



# Climate Action Revenue Incentive (CARIP) Public Report 2017



**Report Submitted by: City of Nanaimo**  
**Name: Michelle Miller & Priscilla Feng**  
**Role: Financial Analyst**  
**Email: [Priscilla.feng@nanaimo.ca](mailto:Priscilla.feng@nanaimo.ca)**  
**Phone: 250-754-4251**

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The City of Nanaimo has completed the 2017 Climate Action Revenue Incentive Program (CARIP) Public Report as required by the Province of BC. The CARIP report summarizes actions taken in 2017 and proposed for 2018 to reduce corporate and community-wide energy consumption and greenhouse gas emissions (GHG) and reports on progress towards achieving carbon neutrality.

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## 2017 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 2017

**Zoning Bylaw Changes** – Bylaw 4500 Schedule D was reviewed and altered to promote sustainable building practices by rewarding developers who meet or exceed the City’s sustainable amenity criteria, with respect to increased population density.

#### Broad Planning

What is (are) your current GHG reduction target(s)?	The City of Nanaimo's GHG reduction target as stated in the OCP and Community Sustainability Action Plan is to reduce 2007 emissions by 3% by 2020, and by 39% by 2050. The City had previously adopted Provincial guidelines until we could prepare our own CEEI. This was prepared by Stantec in 2011, and it was recommended we lower the Provincial targets so they are more attainable.
Has your local government used the Community Energy and Emissions Inventory (CEEI) to measure progress?	<b>Yes</b>
What plans, policies or guidelines govern the implementation of climate mitigation in your community?	<b>Yes</b>
<ul style="list-style-type: none"> <li>• Community Energy and Emissions (CEE) Plan</li> <li>• Climate Action Plan</li> <li>• Integrated Community Sustainability Plan</li> <li>• Official Community Plan (OCP)</li> <li>• Regional Growth Strategy (RGS)</li> <li>• Do not have a plan</li> <li>• Other:</li> </ul>	<b>Yes</b>
Does your local government have a corporate GHG reduction plan?	<b>Yes</b>
Does your local government have a climate reserve fund or something similar?	<b>Yes</b>

## 2017 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 2017	
	<b>Step Code Education and Engagement</b> – Planning stages were completed to support the implementation of a Step Code within City bylaws and policy, applying to new buildings and existing homes. Educational opportunities were provided and public consultation was performed.
	<b>Realtor Energy Efficiency Program</b> – This is a program that began in 2017, aimed at training realtors in the area of home energy efficiency, so that homebuyers can be better informed on the various opportunities and benefits associated with energy efficient components.
	<b>Woodstove Change Out Program</b> – Rebates offered for the purchase of high efficiency woodstoves that replace those failing to meet CSA B415.1 standards.
Community-Wide Actions Proposed for 2018	
	<b>Step Code Education and Engagement</b> – Proposals have been adopted by Council and preliminary implementation has begun.
	<b>Realtor Energy Efficiency Program</b> – This program will continue through 2018.
	<b>Woodstove Change Out Program</b> – This program will continue through 2018.
Corporate Actions Taken in 2017	
	<b>Street Light Conversion</b> – Planning Phase 1 of converting street lights from high pressure sodium to LED was completed, with consultation performed and approval by Council.
	<b>Beban Park Recreation Centre Upgrades</b> – New condensing boilers, piping and control system components implemented to increase efficiency, as recommended by the Thermal Energy Study performed in 2016.
	<b>Continuous Optimization Program</b> – Put in place to continuously reassess and adjust the efficiency of building operations at Nanaimo Aquatic Centre, Nanaimo Ice Centre and Beban Park Recreation Centre.
	<b>Annual Building, Lighting and Mechanical Upgrades</b> – Corporate buildings analyzed annually to find areas of inefficiency and address them by priority.
Corporate Actions Proposed for 2018	
	<b>Street Light Conversion</b> – Implementation of Phase 1 is scheduled to occur, with design and tender currently underway. Phase 2 implementation will take place in 2019.
	<b>Beban Park Recreation Centre Upgrades</b> – New reheating coils scheduled to be installed this year. The complete set of upgrades to this centre will be the greatest reducer of GHGs amongst our efforts.
	<b>Continuous Optimization Program</b> – This continues in 2018.
	<b>Annual Building, Lighting and Mechanical Upgrades</b> – This continues in 2018.

