

DATE: May 6, 2015

FILE: 6410-30/CV

TO: Chair and Directors
Electoral Areas Services Committee

FROM: Debra Oakman
Chief Administrative Officer

RE: Rural Comox Valley Community Climate Action Plan

Purpose

The purpose of this report is to present the Rural Comox Valley community climate action plan for approval.

Policy analysis

The Comox Valley Regional District (CVRD) has demonstrated its commitment to climate action in multiple ways, including signing on to the *Climate Action Charter* in 2007, and participation in the Federation of Canadian Municipalities (FCM) Partners for Climate Protection program. The Comox Valley regional growth strategy bylaw no. 120, 2010 and rural Comox Valley official community plan bylaw no. 337, 2014 have adopted a target of a 50 per cent reduction in community greenhouse gas emissions by 2030, and many of the policies and objectives within are intended to mitigate the impacts of climate change by working towards this target. As part of phase 1 of the rural CVRD sustainability strategy implementation program, \$20,000 was committed to development of a community climate action plan for CVRD electoral areas.

Executive summary

During public consultation for the revision of the rural Comox Valley official community plan (OCP), community interest in action to mitigate the impacts of climate change was a common theme. To build the policies and objectives in the adopted OCP into a plan for action, the CVRD has developed a community climate action plan for rural areas of the CVRD. Approval of this plan will also enable the CVRD to meet the Milestone 3 requirements of the FCM Partners for Climate Protection program for community emissions.

The action plan is guided by information in the community energy and emissions inventory (CEEI) and the partners for climate protection program criteria. The results of modeling community development have also been used to ensure that the GHG reduction target in the rural OCP can be reached. CEEI data for the rural CVRD indicates the majority of community GHG emissions are attributed to transportation and buildings. The two largest sections of the action plan describe a suite of activities that will enable community emissions reductions in the transportation and buildings sectors. Some of the key proposed actions include:

- Provide for holistic transportation planning within the CVRD in order to facilitate wide collaboration and stakeholder action.
- Dedicate funding to alternative transportation planning, design, construction and maintenance, focusing on “service centres” and multi modal infrastructure.
- Promote electric vehicle charging stations in new and existing homes and install electric vehicle charging stations in rural “service centres”.

- Continue the home energy incentive program and green building education program, and consider offering program incentives, with the aim of retrofitting 2 per cent of the existing building stock annually.
- Establish an incentive for achieving passive house design standards for new homes and major renovations.

To aid with moving the action plan items into an implementation program, staff have identified the BC Hydro Community Energy and Emissions Plan (CEEP) Quickstart program ([link](#)) as a viable option. This program is offered free of charge to communities with populations under 75,000, and consists of a facilitated one and a half day workshop with staff and elected officials, resulting in a prioritized four-year implementation schedule, with ongoing implementation support provided by the BC Community Energy Association. CVRD staff have engaged in discussions with the Community Energy Association regarding this program, and with board support, will work with them to schedule and host a workshop.

Recommendations from the chief administrative officer:

THAT the “CVRD Electoral Areas Community Climate Action Plan” attached as Appendix ‘A’ to the staff report dated May 6, 2015 be approved and submitted to the Partners for Climate Protection for recognition under Milestone 3.

AND FURTHER THAT staff work with the Community Energy Association to participate in the Community Energy and Emissions Plan Quickstart program.

Respectfully:

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Attachments: Appendix A – “CVRD Electoral Areas Community Climate Action Plan”

Comox Valley Regional District Rural Areas

Community Climate Action Plan

Partners for Climate Protection Milestone 3

April 6, 2015

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Introduction

This document serves as the Comox Valley Regional District Rural Areas Partners for Climate Protection Milestone 3 document. The CVRD is committed to action on climate change, as shown by our Regional Growth Strategy and Sustainability Strategy completed in 2010, and by the recent update to our Official Community Plan. We recognize our role in climate change mitigation and adaptation in our community and on the global scale. The rural areas include Unincorporated Areas A, B and C (Maps 1 and 2).

Impetus for Action on Climate Change

The Earth's climate is determined by its ability to both trap and reflect heat from the sun and to circulate it through the atmosphere and the oceans. When this capacity is altered, the Earth's climate can change. The term "climate change" refers to a change in the average state of the climate. Annual climate data has shown noticeable temperature highs and lows, but over longer periods of time there has been a discernible warming trend across the globe.

The global average temperature over the first decade of the 21st century was significantly warmer than any preceding decade on record over the past 160 years. The overwhelming majority of scientists agree that this is due to rising concentrations of heat-trapping greenhouse gases in the atmosphere caused by human activities. The increase in these gases alter the Earth's ability to naturally regulate the climate.

The impacts of climate change are becoming more apparent. There is increased species migration, extreme weather events are increasingly common and severe, and sea level is expected to rise significantly in most coastal areas over the coming decades, to name a few. The scientific community has concluded that some climate change is inevitable even if action is taken to reduce greenhouse gas emissions.

The *Stern Review on the Economics of Climate Change* was released in 2006. The report stresses that the benefits of strong and early action on climate change (i.e.: mitigation efforts) far outweigh the economic costs of inaction. The Review estimates that if action is not taken, base climate change costs and risks will be equivalent to losing at least 5% of global GDP each year, now and forever. If a wider range of risks and impacts is taken into account, damage estimates could rise to 20% of GDP or more. In contrast, the costs of action – reducing greenhouse gas emissions to avoid the worst impacts of climate change – can be limited to around 1% of global GDP each year.

For all these reasons and more, it is important that the Comox Valley take climate change mitigation actions (e.g.: conserving energy and reducing greenhouse gas emissions) and adaptation actions (e.g.: agricultural and infrastructure preparedness) to lessen and be prepared for expected climate change impacts.

CVRD Rural Areas Background

Local context

The Comox Valley Regional District (CVRD) comprises three electoral areas and three municipalities providing sustainable services for residents and visitors to the area. The members of the regional district work collaboratively on services for the benefit of the diverse urban and rural areas of the Comox Valley.

The geography of the CVRD includes rural agricultural, vibrant urban, meandering coastline and dramatic mountains. It covers an area of 2,425 square kilometres, of which 1,725 square kilometres is made up of land (the remainder is water), and serves a population of 63,538 according to the 2011 Census.

