



2016 Climate Action Revenue Incentive Program (CARIP) Public Report

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2016 Introduction

The Cowichan Valley Regional District has completed the 2016 Climate Action Revenue Incentive Program (CARIP) Public Report as required by the Province of BC. The CARIP report summarizes actions taken in 2016 and proposed for 2017 to reduce corporate and community-wide energy consumption and greenhouse gas emissions (GHG) and reports on progress towards achieving carbon neutrality.

	2013	2014	2015	2016
Emissions (tonnes CO₂e)				
Emissions from Services delivered directly by CVRD	1428	1312	1148	1135
Emissions from Contracted Services	246	330	362	523
Total Emissions	1674	1642	1510	1,658
Offsets (tonnes CO₂e)				
Energy Efficient Building Retrofits and Fuel Switching*	(28.8)	(27.3)	(27)	(26.7)
Household Organic Waste Composting**	(1645.2)	(1614.7)	(1483)	(1631.3)
Total Offsets	(1674)	(1642)	(1510)	(1,658)
CORPORATE GHG EMISSIONS BALANCE (tonnes CO₂e)				
	0	0	0	0

*see separate report: "Cowichan Station Hub Energy Efficient Building Retrofit and Fuel Switching: Carbon Credits for Carbon Neutral Reporting 2016"

**see separate report "Yard and Garden Organics Diversion: Carbon Credits for Carbon Neutral Reporting 2016"

2016 BROAD PLANNING ACTIONS

Broad Planning Actions

Broad Planning refers to high level planning that sets the stage for GHG emissions reductions, including plans such as Official Community Plans, Integrated Community Sustainability Plans, Climate Action Plans or Community Energy Emissions Plans. Land use planning that focuses on Smart Growth principles (compact, complete, connected, centred) plays an especially important role in energy and GHG reduction.

Corporate Actions Taken in 2016	
	Complete 2014-2018 Strategic Plan to set the course for CVRD Board and staff, providing a roadmap and strategic focus areas to address challenges and opportunities.
	Endorsed the Strategic Energy Management Plan.
Corporate Actions Proposed for 2017	
	Regional Integrated Planning Strategy to be developed under the banner of Cowichan 2050

Broad Planning	
What is (are) your current GHG reduction target(s)?	33% Reduction by 2020 and 80% reduction by 2050 below 2007 levels.
Has your local government used the Community Energy and Emissions Inventory (CEEI) to measure progress?	Yes
What plans, policies or guidelines govern the implementation of climate mitigation in your community?	
<ul style="list-style-type: none"> • Community Energy and Emissions (CEE) Plan • Climate Action Plan • Integrated Community Sustainability Plan • Official Community Plan (OCP) • Regional Growth Strategy (RGS) • Do not have a plan 	Yes Yes No Yes No No
Does your local government have a corporate GHG reduction plan?	Yes
Does your local government have a climate reserve fund or something similar?	No

2016 BUILDINGS AND LIGHTING ACTIONS

Building and Lighting Actions

Low-carbon buildings use the minimum amount of energy needed to provide comfort and safety for their inhabitants and tap into renewable energy sources for heating, cooling and power. These buildings can save money, especially when calculated over the long term. This category also includes reductions realized from energy efficient street lights and lights in parks or other public spaces.

Community-Wide Actions Taken in 2016

	Ornamental street lighting energy use assessment and preparation of a business case for LED upgrades
	CVRD provided support for the Cobble Hill Hall Upgrades: building envelope, lighting systems and geothermal heat pump.
Community-Wide Actions Proposed for 2017	
	Ornamental street lighting LED upgrades at select systems.

