

# Climate Action Revenue Incentive (CARIP) Public Report for 2018

**Local Government: District of Saanich**

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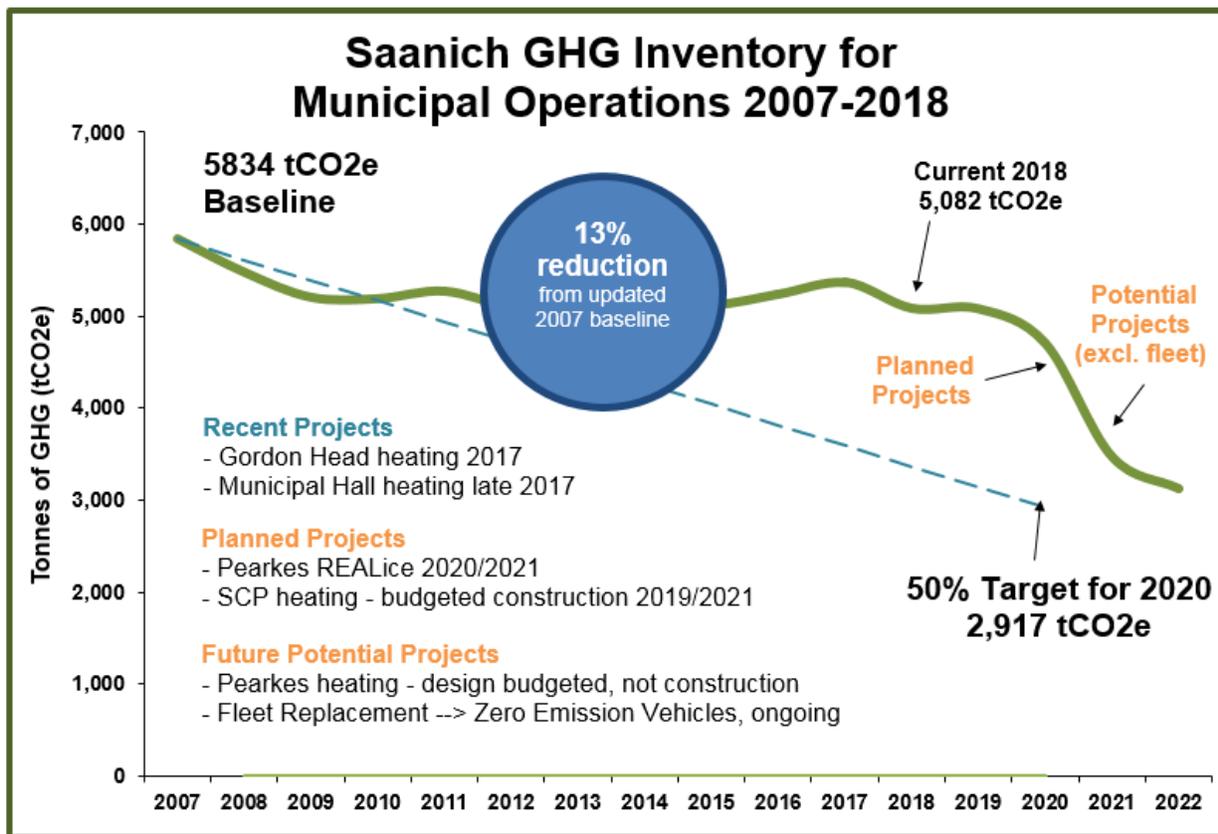
The District of Saanich has completed the 2018 Climate Action Revenue Incentive Program (CARIP) Public Report as required by the Province of BC. The CARIP report summarizes actions taken in 2018 and proposed for 2019 to reduce corporate and community-wide energy consumption and greenhouse gas emissions (GHG) and reports on progress towards achieving carbon neutrality.

## 2018 BROAD PLANNING ACTIONS

### Saanich Corporate GHG Inventory

In 2010, the District of Saanich approved the Climate Action Plan, which committed to a GHG reduction target for corporate emissions of 50% by 2020 from 2007 levels. Figure 1 provides the progress made towards the 2020 corporate GHG emissions reduction target from the 2007 baseline. This shows that our corporate GHG emissions reductions are currently at 5,082 tonnes of Carbon equivalent (tCO<sub>2</sub>e), which is 13% below our updated 2007 baseline (5,834 tCO<sub>2</sub>e). The baseline was updated for 2018 reporting to represent updated methodology including improved contractor emissions tracking.

**Figure 1: Saanich Corporate GHG Emissions**



Our corporate GHG inventory is split relatively equally between buildings and fleet, with 2,162 tCO<sub>2</sub>e from buildings and 2,920 tCO<sub>2</sub>e from fleet, including contractor emissions. The main GHG contributions from our fleet relate to diesel use in our heavy-duty vehicles and trucks. The

reduction in the number of vehicles overall and replacement of smaller (light duty) cars with electric vehicles (EVs) has supported a reduction in our fleet emissions in recent years. Staff continue to monitor market options that would enable us to move our heavy-duty fleet and trucks to a low carbon fuel source.

Key facilities that have undertaken recent heating system upgrades have seen a decline in their heating fuel requirements and GHG emissions. These projects include the installation of an Air Source Heat Pump and condensing boiler at Gordon Head Recreation Centre and the upgraded new condensing boiler at the Municipal Hall. Additionally, 2018 saw a decrease in the number of Heating Degree Days (HDD) in comparison to 2017. (HDD is a measurement designed to quantify the demand for energy needed to heat a building and relates to the number of degrees that a day’s average temperature is below 16oC.)