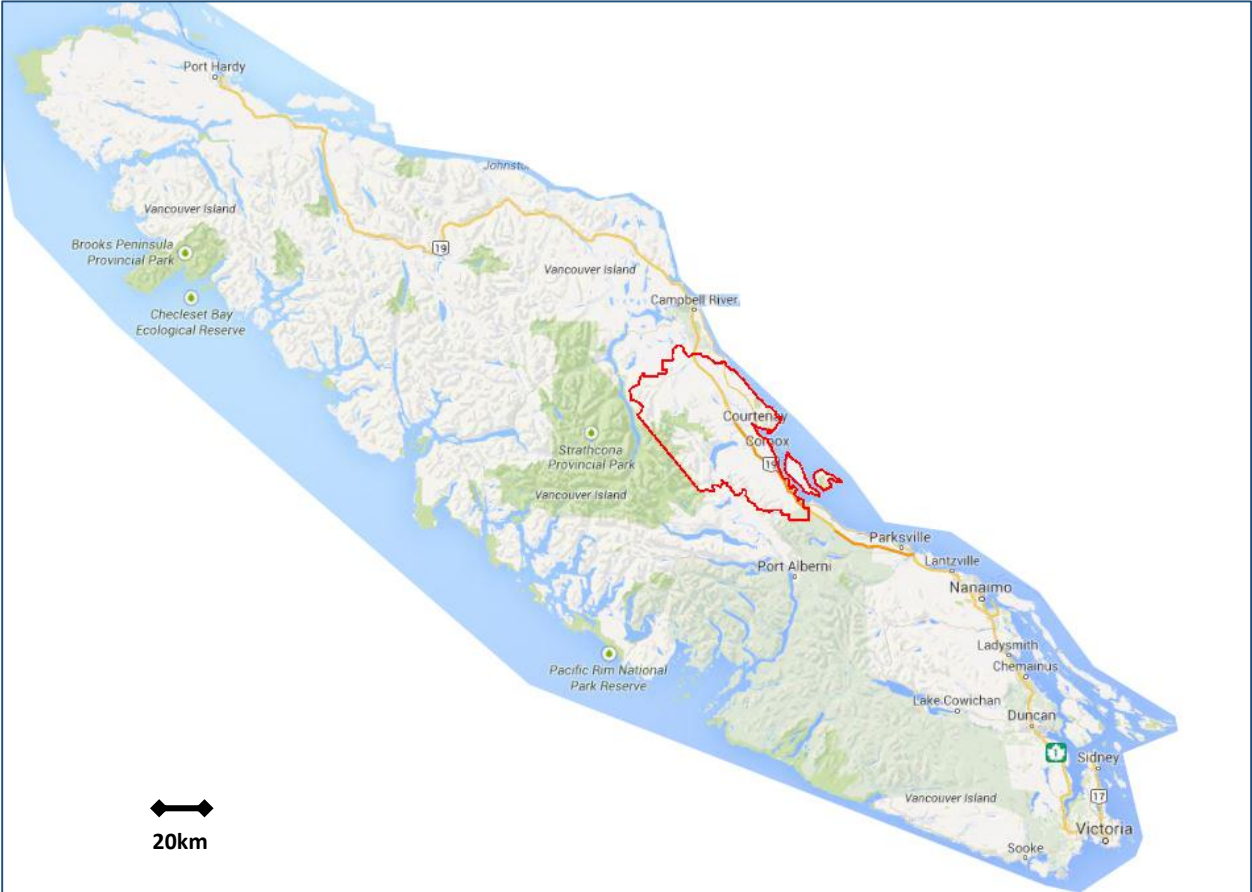
CVRD's borders extend from Cook Creek in the south to the Oyster River in the north, west to Strathcona Park, and east to take in Denman and Hornby Islands (Maps 1 and 2).

The CVRD was established in February 2008, following the restructuring of the Comox Strathcona Regional District into two: Comox Valley Regional District and the Strathcona Regional District. The boundaries of the Comox-Strathcona Regional Hospital District (CSRHD) are the same as those two combined regional districts and have the same board of directors as the CVRD and SRD combined.

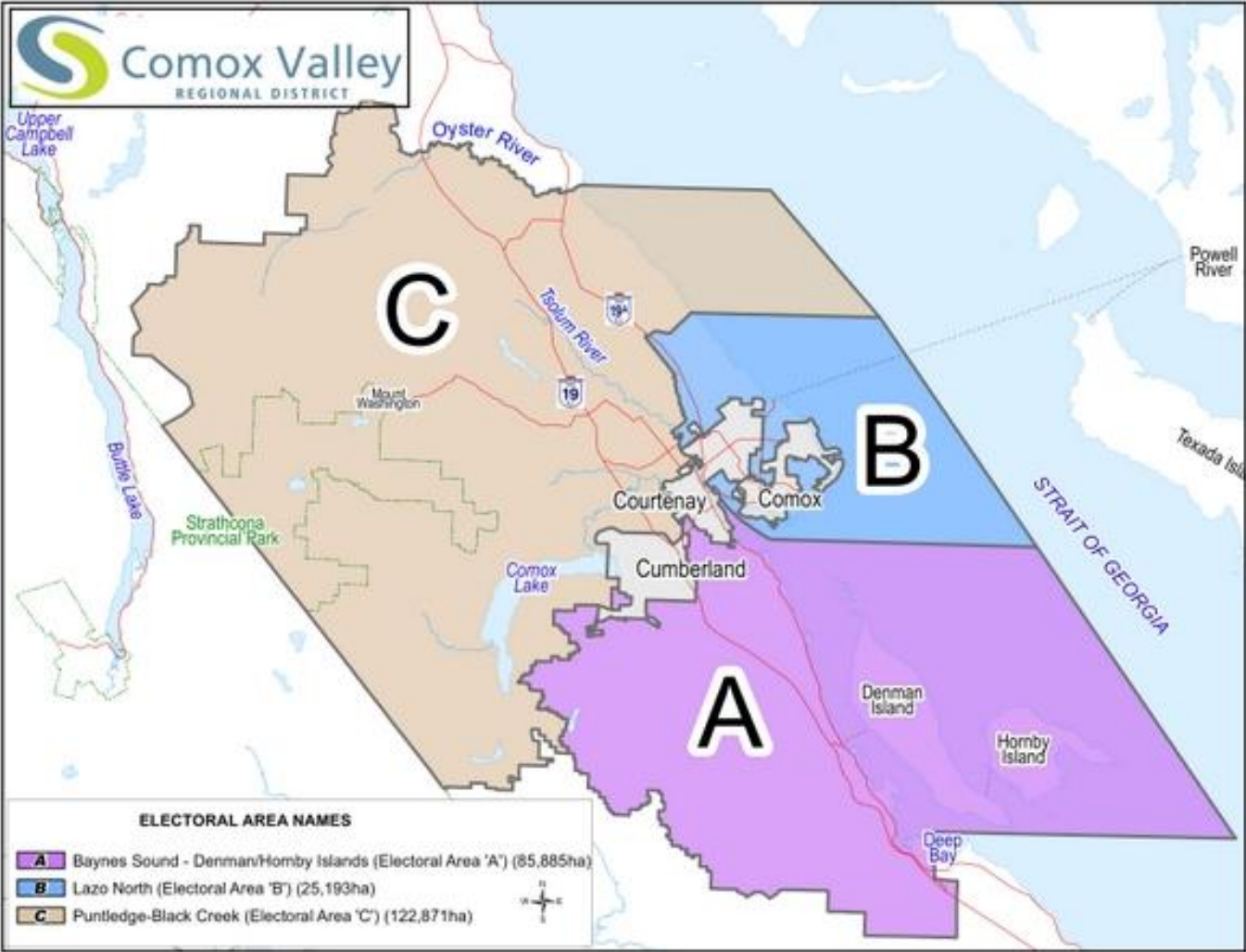
The CVRD rural areas include everything inside the CVRD boundary on Vancouver Island, excluding the K'ómoks First Nation reserve lands, Town of Comox, City of Courtenay and Village of Cumberland. This Climate Change Action Plan applies to these rural areas only. The current population of the Rural Areas is 22,163 (BC Stats).

The CVRD Rural Areas are expected to experience very little population growth, as almost all growth in the CVRD is being focused in the urban centres and settlement nodes. The consistent population coincides with very little land-use changes or housing development.

Map 1: Vancouver Island
CVRD indicated by red boundary.



Map 2: CVRD



Energy and Emissions in the CVRD

CEEI Data

British Columbia's Community Energy and Emissions Inventory (CEEI) collects data from GHG source sectors such as utilities, public agencies and other trusted partners, in order to calculate the size of each sector's carbon footprint in each local government jurisdiction across B.C. Additionally, the CEEI monitors supporting indicators from core sectors and other sources to help track the progress of local government efforts to reduce GHG emissions across their communities. The data represents energy consumption and greenhouse gas emissions from community activities in on-road transportation, buildings and solid waste. The CEEI data effectively achieves the requirements of PCP Milestone 2 for all BC communities.

The energy and emissions profile for the CVRD Rural Areas is depicted in the information in Appendix A: 2010 Community Energy and Emissions Inventory. The CEEI covers energy use and emissions resulting from transportation, building energy and solid waste activities. Highlights of this information include:

- The CVRD Rural Areas consumed 2,340,068 GJ of energy in 2010 and produced 109,540 tCO₂e.
- Buildings were responsible for 27% of emissions, transportation for 58% and solid waste for 15%.
- Gasoline consumption is responsible for 53% of emissions from all fuel sources.
- Residential heating oil is responsible for 50% of all building emissions.
- Trucks, vans and SUVs are responsible for 48% of vehicle emissions.
- Commercial vehicles are responsible for 18% of vehicle emissions.
- Between 2007 and 2010 overall vehicle emissions increased by almost 2,500 tCO₂e. This is largely due to an increase in light trucks, vans and SUVs, as well as an increase in commercial vehicle traffic.
- Between 2007 and 2010 overall building energy use decreased by over 32,000 GJ. Building emissions decreased by 1,416 tCO₂e.
- 1,284 tonnes more waste was produced in 2010 than 2007, resulting in 1,432 additional tCO₂e.

