

Climate Action Revenue Incentive (CARIP) Public Report for 2018

Local Government:

Fraser Valley Regional District



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Date: 30 May 2019



The Fraser Valley Regional District 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

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, and centred) plays an especially important role in energy and GHG reduction.

Q 6 + Q 7 Community-Wide Broad Planning Actions Taken in 2018 + Additional Actions	
	The FVRD continued to collaborate on interagency committees (Georgia Basin International Airshed Strategy Coordinating Committee, Lower Fraser Valley Air Quality Coordinating Committee, Agricultural Nutrient and Air Working Group, Air Quality and Health Steering Committee) to share best practices, work collaboratively on reducing emissions of pollutants and GHGs and improving air quality. The FVRD also participates in a new Electric Vehicle Peer Network Group that was created in 2018.
	The draft regional growth strategy is a strategic plan that provides an overarching planning framework for sustainable growth. It considers transit, ecosystem health, energy and climate change, and economic strength and resiliency. As a long range vision with a 20-30 year scope, it aims to ensure the region as a whole is committed to protecting the natural environment through responsibly managed growth.
	The FVRD has continued to work on updating the Air Quality Management Plan which will include plans to reduce GHG emissions in the Region.
	A New Official Community Plan has been drafted for Area D in which the GHG reduction targets mimic the Provincial targets. It also emphasizes trails and parks. This draft is at first reading and will be adopted in 2019.
Q 8 Community-Wide Broad Planning Actions Proposed for 2019	
	The FVRD is currently working on a policy around second dwellings to allow for changes in zoning bylaws and OCPs. This promotes compact communities.
	Finalization and implementation of Regional Growth Strategy. Includes GHG reduction targets. Worked on it in 2018 and plan to complete in 2019
	The FVRD has continued through 2019 to work on updating the Air Quality Management Plan which will include plans to reduce GHG emissions in the Region.
	The FVRD has been amending the Hemlock community plan. It includes transportation, environmental performance of buildings, and greenspace. Stakeholder engagement has been done, and FVRD is now in the drafting phase which will be completed in 2019.

Q 9 + Q 10 Corporate Broad Planning Actions Taken in 2018 + Additional Actions	
	The FVRD has a climate change action policy where geohazard assurance statements need to be provided by engineers for development areas. This policy ensures that engineers have a climate change assessment for potential hazard changes, expected change of slope stability, flooding, seismic and rainfall intensity changes.
	The FVRD participated in the Lower Mainland Flood Management Strategy to address increased Fraser River flood risks as a result of climate change.
Q 11 Corporate Broad Planning Actions Proposed for 2019	
	The FVRD plans to produce a corporate 'Green Initiatives' video which will showcase the green initiatives that we have taken recently.
	The FVRD plans to update its corporate greenhouse gas emissions plan in late 2019/early 2020.
	The FVRD started 'Clean Economy' study in 2018 and it will be completed in 2019. The Clean Economy Report and a Reference Guide will identify and discuss "clean economy" sectors specific to the FVRD region and provide tangible strategies and recommendations to foster its growth. This includes existing sectors, such as agriculture and agriculture related industries that are undergoing significant technological change. The objectives of this report are to help the FVRD understand the nature of the "clean economy" in the region, identify supportive policies for FVRD local governments to consider and identify the types of hard and soft infrastructure necessary to support the "clean economy".

Broad Planning	
Q 12 What is (are) your current GHG reduction target(s)?	As outlined in the FVRD's draft Regional Growth Strategy, the FVRD aims for the following GHG reduction targets: reduction in GHG emissions of 20% by 2020 and 50% by 2050 relative to 2007 levels.
Q 13 Are you familiar with your local government's community energy and emissions inventory (e.g. CEEI or another inventory)?	Yes
Q 14 What plans, policies or guidelines govern the implementation of climate mitigation in your community?	
<ul style="list-style-type: none"> • Community Energy and Emissions Plan • Integrated Community Sustainability Plan • Community- Wide Climate Action Plan • Official Community Plan • Regional Growth Strategy 	No No No Yes Yes
Q 15 Does your local government have a corporate GHG reduction plan?	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.

