Summary Report on
LOCAL GOVERNMENT CLIMATE ACTIONS 2018

BRITISH COLUMBIA

CARIP
CLIMATE ACTION REVENUE INCENTIVE PROGRAM

SEPTEMBER 2019

Contents

Front & back cover photo courtesy: HCMA Architecture + Design, District of North Saanich Municipal Hall (See page 8)

Introduction

Established in 2010, the Climate Action Revenue Incentive Program (CARIP) provides conditional grants to local government signatories of the BC Climate Action Charter (Charter). The Charter establishes the joint Provincial-UBCM Green Communities Committee (GCC) to provide support to signatories. By signing the Charter, local governments commit to taking action towards achieving carbon neutrality in their corporate operations and to reducing community-wide emissions through the development of more complete, compact and energy efficient rural and urban communities.

The CARIP grant is equal to 100% of the carbon tax that eligible local governments have directly paid in a given year. To be eligible, local governments are required to be Charter signatories, report publicly on their plans and progress toward meeting their corporate and community-wide climate action goals, and complete an annual CARIP survey summarizing their actions.

In 2018, 186 of the 187 signatory local governments responded to the CARIP survey and reported on climate actions in areas as diverse as land use, transportation, waste, water, energy, and other infrastructure and service provision. It is evident from these surveys that local governments are continuing to demonstrate leadership and apply innovative approaches to both reducing greenhouse gas (GHG) emissions and adapting to a changing climate.

2018 CARIP Report Snapshot
Local Governments Reporting: **186**
Local Governments Measuring: **147**
Carbon Neutral Local Governments: **50**

Photo courtesy: City of Kelowna

The 2018 CARIP Summary Report

This report illustrates the continued progress by local governments to reduce carbon emissions through highlighting examples of the achievements and experiences of small, medium, and large communities.

The 2018 CARIP Summary Report includes:

- Update on local government progress towards carbon neutrality
- Highlights of climate mitigation and adaptation actions taken by small, medium, and large communities across B.C.
- Hyperlinked list of funding sources and programs used by local governments in support of climate action

50 Local Governments achieved carbon neutrality in their corporate operations in 2018

Ashcroft
Capital Regional District
Central Saanich
Coldstream
Columbia Shuswap RD
Comox Valley RD
Comox
Cowichan Valley RD
Cumberland
Delta
Duncan
Fort St. James
Granisle
Highlands
Islands Trust
Keremeos
Ladysmith
Langley
Lantzville
Logan Lake
Lumby
Mission
Nelson
New Denver
Oak Bay
Oliver
Osoyoos
Parksville
Peace River RD
Pemberton
Penticton
Pitt Meadows
Port Alice
Port Hardy
Powell River
RD of East Kootenay
RD of Kitimat-Stikine
RD of Mount Waddington
RD of Nanaimo
Richmond
Sidney
Sooke
Squamish
Thompson-Nicola RD
Tofino
Ucluelet
Vancouver
View Royal
West Vancouver
Whistler

Carbon Neutral Local Government

The annual reporting of Climate Action Charter signatories through the CARIP survey enables a comparison from year-to-year, on the progress made by local governments on their carbon neutral commitments.

Of the 147 local governments that measured and reported on their GHG emissions in the 2018 CARIP reporting year, 50 local governments achieved carbon neutrality. This is an increase of five local governments since 2017. Appendix A lists the status of each local government's achievement toward the Charter commitment of carbon neutrality.

To support their achievement of Charter commitments, the GCC maintains a Carbon Neutral Framework (CNF), to provide guidance to local governments in measuring corporate emissions and balancing – through verified emission reduction projects – or offsetting emissions. The framework clarifies what emissions are in scope and how those emissions can be reduced and balanced / offset.

The CNF is designed to meet three key interests: ensuring that the approach offers choice in terms of the offsets that can be purchased; providing options for investments in local GHG reduction projects that are practical and flexible for the range of B.C. local governments; and ensuring that the approach is credible and that emission reductions are measurable. To do this, the approach provides options that allow local governments to use measurable community reductions to balance their corporate emissions (Options 1 and 2), as well as the ability to purchase validated offsets from a credible offset provider (Option 3).

Photo courtesy: The City of Nanaimo

The increase in carbon neutral local governments may be attributed to the new trenchless technology GCC Option 1 project profile, which became available for measuring emission reductions in the 2018 reporting year. The 1,310 tCO_2e of reduction credits that were claimed from the trenchless technology projects represent a significant uptake and surpassed the amount claimed for energy efficient retrofits, solar thermal, and low emission vehicles combined.

The total corporate GHG emissions generated by local governments in 2018 was 273,242 tCO_2e[1], a decrease of 533 tCO_2e from 2017. The moderate decrease in emissions can be in part attributed to the success of the CNF, which encourages emission reductions wherever possible. Corporate emissions reductions may also be due in part to the 2017 change to the scope of local government corporate emissions inventory. Recycle BC is now responsible for emissions associated with the collection of packaging and printed paper, which was previously counted as part of local government corporate inventories.