**Building and Lighting**

The Province has committed to taking incremental steps to increase energy-efficiency requirements in the BC Building Code to make buildings net-zero energy ready by 2032. The BC Energy Step Code--a part of the BC Building Code--supports that effort

Is your local government aware of the BC Energy Step Code?	<b>Yes</b>
Is your local government implementing the BC Energy Step Code?	<b>Yes</b>

## 2017 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 2017	
	<b>Reservoir No. 1 Energy Recovery Facility</b> – Produced a total of 880 MWh of energy, offsetting about 37% of the water supply system’s energy consumption.
Corporate Actions Proposed for 2018	
	<b>Reservoir No. 1 Energy Recovery Facility</b> – Continuing to generate power at an annual target of 900 MWh. System components are regularly shut down during times of low flow to maximize energy output.

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 <a href="#">BC Climate Action Toolkit</a> ?	Yes
Are you familiar with the 2017 “ <a href="#">List of Funding Opportunities for Clean Energy Projects Led by First Nations and Local Governments?</a> ”	No

## 2017 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 2017	
	<b>Partners in Parks Program</b> – Opportunity for the public, City staff, volunteers and consultants to learn about and get involved with playground development, invasive species removal, garden/tree planting and park maintenance.
	<b>Planting</b> – Funding received to plant fruit trees, nut trees and a food garden in Beaufort Park, as well as coniferous trees in Beban Park, totalling over 300 trees planted in 2017.
	<b>Vancouver Island Beggartick Restoration</b> – The City hired Saanich Native Plants to reintroduce this endangered species to the Jingle Pot Marsh.
	<b>Departure Creek Realignment and Restoration</b> – Plan developed to realign, improve and restore Departure Creek to support salmon habitat and riparian vegetation.
	<b>Snuynemuxw First Nation (SFN) Stream Restoration</b> – The City partnered with the SFN to improve fish habitat on three separate watercourses in South Nanaimo, in accordance with the 2016 Report. Restoration began and finished in 2017.
	<b>Earth Day/Rivers Day Voucher Program</b> – Nanaimo residents purchased 700 subsidized vouchers for large fruit or coniferous trees to be retrieved from a local nursery.
Community-Wide Actions Proposed for 2018	
	<b>Partners in Parks Program</b> – This program will continue through 2018.
	<b>Planting</b> – Plans to plant trees in Bowen Park, along Millstone River and along boulevards in new subdivisions.
	<b>Vancouver Island Beggartick Restoration</b> – Endangered species currently being reintroduced to Jingle Pot Marsh.
	<b>Departure Creek Realignment and Restoration</b> – Implementation will begin this year.
	<b>Earth Day/Rivers Day Voucher Program</b> – This program will continue through 2018, with the goal of selling 800 vouchers.
	<b>Adopt a Street Tree Program</b> – Landowners can apply to have a tree planted on City property in front of their land, with an agreement to water the trees. Our goal is to fund 100 trees.
Corporate Actions Taken in 2017	
	<b>Tree Management and Protection Bylaw</b> – Review performed and amendments proposed for high profile tree cutting prosecutions, additional protection measures for existing trees on private lands, and tree replacement requirements.
Corporate Actions Proposed for 2018	
	<b>Tree Management and Protection Bylaw</b> – Proposed amendments expected to proceed to Council for adoption.
	<b>Tree Inventory Update</b> – Use of GIS mapping to expand upon tree inventory, eventually leading to automated workflow management.
	<b>Street Tree Informational Pamphlet</b> – To be distributed in new subdivisions and locations with street trees, informing residents on their importance and management requirements.

<p><b>Urban Forestry Management Strategy Review</b> – This strategy (created in 2010) will be re-evaluated for consistency to current requirements.</p>
<p><b>Comprehensive Soils Bylaw</b> – Bylaw reviewed to encompass multiple considerations currently dispersed across multiple bylaws, including the placement and removal of soils from a property, erosion and sediment control, storm water retention and contamination. Amendments expected to proceed to Council for adoption in 2019.</p>
<p><b>Development Services</b> – Developers are now required to retain the first 31 mm of rainfall over a site by means of infiltration, storage and reuse, and/or slow release. This has been done with absorbent landscaping soils, below-ground infiltration, rain gardens, bio-swales, ponds and green roofs, and methods continue to improve.</p>