CVRD Rural Areas Energy and Emissions Predictions

Outside of the settlement nodes, population and land-use in the CVRD Rural Areas is projected to be somewhat similar decades from now as it is today. In a business as usual scenario, the energy consumption and GHG emissions production of the area would be similar to what they are currently (i.e.: as those documented in Appendix A). Some reductions are expected as a result of three factors universal to BC communities:

1. Increased fuel efficiency standards in automobiles;
2. Lower carbon content of fuels mandated by provincial and federal authorities; and
3. Increasing energy efficiency requirements in the BC building code.

These universal reductions will be helpful but do not reduce the responsibility of the CVRD and its residents to take a proactive approach to energy use and emissions production and will be insufficient in achieving the CVRD energy and emissions targets set out in the Sustainability Strategy and Regional Growth Strategy.

CVRD Rural Areas Energy Options

Given the low projected population growth for the foreseeable future, energy efficiency requirements in new housing will be of limited assistance in meeting targets in the rural areas outside of the settlement nodes. With low growth in these rural areas, the CVRD will largely depend on urban area policies and actions to achieve its GHG reduction goals. For the rural areas, emissions reductions will require different approaches.

Key among these will be energy and water efficiency measures and renewable energy production. The Canadian Wind Energy Atlas indicates that average wind speeds in Comox Valley are less than 20km/hr.¹ A 2000 BC Hydro province-wide wind power study also determined Comox Valley to have poor to fair wind speeds (<20km/hr).² The highest wind speeds are in the mountainous regions in the western part of CVRD. Typical wind farm-scale wind turbines activate at minimum wind speeds of 13km/hr, and operate optimally above 28km/hr.³ The wind speeds in the CVRD are generally too low for any sizeable wind farm operation or small-scale residential installations, although there may be some exceptions along the coast or higher up in the mountains.

Solar power shows some promise in the CVRD with an average photovoltaic (PV) potential of 1100kWh/kW (kilowatt hours per kilowatt of installed PV solar panels).⁴ The solar conditions in the valley are suitable for solar PV and solar hot water installations. The CVRD operates four solar PV installations in the rural areas, and data from the first full year of use has verified the Comox Valley's PV potential.

CEEI data for the rural areas of the CVRD indicates a large proportion of rural building emissions are attributed to home heating oil. Program options that offer lower emissions alternatives to home heating oil could assist with reducing GHG emissions in the rural building sector.

¹ Canadian Wind Energy Atlas for Vancouver Island: www.windatlas.ca/en/nav.php?field=EU&height=50&season=ANU&no=55

² BC Hydro British Columbia Predicted Wind Speed Map:

www.bchydro.com/content/dam/hydro/medialib/internet/documents/environment/pdf/environment_wind_energy_resource_map_pdf.pdf

³ Wind power information can be found on the Canadian Wind Energy Association website (CanWEA): www.canwea.ca

⁴ Natural Resources Canada PV potential and insolation mapping: <http://pv.nrcan.gc.ca>

CVRD Rural Areas Climate Change Policy Direction

CVRD has two provincial policy obligations related to addressing climate change. The first is the BC Climate Action Charter, to which CVRD is a signatory. It commits municipalities to three actions:

1. Being carbon neutral with respect to operations by 2012;
2. Measuring and reporting on community GHG emissions; and
3. Creating complete, compact, more energy efficient rural and urban communities.

The second requirement comes from the provincially-legislated Green Communities Act (Bill 27). In May 2008 this act amended the Local Government Act and Community Charter to include legal obligations to include GHG targets, and actions and policies for achieving those targets, in Official Community Plans (OCPs) by 2010. New powers are also assigned to municipalities to support mechanisms to reduce energy, personal vehicle trips and water consumption.

As part of the provincial Climate Action Revenue Incentive Program (CARIP), the CVRD publicly reports annually on its climate action plans and progress towards meeting the goals, objectives and targets that have been adopted.

The CVRD has made a strong commitment to climate action, including joining the Partners for Climate Protection program in 2006 and adopting a Climate Change Toolkit in 2008. In 2009-2010 the Comox Valley Sustainability Strategy was completed and has adopted a long-term target of 80 percent reduction of GHG emissions from 2007 levels by 2050, with a mid-term target of 50 percent reduction by 2030. The Regional Growth Strategy has adopted the same GHG reduction target as the Comox Valley Sustainability Strategy. In March 2011 the CVRD Board approved a corporate energy plan with a target of reducing corporate emissions by 10% by 2015.

Regional Growth Strategy Targets

The CVRD Regional Growth Strategy (RGS) sets direction on sustainability targets. Selected targets and their timelines are collected here.

Transportation

MEASURES	Baseline (2006)	TARGETS			Data sources
		Short-term (2015)	Medium-term (2020)	Long-term (2030)	
Increase transit mode share	1%	1.5%	2%	2.5%	BC Transit
Increase % of bicycle & pedestrian commuters	9%	10%	11%	20%	Census Canada

MEASURES	Baseline (2007)	TARGETS			Data sources
		Short-term (2015)	Medium-term (2020)	Long-term (2030)	
Reduce on-road transportation GHG emissions	199,311 CO ₂ e(t)	20% Reduction	33% Reduction	50% Reduction	CEEI

Water Conservation

MEASURES	Baseline (2008)	TARGETS			Data sources
		Short-term (2015)	Medium-term (2020)	Long-term (2030)	
Reduce daily total water consumption per capita	500-600 litres	20% reduction	30% reduction	40% reduction	CVRD water services

Waste

MEASURES	Baseline (2010)	TARGETS			Data sources
		Short-term (2015)	Medium-term (2020)	Long-term (2030)	
Increase solid waste diversion rate	48%	55%	65%	75%	CVRD
Reduce solid waste GHG emissions	61,605 CO2e(t)	20% Reduction	33% Reduction	50% Reduction	CEEI

Local Food Production

MEASURES	Baseline (2010)	TARGETS			Data sources
		Short-term (2015)	Medium-term (2020)	Long-term (2030)	
No net loss of zoned farmland in the ALR	23,059 hectares	= or > 23,059 hectares	= or > 23,059 hectares	= or > 23,059 hectares	Agricultural Land Commission, Local governments

Buildings

MEASURES	Baseline (2007)	TARGETS			Data sources
		Short-term (2015)	Medium-term (2020)	Long-term (2030)	
Reduce building GHG Emissions	33,662 tonnes CO2e	20% Reduction	33% Reduction	50% Reduction	CEEI

CVRD Sustainability Strategy Targets

The CVRD Sustainability Strategy designates high-level targets for the year 2050 in the areas of:

- Energy
 - -50% use per capita.
 - 50% of energy supplied by clean, renewable energy for new building energy demand.
- Water use (non-agricultural)
 - -50% per capita.
- Wastewater
 - 100% treated to tertiary or reuse standards.
- Ecosystems
 - 100% sensitive ecosystems and riparian areas conserved.
 - 70% degraded ecosystems are restored.
- Waste
 - 90% diversion rate.
 - All new landfills are designed to maximize methane capture and reuse.
 - All existing landfills are reviewed for viability of landfill gas capture and reuse by 2012.
- Local food
 - 60% of fruits and vegetables consumed are produced on Vancouver Island.
 - 100% of dairy consumed is produced locally.
 - 45% of protein products consumed are produced locally.
- Urban residents
 - 80% of CVRD residents.
- Transportation
 - 80% of residents live within a 400m walk of transit.
 - 100% of residents within 400 m of dedicated bicycle and pedestrian pathways.
 - 80% reduction in automobile related GHG emissions.
 - 24% mode share for private vehicles.
 - 30% small, low-speed mobility vehicles (total vehicle mode share: 54%).
 - 15% mode share for cycling.
 - 16% mode share walking.
 - 15% mode share for public transit.
- Jobs and school seats:
 - 80% located along major transit corridors and in designated employment centers.
- Housing
 - 60% of multi-family residential and attached in housing stock (units).
- Buildings
 - 95% of residential units built in 2008 or earlier have undertaken an energy retrofit or replacement to achieve a rating of EnerGuide 73 or above, or a 25% reduction in energy use.
- Infrastructure
 - 40% decrease in net energy intensity of infrastructure systems and equipment including water, wastewater, and street lighting, from 2008 levels.