Corporate Actions Taken in 2016	
	Island Savings Centre: Completed the ice resurfacers snow melt pit, except for heat exchanger, repurposed oil tank to collect melted ice for irrigation; Installed new theatre exist doors; completed external metal cladding to North end of building; installed new drainage system (with rain gardens), and asphalt parking lot for better control and protection of rain water and parking lot contaminants; installed solar powered LED sign for Theatre.
	Kerry Park Recreation: Completed installation of new metal cladding, hardiplank and insulation on majority of the external walls; installed new LED lighting in curling side hallway, meeting room and lounge areas.
	Shawnigan Lake Community Centre: Completed Lighting upgrades; installed new doors and windows at Elsie Miles.
	CLSA: Completed installation of new dehumidification system; purchased significant amount of LED lighting.
Corporate Actions Proposed for 2017	
	Island Savings Centre: Install heat exchanger for ice melt pit to reclaim heat; replace \$15k worth of new windows (seals broken) on second floor; Pilot Project with BC Hydro – Automated recommissioning using Fault Detection and Diagnostic Software (Coppertree).
	CVRD Head Office: Install new boiler for heating system.
	Kerry Park Recreation: Replace the HVAC units supplying the dressing rooms, warm room, arena washrooms and arena concession; Install new domestic hot water storage tank; Replace 2 arena shell & tube chillers with 2 new plate & frame chillers, brine pumps and receiver, which will operate more effectively and use less energy and ammonia; and exploratory drilling for water supply to supply sportsfields.
	Shawnigan Lake Community Centre: Completed Lighting upgrades; Replace gas fired hot water tank with electric at SLCC; Install new doors at SLCC (Gym and foyer); and Replace old electric hot water tank with energy star electric tank at Elsie Miles.
	CLSA: Replace 1 arena shell & tube chiller with a new plate & frame chiller, brine pumps and VSD and computer system, which will operate more effectively and use less energy and ammonia charge; Installation of new LED lighting.

2016 ENERGY GENERATION ACTIONS

Energy Generation Actions

A transition to renewable or low-emission energy sources for heating, cooling and power supports large, long-term GHG emissions reductions. Renewable energy including waste heat recovery (e.g. from biogas and biomass), geo-exchange, micro hydroelectric, solar thermal and solar photovoltaic, heat

pumps, tidal, wave, and wind energy can be implemented at different scales, e.g. in individual homes, or integrated across neighbourhoods through district energy or co-generation systems.

Corporate Actions Taken in 2016	
	Bings Creek Recycling Centre 23kW Solar PV Demonstration Project
	Business case prepared for solar landfill included in Meade Creek Recycling Centre Site Closure Plan

Energy Generation	
Is your local government developing, or constructing:	
• A district energy system	No
• A renewable energy system	No
Is your local government operating:	
• A district energy system	No
• A renewable energy system	Yes
Is your local government connected to a district energy system that is operated by another energy provider?	No
Are you aware of the Integrated Resource Recovery guidance page on the BC Climate Action Toolkit ?	Yes

2016 GREENSPACE/ NATURAL RESOURCE PROTECTION ACTIONS

Greenspace Actions

Greenspace/Natural Resource Protection refers to the creation of parks and greenways, boulevards, community forests, urban agriculture, riparian areas, gardens, recreation/school sites, and other green spaces, such as remediated brownfield/contaminated sites as well as the protection of wetlands, waterways and other naturally occurring features.

Community-Wide Actions Taken in 2016	
	1.5 km of the Cowichan Valley Trail was upgraded through the Town of Lake Cowichan.
	Community pathways were constructed in Mill Springs and upgraded in Central Park for accessibility (1 km) and a 3 km new trail opened in Stoney Hill Regional Park.
	Work on the Electoral Area Community Parks and Trails Master Plan commenced to provide guidance for community parks and pathway acquisition and development over the next 10-15 years.
	Parks volunteer activities included ivy pull at Mill Bay Nature Park, invasive removal/native plantings at Bright Angel Park, shoreline plantings at West Shawnigan Lake Park and Hecate Park, plantings at Busy Place Creek, broom removal Yellow Point Park
	CVRD Invasive Species Management Program expanded to include Regional Parks and Community Parks in Electoral Areas C, G and H
Community-Wide Actions Proposed for 2017	
	CVRD Invasive Species Management Program expanded to include Regional Parks and Community