## Broad Planning Actions

<b>Q 6 + Q 7 Community-Wide Broad Planning Actions Taken in 2018 + Additional Actions</b>	
	Saanich is building a plan to reach 100% renewable energy, 80% greenhouse gas emission reductions, and building resilience to a changing climate. Phase 1 of updating the Saanich Climate Plan was completed in December 2018, which included extensive public engagement, modelling a 2050 pathway, and completing two community GHG inventories – one territorial or GPC, and one consumption-based. Engagement showed strong community support for urgent, effective climate action. Visit <a href="http://www.saanich.ca/climateplan">www.saanich.ca/climateplan</a> for updates.
	Saanich is participating in the international “One Planet Cities” initiative, supporting a group of Saanich volunteers, businesses, schools, and organizations to create their own “One Planet Action Plans,” or plans to help their organizations get to “One Planet Living.” The One Planet Cities project is funded by the KR Foundation in Denmark and aims to create happier, healthier, more liveable cities. The project is coordinated by Bioregional, a non-profit from the UK, and their local non-profit partners One Earth.
	Saanich is completing updates to Local Area Plans, which incorporate climate mitigation and adaptation considerations. In 2018, the Local Area Plans for the communities of Cordova Bay, Cadboro Bay, and Uptown Douglas are underway. Additionally, a Garden Suite study is underway.
<b>Q 8 Community-Wide Broad Planning Actions Proposed for 2019</b>	
	The updated Saanich Climate Plan, including adaptation and mitigation actions, will continue to be developed. The next two phases of public engagement are scheduled for spring and summer 2019, and a draft plan will be presented to Council in fall 2019.
	The Saanich online Carbon Calculator will be updated to include consumption-based emissions, and promoted to help residents understand where they can focus their efforts to reduce their personal carbon emissions.
	Local Area Plans for North Quadra, Quadra, Gordon Head, and Carey communities will begin in 2019.

<b>Q 9 + Q 10 Corporate Broad Planning Actions Taken in 2018 + Additional Actions</b>	
	The Saanich Carbon Fund continues to be implemented, with departments paying into a

	fund for corporate climate action initiatives based on their GHG emissions that year. 2018 was the first year that contractor emissions were included in the Carbon Fund costs to departments.
	Continued training and refinement of the web-based data system (“SoFi”) for tracking corporate GHG emissions. This tool is helping to simplify annual corporate GHG reporting, improve analysis capabilities and minimize staff time required in future years.
<b>Q 11 Corporate Broad Planning Actions Proposed for 2019</b>	
	The Saanich Climate Action Plan will include corporate planning and targets.

<b>Broad Planning</b>	
<b>Q 12 What is (are) your current GHG reduction target(s)?</b>	50% corporate GHG reduction by 2020 of 2007 baseline (from 2010 Climate Action Plan) 80% community GHG reduction and 100% renewable energy by 2050 (from 2017 Council resolution)
<b>Q 13 Are you familiar with your local government's community energy and emissions inventory (e.g. <a href="#">CEEI</a> or another inventory)?</b>	Yes
<b>Q 14 What plans, policies or guidelines govern the implementation of climate mitigation in your community?</b>	No No Yes Yes Yes No Yes
<b>Q 15 Does your local government have a corporate GHG reduction plan?</b>	Yes

## 2018 BUILDING 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.

<b>Q 16 + Q 17 Community-Wide Building and Lighting Actions Taken in 2018 + Additional Actions</b>	
	Helping residents to shrink their greenhouse gas emissions, Saanich provided "top up" funding to two energy efficiency programs for Saanich residents between 2015 and 2018. The Province's Oil to Heat Pump (O2HP) program provided rebates and other coaching supports for the replacement of oil heating systems with a low-carbon air-source heat pump,

	and saw 155 Saanich residents participate out of a total 472 participants province-wide. Over 1,000 tonnes of GHGs per year were eliminated from Saanich households as a result. Through the Municipal Partner Offer (MPO) pilot, Saanich provided "bonus" funding for 43 residents that undertook deep energy retrofits on their home (3+ upgrades), and enabled oil heated homes to access rebates that were previously only offered by the utilities for electric and gas-heated homes. The successes of these programs have been integrated into the Province's EfficiencyBC program, where municipal top-ups and oil to heat pump conversions are now supported at higher incentive levels.
	Recognizing that many residents in our community are unable to benefit from the rebate programs available due to difficulty with upfront costs, Saanich is furthering work towards providing a retrofit financing program which would enable homeowners to invest in more costly energy upgrades without the burden of high capital costs, and repay the District over time, while enjoying lower energy costs.
<b>Q 18 Community-Wide Building and Lighting Actions Proposed for 2019</b>	
	Saanich will apply for external grant funding for a community retrofit financing program, and seek Council approval and funding to implement the program.
	Saanich will continue to promote the available rebates from other sources, including Efficiency BC.
	Saanich will "top-up" the cost of energy evaluations through Efficiency BC.
	In partnership with non-profit City Green Solutions and 8 other local governments in BC, participate in the Federation of Canadian Municipalities' Transition 2050 project to accelerate low carbon heating system and deep energy and emission reduction retrofits in our community building stock.