Q 16 + Q 17 Community-Wide Building and Lighting Actions Taken in 2018 + Additional Actions	
	All new street lighting that needed replacements was with new, energy efficient LED streetlights rather than high-pressure sodium. The LED lights will reduce streetlight energy use, they are longer lasting, and will reduce light pollution.
	Continued distribution of the FVRD brochure on 'Improving Home Energy Efficiency: A Guide for Rural Homeowners in the Fraser Valley', both online and at the front counter.
Q 18 Community-Wide Building and Lighting Actions Proposed for 2019	
	All new street lighting that needs replacements will be with new, energy efficient LED streetlights rather than high-pressure sodium. The LED lights will reduce streetlight energy use, they are longer lasting, and will reduce light pollution.
	In 2019, lighting upgrades will occur for the Hope and Area Recreation Centre swimming pool. The upgrades will provide better lighting for users and will be more efficient.
Q 19 + Q 20 Corporate Building and Lighting Actions Taken in 2018 + Additional Actions	
	The FVRD is currently undertaking a streetlight audit for inventory (count, lighting type, etc). This will help to inform a proper replacement strategy for HPS to LED
	The domestic hot water tanks were taken out at the FVRD head office and replaced with on-demand heating which significantly improve energy efficiency.
	Baker Trails Wastewater Treatment Plant: Changed all lighting to LED and went to automated light switches so that they're only used when needed.
	The FVRD Parks department built a workshop at Island 22 for staff use. It allowed the FVRD to consolidate 5 storage areas from across the region into one place to reduce drive time. This workshop now allows enough space for the FVRD to purchase in bulk which will reduce fuel usage in shipping. The workshop was built with all new LED lighting, automatic lighting shutoff and a low-flow toilet.

	New thermal blankets (pool covers) were installed at the Almerston Carlson Pool in North Bend. This installation will reduce chemical usage and increase energy efficiency by keeping the heat in.
Q 21 Corporate Building and Lighting Actions Proposed for 2019	
	At the new Vedder River Campground, the FVRD plans to install six energy efficient hand dryers.
	The FVRD received funding from BC Hydro to hire an engineering firm to conduct an energy efficiency study at the Hope and Area Recreation Centre. The opportunities for efficiency have been identified and the FVRD is working on grant applications to carry out the recommendations.
	The FVRD is building a new wastewater treatment plant in Cultus Lake (North Cultus Wastewater treatment plant) with all new LED lighting and will be integrated into the SCADA system so that it can be managed remotely, reducing trips to the site. Programming has been written so that it runs optimally and pumps only run when needed.

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	
Q 22 Is your local government aware of the BC Energy Step Code?	Yes
Q 23 Is your local government implementing the BC Energy Step Code?	No

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.

Q 24 + Q 25 Community-Wide Energy Generation Actions Taken in 2018 + Additional Actions	
Q 26 Community-Wide Energy Generation Actions Proposed for 2019	

Q 27 + Q 28 Corporate Energy Generation Actions Taken in 2018 + Additional Actions	
	Baker Trails Wastewater Treatment Plant: Switched from diesel to natural gas generation in 2017 and completed in 2018
	The FVRD secured grant funding from Solar Now and hired a contractor to install Solar Panels on the FVRD main office building in 2019. The install is scheduled for April 29 th , 2019. The installation will provide clean electricity to the building and reduce utility costs.
	The FVRD commissioned a feasibility study to look at a geothermal heat pump upgrade and heat recovery project at the Hope and Area Recreation Centre. A geothermal heat pump system has the potential to reduce 290 tonnes of CO ₂ per year from being emitted into the atmosphere, save energy costs and reduce domestic water usage.
Q 29 Corporate Energy Generation Actions Proposed for 2019	
	The FVRD will apply for a grant to carry out a geothermal heat pump upgrade and heat recovery project at the Hope and Area Recreation Centre. If successful, procurement will start in late 2019.
	The installation of the solar array on the FVRD corporate head office will occur in May 2019.