	Parks in Electoral Areas C, G and H
	Invasive Species Management Program will be underway within all nine electoral areas and the regional parks and trails program. The annual program is focused both on targeted invasive species removal/control and subsequent habitat restoration/management
	Complete construction and opening of the 9 km Cowichan Valley Trail – Malahat Connection between Shawnigan Lake and Capital Regional District.
	Continue community and regional parks pathway development which is focused on the next pathway phase for Mill Springs, Ida Road pathway, trail improvements in Old Baldy Mountain Park, Polara Hill in the Cobble Hill Regional Recreation Area and the Shawnigan Lake Rail With Trail between Shawnigan Wharf and Elsie Miles Park
	Ongoing parks volunteer programming includes knotweed removal in Bright Angel Park, shoreline restoration West Shawnigan Lake Park, Hecate Park and Lake Cowichan, scotch broom removal Stoney Hill Regional Park and Yellow Point Park.

Corporate Actions Proposed for 2017	
	Complete the Electoral Area E Community Parks and Trails Master Plan to provide guidance for community parks and pathway acquisition and development over the next 10 to 20 years
	Ongoing parks volunteer programming includes knotweed removal in Bright Angel Park, shoreline restoration West Shawnigan Lake Park, Hecate Park and Lake Cowichan, scotch broom removal Stoney Hill Regional Park and Yellow Point Park.

Greenspace	
Does your local government have urban forest policies, plans or programs?	No

2016 SOLID WASTE ACTIONS

Solid Waste Actions

Reducing, reusing, recycling, recovering and managing the disposal of the residual solid waste minimizes environmental impacts and supports sustainable environmental management, greenhouse gas reductions, and improved air and water quality.

Community-Wide Actions Taken in 2016	
	Hosted a free Burn It Smart educational workshop on residential wood heating in February/March, 2016.
	Completed installation of improved organics management system at Bings Creek Transfer Station.
	Continued to offer free yard waste collection at CVRD Recycling Centres.
	Continued to provide support to Cowichan Biodiesel Co-op.
Community-Wide Actions Proposed for 2017	
	Review best practices for yard waste management as part of Open Burning Emissions Reduction Study.
	Continue to offer free yard waste collection at CVRD Recycling Centres.

Corporate Actions Taken in 2016	
	Bings Creek Recycling Centre Energy Upgrade Project LED lighting upgrade throughout the facility.
	Design energy efficient replacement facility at Meade Creek Recycling Centre.
	Purchased new excavator for Bings Creek solid waste management complex that runs on up to 20% biofuel.
Corporate Actions Proposed for 2017	
	Achieve 60% completion of construction of new energy efficient replacement facility at Meade Creek Recycling Centre.
	Complete waste composition study.
	Complete waste composition study.
	Amend solid waste management plan.

Solid Waste	
Does your local government have construction and demolition waste reduction policies, plans or programs?	Yes
Does your local government have organics reduction/diversion policies, plans or programs?	Yes

2016 TRANSPORTATION ACTIONS

Transportation Actions

Transportation actions that increase transportation system efficiency, emphasize the movement of people and goods, and give priority to more efficient modes, e.g. walking, cycling, ridesharing, and public transit, can contribute to reductions in greenhouse gas emissions and more livable communities.

Community -Wide Actions Taken in 2016	
	In partnership with BC Hydro, installed the updated Combined Charging Station (CCS) at Island Savings Centre in November 2016 which is capable of charging more electric vehicle types than the original DCFC unit, and users fees were implemented.
	Implemented transit changes in October 2016 to optimize service in Ladysmith, Youbou and Honeymoon Bay. This included: consolidating local routes, introducing a new express service between Ladysmith and Duncan.
	Commenced work with BC Transit, MOTI and consultants to get conceptual designs and estimated costs for park and ride expansion required to support short and long term future growth of the Cowichan Valley Commuter service south to Victoria. Final designs to be completed in 2017.
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	In partnership with BC Transit, the CVRD installed a new transit shelter at Village Green Mall on Central Road in Duncan to expand capacity at the main hub for customers.
	Introduced new transit promotions to increase awareness about transit and attract new ridership. Both promotions will be continued in 2017. These included: <ul style="list-style-type: none"> o The Schools Out Transit Special offering a free week of transit to all youth (K-12) in June; o Free Swim or Skate promotion with last month's expired transit pass to encourage