In 2018, local governments claimed 139,345 tCO_2e of GHG emission reductions and offsets to balance their corporate footprint. Of the total emission reductions and offsets claimed, 127,247 tCO_2e were achieved through GCC Option 1 and 2 projects.[2] In 2018, Household Organic Waste Composting remained the most common Option 1 project and Biocover Methane Reduction the most common Option 2 project. Local governments chose to purchase 12,097 tCO_2e worth of offsets in 2018, a decrease from the 12,349 tCO_2e purchased in 2017. This decrease in purchased offsets may be attributed to greater use of GCC Option 1 and 2 projects. Please refer to Appendix B for total corporate emissions and reductions reported through CARIP between 2012 and 2018.

Corporate and Community-Wide Climate Mitigation Actions

Since 2010, the number and scope of corporate and community-wide climate change mitigation actions and plans pursued by local governments has been increasing. Actions range from shifting to LED lighting, to those that require significant investment, such as installing alternative energy systems. The results from the 2018 CARIP survey indicate that local governments across B.C. are adopting and promoting the BC Energy Step Code, supporting active transportation through broader planning efforts, and continuing to support community engagement and education on climate-related topics in a variety of ways.

In 2018, 51% of CARIP respondents reported having corporate GHG reduction plans in place while approximately 94% of CARIP respondents indicated using planning tools to support climate mitigation on a community-wide scale. As shown in Table 1, since 2015[3], there has been an increase in the percentage of local governments with Energy and Emissions Plans, Community Wide Action Plans, and Official Community Plans supporting climate action.

1 tCO_2e denotes tonnes of carbon dioxide equivalent.

2 For more information, see *Chapter 2 of Becoming Carbon Neutral: Guidebook for B.C. Local Governments.*

3 2015 was the first year local government were asked to identify the plans they have that support climate change mitigation.

The Small Community Experience *(population up to 4,999)*

Corporate Mitigation Actions

Small communities across B.C. are taking action to reduce their corporate emissions in a multitude of ways. Actions reported in the survey include the installation of LED lighting in buildings and solid waste diversion (recycling, composting and reducing single use plastics). There is also a continued focus on the installation of solar generation systems and energy upgrades to existing buildings to increase energy efficiency and reduce GHGs. For example, the new district office in Elkford has been designed according to Commercial Step Code 3 with 30% of the electrical power to be provided by solar panels. The District of Sparwood installed building automation systems in each district building to reduce energy use and the District of Barriere received a grant to expand its biomass district hot water heating system to include the Barriere Search and Rescue building and fire hall.

CLIMATE ACTION HIGHLIGHT: ***The Thorsen Creek Waste and Recycling Centre*** opened in November of 2018, marking the Central Coast Regional District's (CCRD) 50 years of service to the community. The centre, complemented by a comprehensive recycling program, provides improved access to recycling options for the community, diverts more waste and extends life of the current landfill. Residents are now able to recycle a wide range of items such as packaging material (cans, jars, plastics, cardboard), printed paper, small appliances, tires, light bulbs, and used oil.

Waste management has been a top priority for the community and the new centre is one of many strategies implemented to maximize remaining landfill space. Additional strategies include maximizing recycling opportunities, a new funding agreement between the CCRD and the Nuxalk Nation, hiring a recycling attendant, updating the district's Solid Waste Management Plan, increasing education and promotion of recycling, and decommissioning the old waste transfer site to free up landfill space. An overall reduction in waste generation and efforts made to recycle material can reduce the need for energy-intensive extraction and processing activities, leading to fewer GHG emissions.

The total cost of the project was approximately $1 million covered in part by the Federal Gas Tax-Community Works Fund, with additional capital funds from the region's solid waste management budget. Financial support was also provided by the BC Used Oil Management Association for the purchase of storage tanks and modified sea-cans. BC Hydro provided the funding for the trees and shrubs planted at the site.

Community-Wide Mitigation Actions

Smaller communities, that represent 41% of CARIP survey respondents, continue to support community-wide reduction efforts by promoting actions in areas that include local food production, renewable energy generation and planning for public transit and active transportation.

90% *of CARIP survey respondents continue to have water conservation plans or policies in place.*

45% *of CARIP survey respondents have urban forest policies, plans or programs.*

Table 1: *Policies by Mode of Transportation*

MODE OF TRANSPORTATION	% OF LGS REPORTING ACTIONS 2018	% OF LGS REPORTING ACTIONS 2017	% OF LGS REPORTING ACTIONS 2016
Walking	81	80	79
Cycling	77	76	75
Transit	75	72	65
Electric Vehicles	69	62	54

As indicated in Table 1: *(Above) There has been an increase in the number of local governments reporting actions across all modes of low emission transportation with notable increases in actions related to transit and electric vehicles.*

About ***21%*** *of CARIP survey respondents are engaged in transportation demand management activities. In large communities (****100,000+****), where congestion is most acute,* ***40%*** *of local governments have transportation demand management strategies in place.*

CLIMATE ACTION HIGHLIGHT: *The District of Lillooet's Active Community Master Plan*, completed in July 2018, will guide the District's work in becoming a complete community and promoting healthy living. Development of the plan included an extensive community engagement process that will also inform an upcoming update to the District's Official Community Plan. One of the guiding objectives of the Active Community Master Plan is to support safe, active transportation. The plan includes strategies to improve communications regarding Lillooet's current active living opportunities, improve road safety for pedestrians and cyclists, expand bicycle infrastructure, explore opportunities to improve the pedestrian realm, and enhance the public trail network.