Energy Generation	
Q 30 Is your local government developing, or constructing a <ul style="list-style-type: none"> • district energy system • renewable energy system 	No Yes
Q 31 Is your local government operating a <ul style="list-style-type: none"> • district energy system • renewable energy system • none of the above 	No Yes
Q 32 Is your local government connected to a district energy system that is operated by another energy provider?	No
Q 33 Are you familiar with the 2018 List of Funding Opportunities for Clean Energy Projects Led by First Nations and Local Governments?	Yes

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.

Q 34 + Q 36 Community-Wide Greenspace Actions Taken in 2018 + Additional Actions (Q 35 below Q 41)	
	The FVRD continued partnership with the Fraser Valley Watersheds Coalition. In 2018, 13,152 trees and shrubs were planted, 11,273 m2 of aquatic habitat restored, and 11 regionally based projects.
	The FVRD manages 5 MoTI properties around Hatzic Lake and Lake Errock and developed one into a community park in 2018.
	At Thompson Regional Park, a natural play space playground comprised of natural elements such as logs and sand, as opposed to traditional metal and plastic equipment, was built to encourage children to play. It is nature based and reflective of the surrounding environment.
	At the Animal CARE Centre, the gravel play area for dogs was replaced with real grass.
	Early 2018, the Electoral Area D residents were consulted to help guide the Popkum street tree program for the 450 trees in this community. 60 additional trees were planted in the community in 2018 and the tree species were carefully selected according to the nature of the area.
	The Hope and Area Recreation Centre hosts a community garden supported by the summer program where students are able to grow local food. The Rec Centre added two new plots in the new community garden in 2018.
Q 37 Community-Wide Greenspace Actions Proposed for 2019	
	In 2017, the trail from Lindell Avenue to Maple Bay Campground was completed in south Cultus. This new Lakeside Trail is a 2km recreational trail along south side of the lake which promotes community connectivity. In 2019, this trail will be extended from Sunnyside Campground into Cultus Lake Provincial Park to Jade Bay (2 km).
	The FVRD will be building a playground and community park in Electoral Area D.
	Elbow Creek Trail, located on Crown land in Morris Valley in Electoral Area C adjacent to Eagle Point Community Park has been identified as a new community park.
	Continued promotion and development of the 'Experience the Fraser' initiative which is a contiguous trail system for non-motorized use running along the Fraser River from Hope to the Salish Sea

Q 38 + Q 39 Corporate Greenspace Actions Taken in 2018 + Additional Actions	
	The FVRD installed public signage at Hillkeep Regional Park in the City of Chilliwack to communicate causes of degraded visual air quality and actions to improve it (co-benefit of reducing emissions of air contaminants is typically a reduction in GHG emissions).
	New residential developments including trails to improve community connectivity and greenspace at Aquadel and Minter Gardens. Currently at 3 rd reading, is a covenant requiring two trees to remain on each property at the Minter Gardens development.
	A urine diversion toilet was installed in 2018 at the top of Elk Mountain to address environmental damage and enhance user experience in the backcountry. This new outhouse diverts urine (reducing 70% of the volume collected) which significantly reduces the number of helicopter trips to empty the outhouse.
	The FVRD acquired park land from Metro Vancouver which includes Glen Valley Regional Park, Matsqui Trail Regional Park, and the western flank of Sumas Mountain Regional Park.
	The FVRD planted a bigleaf maple in each of the 10 FVRD regional parks to commemorate the FVRD's 50th Anniversary.
	The FVRD made a commitment for the wastewater treatment plant that is being built: for every tree taken down, a new one will be planted within the Cultus Lake Park Board.
Q 40 Corporate Greenspace Actions Proposed for 2019	
	Via funding from the BC Rural Dividend Fund, AdvantageHOPE, the Fraser Valley Regional District, and the Ministry of Transportation and Infrastructure will oversee the completion of the design work for the Experience the Fraser Canyon to Coast Trail on the Bill Hartley Fraser-Hope Bridge and the trail along Hope's waterfront from Water Avenue to Tom Berry Road.
	The outhouse at Mt Cheam needs upgrading, and the FVRD plans to replace it with an outhouse that have urine diversion (reduction of approximately 70% volume).
	Through a Federal Gas Tax Fund (100% funding) a regional approach was started in 2018 that will quantify outdoor recreation sectors in 2019 to fully understand what they mean to the local economy. This information will help to prioritize capital expenditures, inform marketing decisions, and showcase the region as a premier tourism destination.
	The FVRD applied for a grant to build a universally accessible viewing platform at Cheam Lake Regional Park. If successful, this new infrastructure will be built in 2019.
	The community of Hemlock in Electoral Area C wants a trail connecting the residences to Sasquatch Mountain Resort (similar to Whistler Village) to promote walk-ability. Planning is expected to begin in 2019.