<b>Q 19 + Q 20 Corporate Building and Lighting Actions Taken in 2018 + Additional Actions</b>	
	Efficiency and low-carbon capital upgrades were completed in pursuance of our 2020 and 2050 climate targets. Efficiency upgrades were completed at the Municipal Hall, including a new high efficiency boiler, heating coils, and controls. Servers were also upgraded to solid state drives. These upgrades are expected to reduce corporate GHG emissions by 61.5 tCO <sub>2</sub> e.
	The Strategic Facilities Master Plan was adopted in April 2018. The Plan stated that "all future construction projects should aim to meet LEED Gold certification at a minimum and future redevelopment design should give consideration to these issues. Construction and redevelopment should also address the need for facilities to achieve the highest step of the BC Energy Step Code, equivalent to the Passive House standard, addressing our vision for becoming a 100% renewable energy community by 2050. The design should take into consideration future climate projections as well as site location relative to future sea level rise and incorporate climate adaptation measures.
	Regular quarterly energy reports were presented to Saanich facility operators and managers, using the reporting features in the GHG Reporting SOFI software, along with benchmarking and weather normalization.
	In 2016, Saanich began a 5-year program to convert 9,000 street lights from High Pressure Sodium (HPS) lamps to energy efficient Light Emitting Diodes (LEDs). The program will result in a 30% reduction in overall electricity use and an annual savings of \$240,000 and 26 tCO <sub>2</sub> e once fully complete. The LED fixtures also have a longer life span than HPS fixtures reducing the need for maintenance. In 2018/19, 817 lighting units have already

	been replaced, with an estimated energy savings of \$20,421 (energy and O&M).
	Efficient lighting upgrades at Cedar Hill Recreation Centre, Les Passmore, Municipal Hall, and Nellie McClung facilities, with total savings (energy and O&M) estimated to be \$57,142.
<b>Q 21 Corporate Building and Lighting Actions Proposed for 2019</b>	
	Energy studies work are planned for key facilities, including a whole building advanced retro-commissioning and electrical conversation audit at Gordon Head Recreation Centre, detailed energy audit at Saanich Commonwealth Place.
	Phased upgrades at Saanich Commonwealth Place to transition from fossil fuels to renewable biomass, plus efficiency upgrades, are planned for 2019-2022. The first phase will include mechanical and electrical design work, new air handlers and controls, and lighting upgrades.
	Additional lighting and mechanical upgrades in key facilities are anticipated to reduce our corporate GHGs by an additional 78.8 tCO <sub>2</sub> e.
	Streetlight retrofits will continue in 2019/2020, with an anticipated energy and O&M savings of \$8,777.

<b>Building and Lighting</b>	
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	
<b>Q 22 Is your local government aware of the <a href="#">BC Energy Step Code</a>?</b>	Yes
<b>Q 23 Is your local government implementing the <a href="#">BC Energy Step Code</a>?</b>	Yes

## P5 2018 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.

<b>Q 24 + Q 25 Community-Wide Energy Generation Actions Taken in 2018 + Additional Actions</b>	
	Saanich residents have adopted solar photovoltaic systems in growing numbers. In 2018, there were 21 new solar PV net metering residential customers in Saanich, for a total of 76 residential PV net metering participants, 7 institutional/commercial PV net metering participants, and 39 solar thermal systems in Saanich to date.
<b>Q 26 Community-Wide Energy Generation Actions Proposed for 2019</b>	
	Public and stakeholder engagement is underway on the update of the Climate Action and

Adaptation Plans with a vision for 100% Renewable Energy by 2050.
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<b>Q 27 + Q 28 Corporate Energy Generation Actions Taken in 2018 + Additional Actions</b>
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Through the FortisBC-funded Sustainable Energy Specialist, Saanich has explored several opportunities for RNG supply as it relates to the role of our municipality, including engagement with our agricultural businesses (integrated with the Peninsula and Area Agricultural Commission), regional supply of RNG through our curbside organics collection and opportunities for RNG supply at our Public Works Yard. Saanich has liaised with the Capital Regional District relating to RNG supply from curbside organics, arranging presentations to the Agricultural Commission to connect with local farmers, and ensuring the consideration of RNG generation is embedded within the Public Works Yard site options and development as it proceeds over the next few years.
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<b>Q 29 Corporate Energy Generation Actions Proposed for 2019</b>
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<b>Energy Generation</b>	
<b>Q 30 Is your local government developing, or constructing a</b> <ul style="list-style-type: none"> <li>• district energy system</li> <li>• renewable energy system</li> <li>• none of the above</li> </ul>	<b>No</b> <b>Yes</b>
<b>Q 31 Is your local government operating a</b> <ul style="list-style-type: none"> <li>• district energy system</li> <li>• renewable energy system</li> <li>• none of the above</li> </ul>	<b>No</b> <b>Yes</b>
<b>Q 32 Is your local government connected to a district energy system that is operated by another energy provider?</b>	<b>Yes/No</b>
<b>Q 33 Are you familiar with the 2018 <a href="#">List of Funding Opportunities for Clean Energy Projects Led by First Nations and Local Governments?</a></b>	<b>Yes/No</b>

## 2018 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.

<b>Q 34 + Q 36 Community-Wide Greenspace Actions Taken in 2018 + Additional Actions (Q 35 below Q 41)</b>
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In 2018 Saanich planted over 1888 trees and maintained 1300 young trees (previously planted).
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2018 saw the continuation of a volunteer program coordinated by Parks & Recreation to remove invasive species and restore disturbed natural areas covering 56 parks with over
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	18,500 volunteer hours.
	Continued Implementation of the Invasive Species Management Strategy including education for residents, development of best management practices, and treatment of invasive species.
	Continued restoration of Swan and Colquitz Creeks to ensure appropriate habitat for salmonids. Distributed thousands of salmon fry in to local creeks for future stock enhancement.
	Completion of the Haro Woods Park Management Plan, a small urban forest area, which has a focus on environmental protection, restoration and respectful use.
	Continued implementation of Urban Forestry Strategy key findings including education on tree care for residents, updating best management practices and policy, and strengthening of the tree planting program objectives.
	In 2018 Saanich planted over 1888 trees and maintained 1300 young trees (previously planted).