CLIMATE ACTION HIGHLIGHT: ***The Village of Masset***, with help from the Whistler Centre for Sustainability, completed the *Masset 2040: Integrated Official Community Plan* (IOCP) update. The IOCP articulates a shared vision and goals for the future success and sustainability of Masset and identifies the policies to help guide the community there. The *Masset 2040 IOCP Implementation Guide* articulates priority actions to be implemented following the adoption by Council of the IOCP update. These actions, that began in 2018, include remediation of empty lots in the downtown core, clean-up the park area at Seaplane Spit to create an accessible greenspace, enhancing the Delkatla Wildlife Sanctuary, increasing overall health and wellbeing of residents, and providing improved tourism amenities.

Photo courtesy: The Village of Masset

The Medium-sized Community Experience *(population 5,000- 49,999)*

Corporate Mitigation Actions

Corporate climate actions undertaken by medium-sized communities included addressing buildings and lighting and water and waste water. LED lighting upgrades continue to be undertaken as do updates to HVAC systems and the integration of sustainable building design. Local governments also supported new approaches to staff travel, including the addition of electric and conventional bikes to municipal fleets.

CLIMATE ACTION HIGHLIGHT: ***The District of North Saanich*** is now realizing benefits from its new Municipal Hall. Construction began in 2015 and was completed in August 2017. The objectives of the project were to replace aging infrastructure, provide seismic upgrades, and increase energy efficiency. The new building features solar energy panels and battery backup, an electric vehicle charging station, variable refrigerant flow HVAC systems, low flow plumbing systems, and LED lighting.

The project was completed on time, within budget and was fully funded through reserve funds; tax increases or borrowing were not required.

Photo courtesy: The District of North Saanich

Community-Wide Mitigation Actions

In 2018, medium-sized communities (representing 40% of CARIP survey respondents) continued to demonstrate a commitment to reducing GHG emissions by taking actions across many sectors. As in small communities, the completion of Official Community Plan updates focused on actions supporting the development of compact complete communities and implementing active transportation initiatives.

CLIMATE ACTION HIGHLIGHT: ***The City of Langford's*** Smart Cities Plan responded to Infrastructure Canada's 2018 Smart Cites Challenge. The Plan is a 10-year digital strategy linked directly to City priorities in the new City Centre Design Guidelines and acts as a roadmap for policy and technology implementation to improve efficiency and sustainability as it relates to Langford's twin pillars of affordability and livability. Considerations include reduced GHG emissions, the optimization of energy and resource use, impacts of climate change, population growth, and economic development. Langford has partnered with academic researchers, local businesses and residents to achieve plan goals such as a 54% reduction in energy use per-capita; the city-wide reduction of GHG emissions to pre-2007 levels; and 15% or more reduction in city water consumption costs.

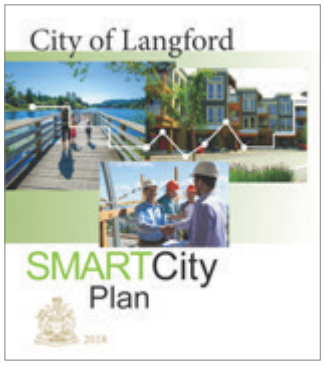


Photo courtesy: The City of Langford

CLIMATE ACTION HIGHLIGHT: ***The District of Squamish*** adopted its *2040 Official Community Plan update* in June 2018, which addresses both corporate and community climate action. Mitigation policies include reaffirmed GHG emissions reduction targets, a vision of compact infill land use within a newly identified Growth Management Boundary, a focus on local employment and reduced commuting distances, and support for alternative and active transportation options.

Beginning in 2016 when the District finalized its *Active Transportation Plan* it began allocating $700,000 annually for related infrastructure projects. The goal is to encourage a mode shift away from single occupant vehicles for a variety of reasons including: improving physical and mental health, reducing GHG emissions, and improving transportation options for youth, seniors and other residents who are not able to own/operate their own vehicles.

Photo courtesy: The District of Squamish

CLIMATE ACTION HIGHLIGHT: ***The City of Port Alberni*** has developed an extensive network of trails, sidewalks, parks, and natural and heritage attractions. Its *Active Transportation Plan* includes greater connectivity and continuity of the trail and road networks, encouraging residents and visitors to walk and bicycle for transportation and recreation. The extensive trail network and natural environment attract visitors, increases community livability and quality of life, and reduces GHG emissions due to reduced use of vehicles.

Photo courtesy: The City of Port Alberni

CLIMATE ACTION HIGHLIGHT: ***The District of Kent*** completed the Highway 9 shoulder enhancement project to improve the cycling route between Agassiz and Harrison Hot Springs. The project supports the District's 2009 *Active Transportation Plan* which focused on linkages to other modes of transportation (pedestrian, transit, lakes/blueways) and built on the Community-Based Leisure Needs Assessment that identified trails and bike lanes as a high priority. The Fraser Valley Regional District, Village of Harrison Hot Springs, and Kent Harrison Healthy Communities Committee all played an active role in the planning process.