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

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.

Q 42 + Q 43 Community-Wide Solid Waste Actions Taken in 2018 + Additional Actions	
	In partnership with the FVRD, FoodMesh launched a regional food recovery program connecting local farms, charities, and food industry partners to easily exchange surplus edible food via an online app/marketplace. 61 local FVRD businesses and charities have so far joined the network and helped divert 100,000 kg of surplus food to users who can find needs for it. This is the equivalent of over 165,000 meals valued at \$565,000. A retail food recovery pilot project was initiated by Foodmesh with Save On Foods in November in the City of Chilliwack. Three local stores diverted all surplus food for three months donating 59,000 kg to the local food bank which was then redistributed to local charities in need of food for their programs and users. Left-over food was used by local farmers for animal feed and a very small percentage went to composting operations. The success of this project has resulted in Save On Foods rolling out the program in 100 of their 170 stores in BC and looking to expand it to all their western operations across Canada. The Food Recovery program helps organizations recover costs and increase margins by matching overstocked food with businesses and charities, reducing food waste, providing meals and within the FVRD it has helped reduce 190000 kgco2e, that's 190 tonnes of greenhouse gas emissions in the process.
	Implementation of the FVRD Solid Waste Management Plan including policies relating to the establishment of organics separation, increased recycling, promoting reuse, and reducing operation-related GHG emissions.
	A regional source separation bylaw was approved in 2018 and will be coming into effect in 2020 which will require all residents and businesses within the region to sort all recycling and organics out of their waste stream.
	The FVRD supported Household Hazardous Waste day in Mission and Chilliwack, Illegal Dumping clean-up events, and Waste Reduction Month across multiple communities.

In 2018 the Fraser Valley Regional District hosted the Southern Interior Waste Manager’s Association annual conference. Over 70 waste professionals from Local, Regional and Provincial government convened in Harrison Hot Springs together with First Nations representatives, private sector operators and consultants. Solid Waste and First Nations opportunities were discussed which included Extended Producer Regulations and recent updates to plans. Visits to local facilities included touring Fraser Valley Biogas anaerobic digester, an electronic recycling unit in Chilliwack (eCycle Solutions) and Redux Nutrition where food waste is converted to animal feed. The final morning allowed local programs such as illegal dumping campaigns, mixed waste processing, and a new mattress recycling facility to be discussed.

Q 44 Community-Wide Solid Waste Actions Proposed for 2019

	<p>FoodMesh and the FVRD have extended the program throughout 2019. The goal is to divert a minimum of 250,000 kg of surplus food, equivalent to 470,000 kgco2e. If external funding sources are found the second option is to aim for 1.5 million kg of surplus food, equal to roughly 2,850,000 kgco2e reduced.</p>
	<p>As the new bylaw for source separation was passed at the FVRD Board level an outreach campaign is being put together to reach out to all previous consultees in the consultation phases. The outreach campaign will concentrate on spreading information to the industrial, commercial and institutional sector about the forthcoming changes in 2020 and how they together with the waste management industry can prepare for this. Educational and promotional materials have been produced, which are available through our www.BeWasteWise.ca website. All residential sectors will also be targeted in phases together with local government partners.</p>
	<p>The FVRD will continue to support Household Hazardous Waste day in Mission and Chilliwack, Illegal Dumping clean-up events, and Waste Reduction Month across multiple communities.</p>
	<p>The FVRD plans on supporting a Repair café for textiles and potentially electronic items as well as promoting the national ‘Love Food, Hate Waste’ campaign.</p>
	<p>The FVRD will support the Tire Stewardship roundup event in Abbotsford and Mission in 2019.</p>