**Q 37 Community-Wide Greenspace Actions Proposed for 2019**

	Together with the Ministry of Transportation and Infrastructure, develop and implement restoration projects in Cuthbert Holmes Park to mitigate impacts from the McKenzie Interchange project.
	The Streamside Development Permit Area Guidelines will be updated in 2019 in response to the 2014 Ombudsperson of British Columbia Report.
	The Pesticide Bylaw will be updated in 2019 in response to new amendments to Provincial regulations.
	Continued Implementation of the Invasive Species Management Strategy including education for residents, development of best management practices, and treatment of invasive species. A new GIS layer and database will be completed for more effective response to high priority species.
	Publish the 4 <sup>th</sup> edition of the Environmentally Significant Areas Atlas.
	Strengthen collaborations with Community Associations to expand the boulevard tree partnership program to help expand the urban forest canopy.
	Together with non-profit societies, continue enhancement of Swan and Colquitz Creeks to improve habitat for salmonids.

**Q 38 + Q 39 Corporate Greenspace Actions Taken in 2018 + Additional Actions**

	Created a database of invasive species outbreaks.
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**Q 40 Corporate Greenspace Actions Proposed for 2019**

	Propose and implement changes to the Tree Protection Bylaw to strengthen the protection of the urban forest in Saanich.
	To begin a public process of creating an environmental policy framework and a Biodiversity Conservation Strategy for the municipality.

**Greenspace**

<b>Q 41 Does your local government have urban forest policies, plans or programs?</b>	<b>Yes</b>
<b>Q 35. Does your local government have policies, plans or programs to support local food production?</b>	<b>Yes</b>

## 2018 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.

<b>Q 42 + Q 43 Community-Wide Solid Waste Actions Taken in 2018 + Additional Actions</b>	
	2018 was the fifth year of the Greener Garbage kitchen scraps program, which started in April 2014. 8947 tonnes of compostable kitchen scraps and yard and garden waste were collected from households in 2018, plus 7092 tonnes of yard and garden waste drop off.
	Saanich served on the CRD Solid Waste Management Planning committee, which governs waste reduction targets, waste, recycling, diversion, and energy capture.
<b>Q 44 Community-Wide Solid Waste Actions Proposed for 2019</b>	
	Continue the Greener Garbage kitchen scraps program.

<b>Q 45 + Q 46 Corporate Solid Waste Actions Taken in 2018 + Additional Actions</b>	
	Walkthroughs of G. R. Pearkes and Cedar Hill Golf Club and Cedar Hill Recreation Centre to inventory current and potential recycling program improvements.
	Implemented a corporate and community refundable beverage container drop-off program at the Municipal Hall, saving Saanich staff time and fundraising for the Saanich Employee Benefits Association.
<b>Q 47 Corporate Solid Waste Actions Proposed for 2019</b>	
	Implementing improved waste management systems across corporate facilities, including recreation centres.

<b>Solid Waste</b>	
<b>Q 48 Does your local government have construction and demolition waste reduction policies, plans or programs?</b>	<b>Yes</b>
<b>Q 49 Does your local government have organics reduction/diversion policies, plans or programs?</b>	<b>Yes</b>

## 2018 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 and public transit, can contribute to reductions in GHG emissions and more livable communities.

<b>Q 50 + Q 51 Community-Wide Transportation Actions Taken in 2018 + Additional Actions</b>	
	The Saanich Active Transportation Plan, with the goal of doubling active mode share by