Photo courtesy: The District of Kent

Medium-sized communities also focused on actions to achieve GHG reductions through energy efficient buildings initiatives, including:

- *Power Down Campbell River* offered rebates and resources for homeowners wanting to retrofit their homes for energy efficiency. The program includes educational videos on home energy ratings and energy efficiency considerations.
- The City of Penticton has implemented the BC Energy Step Code. Step One is required for new residential buildings including single detached houses, duplexes, and row housing. Buildings that achieve a minimum of Step 3 of the Step Code at time of occupancy, will receive a 5% building permit fee rebate.
- The City of Kimberly engaged with local developers regarding energy efficiency changes to the BC Energy Step Code.
- The City of Fort St. John promoted its certified Passive House including public tours. The City also facilitated tours of a recently completed BC Hydro/BC Housing 50-unit Passive Apartment building.
- The Town of Smithers, in partnership with the Province and the Dik Tiy Housing Society built a 19-unit affordable housing project to Passive House standard.

District of Kent Floodplain Bylaw Adaptation Project (See page 15). Photo courtesy: The District of Kent

Large Community Experience *(population 50,000 +)*

Corporate Mitigation Actions

Large communities in B.C. continue to be engaged in a variety of GHG reduction activities. Electric vehicle fleet initiatives (including charging station installations), building upgrades, and innovative energy efficient design were popular themes in the corporate actions reported by these communities.

CLIMATE ACTION HIGHLIGHT: In July 2018, the ***City of Surrey*** began construction of the Clayton Community Centre, an integrated service facility, slated to become the first community centre in North America to achieve Passive House certification. Located in the rapidly growing East and West Clayton neighbourhoods, the centre is designed to maximize energy efficiency and protect natural ecosystems. Planned to feel like an extension of the surrounding forest and parkland, it features a state-of-the-art heating and cooling system, triple-glazed windows, and an exterior designed to minimize heat loss. As a community hub, it integrates four civic services – recreation, library, arts, and parks – all in a single facility. The unique mix of space delivers arts and culture programming, branch library services, and recreational activities. These core services are complemented by shared social spaces for residents to connect with their neighbours, as well as a mix of supplementary spaces designed to enable community-led programming. On track for a summer 2020 completion, this facility will play an important role in the community life and identity of Clayton and serve as a leading example of green building design.

"The new Clayton Community Centre meets many pressing needs in a community that has rapidly expanded in recent years. Combining city services and programs in one place simply makes sense for residents and their families. Using materials and a design to achieve Passive House certification means it will sustainably benefit residents for decades to come."
Mayor Doug McCallum – City of Surrey

Photos Courtesy: HCMA Architecture + Design, City of Surrey

CLIMATE ACTION HIGHLIGHT: ***Metro Vancouver's*** *Sustainable Infrastructure and Buildings Policy*, effective as of October 2018, establishes minimum standards for sustainable design and construction of Metro Vancouver infrastructure and buildings. Metro Vancouver undertakes a wide range of capital projects that support the organization's mandate of delivering services to the region including drinking water, liquid waste, solid waste, air quality, regional planning and regional parks. The policy aims to ensure that all projects, regardless of size or type, are consistent in their sustainability considerations. In particular, the policy focuses on improving energy efficiency, reducing lifecycle greenhouse gas emissions, encouraging the efficient and sustainable use of resources, and mitigating the impact of infrastructure and building projects on the natural environment.

Using the Envision and LEED rating systems, along with the BC Energy Step Code, the policy sets design and construction standards to reduce environmental impacts, demonstrate fiscal responsibility through life cycle costing, and show leadership in sustainable design. Metro Vancouver is currently developing a Design Guide to support implementation of the policy.

CLIMATE ACTION HIGHLIGHT: ***The District of Saanich*** has identified the need for its aging building portfolio to be upgraded, and in some cases redeveloped, to maintain the delivery of services to residents. The District's Strategic Facilities Master Plan, adopted in April 2018, guides capital investment decisions for the District's 10 key facilities. Whether for day-to-day maintenance and replacement upgrades or major renovations and redevelopment, the plan reinforces the District's commitment to be a 100% renewable energy community and achieving an 80% reduction of GHGs by 2050. New projects are recommended to be LEED Gold at a minimum as well as the highest equivalent levels for the BC Energy Step Code. The District's first project, the redevelopment of Fire Station #2 has been recently approved by Council and will be targeting net zero in addition to LEED Gold and Step Code Commercial Level 3.

Photo courtesy: The District of Saanich

Community-Wide Mitigation Actions

As in previous years, there were a range of community-wide actions reported by large communities, whose local governments make up 19% of CARIP survey respondents. Efforts include promoting the BC Energy Step Code, encouraging transit-oriented development and implementing active transportation strategies.

51% *of CARIP survey respondents had a corporate GHG reduction plan in 2017.*

55% *of survey respondents have a climate action reserve fund (a* ***5%*** *increase from 2017).*

CLIMATE ACTION HIGHLIGHT: ***The District of North Vancouver*** Youth in Film Program was established in 1998 with the intent of providing youth opportunities to explore careers in film and television. The 2018 Sustainability on Screen Youth Film Camp empowered participants to produce short films about 'climate action'.

The larger program was created to engage youth in the production of films on subjects they are passionate about. In this case, their interest in climate change and the opportunity to tell the story about the District's *Community Energy and Emissions Plan* (CEEP) fit well with those interests. The District's draft

CEEP identifies actions and targets to meaningfully reduce its contribution to climate change and advance efforts on making the District a more energy efficient community.