	customers to consider monthly passes and access recreation programs.
	Installed additional transit stops to formalize flag stops on Route #4 (Maple Bay) and Route #7 (Cowichan Lake via Gibbins Road).
Community-Wide Actions Proposed for 2017	
	Pilot project to implement Saturday service on the Commuter routes between Cowichan and Victoria starting in September 2017.
	Plan transit service changes and expansion for local routes to be implemented in 2018.
	Work with BC Transit and the Federal government on design and construction of a new (\$15M) Cowichan Valley Transit maintenance facility to support long term operations & maintenance and future fleet growth. Acquire property by May 31, 2017 with construction to be completed by March 31, 2019.
	Working with BC Transit and MOTI to confirm and implement short term capacity improvements necessary to support the Frayne Road Park and Ride site.
	Working with BC Transit and MOTI to source out long term capacity improvements necessary and funding to support the Frayne Road Park and Ride site. Commence exploratory discussions with possible land owners.

Corporate Actions Proposed for 2017	
	The CVRD is working with FleetCarma to collect data to consider suitability and conversion of more CVRD corporate fleet vehicles to EV's.
	Purchase one additional Electric Vehicle for CVRD Fleet.
	Participate in the Smart Drive Challenge

Transportation	
Does your local government have policies, plans or programs to support:	
• Walking	No
• Cycling	Yes
• Transit Use	Yes
• Electric Vehicle Use	Yes
• Other (please specify)	No
Does your local government have a transportation demand management (TDM) strategy (e.g. to reduce single-vehicle occupancy trips, increase travel options, provide incentives to encourage individuals to modify travel behavior)?	No
Does your local government have policies, plans or programs to support local food production (thus reducing transportation emissions)?	No

2016 WATER AND WASTEWATER ACTIONS

Managing and reducing water consumption and wastewater is an important aspect of developing a sustainable built environment that supports healthy communities, protects ecological integrity, and reduces greenhouse gas emissions.

Community-Wide Actions Taken in 2016	
	Swabbing Cowichan Bay sewer system to increase flow efficiency
	Preliminary design complete for relocation of the Shawnigan Lake North water system from a flood zone (pending funding).
	Preliminary design complete for Saltair Water System upgrade proposal to include hydro-electric generation system.
	Pre-design for Arbutus Ridge Waste Water system upgrade includes effluent re-use for golf course irrigation.
Community-Wide Actions Proposed for 2017	
	Update/amend South Sector Liquid Waste Management Plans to ensure existing commitments are met emerging issues are considered.
	Implement inclined block pricing rate structure and universal metering for Shawnigan Lake North Water System.
	Solar powered mixing system at Shawnigan Lake North Reservoir
	Registering all groundwater wells and establishing transducer monitoring system.

Water Conservation	
Does your local government have water conservation policies, plans or programs?	Yes

2016 CLIMATE CHANGE ADAPTATION ACTIONS

Climate Change Adaptation Actions

For local governments, adaptation to a changing climate can take the form of changes in policy, management, technology and behaviour that minimize negative impacts or exploit opportunities. It can involve both “hard” and “soft” solutions, including: changes in infrastructure engineering, planning, zoning, bylaws, and public education.