	2036 and reaching 50% active mode share (including public transit use) by 2050.
	Transit stop improvements - Installation of 11 new transit stops accessible for persons of all abilities. Working with BC Transit 10 new transit shelters.
	Shelbourne Valley Project (SVP) – Phase 1 - Phase 1 of the SVP includes the installation of buffered bike lanes between McKenzie Avenue and Torquay Drive, and a bikeway connecting Shelbourne Street at Pear Street to UVic via Pear Street and Poplar Ave.
	An Electric Vehicle Strategy is in development with key stakeholder engagement in 2018. The provincial rebates and incentive programs outlined on Plug-in BC to support the uptake of Electric Vehicles (EVs) and charging infrastructure continued to be promoted by Saanich in 2018.
	Ansell-Larchwood-McKenzie Sidewalk - In correlation with the Safe Route to School program the District is undertaking a pathway connection project from Ansell Road to Larchwood Drive.
	Lansdowne Dean Ave – To provide a safe cycling and walking connection from Dean Avenue to Lansdownes multi use pathway and to Camosun College. The District undertook an intersection upgrade project which included installation of a pedestrian activated traffic signals.
<b>Q 52 Community-Wide Transportation Actions Proposed for 2019</b>	
	Wilkinson Rd - Greenlea Ave to Travino Lane Rd Improvements - The planned improvements for this project are to provide pedestrian and cycling facilities that contribute to a more balanced mode share along Wilkinson Rd from Travino Lane to Greenlea Dr. This project will include the installation of concrete sidewalks on the east side of the road, painted bike lanes, improved bus stops, and intersection improvements at Greenlea Rd.
	Feltham Road Re-laning – Shelbourne St to Tyndall Ave - This project is driven by the Active Transportation Plan and will provide improvements to sidewalks and new dedicated cycling facilities along Feltham Rd from Shelbourne St to Tyndall Ave. Plans include road re-laning, buffered bike lanes, a full pavement overlay and improvements to existing sidewalks.
	Caen Rd & Dieppe Rd Sidewalk – Dieppe Rd to Quadra St - This project is intended as a continuation of the newly constructed concrete sidewalk on Dieppe Rd to complete the gap in pedestrian facilities between Dieppe Road and Quadra Street.
	Shelbourne Valley Project (SVP) – Phase 1 - Phase 1 of the SVP includes the installation of buffered bike lanes between McKenzie Avenue and Torquay Drive, and a bikeway connecting Shelbourne Street at Pear Street to UVic via Pear Street and Poplar Ave.
	West Saanich Road - Quadra St to Royal Oak Shopping Centre - This project is a final phase of West Saanich Rd Street Scape, which fulfills key policies identified in the District's Official Community Plan, completes gaps in the cycling and pedestrian facilities along West Saanich Road, and provides safe alternate modes of transportation. Along with the installation of buffered bike lanes, concrete sidewalks, LED street lighting, upgrade of bus stops, installation of a new mid-block crosswalk connecting two bus stops, planting of significant amount of new trees, an asphalt overlay will take place from Quadra St to Royal Oak Shopping Centre.
	Finnerty Road - McKenzie Ave to Arbutus Rd Infrastructure Upgrade Project - This project will install new concrete sidewalks, install dedicated protected bike lanes and place an asphalt overlay between the roundabout at McKenzie Ave and Arbutus Rd.
	Cedar Hill Road Crosswalk - at Doncaster Drive - This project will include the installation of a new crosswalk on Cedar Hill Road at the intersection of Doncaster Drive and McRae

	Avenue. New sidewalks will be installed on both sides of Cedar Hill and the approach angles of Doncaster Drive and McRae Avenue will be adjusted to improve traffic patterns, visibility, and pedestrian safety. Pedestrian activated flashing beacons will also be installed along with crosswalk signs and paint markings.
	Cadboro Bay – Hibbens Close to Killarney Road Pedestrian Improvements - This project will provide interim pedestrian improvements along Cadboro Bay Road between Hibbens Close and Killarney Road until the other more permanent improvements planned in the 5-10 year time frame as outlined in the Active Transportation Plan can be implemented.
	BC Hydro plans to install a second DC Fast Charger at or near Uptown, with plans for it to be operational later in 2019.

<b>Q 53 + Q 54 Corporate Transportation Actions Taken in 2018 + Additional Actions</b>	
	Installed 2 x Level 2 EV chargers at Fire Hall 1 with another 3 stalls electrified ready for future installation. Installed 4 x Level 2 EV chargers at the Annex (Municipal Hall) with another 6-10 electrified ready for future installation.
	Maintenance of public chargers, including part replacements, continues in order to provide the public with reliable service.
	Began “Transportations Future Project” a collaboration with the University of Victoria’s Pacific Institute for Climate Solutions to analyze what fleets (corporate/municipal) make sense to be early adopters of battery electric drivetrains. That work involves detailed drivetrain-drive cycle analysis, and the associated grid impacts from plugging in to charge. Saanich is providing fleet data necessary for the research, which can also be used to identify opportunities for fuel use and GHG reductions from fleet operational strategies and future vehicle purchases and for use in academic works and publications.
<b>Q 55 Corporate Transportation - Actions Proposed for 2019</b>	
	Planning for further corporate fleet replacement with EVs will continue in 2019 with four additional fleet EVs expected in 2019 and six EVs expected in 2020.
	Working towards an E3 Fleet Program rating.
	A Level 2 charging station is planned to be installed at the Public Works Yard.

<b>Transportation</b>	
<b>Q 56 Does your local government have policies, plans or programs to support:</b>	
<ul style="list-style-type: none"> <li>• Walking</li> <li>• Cycling</li> <li>• Transit Use</li> <li>• Electric Vehicle Use</li> <li>• Other (please specify)</li> </ul>	<p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>
<b>Q 57 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 behaviour)?</b>	No
<b>Q 58 Does your local government integrate its transportation and land use planning?</b>	Yes

## 2018 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 GHG emissions.

<b>Q 59 + Q 60 Community-Wide Water and Wastewater Actions Taken in 2018 + Additional Actions</b>	
	Technical support and involvement in the Capital Regional District (CRD) sewage treatment plant development, design and construction provided in 2018.
<b>Q 61 Community-Wide Water and Wastewater Actions Proposed for 2019</b>	
	In 2019, Saanich will complete a strategy for delivering a municipal-wide Drainage Master Plan to improve the storm drain network and reduce the risk of flooding. The first step will be to model all drainage basins; priority will be given to drainage basins contained within those neighbourhoods undergoing Local Area Plan bylaw updates and those previously identified in Council's Strategic Plan
	Technical support and involvement in the Capital Regional District (CRD) sewage treatment plant development, design and construction will continue in 2019.
<b>Q 62 + Q 63 Corporate Water and Wastewater Actions Taken in 2018 + Additional Actions</b>	
	In 2018 we replaced 4,700 metres of watermain, rehabilitated/replaced 3,500 metres of sanitary sewer, and rehabilitated/replaced 1,600 metres of storm drain mains.
<b>Q 64 Corporate Water and Wastewater Actions Proposed for 2019</b>	
	In 2019, we will be initiating a network modeled unidirectional flushing program for the water system to improve our process related to maintaining potable water quality. This will also reduce/optimize the amount of water required to be flushed through the system, enhancing water conservation practices for this operational function.
<b>Water Conservation</b>	
<b>Q 65 Does your local government have water conservation policies, plans or programs?</b>	<b>Yes</b>