Participants gained a heightened understanding of both climate change and climate action. Specifically, participating youth were challenged to think about how to promote climate action within their age cohort, how to be more civically engaged, and how to articulate activism and awareness using an artistic lens. This initiative provided a unique opportunity to learn about climate action directly from staff working to establish a community-wide plan to reduce emissions.

The short films produced are titled 'The Little Things', and 'Between the Forest'. These films were screened at the June 11, 2018 Regular Meeting of Council, and can be viewed on the *District webpage*.

CLIMATE ACTION HIGHLIGHT: In 2018, over 300 grade 4 and 5 students, teachers, and parents attended the *City of Nanaimo's Public Works day event*. ***The City of Nanaimo*** participates in National Public Works Week, an initiative to bring awareness to the essential role that public works play in a community's quality of life. Through 16 interactive stations, Public Works Day gives school-aged children an experiential and behind the scenes look at the programs, operations and infrastructure that keep Nanaimo flowing, and encourages youth to become engaged citizens and stewards for sustainability. One of the focuses of the day is the hydrological cycle, including the watershed, water conservation and treatment, sewers and drainage systems, as well as the potential impacts of climate change on the system. The Regional District of Nanaimo participated as part of a partnership in water, wastewater and solid waste sustainability.

Response to Public Works Day has been fantastic! For example: "Thank you for providing a great field trip for us to enjoy. We hope you keep taking care of Nanaimo! We really appreciate all the work you do!" – Pleasant Valley Elementary School, grade 4.

Photo courtesy: The City of Nanaimo

CLIMATE ACTION HIGHLIGHT: ***The City of New Westminster***, through *Energy Save New West*, is delivering a comprehensive program of industry training, Builder & Developer Breakfasts, and incentives on energy modeling to support BC Energy Step Code implementation. Since 2015, the City has hosted 12 Builder & Designer Breakfasts with over 450 attendees including architects, designers, builders and other tradespeople. The 2018 event covered the BC Energy Step Code Implementation Framework for Part 9 Buildings, Energy Step Code Performance Metrics, and the FortisBC New Home Program.

City Council adopted a *Building Bylaw Amendment* (No. 8084, 2019), requiring new buildings to achieve a minimum level of the BC Energy Step Code effective March 31, 2019 for Part 9 residential buildings, and effective January 1, 2020 for Part 3 multi-unit residential and commercial buildings.

Photo courtesy: The City of New Westminster

Adaptation

Over the last several years, the CARIP survey has included questions about local government actions on climate adaptation. Survey responses illustrate the development of local government knowledge, planning, and action since 2015.

In 2018, 84% of survey respondents identified being engaged in emergency response planning to address the impacts of a changing climate. Approximately two thirds of survey respondents reported being engaged in infrastructure upgrades and public education. Over 50% reported being engaged in risk and vulnerability assessments, risk and reduction strategies, strategic financial planning, OCP policy changes, research, mapping, and partnerships.

The top three climate change impacts of concern for local governments include:

- Increased temperatures increasing wildfire activity
- Extreme weather events contributing to urban and overland flooding
- Changes in temperature and precipitation causing seasonal drought

The examples below demonstrate how some local governments are addressing these impacts.

Wildfire

Several local governments in B.C. are addressing wildfire risk through fuel reduction - a fire management strategy that focusses on removing ground brush and debris, pruning lower branches and removing tight second growth trees. For example, Cowichan Valley Regional District conducted an urban wildfire interface analysis, the Village of New Denver continued wildfire interface brushing, and the Squamish-Lillooet Regional District engaged in interface wildfire risk reduction.

While some local governments are taking direct action to mitigate the spread of wildfires, others are engaged in public outreach and education activities. For example, the District of West Kelowna installed wildfire prevention signs on main travel routes and both the Mountain Resort Municipality of Sun Peaks and the District of Barriere engaged in public education efforts.

CLIMATE ACTION HIGHLIGHT: ***The Capital Regional District's*** (CRD) approach to wildfire risk includes funding research by Natural Resources Canada (NRCan) and the University of Victoria to collect and analyze sediment cores from both the Sooke Lake Reservoir and nearby Begbie Lake, which are within the primary water supply catchment in the Greater Victoria Water Supply Area. The research has characterized changes in forest composition and wildfire return intervals associated with changes to climate and other drivers since the end of the last ice age. It is also examining the effects of wildfires and human disturbances within the past several hundred years on Sooke Lake Reservoir and assessing fire induced impacts and recovery. The findings are being used to assess the potential vulnerability of forest tree species in the water supply area to climate change, how the likelihood of wildfire in the area could change with climate, and the potential impacts of wildfire and other disturbances on water quality in the Sooke Lake Reservoir.

CLIMATE ACTION HIGHLIGHT: In the ***Resort Municipality of Whistler***, hotter and drier summers due to climate change are expected, which will exacerbate both the risks and consequences of wildfire. In response, a *development permit area* for wildfire protection was established. When the 2018 OCP is adopted, wildfire development permit guidelines will apply to new developments and will mitigate the likelihood and consequences of wildfire scenarios.

Photo courtesy: Resort Municipality of Whistler

Flooding

Many communities, including the Regional District of Okanagan-Similkameen, the Regional District of Kootenay Boundary, qathet Regional District, the Village of Tahsis, the District of Chetwynd and the Resort Municipality of Whistler engaged in flood risk studies.