<b>Greenspace</b>	
Does your local government have urban forest policies, plans or programs?	<b>Yes</b>
Does your local government have policies, plans or programs to support local food production?	<b>Yes</b>



## 2017 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 2017	
	<b>Automated Solid Waste Collection</b> – A pilot was conducted to collect the solid wastes from one-third of City residents using automated compressed natural gas trucks. Implementation required extensive public communication regarding waste sorting and cart usage.
	<b>Diverse Curbside Collection</b> – Curbside collection of recycling, organics and now yard waste.
	<b>Partners in a Cleaner Community</b> – This is a bi-annual event where non-profits and volunteers set out to clean up litter in neighborhoods and parks.
	<b>Annual Reuse Events</b> – Include the “Reuse Rendezvous” where residents are encouraged to put out items at the curbside that may be useful to others, and the “Car Trunk Sale” where reusable items are bought and sold by community members.
	<b>Educational Efforts</b> – Publications include a bi-annual recycling newsletter entitled “Trash Talks” and our “Collections Calendar” that provide information about landfill diversion. “Ask us Anything” stalls are present for events such as Bathtub Day and the Vancouver Island Exhibition.
	<b>Recycling App</b> – The City developed an app in conjunction with Recollect, allowing citizens to easily retrieve sorting and waste disposal information, as well as report any issues with waste collection.
Community-Wide Actions Proposed for 2018	
	<b>Automated Solid Waste Collection</b> – Remaining two-thirds of the City will be automated in 2018.
	<b>Diverse Curbside Collection</b> – This will continue through 2018.
	<b>Partners in a Cleaner Community</b> – This bi-annual event will continue through 2018.
	<b>Annual Reuse Events</b> – These events will continue through 2018.
	<b>Educational Efforts</b> – These efforts will continue through 2018.
	<b>Recycling App</b> – This resource is now commonly in use.

Corporate Actions Taken in 2017	
	<b>Solid Waste Management Plan Review</b> – Changes proposed to increase diversion from the landfill, and to form more stringent source separation requirements in the multi-family and ICI sectors.
	<b>Green Group</b> – This group consists of volunteers from all areas of our organization, mandated to improve environmental sustainability by increasing the knowledge of City staff towards recycling and composting, and by making suggestions to improve these services.
	<b>Zero Waste Events</b> – Included Christmas Luncheons and Hometown Hockey Nights, supplying receptacles for all types of waste and encouraging community members to reduce waste. Plans were developed to create Zero Waste Kits for citizens wanting to host their own Zero Waste Events.

<b>Corporate Actions Proposed for 2018</b>	
	<b>Solid Waste Management Plan Review</b> – Changes were approved by the Regional District of Nanaimo (RDN).
	<b>Green Group</b> – This group will continue operating through 2018.
	<b>Zero Waste Events</b> – These events will continue through 2018.

<b>Solid Waste</b>	
Does your local government have construction and demolition waste reduction policies, plans or programs?	<b>No</b>
Does your local government have organics reduction/diversion policies, plans or programs?	<b>Yes</b>

## 2017 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 2017	
	<b>Expanded Bike Network</b> – Bike lanes, shared lanes and neighborhood bikeways were added or improved along 7.5 linear kilometers throughout the City.
	<b>Improved Accessibility</b> – The City installed one new bus shelter.
	<b>Car Share Program</b> – Ongoing support for this program by designating parking spots to carpoolers. Plans created to expand this program to new multi-level family developments.
	<b>Bike to Work Week</b> – Staff and community members encouraged to participate in this event.
	<b>Pedestrian Safety Day</b> – Hosted downtown, this event promoted walking as a method of transport by educating community members about health and safety, and supplying reflective badges.
Community-Wide Actions Proposed for 2018	
	<b>Expanded Bike Network</b> – Bike lanes and trails will be added or improved along 1.5 linear kilometers throughout the City.
	<b>Improved Accessibility</b> – The City plans to install one new bus shelter and/or improve current transit stops to increase accessibility
	<b>Car Share Program</b> – Support will continue for this program in 2018.
	<b>Bike to Work Week</b> – Support will continue for this event in 2018.
	<b>Active and Safe Route to School Project</b> – This is a commuter challenge similar to “Bike to Work Week” but for students using an active form of transportation (eg. walk, run, bike, paddle, etc.).