## 2018 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.

<b>Q 66 Please identify the THREE climate impacts that are most relevant to your Local Government.</b>	
<ul style="list-style-type: none"> <li>• Warmer winter temperatures reducing snowpack</li> <li>• Changes to temperature and precipitation causing seasonal drought</li> <li>• Heatwaves impacting population health</li> <li>• Increased temperatures increasing wildfire activity</li> </ul>	

<ul style="list-style-type: none"> <li>• Increased temperatures affecting air quality</li> <li>• Changing temperatures influencing species migration and ecosystem shifts</li> <li>• Changing temperatures influencing ecosystem shifts</li> <li>• Extreme weather events contributing to urban and overland flooding</li> <li>• Sea level rise and storms causing coastal flooding and/or erosion</li> </ul>	<p>Yes Yes Yes</p>
<p>Other (please specify): Risk assessment is underway as part of the updated Saanich Climate Plan, expected to be completed in fall 2019. Results to date indicate that the highest risks are to ecosystems, including stress for native plants, opportunities for invasive species, ecological regime shifts, and coastal squeeze from rising sea levels.</p>	
<p><b>Q 67 In 2018 has your local government addressed the impacts of a changing climate using any of the following?</b></p>	
<p>Risk and Vulnerability Assessments Risk Reduction Strategies Emergency Response Planning Asset Management Natural/Eco Asset Management Strategies Infrastructure Upgrades (e.g. stormwater system upgrades) Beach Nourishment Projects Economic Diversification Initiatives Strategic and Financial Planning Cross-Department Working Groups Official Community Plan Policy Changes Changes to Zoning and other Bylaws and Regulations Incentives for Property Owners (e.g. reducing storm water run-off) Public Education and Awareness Research Mapping Partnerships</p>	<p>Yes Yes Yes No No Yes No No No Yes No No Yes Yes Yes Yes Yes</p>
<p>Other (please specify): Saanich is updating our adaptation actions as part of our updated Climate Plan, expected to be completed in Fall 2019. Our building efficiency and heat pump top up programs support both mitigation and adaptation.</p>	

<p><b>Q 68 Climate Change Adaptation Actions Taken in 2018</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.</p>	
	<p>Saanich has partnered with ICLEI to develop the adaptation portions of the updated Saanich Climate Plan. A public survey and multiple public and stakeholder workshops were conducted in 2018, educating about projected changes, identifying community impacts, assessing risks, and developing draft actions. See</p>

	<a href="https://www.saanich.ca/EN/main/community/sustainable-saanich/climate-change-energy/climate-plan-events-videos.html">https://www.saanich.ca/EN/main/community/sustainable-saanich/climate-change-energy/climate-plan-events-videos.html</a> for interim engagement report, open house boards and presentations from engagement events.
	Saanich supported retrofit programs to encourage building envelope upgrades and heat pump conversions (for better comfort in hotter summers).
	The 2018 Strategic Facilities Master Plan includes a commitment to “take into consideration future climate projections as well as site location relative to future sea level rise and incorporate climate adaptation measures.”
<b>Q 69 Climate Change Adaptation Actions Proposed for 2019</b>	
	Saanich is partnering with the CRD and seeking funds for detailed sea level rise and tsunami mapping.
	Saanich is incorporating climate adaptation topics into the Saanich Emergency Program speaker series.
	Saanich anticipates completing the updated Climate Plan, and beginning implementation of the priority adaptation actions.
	A revised Sustainability Checklist will be developed covering both adaptation and mitigation measures, along with other sustainability considerations, for building construction projects.
	Continue work on developing a Biodiversity Conservation Strategy.
<b>Q 70 For more information please contact</b>	
	Maggie Baynham, Senior Sustainability Planner.



## 2018 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.

Q 72 Community-Wide Other Actions Taken in 2018	
Q 73 Corporate Other Actions Taken in 2018	

Other	
Q 74 Are you familiar with the <a href="#">Community Lifecycle Infrastructure Costing Tool (CLIC)</a> ?	Yes
Q 75 Is your local government using the <a href="#">CLIC</a> tool?	No

## 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 highlight 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 making applications to [CEA's Climate and Energy Action Awards](#), [FCM Sustainable Communities Awards](#) or to [FCM's National Measures Report](#).

<b>Q 76 Community-Wide Innovation Action</b>
Recognizing that many residents in our community are unable to benefit from the rebate programs available due to difficulty with upfront costs, Saanich is furthering work towards providing a retrofit financing program which would enable homeowners to invest in more costly energy upgrades without the burden of high capital costs, and repay the District over time, while enjoying lower energy costs.
<b>Q 77 Corporate Innovation Action</b>
<b>Q 78 For more information on actions described above contact</b>

**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 separated by a forward slash (e.g. program1/program2).

**Mitigation**

<b>Q 79 Mitigation Programs, Partnerships and Funding</b>
BC Hydro Community Energy Manager/BC Hydro Corporate Energy Manager/FortisBC Sustainable Energy Specialist/MCIP/FCM T2050 grant/KR Foundation One Planet Cities Initiative/Vancity support for One Planet Saanich initiative.