To respond to flood events of 2017 and 2018, and to proactively mitigate the anticipated effects of climate change, the City of Kelowna completed risk and vulnerability assessments of waterfront parks including Manhattan Beach, Manhattan Point, Sutherland Beach, Kinsmen Park, City Park, Kerry Park, Sarsons Beach, Paddle Centre, and Maude Roxby Marsh. The City completed a beach nourishment project and monitoring program with the goal of building a public foreshore that is resilient to future climatic events.

The District of Kent adopted a Floodplain Bylaw to support appropriate development on the Agassiz floodplain and to account for potential flood water levels. The bylaw designates land as floodplain and makes provisions in relation to flood control, flood hazard management, and the development of land that is subject to flooding or erosion.

Drought

Many local governments have taken recent action to address the impacts of drought in their community. The City of Terrace's Downtown Action Plan and Urban Design Guidelines include drought tolerant landscape design recommendations. The Cowichan Valley Regional District implemented a water use plan and groundwater monitoring system. The Capital Regional District assessed various ecosystem service characteristics in the Greater Victoria Water Supply Area in order to identify vulnerabilities to water quality and supply, as it relates to climate change projections.

CLIMATE ACTION HIGHLIGHT: ***The Regional District of Okanagan-Similkameen*** developed the *Okanagan Agricultural Water Supply Status Communications Pilot Project* – a joint effort of the *Okanagan Basin Water Board* (OBWB) and the *BC Agriculture & Food Climate Action Initiative.* The BC Agriculture and Food Climate Action Initiative identified challenges producers face as their operations are affected by a changing climate. The project aims to increase communication with producers in times of extreme weather or wildfire, for example better communications to producers by their water purveyor before and during drought events.

With the availability of mass notification systems, and willing local governments and purveyors, the Climate Action Initiative brought this project idea forward. The OBWB provided local utilities access to Civic Ready, a mass notification system, and created template messaging for users. The RDOS, already using Civic Ready, joined the pilot and assists the City of Penticton in outgoing messaging.

The pilot's success is illustrated through producer support and reduction in water consumption when requested. Less water pumped, more electricity and resources saved! Messages are sent to the producers in the manner that best suits them; text, email, text to voice, and landline voice messaging. Texts and emails allow for attachments and links to provide producers with more information.

Photo courtesy: City of Kelowna

CLIMATE ACTION HIGHLIGHT: The Sardis-Vedder Aquifer is the primary source of drinking water for 84,000 residents in the ***City of Chilliwack***. The City has proactively protected this groundwater supply by implementing the 1997 Groundwater Protection Plan, the first of its kind in B.C., included groundwater modelling, vulnerability mapping, and a contaminant inventory. The 2018 Sardis-Vedder Aquifer Groundwater Model Update Study included an update of the original groundwater model based on current conditions. The updated model was used to conduct capture-zone analyses and carry out predictive simulations to assist with aquifer management. The results were used to develop an updated Groundwater Protection Plan and Groundwater Management Plan.

Partner Organizations

In recent years, local governments have identified, through the CARIP survey, partner organization that helped them work toward their climate mitigation and adaptation goals. These organizations range from non-profits, industry, academic institutions, to government institutions. Some collaborative initiatives required sector specific or region-specific partnerships. For example, local governments reported initiatives that resulted from partnering with the Okanagan Similkameen Invasive Species Society, the Penticton and Area Cycling Association, the South Vancouver Island Habitat Acquisition Trust, and the Gwaii Trust Society.

Pictured Above: City of Nanaimo Public Works Day t-shirt design winner 2018. Photo courtesy: City Nanaimo Public Works Day

Each year the CARIP summary report highlights one of the identified partners. This year numerous local governments connected with the BC Sustainable Energy Association (BCSEA).

The BCSEA is a volunteer-based charity that supports the sustainable production, distribution, and consumption of energy in British Columbia and beyond. The association collaborates with governments, industry, universities and other institutions, other non-governmental organizations, and citizens to put in place the conditions needed to accelerate the province's transition to a lower-carbon economy. The BCSEA develops and undertakes educational programs, policy advocacy, public outreach and energy planning in the following areas: Chapter Outreach (*Victoria*, *Vancouver*, *Kamloops* and *Okanagan*); Advance Renewable Energy Generation; Advance Energy Conservation and Efficiency; and Advance Low-Carbon Passenger Transportation.

List of Partners Identified in CARIP Reports

Adaptation to Climate Change Team Asset Management BC

BC Agriculture and Food Climate Action Initiative

BC Energy Step Code Council

BC Energy Step Code Local Government Peer Network

BC Healthy Communities

BC Hydro Energy Wise Network

BC Hydro Sustainable Communities

BC Hydro Community Energy Manager Funding

BC Hydro Power Smart

BC Hydro EV Charging Station Program

BC Municipal Climate Leadership Council

BC Oil to Heat Pump Incentive Program

BC Sustainable Energy Association

BC Bikes Cycling Project Funding Bioregional's One Planet Cities Initiative

C40 Cities

Carbon Neutral Cities Alliance

Cariboo Chilcotin Conservation Society

City Green Solutions

Clean Water and Wastewater Fund

Climate Action Program (CRD)