Corporate Actions Taken in 2017	
	<b>Off Street Parking Bylaw</b> – Changes proposed to include bicycle parking requirements currently not existing within the bylaw, and to decrease automobile dependency and parking lot construction.
Corporate Actions Proposed for 2018	
	<b>Off Street Parking Bylaw</b> – Proposed amendments expected to proceed to Council for adoption.

Transportation	
Does your local government have policies, plans or programs to support:	
• Walking	Yes
• Cycling	Yes
• Transit Use	Yes
• Electric Vehicle Use	Yes
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)?	Yes
Does your local government integrate its transportation and land use planning?	Yes

## 2017 WATER AND WASTEWATER ACTIONS

### 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 2017	
	<b>Harmonized Water Restrictions</b> – To reduce confusion to the public when communicating water restrictions, the City and surrounding regional municipalities made them consistent across areas.
	<b>Toilet Rebate Program</b> – Rebates offered to single and multi-family dwellings when low-efficiency toilets using at least 13 litres of water are replaced with CSA approved low-flow models.
	<b>Appliance Rebate Program</b> – Rebates offered to single and multi-family dwellings when low-efficiency appliances such as washing machines and dishwashers are replaced with low-flow models.
	<b>Commemorated Annual Events</b> – the City of Nanaimo participated in the celebration of World Water Day, BC Drinking Water Week and National Public Works Week.
	<b>Community Education</b> – Elementary school students were educated on the City’s water supply and taken on field trips to our drinking watershed.
	<b>Public Tours</b> – Tours provided of the City’s Public Works Department and new Water Treatment Plant.
Community-Wide Actions Proposed for 2018	
	<b>Toilet Rebate Program</b> – Rebate programming will continue into 2018
	<b>Appliance Rebate Program</b> – Rebate programming will continue into 2018.
	<b>Commemorated Annual Events</b> – These events will continue through 2018.
	<b>Community Education</b> – These efforts will continue through 2018.
	<b>Public Tours</b> – These tours will continue through 2018.
Corporate Actions Taken in 2017	
	<b>Efficiency Upgrades</b> – Improvements to Pump Station, Water Treatment Plant and Departure Bay Reservoir made to increase water supply efficiency and reduce losses.
	<b>I&amp;I Reduction Strategy</b> – Consultant group was engaged to complete the strategy. The plan includes the installation of one permanent sanitary sewer monitoring station per sewer catchment to quantify and qualify inflow and infiltration, measuring and documenting reductions achieved.
	<b>ICI Water Meter Evaluation and Upgrade</b> – Plans put in place to upgrade water meters at high flow areas in the industrial, commercial and institutional sectors, with the goal of conserving water and eventually preventing any cross-contamination to the City’s water supply.
	<b>Water Supply Strategic Plan Update</b> – This plan was created in 2007, but reviewed and adjusted in 2017 to include the impacts of climate change and population growth on water supply augmentations and their required timings.
	<b>Water Audit</b> – Characterization and quantification completed for water uses and leakages throughout the city.
	<b>Stormwater Management</b> – Developers must provide plans for stormwater management on all new sites, including adaptations to accommodate increased runoff and treatment components if water quality is compromised by the development.

<b>Corporate Actions Proposed for 2018</b>	
	<b>Efficiency Upgrades</b> – Water Audit used to prioritize water system upgrades, including piping and reservoir components. The energy recovery facility at Reservoir No. 1 has been continuously adjusted to produce the greatest amount of energy given a variable flow rate.
	<b>I&amp;I Reduction Strategy</b> – The report is now complete, and City staff are currently preparing for implementation.
	<b>ICI Water Meter Evaluation and Upgrade</b> – Phase 1 is currently up for tender and Phase 2 is in the design stage, with the goal of implementation in 2019.
	<b>Stormwater Management</b> – This will continue through 2018.

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

## 2017 CLIMATE CHANGE ADAPTATION ACTIONS

This section of the CARIP survey is designed to collect information related to the types of climate impacts local governments are experiencing and how they are being addressed.