**Adaptation**

<b>Q 80 Adaptation Programs, Partnerships and Funding</b>
ICLEI

**2018 CARBON NEUTRAL REPORTING**

Local governments are required to report on their progress in achieving their carbon neutral goal under the [B.C. 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 portion of the survey, please ensure that you are familiar with guidance available on the [B.C. Climate Action Toolkit website](#), especially the [Workbook](#) and [Becoming Carbon Neutral: A Guide for Local Governments in British Columbia](#).

*Please note: As a result of the BC Recycling Regulation, local governments are no longer required to account for GHG emissions from vehicles, equipment and machinery required for the collection, transportation and diversion of packaging and printed paper, in their annual Climate Action Revenue Incentive Program (CARIP) reports.*

## Reporting Emissions

<b>Q 81 Did your local government measure corporate GHG emissions for 2018?</b>	<b>Yes</b>
<b>Q 82 If your local government measured 2018 corporate GHG emissions, please report the number of corporate GHG emissions from services delivered directly by your local government (in tonnes of carbon dioxide equivalent)</b>	<b>4742.5 tCO<sub>2</sub>e</b>
<b>Q 83 If your local government measured 2018 corporate GHG emissions, please report the number of corporate GHG emissions from contracted services (in tonnes of carbon dioxide equivalent)</b>	<b>338.5 tCO<sub>2</sub>e</b>
<b>Q 84 TOTAL A: CORPORATE GHG EMISSIONS FOR 2018 (Direct GHGs + Contracted GHGs)</b>	<b>5081 tCO<sub>2</sub>e</b>

## Reporting Reductions and Offsets

To be carbon neutral, a local government must balance their TOTAL corporate GHG emissions generated in 2018 by one or a combination of the following actions:

- undertake GCC-supported Option 1 Project(s)
- undertake GCC-supported Option 2 Project(s)
- purchase carbon offsets from a credible offset provider

*For more information about options to balance or offset corporate GHG emissions please refer to [Becoming Carbon Neutral: A Guidebook for Local Governments in British Columbia](#).*

If applicable, please report the 2018 GHG emissions reductions (in tonnes of carbon dioxide equivalent (tCO<sub>2</sub>e)) being claimed from any of the following Option 1 GHG Reduction Projects:

<b>OPTION 1 PROJECTS</b>	<b>REDUCTIONS</b>
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Q 85 Energy Efficient Retrofits (in tonnes of carbon dioxide equivalent (tCO <sub>2</sub> e))	0
Q 86 Solar Thermal (in tonnes of carbon dioxide equivalent (tCO <sub>2</sub> e))	0
Q 87 Household Organic Waste Composting (in tonnes of carbon dioxide equivalent (tCO <sub>2</sub> e))	0
Q 88 Low Emission Vehicles (in tonnes of carbon dioxide equivalent (tCO <sub>2</sub> e))	0
Q 89 Avoided Forest Conversion (in tonnes of carbon dioxide equivalent (tCO <sub>2</sub> e))	0
<b>Q 90 TOTAL B: REDUCTIONS FROM ALL OPTION 1 PROJECTS FOR 2018</b>	<b>0 tCO<sub>2</sub>e</b>

**Q 91 If applicable, please report the names and 2018 GHG emissions reductions (in tonnes of carbon dioxide equivalent (tCO<sub>2</sub>e)) being claimed from Option 2 GHG Reduction Projects:**

<b>Option 2 Project Name</b>	<b>REDUCTIONS</b>
Option 2 GHGs Reduced (tCO <sub>2</sub> e)	
Option 2 Project Name	
Option 2 GHGs Reduced (tCO <sub>2</sub> e)	
Option 2 Project Name	
Option 2 GHGs Reduced (tCO <sub>2</sub> e)	
<b>Q 92 TOTAL C: REDUCTIONS FROM ALL OPTION 2 PROJECTS FOR 2018</b>	<b>tCO<sub>2</sub>e</b>

### Offsets

**Q 93 If applicable, please report the name of the offset provider, type of project and number of offsets purchased (in tonnes of carbon dioxide equivalent (tCO<sub>2</sub>e)) from an offset provider for the 2018 reporting year:**



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

Offset Provider Name	OFFSETS
Offsets (tCO2e)	
Offset Provider Name	
Offsets (tCO2e)	
<b>Q 94 TOTAL D: OFFSETS PURCHASED FOR 2018</b>	<b>0 tCO2e</b>

**Q 95 TOTAL REDUCTIONS AND OFFSETS FOR 2018 (Total B+C+D) = 0 tCO2e**

### **Corporate GHG Emissions Balance for 2018**

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

**Q 96 CORPORATE GHG EMISSIONS BALANCE FOR 2018 = (A – (B+C+D)) = 5081 tCO2e**

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

**Q 97 If your local government was carbon neutral in 2018, please record any emissions reductions you will be carrying over for future years and the source of the reductions, including the year they were earned (e.g. organics diversion, 2018 100 tCO2e)**

SOURCE OF CARRY OVER EMISSION REDUCTIONS (and year earned)	REDUCTIONS

<b>Q 98 BALANCE OF REDUCTIONS ELIGIBLE FOR CARRY OVER TO NEXT YEAR</b>	<b>0 tCO<sub>2</sub>e</b>
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Carbon Neutral Reporting	
<b>Q 99 Does your local government set aside funds in a climate reserve fund or similar?</b>	<b>Yes</b>

## GCC CLIMATE ACTION RECOGNITION PROGRAM

### Green Communities Committee 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.

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 their community’s energy and emissions inventory (i.e. 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 (e.g. 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.

