Charter**
- 2. International Centre for Sustainable Cities MOU**
- 3. Port Alberni Climate Change Committees**
- 4. Corporate Energy Consumption and Emissions (2007–2014)**
- 5. City Facilities Listing & Facility Energy Reports**
- 6. City Fleet Listing and Fuel Consumption Information**
- 7. City Infrastructure Listing & Water Conservation Plan**
- 8. Corporate Paper Use Information**
- 9. Street Tree/Urban Forest Sequestration Information**
- 10. Provincial “Community Energy & Emissions Inventory” for Port Alberni 2010**
- 11. Community Solid Waste Information**
- 12. District Energy Project Information**
- 13. Provincial Supporting Documents regarding Municipal Carbon Neutrality**
- 14. Electric Vehicle Charging Station Information**
- 15. Active Transportation Plan 2014**
- 16. The Alberni Valley Gleaning Project 2015 Report – AV Transition Town Soc.**