Q 45 + Q 46 Corporate Solid Waste Actions Taken in 2018 + Additional Actions

	<p>The FVRD had a feasibility and impact assessment analysis carried out for an advanced recycling centre or mixed waste materials recovery process in the region to further divert more recyclable and compostable material from the garbage stream. It will conclude in 2019. This is a key component of the FVRD Solid Waste Management vision to bring the region closer to zero waste.</p>
	<p>The Boston Bar Landfill has planning underway to officially close it by having it capped and monitored for leachate generation. The design was initiated in 2018 and will be completed in 2019.</p>
	<p>The Province of BC donated 25 double bear-proof bins (compost & recycle) to the FVRD for use in its parks and campground.</p>
	<p>The FVRD uses compostable cutlery and plates rather than plastic, and when possible, uses glasses and mugs that can be washed.</p>

Q 47 Corporate Solid Waste Actions Proposed for 2019	
	Updates in Sunshine Valley and Hemlock Valley Transfer stations and the Chaumox Road Landfill will take place in 2019 to add the capacity to take organic materials.
	Upgrades to the Hemlock Valley Transfer Station will include a manned station which will reduce the frequency of pickups required. Therefore, they will not have to haul empty bins anymore.
	The FVRD will be developing a storm water management plan at Chaumoix Landfill. The goal is to reroute all surface water near the landfill to avoid leachate to mitigate potential future issues.
	The FVRD is looking to partner with local First Nation communities for yard waste and organics processing facilities.
	The Hope Rec Centre will look into adding more of the four-bins (compost, recycle, bottles, garbage) around the Centre. Better signage will also be considered to ensure waste is being disposed of properly.
	The FVRD is developing a corporate solid waste management plan for the Vedder River Campground to try to make the campground as zero-waste as possible.

Solid Waste	
Q 48 Does your local government have construction and demolition waste reduction policies, plans or programs?	No
Q 49 Does your local government have organics reduction/diversion policies, plans or programs?	Yes

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.

Q 50 + Q 51 Community-Wide Transportation Actions Taken in 2018 + Additional Actions	
	In 2018, FVRD and BC Transit focused efforts on improving ridership by the implementation of marketing initiatives. The ongoing success of the Fraser Valley Express (FVX) has become a benchmark for interregional service development. The service to include Sundays and Statutory holidays was completed and ridership on weekends has doubled since this expansion. Immediate take-up with a 92% increase in ridership reflects the demand for the service.

	The FVRD and BC Transit launched a new transit service, Route #22, between Hope and Agassiz in 2017 where riders can transfer to the Route #11 for travel into Chilliwack. A bus stop in the Chawathil First Nation community was included in 2018.
	The FVRD continued to promote bike to work week and bike commuter challenges.
	Rehabilitation of the Island 22 Regional Park boat launch took place in 2018. A new entrance and exit was built for enhanced traffic flow, reduce idling, and better positioning of amenities. Further improvements are proposed for 2019 which includes building a staging area where boats can pull over and turn off their engines on the side rather than idling in the loading area.
	The FVRD launched 'My FVRD' online so that dog licence renewals, utilities invoices, transit passes, bylaw tickets can all be paid online and registration for recreation classes can also be booked online. This significantly reduces the number of trips to the FVRD office, especially for those living far away.
Q 52 Community-Wide Transportation Actions Proposed for 2019	
	Work with BC Transit to finalize the Transit Future Action Plan to FVRD Services.
	The FVRD will promote bike to work week and bike commuter challenges again in 2019.
	The FVRD is planning on carrying out an electric vehicle gap analysis and study to identify gaps in electric vehicle charging locations in the region.
	The FVRD will continue to promote Emotive – the electric vehicle experience campaign. This campaign brings electric vehicles to events throughout the region to show residents how great electric vehicles are to drive. An Emotive booth was set up at key events in the region in 2018, such as the Abbotsford Airshow and the Agassiz Fall Fair and Corn Festival and will repeat again in 2019.
	Further boat launch improvements are proposed for 2019 which includes building a staging area where boats can pull over and turn off their engines on the side rather than idling in the loading area.