In addition to these targets, the Sustainability Strategy details interim targets, usually for the years 2020 and 2030. The targets in the Sustainability Strategy and the Regional Growth Strategy are reflected in the policies and actions of the 2014 Rural Comox Valley Official Community Plan. These targets serve as sustainability performance measures and indicators.

CVRD Rural Areas Simple Energy and Emissions Projections

A simple energy and emissions projection was performed using the open source land-use energy and emissions model GHGProof to estimate a business as usual (BAU) Scenario and a Scenario in which energy saving and emissions reduction actions were taken (S2). In keeping with the Sustainability Strategy, a target year of 2050 was set for Scenario 2. The targets in the Sustainability Strategy (SS) and Regional Growth Strategy (RGS) were used to guide the following assumptions for both scenarios:

	BAU	S2	In S2, by 2050...
Population	23,156	23,156	The population remains unchanged, as per rural OCP direction.
Transportation			
Trip length	6.3	6.3	Avg. trip length does not change.
Mode share			
Vehicle	92.0%	54.0%	Vehicle trips decline 38%. (SS target: 54% mode share)
Walk	4.0%	16.0%	Walking trips increase 12%. (SS target: 16% mode share)
Cycle	2.0%	15.0%	Bike trips increase 13%. (SS target: 15% mode share)
Public transit	2.0%	15.0%	Transit trips increase 13%. (SS target: 15% mode share)
Private transport fuel efficiency (km/l)	9.8	9.8	Fuel efficiency standards increase for both. (Federal standard)
Private transport fuel emissions factor (kg CO ₂ e/l)	2.50	1.25	Fuel emissions factor decreases by half. (Due to electric vehicle uptake assumption)
Walking: # of dwellings <400m to CBD	4%	4%	# of dwellings close to CBD unchanged.
Cycling: # of dwellings <1000m to CBD	21%	21%	# of dwellings close to CBD unchanged.
Transit: # of dwellings <400m to transit stop	21%	24%	# of dwellings close to transit increases 15%. (SS and RGS targets of offering more transit stops and service)
Walking: Proportion of trips <400m to CBD	24%	27%	Walking trips to CBD increase 3%. (Related to SS mode share target)
Cycling: Proportion of trips <1000m to CBD	24%	27%	Cycling trips to CBD increase 3%. (Related to SS mode share target)
Transit: Proportion of trips <400m to transit stop	15%	17%	Transit trips increase 15% (Related to SS mode share target)
Public transit fuel efficiency (km/l)	30.0	30.0	Transit fuel efficiency increases for both. (Federal/Provincial standard)
Public transit fuel emissions factor (kg CO ₂ e/l)	1.92	1.92	Transit fuel emissions factor decreases for both. (Federal/Provincial standard)
Commercial transportation, annual fleet energy reduction	10%	10%	Energy reduction of 10% for both. (Federal/Provincial standard)

Agriculture and forest

Area of local farms

Intensity of production (hectares/capita)

Percent of production locally consumed

Area of forest

BAU	S2	In S2, by 2050...
23,342	23,342	Farm area (ALR) stays the same.
0.58	0.80	Production intensity increases by 0.22ha/capita. (SS and RGS local food targets)
5%	60%	Locally produced goods that are locally consumed increases 55%. (SS and RGS local food targets)
15,015	15,015	Forest area remains unchanged.

BuildingsElectricity emissions factor (kgCO₂e/GJ)

Energy mix- residential

Electricity

Gas

Heating oil

Propane

Wood

Energy mix- commercial

Electricity

Dwelling mix

Single Detached

Attached

Apartment<5 storeys

Apartment> 5 storeys

Residential and Commercial Building Energy – all dwelling and building types

Energy reduction for new buildings

% of existing buildings upgraded

Energy savings in existing buildings

Solid Waste (production rate unchanged)

Solid waste diversion rate

BAU	S2	In S2, by 2050...
6.90	4.00	The electricity emissions factor decreases. (Related to SS target for renewable energy)
54%	79%	
4%	1%	Residential gas use decreases to 1%. (SS & RGS building & energy targets)
18%	1%	Residential heating oil use decreases to 1%. (SS & RGS building & energy targets)
3%	1%	Residential propane use decreases to 1%. (SS & RGS building & energy targets)
21%	16%	Residential wood heating use decreases 5%. (SS & RGS building & energy targets)
100%	100%	Commercial building energy mix is unchanged at 100% electricity supplied.
94%	94%	# of housing types remain unchanged.
5%	5%	# of housing types remain unchanged.
1%	1%	# of housing types remain unchanged.
0%	0%	# of housing types remain unchanged.
25%	60%	New buildings are 35% more efficient. (SS & RGS building targets)
0%	80%	80% of current building stock is retrofitted. (SS & RGS building targets)
10%	50%	40% greater energy efficiency is achieved. (SS & RGS building targets)
58%	90%	Solid waste diversion increases by 32%. (SS target)

These assumptions result in a 24% GHG emissions reduction by 2020 and a 75% reduction by 2050 – close to the Sustainability Strategy’s 80% reduction goal.

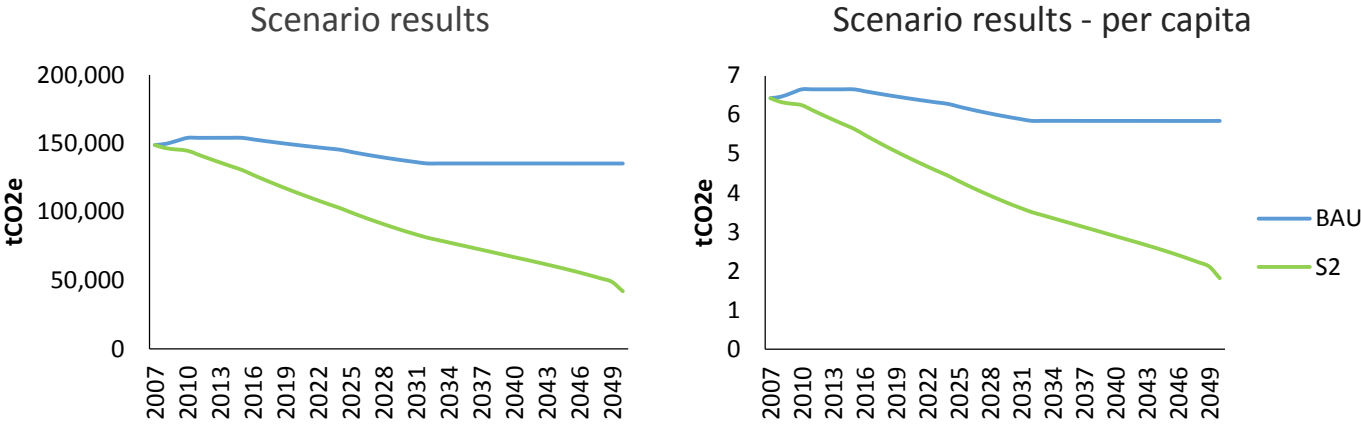


Figure 1: Emissions comparisons between a Business as Usual scenario and a scenario in which emissions reduction actions have been taken to meet CVRD’s energy and emissions targets (S2).

The modelling demonstrates that the Sustainability Strategy targets are ambitious. A variety of aggressive actions are required to achieve them, as presented in the Climate Change Action Plan on the following pages.

