

**DATE:** May 8, 2018**FILE:** 5280-02**TO:** Chair and Directors  
Committee of the Whole**FROM:** James Warren  
Acting Chief Administrative OfficerSupported by James Warren  
Acting Chief Administrative  
Officer*J. Warren***RE: Carbon Neutral Update****Purpose**

To present the results of the 2017 Comox Valley Regional District (CVRD) corporate emissions inventory, and to present proposed emissions reductions activities for the board's consideration.

**Recommendation from the Acting Chief Administrative Officer:**

THAT the Comox Valley Regional District (CVRD) achieve carbon neutrality for 2017 with the purchase of 2003 metric tonnes of verified offsets from the East Central Landfill Gas project, Minnesota at a cost of \$1.75 USD/MT, totalling approximately \$4,500 CAD;

AND FURTHER THAT remaining 2017 carbon offset funds (\$43,500) be allocated to a solar photovoltaic installation as part of the Comox Valley Regional Office building project.

**Executive Summary**

- The CVRD has been carbon neutral in its operations since 2012.
- This is achieved through a combination of operational energy efficiency improvements and purchase of verified carbon offsets.
- The inventory of 2017 energy consumption and resulting greenhouse gas (GHG) emissions is complete, indicating the CVRD's 2017 emissions at 2,003 tonnes.
- This is an increase over 2016's emissions, and can be attributed to growth in CVRD services (ie. Sandwick water service, CVWMC leachate treatment) and cooler winter temperatures.
- Practice since 2012 has been to purchase low cost verified carbon offsets, and use remaining budgeted funds on local GHG reduction/energy efficiency projects.
- Recommended approach for 2017 emissions is similar:
  - Purchase 2,003 tonnes of verified carbon offsets from a landfill gas project in Minnesota, at an approximate cost of \$4,500
  - Allocate remaining 2017 carbon offset funds (approximately \$43,000) to a solar photovoltaic installation as part of the Comox Valley Regional office building project.

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### Background/Current Situation

Through a combination of energy improvements to operations and purchasing offsets, the CVRD has been carbon-neutral in its operations since 2012. The 2017 corporate GHG emissions inventory has recently been completed, indicating the CVRD's 2017 emissions were 2003 tonnes. Table 1 below is a summary of CVRD corporate GHG emissions since 2009 and GHG reduction expenditures since 2012.

**Table 1 – CVRD corporate GHG emissions and GHG reduction expenditures**

Year	GHGs (tonnes)	Comments/GHG reduction expenditures
2009	2,442	Emissions baseline as established by 2011 corporate energy plan
2010	2,058	Emissions inventory procedure piloted
2011	2,196	Emissions inventory completed to establish procedure for carbon neutral reporting in 2012
2012	2,154	\$4,246 – carbon offsets purchased (Someshwara Hydropower, India) \$12,000 – Comox Valley community carbon marketplace (CCM) launch \$10,000 – Project Watershed blue carbon initiative \$25,214 – sports/aquatic centres energy retrofits
2013	2,109	\$4,218 – carbon offsets purchased (Someshwara Hydropower, India) \$20,000 – CCM GHG reduction assessments and biodiesel study \$27,242 – sports centre energy retrofit
2014	1,889	\$3,542 – carbon offsets purchased (Granger South Jordan Utah LFG) \$18,683 – allocated to CCM GHG reduction projects \$25,000 – sports centre energy retrofit
2015	1,781	\$4,000 – carbon offsets purchased (Granger South Jordan Utah LFG) \$10,000 – Biodiesel facility investigation \$25,720 – Biodiesel facility future reserve fund \$6,500 – Local ScrapIt program implementation \$6,500 – wood stove to heat pump conversion pilot program
2016	1,919	\$4,000 – carbon offsets purchased (Dempsey Ridge Wind Farm) \$22,000 – Home energy efficiency rebate programs (Oil to Heat Pump, EnerGuide) \$20,000 – Corporate energy plan update \$25,720 – re-allocation of 2015 funds to solar PV project
2017	2,003	Calculated emissions for 2017

More than 50 per cent of the CVRD's corporate emissions can be attributed to natural gas use, predominantly in the recreation complexes. The next largest contributors are fleet fuel (diesel and gasoline), and electricity. The functions with the largest contributions to corporate emissions are recreation, sewer and regional solid waste. In comparing 2017 emissions with 2016, increases were noted in three areas – electricity, natural gas and propane. A portion of the emissions increase can be attributed to the conversion of the Sandwich water service into a CVRD administered service, and the addition of the leachate treatment plan at the Comox Valley waste management centre. As well, average winter month (Jan, Feb, Nov, Dec) temperatures in 2017 were the lowest since the CVRD began tracking its energy consumption in 2009. These cooler winter conditions would impact energy consumption at many CVRD facilities such as the recreation complexes.