Q 53 + Q 54 Corporate Transportation Actions Taken in 2018 + Additional Actions	
	Installation of new SCADA systems at North bend Sewer (completed in 2019), Cultus Lake and the Parkview Water System to allow for remote monitoring and less frequent in-person visiting (less driving).
	Conducted an energy audit of FVRD fleet vehicles, which will help guide the new purchase of fleet vehicles. The audit includes suggestions such as replacing gas powered vehicles with electric vehicles.

	The planning department has improved their website page and has expanded capacity to respond to property and development inquiries by phone or email to reduce trips to the FVRD. The capacity to respond to inquiries by phone or email has been increasing each year.
	An electric vehicle was provided to staff at the Hope Recreation Centre for the summer months when the Almers Carlson Pool is open. It was used every day of the week for 3.5 months, to drive 220km per day. A Chevrolet Bolt was used rather than a Ford Ranger to make this daily trip. This will occur again in 2019.
	The FVRD implemented a policy for tracking fuel consumption of contractors to get a better understanding of usage with opportunities to select more fuel efficient contractors in the future. The policy was approved by the Board in 2018 and has started to be implemented within procurement.
Q 55 Corporate Transportation - Actions Proposed for 2019	
	The FVRD is working with BC Hydro to get four new High Voltage Utility Connected (HVUC) Level 2 EV chargers.
	Service on route #22 (Hope), and route #11 (Agassiz-Harrison) is being monitored and further expansion will be considered as demand for transit increases. Planning will begin on a new route connecting the communities on the north side of the Fraser River between Agassiz and Mission.
	A feasibility study will be conducted in the North Fraser Valley between Mission and Maple Ridge with regards to providing transit service. The timing of this study will be dependent on BC Transit's 2019 work plan and their capacity for undertaking additional planning initiatives.
	The FVRD will be buying a smaller fuel efficient truck (2019 Ford Ranger) to replace an old inefficient 2014 F-150.
	The FVRD will be implementing a training program for all new onboard staff members to learn about how to use the corporate electric vehicles. This initiative is designed to reduce anxiety around using EVs and encourage their use for meetings. For existing staff members, EV101 workshops and incentives such as prizes may be used to encourage use of EVs.

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

2018 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 GHG emissions.

Q 59 + Q 60 Community-Wide Water and Wastewater Actions Taken in 2018 + Additional Actions	
	Water conservation and groundwater protection brochures were distributed to residents with new water meter systems.
Q 61 Community-Wide Water and Wastewater Actions Proposed for 2019	
	The Lower Mainland Flood Management Strategy (LMFMS) is developing a "Lower Fraser River Hydraulic Model". The FVRD is on the technical advisory committee for this project. The model is being developed in support of multiple objectives- including the development of flood maps, support stakeholder and public engagement in understanding flood hazards and trade-offs between different types of options to reduce flood damages. This work will be completed in 2019.
	A farm-level flood mitigation, preparedness and recovery toolkit will be created from the Climate Action Initiative Project which the FVRD contributes to. The FVRD will support the development of 1-2 fact sheets that are specific to the FV flood context, all others will be relevant to FV producers but will broadly apply to all producers across BC.
Q 62 + Q 63 Corporate Water and Wastewater Actions Taken in 2018 + Additional Actions	
	The FVRD installed a new sewage treatment system at Baker Trail Estates. The new system will decrease the amount of required maintenance and will operate more efficiently. It also reduces hydro consumption.
	Integration of Parkview and Cultus Lake Park water system was completed in 2018, which eliminated two pumps and one reservoir site. Upgrade Cultus Lake Park water system at Sweltzer Creek crossing.
	The FVRD installed the Lake Errock water main, no pumps required in 2018. The install eliminates single resident backyard booster pumps.
	The FVRD built sewage treatment plants in 2018 which will be in operation in 2019. The Aquadel and Minter Gardens sewage treatment plants were being installed for new developments and are being built to a Class A standard under the municipal waste water regulation.