Climate Change Action Plan

The CVRD Climate Change Action Plan (CCAP) serves as the action plan for the targets set out by the Regional Growth Strategy and the Sustainability Strategy, and refined in the OCP. The Action Plan is aligned with the CEEI data, with actions in three major categories: transportation, land-use and buildings, and solid waste. Although not currently included in the CEEI data, agricultural and forestry related actions recommendations have also been made. In support of these recommendations, financing recommendations have also been made. *This document should be treated as a living document, with information added as it becomes available, especially for costs and potential funding sources.*

Transportation

Sustainability Strategy transportation targets for the year 2050:

- 80% of residents live within a 400m walk of transit.
- 100% of residents within 400 m of dedicated bicycle and pedestrian pathways.
- 80% reduction in automobile related GHG emissions.
- Modal split: 24% for private vehicles, 15% for cycling, 16% for walking, and 15% for public transit.

Regional Growth Strategy targets for the year 2030:

- Increase public transit use to 2.5% of transit mode share.
- Increase the percentage of bicycle and pedestrian commuters to 20%.
- Develop and maintain an inter-regional transportation system.

1	Provide for holistic transportation planning within the CVRD in order to facilitate wide collaboration and stakeholder action.			
Next Steps	i. Investigate feasibility of a trip diary survey in CVRD rural areas to provide baseline data on personal transportation patterns ii. Investigate rural taxibus transit system viability as part of the community bus service review iii. Continue and enhance the Alternative Transportation education program iv. Implement transportation demand management projects as identified in the Rural Comox Valley OCP, including service centres, public transit, carsharing, carpooling, active transportation, active and safe routes to school, cycling facilities, employer incentive programs v. Allocate existing staff resources to implementation of above programs			Timeline: Short-term: 0-5 years
Lead & Support	Partners	Costs	Potential Funding	Monitoring Metric
Community Services. Planning and Development Services Integrated Transportation Advisory Committee?	Integrated Transportation Advisory Committee BC Transit MOTI ICBC Community organizations	TBD	FCM, Gas Tax	Baseline: Modal split. Transportation GHGs. Monitor: Modal split. Transportation GHGs.

2

Partner with local not-for-profits and businesses (bike retailers and car dealerships) in encouraging uptake of the BC Scrap-It program (a car trade-in program that provides alternative transportation incentives).

Next Steps

- i. Establish partnerships with local community organizations, auto recyclers, car dealerships and bike shops.
- ii. Investigate feasibility of offering Comox Valley transit passes as an approved incentive.

Timeline:

Short-term: 0-5 years

Lead & Support

Community Services
Public Affairs and
Information Systems

Partners

Community organizations.
Car dealerships.
Bike Shops.
BC Scrap-It.

Costs

TBD
(estimated to be minimal)

Potential Funding

N/A

Monitoring Metric**Baseline:**

EV sales

Monitor:

Trade-in instances

3

Dedicate funding to alternative transportation planning, design, construction and maintenance, focusing on “service centres” and transit-integrated infrastructure.

Next Steps

- i. Establish a CVRD service to fund construction, operation and maintenance of alternative transportation infrastructure, including greenways/bikeways, EV charging infrastructure and rural transit infrastructure.
- ii. Inventory current and planned expenditures on active transportation infrastructure.
- iii. Assess active transportation projects in the Regional Sustainability Strategy, Regional Growth Strategy, Rural Comox Valley OCP and CVRD Parks and Greenways Plan and allocate budget to priority projects. Include in future local area plans for settlement nodes of Saratoga Miracle Beach, Union Bay and Mt Washington.

Timeline:

Short-term: 0-5 years

Lead & Support

Community Services
Financial Services.
Engineering Services.

Partners

N/A

Costs

TBD

Potential Funding

CVRD, MoTI BikeBC

Monitoring Metric**Baseline:**

Active transportation
infrastructure and
maintenance budget.

Monitor:

Change in active
transportation infrastructure
and maintenance budget.

4

Promote electric vehicle charging stations in new and existing homes and install electric vehicle charging stations in rural “service centres”.

Next Steps	<ul style="list-style-type: none"> i. Research and develop a policy to secure the installation of EV charging stations or ‘EV ready’ for new development, or recognize community EV charging station as a community amenity contribution during development application review. ii. Work with businesses and community groups in rural “service centres” (as identified in settlement node local area plans) to identify partnership opportunities for EV charging stations, and develop draft contract terms for EV charging station hosts. Alternatively, consider CVRD ownership of charging infrastructure. iii. Incentivize residential EV charging installations through bylaw amendments & rebates. iv. Develop and promote an electric vehicle awareness event. 	<p>Timeline: Short-term: 0-5 years</p>
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Lead & Support	Partners	Costs	Potential Funding	Monitoring Metric
<p>Planning and Development Services Community Services</p>	<p>Car dealerships. EV charging station companies. Fraser Basin Council. Plug in BC.</p>	<p>TBD</p>	<p>CVRD, BC Hydro, developers, residents</p>	<p>Baseline: Usage of existing EV charging stations. Number of EV charging stations - public and private. Fuel consumption baseline.</p> <p>Monitor: Number of EVs. Percentage change in fuel consumption per capita. Percentage change in EV charging station usage. Number of charging stations.</p>

5

Installation of cycling & pedestrian infrastructure, including Bikeways, Roadside & Off-Road Greenways, cycling storage and signage.

Next Steps	i. Install cycling network improvements as identified in item #3 ii. Identify and work with partners to install cycling storage facilities at rural “service centres” and other community hubs.			Timeline: Short-term: 0-5 years
Lead & Support Engineering Services. Planning and Development Services.	Partners Community organizations. MoTI.	Costs TBD	Potential Funding CVRD, MoTI	Monitoring Metric Baseline: Kilometres of trail. Number of facilities. Cycling modal split. Monitor: Kilometres of trail. Number of facilities. Cycling modal split.

6

Installation of rural transit infrastructure, including ‘park and ride’, ‘bike and ride’, and bus stop and shelter locations.

Next Steps	i. Identify ‘park and ride’ locations in “service centres” as part of local area planning process in settlement nodes, and determine ownership & operations model. ii. Per direction from Comox Valley Transit service analysis, identify rural bus stop locations, based on rural transit routes, residential housing densities & BC Transit rural bus stop guidelines.			Timeline: Short/medium-term: 0-10 years
Lead & Support Community Services. Planning and Development Services. Engineering Services.	Partners MoTI. BC Transit	Costs TBD	Potential Funding CVRD, MoTI, BC Transit	Monitoring Metric Baseline: Number of facilities. Transit modal split. Monitor: Number of facilities. Transit modal split.

Land-use, Buildings and Infrastructure

Sustainability Strategy targets for the year 2050:

- Energy
 - -50% use per capita.
 - 50% of energy supplied by clean, renewable energy for new building energy demand.
- Buildings
 - 95% of residences built before 2009 have undertaken energy retrofits or replacements to achieve a rating of EnerGuide 73 or above, or a 25% reduction in energy use.
- Infrastructure
 - 40% decrease in net energy intensity of infrastructure systems and equipment including water, wastewater, and street lighting, from 2008 levels.

Regional Growth Strategy targets for the year 2030:

- 90% of new housing units will be in core settlement areas.
- 40% water use reduction per capita.
- 90% of new growth is serviced by sanitary sewer.

1	<p>Continue the Home Energy Incentive Program and Green Building Education Program, and consider offering program incentives for water heater upgrades, energy efficient window replacements, heat pump retrofits, low flow toilets, insulation upgrades and solar photovoltaic and solar hot water energy systems, with the aim of retrofitting 2% of the building stock annually (~185 homes per year; ~75% of building stock by 2050).</p>			
Next Steps	<p>i. Investigate opportunities in home energy products, bulk purchasing and grant availability. ii. Partner with local organizations and utilities in the delivery of audit and retrofit programs. iii. Consider offering financing via a Green Revolving Loan financing mechanism, described below. vi. Review all building renovation permit applications for energy efficiency improvements</p>			<p>Timeline: Short-term: 0-5 years</p>
<p>Lead & Support</p> <p>Building Services. Planning and Development Services. Community Services.</p>	<p>Partners</p> <p>Community partners and financial organizations. BC Hydro. Fortis BC. Elemental Energy Advisors. Building Supply Retailors.</p>	<p>Costs</p> <p>\$100,000/year (185 homes/year at \$500/home)</p>	<p>Potential Funding</p> <p>Government, financial institution or other organization grants. CVRD.</p>	<p>Monitoring Metric</p> <p>Baseline: Number of home energy upgrades to date. Number of homes.</p> <p>Monitor: Number of home energy upgrades. Grant funding. Number of energy system purchases.</p>

2

Periodically review the OCP and other bylaws and consider bylaw amendments that encourage GHG reductions

Next Steps	<ul style="list-style-type: none"> i. Create a development permit area for GHG reductions and water conservation, potentially focussed on Union Bay and Saratoga Beach settlement nodes ii. Research a renewable energy policy framework (e.g.: all new developments must generate 10% of their required energy on-site) iii. Develop zone in settlement node to offer additional density in return for community amenity contributions such as district energy 	Timeline: Short-term: 0-5 years Medium-term: 5-10 years		
Lead & Support	Partners	Costs	Potential Funding	Monitoring Metric
Planning and Development Services. Building Services. Engineering Services.	Developers	TBD	CVRD.	Baseline: Are any of these policies in place? Monitor: How many of these policies have been implemented?