#### *Home energy efficiency programs*

In 2017, \$22,000 of remaining 2016 carbon offset funding was allocated towards home energy efficiency programs. A portion of this has been used to expand the \$400 Oil to Heat Pump program top-up to all areas of the CVRD (previously, this offer was only eligible in electoral areas only). Partially as a result of this change, there are now a total of 18 eligible Comox Valley registrants in this program, of which five are in municipal areas. The provincial Oil to Heat Pump program deadline has been extended to September 1, 2018.

Beginning May 1, 2018, the CVRD has launched an additional home energy incentive program using the funding allocated last year. This program will provide \$300 rebates to homeowners in all areas of the Comox Valley who conduct EnerGuide home evaluations prior to undertaking energy efficiency improvements on their existing homes. These evaluations will allow participants to better prioritize options for improving the efficiency of their homes and allow them to leverage existing BC Hydro and/or FortisBC rebate programs.

#### *Renewable energy infrastructure installation*

In 2017, \$25,720 of 2015 remaining carbon offset funds were allocated towards a renewable energy infrastructure project. The project is underway, and has thus far included the assessment of four CVRD facilities for solar PV. The highest ranked facility per this assessment is the water supply shop on Puntledge Road. In June, a 6.4kW ground-mount solar array will be installed on the property. Public outreach is planned as part of this project, including an open house event on May 29 where residents can learn more about solar PV and how it might work for them, and express their interest in being part of a bulk-buy purchase opportunity.

#### *ScrapIt program*

In 2015, \$6500 was allocated towards the promotion of the provincial ScrapIt program in the Comox Valley, including the provision of Comox Valley transit passes as a qualified program incentive. BC Transit's experience in offering transit passes as a qualified incentive in Greater Victoria has produced underwhelming results. This, in combination with the difficulty in establishing a Comox Valley based scrap vehicle collection point (the nearest current collection point is in Campbell River) suggests that the chances of a successful implementation of this program in the Comox Valley are limited. As such, this funding has been re-allocated towards supporting another mode-shift initiative, Commuter Challenge week in the Comox Valley. This event encourages Comox Valley residents to commute by alternative means of transportation, such as transit, cycling, walking & car-pooling. The benefits to the public of this event are reduced single occupancy vehicle traffic, and reduced household expenditures on motor fuel. The re-allocated funding will allow for enhanced community engagement in the lead up to Commuter Challenge week as well as promotion of the event in local media.

#### *Sports Centre heat reclaim project*

In 2017, the heat reclaim project at the Comox Valley Sports Centre was installed. The project has thus far displaced electrical demand formerly used to heat the swimming pool with heat captured from the arena's ice-making plant. By the fall of this year, it will also be displacing natural gas demand by pre-heating intake air on the air handling units that provide space heating to the various areas of the facility.

#### *Carbon offset purchase options*

Staff have reviewed carbon offset options currently available in the marketplace, as listed below. All are verified to the applicable standards as recommended by the "Becoming Carbon Neutral: Guidebook for BC Local Governments".

Cost / MT	Description
\$30 CAD	Household biogas, India / Windfarm, Turkey / Efficient cookstoves, Uganda
\$25 CAD	Quadra Island Forestland Conservation Project
\$20 CAD	Alternative energy, India / Darkwoods Forest, BC / Zambia Forest Carbon / WTE, Florida / Greenhouse fuel switch, BC
\$11 USD	GreenTrees Forestry, Arkansas
\$6 USD	Agricultural Methane Capture, Wisconsin
\$1.75 USD	Landfill gas capture and re-use, Minnesota

Details of the CVRD's 2017 carbon offset purchase must be included as part of the Climate Action Revenue Incentive Program (CARIP) Carbon Neutral Progress Survey, which must be completed and made public by June 1, 2018.

The CVRD has budgeted \$47,860 (based on \$25 per tonne) and staff are recommending the purchase of the lowest-cost option at \$1.75 (USD) per tonne from the East Central Landfill gas project in Minnesota. This option carries a total offset purchase cost of approximately \$4,500 dependent on CAD-USD exchange rate, and staff recommend allocating the remaining 2017 carbon offset funds (~\$43,000) towards the installation of solar photovoltaic infrastructure as part of the development of the new CVRD office building. This would result in the installation of a roughly 12kW solar array on the new building, producing 13,000 kWh of on-site renewable energy each year. The current design for the new office project does not include any solar energy as this component was removed as part of a cost cutting exercise. The use of the remaining offset funds would allow this component to be added back into the project scope which will in turn help the building achieve LEED Gold standards and also reduce long term operating costs.