	The FVRD installed a 1.5 km watermain on Sylvester Rd by directional drilling rather than trenching with an excavator. A drill rig was used so that there was less ground disturbance.
Q 64 Corporate Water and Wastewater Actions Proposed for 2019	
	Water main installation in Area F will take place in 2019 with directional drilling due to salmon bearing streams.
	Continue to Perform Water Audits of systems with newly installed water meters (almost all FVRD systems are now metered) to determine accuracy of meters and to find potential system leakages.
	Dewdney Area Improvement District (dyking and flood protection for Hatzic Lake and Hatzic Prairie) will be dissolving and the FVRD will be taking over their services. The FVRD will undertake all technical work required by the Province. A hydrology study is taking place at Hatzic Lake and in 2019 the FVRD will do water quality monitoring and testing.
	Continuation of Sewer Gap study, including where there are needs for upgrades, monitoring systems, and improved operation efficiencies. Implementation of the recommendations of the study ongoing to 2020. This is being implemented every time a development application is made. It requires the highest level of sewage treatments which reduce nitrogen and phosphorous.
	The FVRD is working on a biosolid management plan to deal with sludge from wastewater treatment plants. The end goal is to dispose of it locally rather than shipping it out of the region.

Water Conservation	
Q 65 Does your local government have water conservation policies, plans or programs?	Yes

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.

Q 66 Please identify the THREE climate impacts that are most relevant to your Local Government.	
<ul style="list-style-type: none"> • Warmer winter temperatures reducing snowpack • Changes to temperature and precipitation causing seasonal drought • Heatwaves impacting population health • <u>Increased temperatures increasing wildfire activity</u> • <u>Increased temperatures affecting air quality</u> • Changing temperatures influencing species migration and ecosystem shifts • Changing temperatures influencing ecosystem shifts • <u>Extreme weather events contributing to urban and overland flooding</u> • Sea level rise and storms causing coastal flooding and/or erosion 	 ✓ ✓ ✓

Other (please specify):	
Q 67 In 2018 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. stormwater system upgrades)	Yes
Beach Nourishment Projects	No
Economic Diversification Initiatives	No
Strategic and Financial Planning	Yes
Cross-Department Working Groups	Yes
Official Community Plan Policy Changes	Yes
Changes to Zoning and other Bylaws and Regulations	Yes
Incentives for Property Owners (e.g. reducing storm water run-off)	No
Public Education and Awareness	Yes
Research	Yes
Mapping	Yes
Partnerships	Yes
Other (please specify):	

Q 68 Climate Change Adaptation Actions Taken in 2018	
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.	
	The FVRD contributed to a Climate Action Initiative for a freshet flood project. FVRD staff currently sits on a committee that oversees the various projects. Helping agriculture adapt to climate change and flooding was explored.
	The FVRD participated and continues to participate in the Lower Mainland Flood Management Strategy (FBC) to address increased Fraser River flood risks as a result of climate change.
	The FVRD cleaned out Rexford Creek sediment trap so that the dykes could maintain freeboard for flood prevention. Ongoing dyke maintenance occurred.
Q 69 Climate Change Adaptation Actions Proposed for 2019	
	The FVRD will be organizing creek cleanouts at Frost Creek and Elbow Creek to remove gravel from sediment traps in order for the dykes to maintain freeboard. This is a flood prevention strategy.

	With provincial funding, the FVRD will invest \$10.5 million to improve the Nickomen Island Dyke and upgrade the pumps. Designing for the upgrades occurred in 2018 and continues into 2019. The upgrades will both protect the community from high water and will improve capacity to move the water out when it gets in.
Q 70 For more information please contact	
	Environmental Services Coordinator environment@fvrd.ca 604-702-5000