3

Review and update DP Guidelines, Zoning Bylaw, and other bylaws for flood risk, sea level rise (SLR), wildfire risk and extreme weather event risk. (climate change adaptation measure)

Next Steps	<ul style="list-style-type: none"> i. Develop Climate Change Resiliency Plan that includes projections on climate change impacts, including sea level rise, wildfire hazard & extreme weather events such as intense rain and wind storms ii. Review fire hazard mapping and guidelines and consider land use implications iii. Review and update DP guidelines and zoning bylaws. iv. Consider climate-related drought requirements for new development including use of alternative sources of water (rainwater, greywater) to meet outdoor water demand and landscaping using drought-resistant native plants 	Timeline: Short-term: 0-5 years		
Lead & Support	Partners	Costs	Potential Funding	Monitoring Metric
Planning and Development Services	MOE		CVRD	Yes/No

4

Review and revise, if needed, CVRD subdivision and infrastructure standards to offset climate change impacts and reduce energy consumption in design, construction and maintenance including:

- i. Active transportation**
- ii. Service levels and subdivision standards**
- iii. Development Cost Charges**
- iv. Green infrastructure standards including green roofs, open storm water channels, ecological wastewater treatment ponds, rain gardens and limiting total impervious area**
- v. Landscaping standards including xeriscaping, planting of drought-tolerant varieties and species appropriate to local soils and adaptable to future climate**
- vi. Energy efficient municipal infrastructure and utilities**

Next Steps

- i. Review associated plans and standards.
- ii. Research green infrastructure standards.
- iii. Ensure that standards align with updated policies and bylaws.
- iv. Amend CVRD engineering design, construction and operations RFP templates to include clauses relating to greenhouse gas reductions, district energy, integrated resource recovery, energy efficiency and climate change adaptation, and amend proposal ranking criteria to allocate points to proposals based on their merits in these criteria.

Timeline:

Short-term: 0-5 years

Lead & Support

Engineering Services.
Planning and Development
Services.
Community Services.

Partners

BC Transit.
Local municipalities.
Consultants.

Costs

N/A

Potential Funding

ICBC, MoTI

Monitoring Metric

Baseline:

Current infrastructure elements.

Monitor:

Change in infrastructure elements, effectiveness of sustainable infrastructure elements.

5				
Establish an incentive of achieving Passive House design standard for new homes and major renovations.				
Next Steps	i. Review effectiveness and lessons learned from similar policy implementation in other jurisdictions. ii. Revise bylaws per updated BC Building Act. iii. Offer prioritized application review and reduced application fees for new homes and major renovations engineered to Passive House design standard.			Timeline: Short-term: 0-5 years
Lead & Support	Partners	Costs	Potential Funding	Monitoring Metric
Building Services. Engineering Services. Planning and Development Services.	Developers. Community organizations.	N/A	N/A	Baseline: Number of developments achieving a green building standard. Monitor: Number of developments registered for the adopted green building standard.
6				
Continue to implement the Water Efficiency Plan for rural homes connected to municipal water systems.				
Next Steps	i. Monitor effectiveness of the Water Efficiency Plan and modify approach where necessary (ie identify and pursue partnering opportunities for water-efficient appliance incentives, require rezoning applications to include rainwater and/or greywater re-use). ii. Include linkages to Water Efficiency Plan during Local Area Plan development			Timeline: Short-term: 0-5 years
Lead & Support	Partners	Costs	Potential Funding	Monitoring Metric
Community Parks. Building Services. Community Services.	Developers. School districts. Landscape companies. Resident/Community Associations. Building Supply Retailors.	N/A	N/A BC Hydro	Baseline: Water use per capita. Monitor: Change in water use per capita.

7

Develop a Community Energy and Emissions Plan with program implementation details and costing components.

<p>Next Steps</p>	<p>i. Sign up for BC Hydro’s Community Energy and Emissions Plan Quickstart program (https://www.bchydro.com/powersmart/business/programs/sustainable-communities/ceep/quickstart.html)</p>	<p>Timeline: Short-term: 0-5 years</p>
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Lead & Support

Community Services.

Partners

BC Hydro

Costs

N/A

Potential Funding

BC Hydro

Monitoring Metric

Yes/No

Waste

Sustainability Strategy targets for the year 2050:

- 90% diversion rate.
- All new landfills are designed to maximize methane capture and reuse.
- All existing landfills are reviewed for viability of landfill gas capture and reuse by 2012.
- 100% wastewater treated to tertiary or reuse standards.

Regional Growth Strategy targets for the year 2030:

- 75% solid waste diversion rate.

1	Reduce GHG emissions associated with landfilling of organic waste by offering organics diversion options for rural CVRD residents.			
Next Steps	i. Estimate the amount of organic matter currently going to landfill. ii. Estimate the costs and benefits of a landfill organics collection service. iii. Investigate the costs and uptake of offering subsidized backyard composters. iv. Investigate offering curbside organics collection in the Royston service area			Timeline: Short term: 0-5 years
Lead & Support	Partners	Costs	Potential Funding	Monitoring Metric
Community Services. Engineering Services (CSWM)	Compost education centres. Community organizations.	TBD	TBD	Baseline: Landfill tonnage. Monitor: Landfill tonnage. Backyard composters purchased.

2

Continue to implement the recommendations of the Integrated Resource Recovery Options for the Comox Valley Regional District report.

Next Steps	i. Estimate integrated resource recovery project options for anticipated developments, including district energy and reclaimed water. ii. Continue to investigate opportunities for energy production through methane capture from landfills, cow manure and organic waste. iii. Investigate integrated resource recovery options for CVRD infrastructure during maintenance and upgrade planning, with a focus on micro hydro and waste heat utilization options.			Timeline: Short-medium-term: 0-10 years.
Lead & Support Solid Waste Services. Sewer Services. Water Services.	Partners BC Hydro. Fortis BC. Farmers.	Costs TBD	Potential Funding N/A	Monitoring Metric Yes/No

3

Plan for tertiary wastewater treatment upgrades, beginning with the outputs from the South Sewer Project.

Next Steps	i. Use the information gathered and the implementation plan created as a result of the South Sewer Project process to inform a plan for future tertiary wastewater treatment upgrades and options for a reclaimed water distribution system.			Timeline: Medium-long-term: 10-15 years.
Lead & Support Sewer Services. Water Services.	Partners N/A	Costs TBD	Potential Funding N/A	Monitoring Metric Yes/No

Agriculture

Sustainability Strategy targets for the year 2050:

- 60% of fruits and vegetables consumed are produced on Vancouver Island.
- 100% of dairy consumed is produced locally.
- 45% of protein products consumed are produced locally.