Climate Change Adaptation Actions Taken in 2016	
	Climate Impacts: Updated regional climate projections related to infrastructure, ecosystems and public safety; and updated climate impacts risk analysis and draft adaptation strategies
	Ecosystem Protection: Conduct a GIS based Natural Capital Analysis
	Public Health: Implementation and monitoring of Regional Air Shed Protection Strategy, public process has been taken up by a stand along group and seems to be functioning as a community based cross functional implementation group, industry, health, SD 79, CVRD, ag, forestry, public safety as well as general community participation and ownership; and Invasive species bylaw completed and in place.
	Long Term Water Security: Diking construction for Cowichan River Completed, development of early warning system and diking authority; and Watershed based flood control function developed
Climate Change Adaptation Actions Proposed for 2017	
	Focus on climate adaption – regional projections, risk assessments and structured implementation planning. No focused work on carbon mitigation
	Development of watershed management plans and characterization to inform land use planning and development

	Development of framework to include climate in risk assessment of regional assets
	Knowledge transfer of climate pressures and impact to other staff, training on risk assessment processes and procedures
	Case study in green infrastructure and asset management/valuation at a sub watershed and lot level.

In 2016 did you consider climate change impacts in any of the following areas? (check if yes)	
Risk reduction strategies	No
Risk and Vulnerability assessment	No
Asset management	Yes
Infrastructure upgrades (e.g. stormwater system upgrades)	No
Cross-department working groups	Yes
Emergency response planning	Yes
Land-use policy changes (eg. OCP, DPA)	Yes
Economic diversification initiatives	Yes
Ecosystem-based approaches (incl. shorelines)	No
Incentives (e.g. property owner reducing stormwater run-off)	Yes
Public education and awareness	Yes
Research (e.g. mapping, participation in studies)	Yes

2016 OTHER CLIMATE ACTIONS

Other Climate Actions

This section provides local governments the opportunity to report other climate actions that are not captured in the categories above.

Other	
Are you familiar with the Community Lifecycle Infrastructure Costing Tool (CLIC) ?	Yes
Have you used CLIC?	No

INNOVATION AND PEER-TO-PEER LEARNING

Innovation

This section provides the opportunity to showcase an innovative Corporate and/or Community-Wide GHG reduction or climate change adaptation activity that your local government has undertaken and that has had or has the potential to have a significant impact. Projects included here may be featured as success stories on the B.C. Climate Action Toolkit and/or shared with other local governments to inspire further climate action. Please add links to additional information where possible.

Community-Wide Innovative Action
Ongoing implementation and monitoring of the Regional Airshed Protection Strategy. Public process has been taken up by a stand along group and seems to be functioning as a community based cross functional implementation group, industry, health, SD 79, CVRD, ag, forestry, public safety as well as general community participation and ownership

Programs, Partnerships and Funding Opportunities

Local governments often rely on programs, partnerships and funding opportunities to achieve their climate action goals. Please share the names of programs and organizations that have supported your local government's climate actions by listing each entry in the box below.

Programs and Funding
BC Hydro Energy Manger Program Gas Tax - Community Works Fund BC – Community Energy Leadership Program

2016 CARBON NEUTRAL REPORTING

Local governments are required to report on their progress in achieving their carbon neutral goal under the Climate Action Charter. Working with B.C. local governments, the joint Provincial-UBCM Green Communities Committee (GCC) has established a common approach to determining carbon neutrality for the purposes of the Climate Action Charter, including a Carbon Neutral Framework and supporting guidance for local governments on how to become carbon neutral.

Prior to completing this survey, please ensure that you are familiar with guidance available on the B.C. Climate Action Toolkit website, especially Becoming Carbon Neutral: A Guide for Local Governments in British Columbia.

Reporting Emissions

Did you measure your local government's corporate GHG emissions in 2016?	Yes
If your local government measured 2016 corporate GHG emissions, please report the number of corporate GHG emissions (in tonnes of carbon dioxide equivalent) from services delivered <u>directly</u> by your local government:	1,135
If your local government measured 2016 corporate GHG emissions, please report the number of corporate GHG emissions (in tonnes of carbon dioxide equivalent) from <u>contracted</u> services:	523
TOTAL A: CORPORATE GHG EMISSIONS FOR 2016	1,658 tCO₂e

Reporting Reductions and Offsets

To be carbon neutral, a local government must balance their TOTAL corporate GHG emissions by one or a combination of the following actions:

- undertake GCC-supported Option 1 Projects
- undertake GCC-supported Option 2 Projects (community GHG emissions reduction projects that meet project eligibility requirements)
- purchase carbon offsets from a credible offset provider