Collaborative for Advanced Landscape Planning (UBC)

Columbia Basin Trust

Community Energy Association

Community Emergency Preparedness Fund (UBCM)

Community Energy Leadership Program Community Regreening Program (BC Hydro)

Community Resiliency Investment Program: Reducing Wildfire Risks & Impacts Community Works Fund Data Science for Social Good

David Suzuki Foundation

Dreamrider Theatre

EfficiencyBC program

Electric Vehicle and Alternative Fuel Infrastructure Deployment Initiative Emergency Management BC

Energy Innovation Program

FCM Asset Management

FCM Climate Change Staff Grant

FCM Municipalities for Climate Innovation Program

FCM Partners for Climate Protection Program FCM Transition 2050 Grants

Federal Gas Tax Funding

Forest Enhancement Society of BC

FortisBC Community Energy Specialist Funding Fraser Basin Council

Habitat Stewardship Program for Species at Risk

HASTe Hub for Active School Travel

ICLEI Canada

Greenbricks Education Society

Innovative Clean Energy Fund (Province of B.C.)

Institute for Integrated Energy Systems

Institute for Resources, Environment and Sustainability (UBC)

Investing in Canada Infrastructure Program Municipal Natural Assets Initiative

New Building Canada Fund (Government of Canada)

Northern Development Trust

Northern Initiative Trust

Okanagan Basin Water Board

Pacific Institute for Climate Solutions

Pacific Climate Impacts Consortium

Partnership for Water Sustainability

Pembina Institute (Green Building Leaders)

Plug in BC (Province of B.C.)

Recycle BC

Recycling Council of British Columbia

Real Estate Foundation

Renewable Cities North Growth FoundationRural Dividend Program Scout Environmental

School of Community and Regional Planning (UBC)

Smart Prosperity

SolarBC Solar Hot Water Ready Regulation (Province of B.C.)

Solar Now

Strategic Priorities Fund (UBCM)

Tree Canada

Urban Sustainability Directors Network

Vancity enviroFund Initiative

Western Economic Diversification Canada (Government of Canada)

Woodstove Exchange Program (Province of B.C.)

Urban Development Institute

Conclusion

Local governments continue to demonstrate a commitment to reducing their corporate and community-wide GHG emissions and addressing the impacts of climate change.

Five additional local governments in B.C. achieved carbon neutrality in 2018, bringing the total to 50. Approximately 95% of CARIP survey respondents have a plan in place to support community-wide climate mitigation, an increase over 2017. As indicated in the Climate Action Highlights, innovative projects are being implemented by communities of all sizes, from building upgrades and energy efficient design to education and outreach initiatives. Local governments also reported on adaptation actions implemented in 2018, and planned for in 2019, further demonstrating an understanding of the need to address the range of climate change impacts experienced by communities across the province.

More information on the CARIP program and CARIP Summary Reports from past years can be found *here*.

Thorsen Creek Waste and Recycling Centre.
Photo courtesy: Central Coast Regional District

APPENDIX A

2018 Carbon Neutral Status of Reporting BC Local Governments

CARBON NEUTRAL

Ashcroft
Capital RD
Central Saanich
Coldstream
Columbia Shuswap RD
Comox Valley RD
Comox
Cowichan Valley RD
Cumberland
Delta
Duncan
Fort St. James
Granisle
Highlands
Islands Trust
Keremeos
Ladysmith
Langley, Township
Lantzville
Logan Lake
Lumby
Mission
Nelson
New Denver
Oak Bay
Oliver
Osoyoos
Parksville
Peace River RD
Pemberton
Penticton
Pitt Meadows
Port Alice
Port Hardy
Powell River
East Kootenay RD
Kitimat-Stikine RD
Mount Waddington RD
Nanaimo RD
Richmond
Sidney
Sooke
Squamish
Thompson-Nicola RD
Tofino
Ucluelet
Vancouver
View Royal
West Vancouver
Whistler

ACCLERATING PROGRESS ON CHARTER COMMITMENTS

Abbotsford
Armstrong
Burnaby
Campbell River
Chetwynd
Chilliwack
Clearwater
Colwood
Coquitlam
Courtenay
Cranbrook
Creston
Dawson Creek
Elkford
Esquimalt
Fernie
Fort St. John
Fraser Valley RD
Fruitvale
Gold River
Golden
Grand Forks
Harrison Hot Springs
Houston
Invermere
Kamloops
Kelowna
Kimberley
Kootenay Boundary RD
Lake Country
Langford
Langley, City
Maple Ridge
Masset
Metchosin
Metro Vancouver RD
Midway
Montrose
Nanaimo
New Westminster
North Cowichan
North Saanich
North Vancouver, City
North Vancouver, District
Peachland
Port Alberni
Port Coquitlam
Port McNeill

APPENDIX A

2018 Carbon Neutral Status of Reporting BC Local Governments

ACCLERATING PROGRESS ON CHARTER COMMITMENTS *(con'd)*

Port Moody
Prince George
Qualicum Beach
Quesnel
Radium Hot Springs
RD Bulkley-Nechako
RD Central Kootenay
RD Okanagan-Similkameen
RD Fraser Fort George
Revelstoke
Rossland
Saanich
Salmon Arm
Slocan
Smithers
Sparwood
Squamish-Lillooet RD
Stewart
Summerland
Sunshine Coast RD
Surrey
Taylor
Telkwa
Valemount
Vanderhoof
Vernon
Victoria
West Kelowna
White Rock