Regional Growth Strategy targets for the year 2030:

- No net loss of zoned farmland in the ALR, equal to or greater than 23,059 hectares
- No net loss of aquaculture farm tenure, 470 hectares
- Improve farm access to irrigation water by 25%
- Increase farming activity to \$55,000,000 in farm receipts and to 9,071,847kg shellfish production.
- Raise awareness of the regional importance of the local food system

1	Monitor efforts to enhance sustainable agricultural activities in the Comox Valley and facilitate where needed.			
Next Steps	i. Perform an inventory of existing and planned agricultural efforts by the CVRD, community groups, and local and regional farming organizations. ii. Engage the Agricultural Planning and Advisory Committee on sustainable agricultural efforts and coordination. iii. Monitor the uptake and successes of application of the Environmental Farm Plan. iv. Consider supporting farmers in on-site water storage and methane gas capture from dairy cow manure programs. v. Consider establishing an agricultural development centre - an entity that trains farmers, makes farmland available and produces and sells local food. vi. Coordinate with MOA to keep the agricultural land use inventory up to date. vii. Perform an agricultural processing services and facilities assessment with the intent of improving the opportunity, quality and quantity of local value-added food products.			Timeline: Short-mid-term: 0-10 years.
Lead & Support	Partners	Costs	Potential Funding	Monitoring Metric
Planning and Development Services. Public Affairs and Information Systems.	Farmers. Ministry of Agriculture.	TBC	Investment Agriculture Foundation.	Yes/No

Financing

1 Establish a Green Revolving Loan Fund

Next Steps	i. Review Federation of Municipalities guidelines on establishing a Green Revolving Loan Fund. ii. Investigate the funding mechanisms to seed the fund (e.g.: property taxes, North Cowichan example)	Timeline: Short-term: 0-5 years
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Lead & Support Finances. Transit and Sustainability Services.	Partners Business development organizations. Community organizations. Community Futures.	Costs N/A	Potential Funding N/A	Monitoring Metric Yes/No Number of grants awarded. Number of projects completed.
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2 Establish the CVRD Community Carbon Marketplace, as per the recommendations of Cowichan Energy Alternatives Society.

Next Steps	i. Work with Cowichan Energy Alternatives and local partners to establish the marketplace. ii. Offer preliminary assessments to potential projects to determine their feasibility.	Timeline: Short-term: 0-5 years
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Lead & Support Finances. Transit and Sustainability Services.	Partners Cowichan Energy Alternatives. Business development organizations. Community organizations.	Costs TBD	Potential Funding TBD	Monitoring Metric Yes/No
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Conclusions

Through this suite of actions, the CVRD will pursue its sustainability targets. Full greenhouse gas and energy modelling will be done in the near future for community-side energy use and emissions production. The modelling will add rigour to the existing Community Energy and Emissions Inventory data by using actual data wherever available and adding energy and emissions considerations such as forestry, agricultural and liquid waste carbon sinks and sources. The modelling will more accurately determine the energy and emissions effects of the sustainability actions recommended.

Staff time and Regional District capital resources will be used to implement many of these actions. The CVRD has already approved budgets and begun work on several items, as described in Appendix B. The CVRD has also already completed a Corporate Energy Action Plan (2011) to address corporate-side energy and emissions.

References

Regional Growth Strategy (2010)

<http://www.comoxvalleyrd.ca/EN/main/community/regional-strategies/regional-growth-strategy.html>

Regional Growth Strategy 2012 Progress Report

<http://www.comoxvalleyrd.ca/EN/main/community/regional-strategies/regional-growth-strategy/annual-report.html>

Sustainability Framework (2010)

<http://www.comoxvalleyrd.ca/EN/main/community/regional-strategies/sustainability-strategy.html>

2014 Official Community Plan

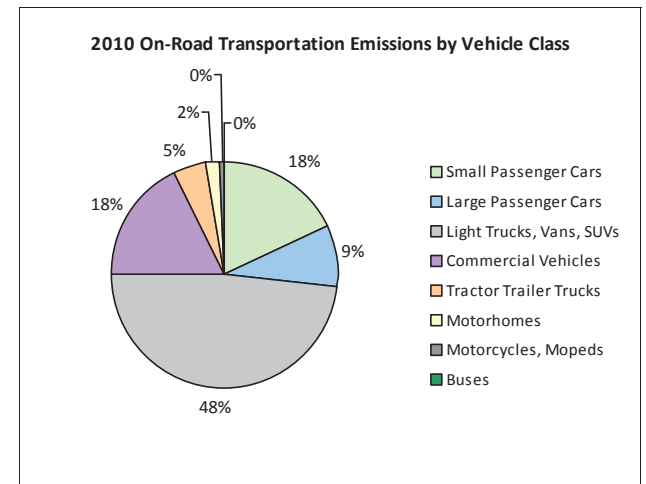
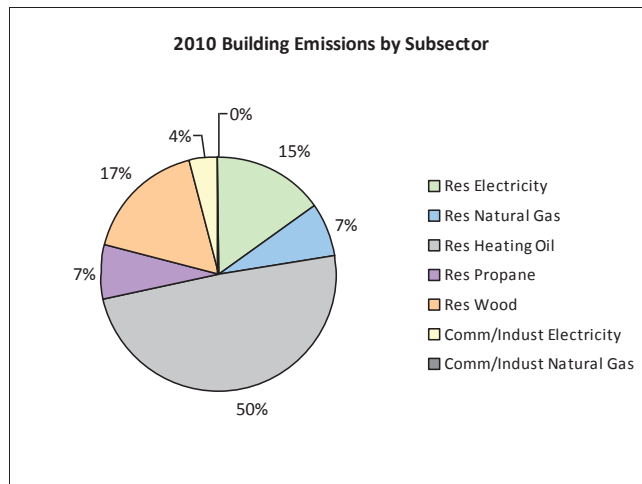
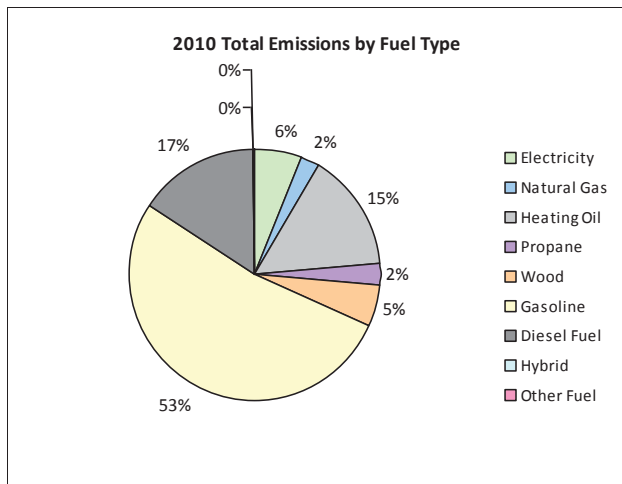
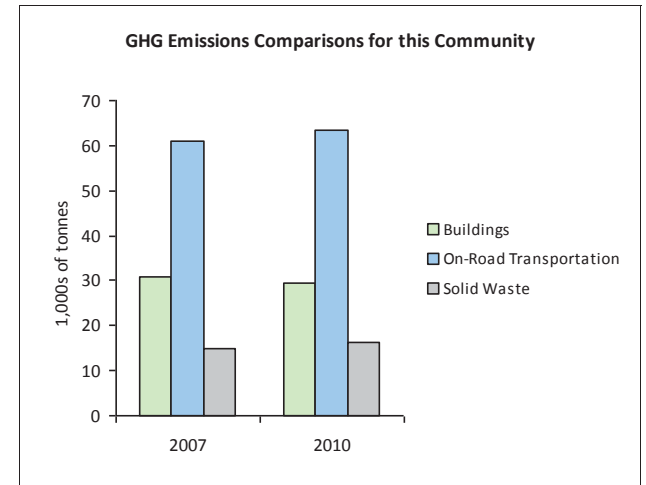
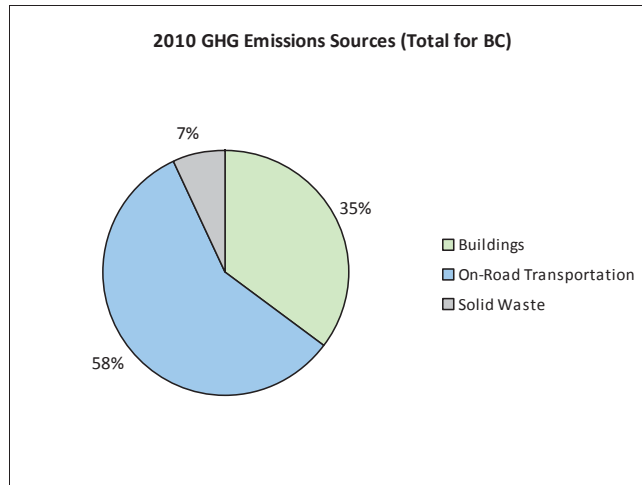
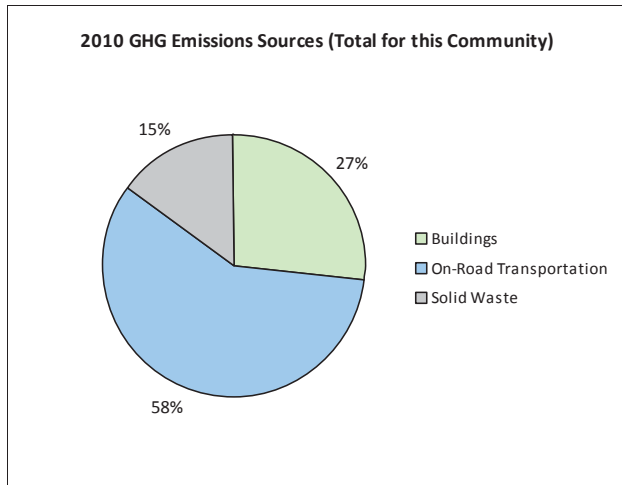
http://www.comoxvalleyrd.ca/assets/Department/Documents/20150114_337_Rural_CV_OCP_Schedule_A.pdf