If applicable, please report the 2016 GHG emissions reductions (in tonnes of carbon dioxide equivalent (tCO₂e)) being claimed from Option 1 GHG Reduction Projects:

OPTION 1 PROJECTS	REDUCTIONS
Energy Efficient Retrofits	26.7
Solar Thermal	Not applicable
Household Organic Waste Composting	1631.3

Low Emission Vehicles	Not applicable
Avoided Forest Conversion	Not applicable
TOTAL B: REDUCTIONS FROM OPTION 1 PROJECTS FOR 2016	1,658 tCO₂e

If applicable, please report the names and 2016 GHG emissions reductions (in tonnes of carbon dioxide equivalent (tCO₂e)) being claimed from Option 2 GHG Reduction Projects:

OPTION 2 PROJECT NAME	REDUCTIONS
	Not applicable
TOTAL C: REDUCTIONS FROM OPTION 2 PROJECTS FOR 2016	0 tCO₂e

If applicable, please report the number of offsets purchased (in tonnes of carbon dioxide equivalent (tCO₂e)) from an offset provider for the 2016 reporting year:

(NOTE: DO NOT INCLUDE ANY FUNDS THAT MAY BE SET ASIDE IN A CLIMATE ACTION RESERVE FUND)

OFFSET PROVIDER NAME	OFFSETS
	Not applicable
TOTAL D: OFFSETS PURCHASED FOR 2016	0 tCO₂e

TOTAL REDUCTIONS AND OFFSETS FOR 2016 (Total B+C+D) = 1,658 tCO₂e

Corporate GHG Emissions Balance for 2016

Your local government's Corporate GHG Emissions Balance is the difference between total corporate GHG emissions (direct + contracted emissions) and the GHG emissions reduced through GCC Option 1 and Option 2 projects and/or the purchase of offsets.

CORPORATE GHG EMISSIONS BALANCE FOR 2016 = (A – (B+C+D)) = 0 tCO₂e

**If your Corporate GHG Emissions Balance is negative or zero,
your local government is carbon neutral.**

CONGRATULATIONS!

GCC CLIMATE ACTION RECOGNITION PROGRAM

Green Communities Committee (GCC) Climate Action Recognition Program

The joint Provincial-UBCM Green Communities Committee (GCC) is pleased to be continuing the Climate Action Recognition Program again this year. This multi-level program provides the GCC with an opportunity to review and publicly recognize the progress and achievements of each Climate Action Charter (Charter) signatory.

This year a new recognition level has been added – **Level 3: Accelerating Progress on Charter Commitments**–. Recognition is provided on an annual basis to local governments who demonstrate progress on their Charter commitments, according to the following:

Level 1 – Demonstrating Progress on Charter Commitments: for local governments who demonstrate progress on fulfilling one or more of their Charter commitments

Level 2 – Measuring GHG Emissions: for local governments that achieve level 1, and who have measured their Corporate GHG Emissions for the reporting year and demonstrate that they are familiar with the Community Energy and Emissions Inventory (CEEI)

Level 3 – Accelerating Progress on Charter Commitments: for those local governments who have achieved level 1 and 2 and have demonstrated undertaking significant action (corporately or community wide) to reduce GHG emissions in the reporting year (ie: through undertaking a GHG reduction project, purchasing offsets, establishing a reserve fund).

Level 4 - Achievement of Carbon Neutrality: for local governments who achieve carbon neutrality in the reporting year.

Based on your local government's 2016 CARIP Climate Action/Carbon Neutral Progress Survey, please check the GCC Climate Action Recognition Program level that best applies:

<input type="checkbox"/>	Level 1 – Demonstrating Progress on Charter Commitments	
<input type="checkbox"/>	Level 2 – Measuring GHG Emissions	
<input type="checkbox"/>	Level 3 – Accelerating Progress on Charter Commitments	
<input checked="" type="checkbox"/>	Level 4 - Achievement of Carbon Neutrality	X
<input type="checkbox"/>	Not Sure	