Please identify the THREE climate impacts that are most relevant to your Local Government.	
• Warmer winter temperatures reducing snowpack	✓
• Changes to temperature and precipitation causing seasonal drought	✓
• Heatwaves impacting population health	
• Increased temperatures increasing wildfire activity	
• Increased temperatures affecting air quality	
• Changing temperatures influencing species migration and ecosystem shifts	✓
• Extreme weather events contributing to urban and overland flooding	
• Sea level rise and storms causing coastal flooding and/or erosion	

In 2017 has your local government addressed the impacts of a changing climate using any of the following?	
Risk and Vulnerability Assessments	Yes
Risk Reduction Strategies	Yes
Emergency response planning	Yes
Asset management	Yes
Natural/Eco asset management strategies	Yes
Infrastructure upgrades (e.g. storm water system upgrades)	Yes
Beach Nourishment projects	No
Economic diversification initiatives	Yes
Strategic and financial planning	Yes
Cross-department working groups	Yes
OCP policy changes	Yes
Changes to zoning and other bylaws and regulations	Yes
Incentives for property owner (e.g. reducing storm water run-off)	Yes
Public education and awareness	Yes
Research	Yes
Mapping	Yes
Partnerships	Yes

<b>Climate Change Adaptation Actions Taken in 2017</b>	
Please elaborate on key actions and/or partnerships your local government has engaged in to prepare for, and adapt to a changing climate. Add links to key documents and information where appropriate.	
	<b>Climate Change Resiliency Strategy</b> – The City began collecting data and planning for this strategy with the goal of preparing for the unavoidable effects of climate change by recommending actions to accommodate, avoid, protect against, and retreat from their repercussions.
<b>Climate Change Adaptation Actions Proposed for 2018</b>	
	<b>Climate Change Resiliency Strategy</b> – The City has received partial funding and has hired an outside consultant to complete the Sea Level Rise Study. Once this study is nearly complete, a consultant can be hired to officially formulate the Climate Change Resiliency Strategy.
<b>For more information please contact:</b>	
	Rob Lawrance, rob.lawrance@nanaimo.ca

<b>The following are key resources that may be helpful to your local government in identifying climate impacts, as well as, strategies, actions and funding to deal with them. For those resources that you have used, please indicate whether they were useful in advancing your work in climate change adaptation?</b>	
<a href="#">Indicators of Climate Change for British Columbia, 2016</a> <a href="#">Plan2Adapt</a> <a href="#">Climate Projections for Metro Vancouver</a> <a href="#">Climate Projections for the Capital Region</a> <a href="#">Climate Projections for the Cowichan Valley Regional District</a> <a href="#">Province of BC's BC Adapts Video Series</a> <a href="#">Preparing for Climate Change: An Implementation Guide for Local Governments</a> <a href="#">The Public Infrastructure and Engineering Vulnerability Committee's (PIEVC) protocol</a> <a href="#">Sea Level Rise Primer</a> <a href="#">BC Regional Adaptation Collaborative Webinars</a> <a href="#">www.ReTooling.ca</a> <a href="#">Water Balance Model</a> <a href="#">The Water Conservation Calculator</a>  Funding: <a href="#">National Disaster Mitigation Program (NDMP)</a> <a href="#">Community Emergency Preparedness Fund (CEPF)</a> <a href="#">Municipalities for Climate Innovation Program (MCIP)</a> <a href="#">Climate Adaptation Partner Grants (FCM)</a> <a href="#">Infrastructure Planning Grants (MAH)</a> <a href="#">Federal Gas Tax Fund</a>	Useful Useful Haven't Used Haven't Used Haven't Used Useful Useful Useful Useful Useful Haven't Used Haven't Used Haven't Used Haven't Used  Useful Useful Useful Useful Useful

<b>Other</b>	
Are you familiar with the <a href="#">Community Lifecycle Infrastructure Costing Tool (CLIC)</a> ?	<b>Yes</b>
Have you used CLIC?	<b>Yes</b>

## INNOVATION AND PEER-TO-PEER LEARNING

### Innovation

This section provides the opportunity to showcase an innovative Corporate and/or Community-Wide GHG reduction and/or climate change adaptation activity that your local government has undertaken and that has had, or has the potential to have, a significant impact. You are welcome to repeat an action that has already been listed.

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.

Communities that have conducted innovative initiatives may want to consider raising their profile through applications to [CEA's Climate and Energy Action Awards](#), [UBCM Climate and Energy Action Award](#), [FCM Sustainable Communities Awards](#) or through submissions to [FCM's National Measures Report](#).

#### Community-Wide Action

**Public Works Day** – The City of Nanaimo participates in National Public Works Week by hosting our own Public Works Day. Up to 300 students from grades 4 and 5 are invited for a full school day of learning about the many services provided by this department, the hydrological cycle including our drinking watershed, water conservation rationale, sewers and drainage systems, and the overall impact of climate change.