Appendix A: CVRD CEEI Data



Comox Valley Regional District Unincorporated Areas 2010 Community Energy and Emissions Inventory

Monitoring and reporting on progress towards greenhouse gas emissions reduction targets



Comox Valley Regional District Unincorporated Areas
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)	C02e (t)	Connections	Consumption	Avg VKT (km)	Energy (GJ)	C02e (t)
Small Passenger Cars	Hybrid			16,400	135	9	11	10,045 L	18,200	352	22
	Gasoline	3,217	4,413,705 L	15,200	154,481	10,552	3,313	4,613,292 L	15,700	161,465	10,409
	Diesel Fuel	239	401,529 L	26,200	15,378	1,096	241	385,522 L	24,400	14,765	1,022
Large Passenger Cars	Hybrid	18	20,775 L	21,600	727	49	44	51,700 L	21,200	1,809	115
	Gasoline	1,476	2,420,200 L	14,800	84,706	5,782	1,390	2,292,582 L	15,200	80,239	5,171
	Diesel Fuel	36	50,670 L	14,900	1,941	138	47	55,787 L	12,700	2,136	147
Light Trucks, Vans, SUVs	Hybrid			22,000	362	24	13	24,003 L	23,400	839	53
	Gasoline	4,970	11,356,257 L	16,700	397,469	27,316	5,450	12,774,203 L	17,500	447,097	29,079
	Diesel Fuel	352	740,905 L	12,000	28,377	2,017	267	614,733 L	14,200	23,544	1,627
	Other Fuel	42	81,595 L	11,800	2,065	125	27	49,722 L	10,700	1,259	76
Commercial Vehicles	Gasoline	452	1,206,749 L	16,400	42,237	2,835	515	1,393,667 L	17,200	48,779	3,117
	Diesel Fuel	687	2,299,044 L	19,000	88,054	6,186	847	3,102,599 L	21,100	118,828	8,100
	Other Fuel	32	67,371 L	12,300	1,704	104	24	48,341 L	11,700	1,224	75
Tractor Trailer Trucks	Diesel Fuel	91	1,218,235 L	31,900	46,659	3,278	83	1,140,223 L	30,900	43,672	2,978
Motorhomes	Gasoline	133	307,847 L	16,400	10,774	718	142	326,548 L	16,600	11,429	726
	Diesel Fuel	80	237,238 L	16,700	9,086	639	67	207,661 L	16,600	7,954	542
Motorcycles, Mopeds	Gasoline	323	71,216 L	5,300	2,493	166	394	101,622 L	6,000	3,558	224
Buses	Gasoline			17,500	520	34		16,700	688	44	
	Diesel Fuel			21,100	402	29		19,900	532	36	
Totals		12,148	24,893,336 L	16,022	887,570	61,097	12,875	24,893,336 L	16,771	970,169	63,563

Buildings		2007				2010			
		Connections	Consumption	Energy (GJ)	C02e (t)	Connections	Consumption	Energy (GJ)	C02e (t)
Residential	Wood	N/A	260,095 GJ	260,095	5,270	N/A	251,781 GJ	251,781	5,101
	Heating Oil	N/A	216,892 GJ	216,892	15,289	N/A	209,960 GJ	209,960	14,359
	Propane	N/A	37,376 GJ	37,376	2,280	N/A	36,181 GJ	36,181	2,207
	Natural Gas	875	46,476 GJ	46,476	2,332	917	43,401 GJ	43,401	2,177
	Electricity	11,350	186,832,715 kWh	672,597	4,670	11,689	183,151,752 kWh	659,346	4,579
Commercial/Small-Medium Industrial	Natural Gas	84		0	0	77		0	0
	Electricity	993	46,931,965 kWh	168,955	1,173	1,070	47,008,264 kWh	169,230	1,175
Totals		13,302		1,402,391	31,014	13,753		1,369,899	29,598



Comox Valley Regional District Unincorporated Areas

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)	C02e (t)	Connections	Consumption	Energy (GJ)	C02e (t)	
Community Solid Waste	Solid Waste	0	14,559 t	N/A	14,947	0	15,843 t	N/A	16,379
Totals		0			14,947	0			16,379

Totals for Transportation, Buildings and Solid Waste

Fuel Type	2007 (Population: 22,857)			2010 (Population: 23,156)		
	Consumption	Energy (GJ)	C02e (t)	Consumption	Energy (GJ)	C02e (t)
Hybrid	20,775 L	1,224	82	85,748 L	3,000	190
Gasoline	19,775,974 L	692,680	47,403	21,501,914 L	753,255	48,770
Diesel Fuel	4,947,621 L	189,897	13,383	5,506,525 L	211,431	14,452
Other Fuel	148,966 L	3,769	229	98,063 L	2,483	151
Wood	260,095 GJ	260,095	5,270	251,781 GJ	251,781	5,101
Heating Oil	216,892 GJ	216,892	15,289	209,960 GJ	209,960	14,359
Propane	37,376 GJ	37,376	2,280	36,181 GJ	36,181	2,207
Natural Gas	46,476 GJ	46,476	2,332	43,401 GJ	43,401	2,177
Electricity	233,764,680 kWh	841,552	5,843	230,160,016 kWh	828,576	5,754
Solid Waste	14,559 t	0	14,947	15,843 t	0	16,379
Grand Totals		2,289,961	107,058		2,340,068	109,540

Comox Valley Regional District Unincorporated Areas
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	11,535	90	8,340	90	8,070	88
Semi-Detached House	85	1	105	1	310	3
Row House	30	0	25	0	35	0
Apartment, Duplex	145	1	55	1	85	1
Apartment, 5 storeys or higher	0	0	5	0	5	0
Apartment, under 5 storeys	85	1	70	1	105	1
Other Single Attached House	35	0	15	0	5	0
Movable Dwelling	855	7	640	7	585	6

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	10,480	79	7,345	84	7,470	83
Car, Truck, Van as Passenger	1,050	8	570	7	615	7
Public Transit	190	1	20	0	100	1
Walked	645	5	360	4	270	3
Bicycle	315	2	215	2	215	2
Motorcycle	35	0	10	0	65	1
Taxicab	10	0	0	0	0	0
Other Method	530	4	250	3	245	3

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	13,958	8
Local Parks	1,058	1
Agricultural Land Reserve	22,390	13
Other land use	129,472	78
Total Parks and Protected Area	15,015	9
Total Land Area	166,878	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	13,958	8
Local Parks	1,058	1
Agricultural Land Reserve	22,390	13
Other land use	129,472	78
Total Parks and Protected Area	15,015	9
Total Land Area	166,878	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.



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2010 Community Energy and Emissions Inventory
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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,