MEASURING GHG EMISSIONS

100 Mile House
Cariboo RD
Central Okanagan RD
Clinton
Enderby
Gibsons
Greenwood
Kitimat
Mackenzie
Merritt
North Okanagan RD
Northern Rockies
Port Clements
qathet RD
Sicamous
Strathcona RD
Terrace
Trail
Tumbler Ridge
Williams Lake

DEMONSTRATING PROGRESS ON CHARTER COMMITTMENTS

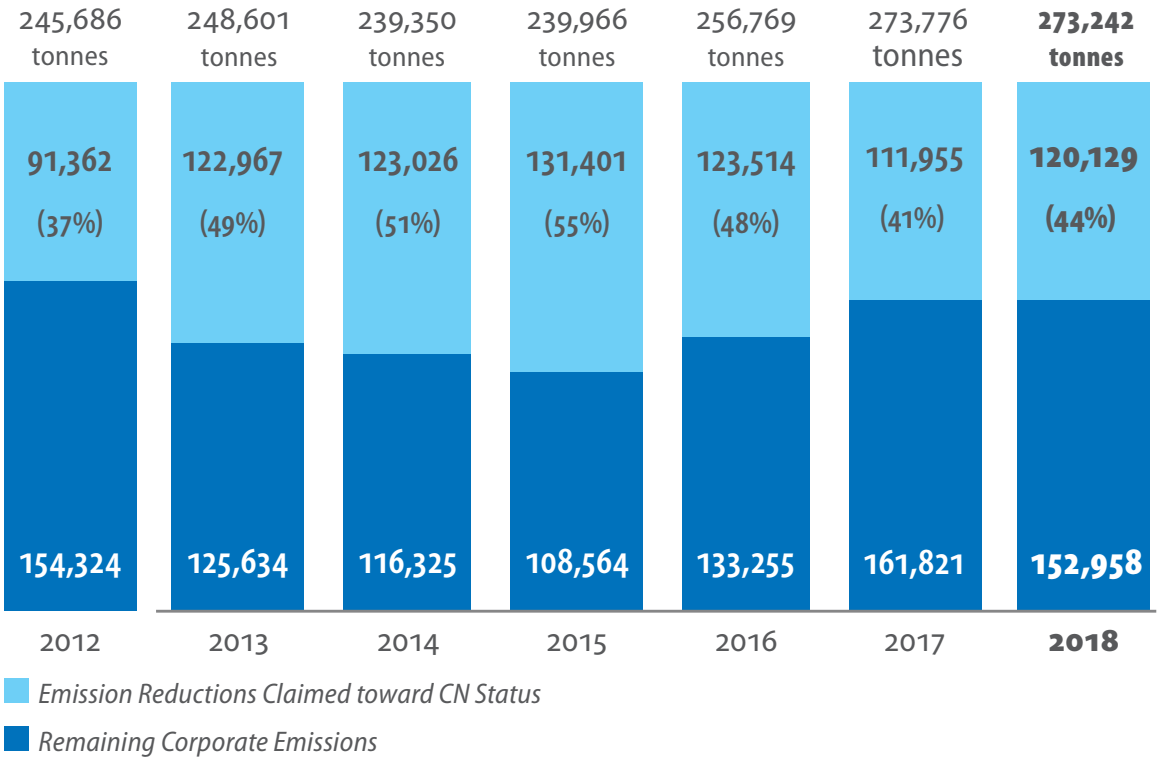
Alert Bay
Alberni-Clayoquot RD
Anmore
Barriere
Belcarra
Bowen Island
Burns Lake
Cache Creek
Canal Flats
Castlegar
Central Coast RD
Chase
Fraser Lake
Hazelton
Hope
Hudson's Hope
Kaslo
Kent
Lake Cowichan
Lillooet
Lions Bay
Lytton
McBride
Nakusp
New Hazelton
North Coast RD
Port Edward
Pouce Coupe
Prince Rupert
Princeton
Queen Charlotte
Salmo
Sayward
Sechelt
Spallumcheen
Sun Peaks
Tahsis
Warfield
Wells

APPENDIX B

The following table and bar graph present corporate emissions reported and emission reductions claimed toward carbon neutral status[4].

For further information, please contact *PLUM@gov.bc.ca* .

CORPORATE EMISSIONS REPORTED THROUGH CARIP, 2012-2017				
	Number of LGs Measuring	Total Corporate Emissions	Emission Reductions Claimed toward CN Status	Remaining Corporate Emissions
2012	144	245,686	91,362	154,324
2013	157	248,601	122,967	125,634
2014	142	239,350	123,026	116,325
2015	146	239,966	131,401	108,564
2016	147	256,769	123,514	133,255
2017	150	272,305	111,955	160,350
2018	147	273,242	120,129	152,958



4 These figures do not include carryover amounts (i.e. the amounts that can be carried over to the following year from reductions over and above the amount required to be carbon neutral). Carryover amounts were included in emission reductions reported in previous years' CARIP Summary Reports.

BRITISH COLUMBIA

CARIP

CLIMATE ACTION REVENUE INCENTIVE PROGRAM