#### Corporate Action

**Municipal Natural Capital Initiative (MNCI)** – In 2016, Council voted to endorse the participation of the City of Nanaimo in the MNCI pilot study, making us one of five Canadian municipalities involved. The intent of this project is to allow local governments to assess their natural capital assets in order to more clearly define their value in supplementing the City's asset management and financial planning. Our focus was on Buttertubs Marsh Conservation Area, a 55 ha floodplain located at 1780 Jingle Pot Road and 175 Pryde Avenue, adjacent to Millstone River. Numerous storm water outflows currently discharge into the marsh, and were quantified with the goal of understanding and maximizing potential municipal services from the area. Prior to the study, no costing estimates for the value of storm water management or any other services had been conducted. The pilot was completed in January 2018, the results of which suggest roughly a \$6M value, potentially increased to \$9M given the anticipated rise in flows with climate change. This year we plan to continue expanding our stormwater drainage inventory, and intentionally utilise the marsh's inherent capabilities. Increasing the storage capacity of this natural system could reduce downstream flooding, aiding to protect, restore and enhance the habitat while offering reduced stormwater costs for the City.

**Cold Water Ice Resurfacing** – In June 2017, cool water ice making equipment (a degassing vortex) was installed at the Nanaimo Ice Centre, serving both ice sheets. This system enables the use of less than 20 C water to be used for ice resurfacing compared to traditional use of 65 C water in the Zamboni, and results in significant energy savings and better quality ice.

**Annual Engineering Co-op Student** – The City's Engineering and Public Works Department hired an environmental engineering student this year to fill the annual position, offering additional knowledge in the areas of contamination, waste management and sustainable building practices.



## 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

**Step Code Education and Engagement** – RDN, BC Hydro and other island municipalities

**Realtor Energy Efficiency Program** – RDN, Vancouver Island Real Estate Board

**Woodstove Change Out Program** – BC Ministry of Environment

**Various Energy and Tree Planting Initiatives** – BC Hydro

**Vancouver Island Beggartick Restoration** – National Wetland Conservation Fund (Canadian Wildlife Service/Environment and Climate Change Canada)

**Tree Planting** – TD Bank

**Departure Creek Realignment and Restoration** – The SFN, the Departure Bay Neighborhood Association and the Department of Fisheries and Ocean

**CNG Solid Waste Collection Trucks** – Fortis BC

**Appliance Rebate Program** – BC Hydro

**Climate Change Resiliency Strategy** – Federation of Canadian Municipalities

**MNCI** – David Suzuki Foundation, Asset Management BC, the Town of Gibsons, Sustainable Prosperity, and Brooke and Associates

**Annual Engineering Co-op Student** – Employment and Social Development Canada

## 2017 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 2017?	<b>Yes</b>
If your local government measured 2017 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:	4,520
If your local government measured 2017 corporate GHG emissions, please report the number of corporate GHG emissions (in tonnes of carbon dioxide equivalent) from <u>contracted</u> services:	487
<b>TOTAL A: CORPORATE GHG EMISSIONS FOR 2017</b>	<b>5,007 tCO<sub>2</sub>e</b>

### 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 2017 GHG emissions reductions (in tonnes of carbon dioxide equivalent (tCO<sub>2</sub>e)) being claimed from Option 1 GHG Reduction Projects:**

OPTION 1 PROJECTS	REDUCTIONS
Energy Efficient Retrofits	
Solar Thermal	
Household Organic Waste Composting	1926
Low Emission Vehicles	
Avoided Forest Conversion	
<b>TOTAL B: REDUCTIONS FROM OPTION 1 PROJECTS FOR 2017</b>	<b>1,926 tCO<sub>2</sub>e</b>

## Corporate GHG Emissions Balance for 2017

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 2017 = 3,081 tCO<sub>2</sub>e**

Based on your local government's 2017 CARIP Climate Action/Carbon Neutral Progress Survey, please check the GCC Climate Action Recognition Program level that best applies:

Level 1 – Demonstrating Progress on Charter Commitments	
Level 2 – Measuring GHG Emissions	
Level 3 – Accelerating Progress on Charter Commitments	✓
Level 4 - Achievement of Carbon Neutrality	
Not Sure	