**Q 100 Based on your local government's 2018 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	<b>x</b>
<input type="checkbox"/>	Level 4 - Achievement of Carbon Neutrality	
<input type="checkbox"/>	Not Sure	

**Q 101 Related to Level 3 recognition, if applicable, please identify any new or ongoing corporate or community wide GHG reduction projects (other than an Option 1 or Option 2 project) undertaken by your local government that reflects a significant investment of time and/or financial resources and is intended to result in significant GHG reductions:**

<b>PROJECT NAME:</b>
Development of the new 100% Renewable and Resilient Saanich Climate Plan.

Local Government Name:	The Corporation of the District of Saanich		
Contact Information:			
Name:	Bernard Tso		
Position:	Accountant		
Telephone Number:	250-475-5494 Ext. 3524		
Email address:	bernard.tso@saanich.ca		

**Calculation of carbon tax paid directly by the local government  
for fuel purchased between January 1 and December 31, 2018**

Fuel Type	January 1 to March 31/2018				April 1 - December 31/2018			
	Unit measure	Units	Tax Rate per unit, January 1, 2018 to March 31, 2018	Carbon Tax paid	Units	Tax Rate per unit, April 1, 2018 to Decemebr 31, 2018	Carbon Tax paid	Total Carbon Tax Paid in 2018
<b>Most common fuels in a local government context:</b>								
Gasoline	Litre	88645	0.0667	5,912.62	307100	0.0778	23,892.38	29,805.00
Diesel	Litre	136171	0.0767	10,444.32	520172	0.0895	46,555.39	56,999.71
Bio-Diesel*	Litre	7167	0.0767	549.71	27377	0.0895	2,450.24	2,999.95
Natural Gas	Gigajoule*	16629	1.4898	24,773.88	21838	1.7381	37,956.63	62,730.51
Natural Gas	m <sup>3</sup> *		0.057	-		0.0665	-	-
Propane	Litre	11833	0.0462	546.68	15523	0.0539	836.69	1,383.37
<b>Other fuels which are taxed:</b>								
Heating Oil	Litre	628	0.0767	48.17	1171	0.0895	104.80	152.97
Locomotive Fuel	Litre		0.0767	-		0.0895	-	-
Heavy Fuel Oil	Litre		0.0945	-		0.1103	-	-
Aviation Fuel	Litre		0.0738	-		0.0861	-	-
Jet Fuel	Litre		0.0783	-		0.0914	-	-
Kerosene	Litre		0.0783	-		0.0914	-	-
Naphtha	Litre		0.0765	-		0.0893	-	-
Methanol	Litre		0.0327	-		0.0382	-	-
Butane	Litre		0.0528	-		0.0616	-	-
Ethane	Litre		0.0294	-		0.0343	-	-
Refinery Gas	m <sup>3</sup>		0.0528	-		0.0616	-	-
Coke Oven Gas	m <sup>3</sup>		0.0483	-		0.0564	-	-
Coal -- Low Heat Value*	Tonne		53.31	-		62.2	-	-
Coal -- High Heat Value*	Tonne		62.31	-		72.7	-	-
Coke	Tonne		74.61	-		87.05	-	-
Petroleum Coke	Litre		0.1101	-		0.1285	-	-
Tires -- shredded*	Tonne		71.73	-		83.69	-	-
Tires -- whole*	Tonne		62.4	-		72.8	-	-
Peat	Tonne		30.66	-		35.77	-	-
<b>Total Carbon Tax Paid:</b>				<b>42,275.38</b>			<b>111,796.14</b>	<b>154,071.52</b>

- Only list fuels that were purchased for the local government's own use, on which carbon tax was paid, and where that carbon tax was not refunded or recovered from another party (e.g., through a lease arrangement). Also do not include any fuels that were exempted from carbon tax (for more information on exemptions see the *Carbon Tax Act* and its Regulations)
- Bio-diesel blends must be prorated in order to claim the diesel and bio-diesel portions on the appropriate line. The proportion of the blend (B5, B10, B15 etc) that is conventional hydrocarbon-based diesel is included on the diesel line, consequently, the bio-diesel pro-rated amount must be entered on the bio-diesel line. For example, a 10,000 litre purchase of B10, which is 10% bio-diesel and 90% hydrocarbon-based diesel, would be recorded as 9,000 litres hydrocarbon-based diesel (90% of 10,000 purchased litres) and bio-diesel would be recorded as 1000 litres (10% of purchased bio-diesel).
- Marketable Natural Gas may be recorded at either Gigajoules or m<sup>3</sup>
- Low Heat Value Coal includes Sub-Bituminous Coal; High Heat Value Coal includes Bituminous Coal
- Only include tires if they are combusted

I declare that the information contained in this Carbon Tax Calculation Form is true and correct and based on actual accounting records and not estimates. I am also aware of the requirement to report publicly by June 1st.

x *Jana Tinney*  
Signature of Financial Officer