#### *Corporate Energy Plan update*

In 2017, \$20,000 of remaining 2016 carbon offset funding was allocated to an update of the CVRD's Corporate Energy Plan. This update will examine the actions taken since the plan was completed in 2011, assess operational changes, and identify further opportunities for energy efficiency improvements in CVRD operations. Staff are tentatively scheduling this update as part of the work plan for 2019.

#### **Policy Analysis**

In 2007, the CVRD became a signatory to the British Columbia climate action charter which includes commitments for signatories to be carbon neutral by 2012. On March 1, 2011 the board approved the CVRD corporate energy plan and adopted a target of reducing greenhouse gas emissions (GHG) by 10 per cent below 2009 levels by 2015.

At the May 29, 2017 meeting of the CVRD board, the following motions were carried:

THAT the Comox Valley Regional District (CVRD) achieve carbon neutrality for 2016 with the purchase of 1919 metric tonnes of verified offsets from the Dempsey Ridge wind farm project at a cost of \$1.50 USD/MT, totalling approximately \$4,000 CAD;

AND FURTHER THAT remaining 2016 carbon offset funds be allocated to a region-wide home energy efficiency program (\$22,000) and an update to the 2011 CVRD corporate energy plan (\$20,000).

THAT \$25,720 in 2015 remaining carbon offset funding be re-allocated to renewable energy infrastructure projects.

AND FURTHER THAT staff be directed to proceed with a suitability assessment of select CVRD facilities for installation of solar photovoltaic panels, and subsequent installation on the best ranked facility.

#### **Options**

With respect to 2017 budgeted carbon offset funds, the following options are presented for the board's consideration:

1. Achieve carbon neutrality for 2017 with the purchase of 2003 metric tons of verified carbon offsets from the East Central Landfill Gas project at a cost of \$1.75 USD/MT, totalling approximately \$4,500 CAD. Remaining 2017 carbon offset funds will be allocated to a solar photovoltaic installation as part of the Comox Valley Regional Office building project.

2. Direct staff to allocate 2017 carbon offset funds in an alternate fashion

Staff are recommending option 1.

### **Financial Factors**

Beginning in 2012, the CVRD included in its financial planning process budget line items to meet its carbon neutral objectives, such that carbon emissions not reduced through the corporate energy plan are offset through the purchase of verified carbon offsets. A cost of \$25/tonne CO<sub>2</sub>e of estimated emissions is included in budgets for CVRD functions, based on the current BC carbon tax rate of \$30 tonne CO<sub>2</sub>e as well as the estimated cost of purchasing BC offsets.

For 2016 corporate emissions, CVRD staff were able to purchase verified offsets to reach carbon neutrality at a cost of \$1.50 USD/tonne on the international market. The remaining budgeted carbon offset funds have been used in local projects, including home energy efficiency incentive programs.

For 2017 emissions, confirmed at 2003 tonnes, \$47,860 is available to purchase offsets and/or fund local emissions reduction projects.

Measuring corporate energy use with the aim of reducing GHG emissions has additional benefits, including improved efficiency of corporate operations, which results in reduced utility costs.

### **Legal Factors**

The British Columbia climate action charter is not legally binding, but in being a signatory, the CVRD has the ability to access the CARIP. CARIP is a conditional grant that provides funding to signatories equivalent to one hundred per cent of the carbon taxes they pay directly. For 2017 operations, the CVRD's CARIP grant is approximately \$48,000.

### **Regional Growth Strategy Implications**

The Comox Valley regional growth strategy (RGS) reflects a long-term target of 80 per cent reduction of GHG emissions from 2007 levels by 2050, with a mid-term target of 50 per cent reduction by 2030.

The activities proposed in this report would work towards the following objectives of the RGS:

Objective 8A-5: Local governments should develop GHG reduction strategies for the operation, maintenance and construction of their buildings in the Comox Valley.

Objective 8-A: Reduce GHG emissions created by the building sector

### **Intergovernmental factors**

All three member municipalities in the Comox Valley have signed the British Columbia climate action charter to become a carbon neutral local government.

### **Interdepartmental involvement**

All CVRD functions are responsible for working toward reduced GHG emissions and carbon neutrality. Staff from the community services branch led the energy inventory with assistance from financial services.

### **Citizen/public relations**

The public is consistently concerned about climate change and it is important that the CVRD show leadership and seek opportunities to reduce energy usage and related costs. As part of the CARIP requirements, a public report on the CVRD's climate action is prepared annually.