Q 71. 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?	
Indicators of Climate Change for British Columbia Plan2Adapt Climate Projections for Metro Vancouver Climate Projections for the Capital Region Climate Projections for the Cowichan Valley Regional District Province of BC's BC Adapts Video Series Preparing for Climate Change: Implementation Guide for Local Governments Public Infrastructure and Engineering Vulnerability Committee's (PIEVC) Sea Level Rise Adaptation Primer BC Regional Adaptation Collaborative Webinars Retooling for Climate Change Water Balance Model Water Conservation Calculator Funding: National Disaster Mitigation Program (NDMP) Community Emergency Preparedness Fund (CEPF) Municipalities for Climate Innovation Program (MCIP) Climate Adaptation Partner Grants (FCM) Infrastructure Planning Grants (MAH) Federal Gas Tax Fund	Useful Haven't Used Useful Haven't Used Haven't Used Haven't Used Useful Haven't Used Useful Haven't Used Useful Useful Haven't Used Useful Useful Useful Useful Useful
Other: Climate Projections for Fraser Valley Regional District	Useful

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	
	The FVRD created an air quality and climate change education program in 2017 for elementary and secondary students, designed to raise awareness of what causes air quality issues and climate change, and what actions can be taken. This successful and highly sought after program was implemented in 2017 and continues into 2019.
	The FVRD continued to administer the Provincial Wood Stove Exchange Program to encourage residents to retire their old inefficient wood burning appliance for a new EPA certified wood, gas, pellet, or electric heat pump appliance. This program is designed to improve air quality in the FVRD's sensitive airshed.
	The FVRD has a 'good neighbour' practice for land development, which discourages burning and promotes chipping and grinding. This is a board policy and is now being used.
Q 73 Corporate Other Actions Taken in 2018	
	A fuel tracking policy for contractor's fuel usage was approved in 2018. Contractor fuel usage will be tracked and reported in 2020 and beyond to better account for GHG emissions.

Other	
Q 74 Are you familiar with the Community Lifecycle Infrastructure Costing Tool (CLIC) ?	Yes
Q 75 Is your local government using the CLIC 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](#).

Q 76 Community-Wide Innovation Action

FoodMesh:

In partnership with the FVRD, FoodMesh launched a regional food recovery program connecting local farms, charities, and food industry partners to easily exchange surplus edible food via an online app/marketplace. 61 local FVRD businesses and charities have so far joined the network and helped divert 100,000 kg of surplus food to users who can find needs for it. This is the equivalent of over 165,000 meals valued at \$565,000. A pilot project was initiated by Foodmesh with Save On Foods in the City of Chilliwack. Three local stores diverted all surplus food for three months donating 59,000 kg to the local food bank which was then redistributed to local charities in need of food for their programs and users. Left-over food was used by local farmers for animal feed and a very small percentage went to composting operations. The success of this project has resulted in Save On Foods rolling out the program in 100 of their 170 stores in BC and looking to expand it to all their western operations across Canada. The Food Recovery program helps organizations recover costs and increase margins by matching overstock food with businesses and charities, reducing food waste, providing meals and in within the FVRD it has helped reduce 190000 kgco2e (190 tonnes of greenhouse gas emissions).

Air Quality Education Program:

One of the objectives of the Fraser Valley Regional District’s air quality portfolio is to increase public education and awareness of air quality in the region. Public education outreach effort was largely enhanced through the 2017 launch of the well-received school program called “Love Our Air” and continuation in 2018.

Within the last few years, the BC Ministry of Education has set new education standards for students in grades K-12. The FVRD saw this curriculum change as an opportunity to increase air quality education in classrooms while teachers searched for a way to align their lessons with the new curriculum. The lessons within the new ‘Love Our Air’ teacher resource introduces students to issues regarding air quality in the region. The lessons are designed for grades 5 and 10 classrooms and linked to the BC Curriculum. The main objectives of teaching Air Quality in grades 5 and 10 are to develop students’ personal and social awareness of their roles and responsibilities with respect to the environment, and their ability to make decisions about ways to reduce pollution through their everyday actions. The lessons include hands-on activities while teaching students the relevance of air quality in their own lives, in their community and in the wider world. Students learn to identify types of air pollutants, their sources and impacts, as well as possible actions and solutions that they can take as individuals, or with their community.

Q 77 Corporate Innovation Action

The FVRD is participating in a High Voltage Utility Connected (HVUC) Level 2 Electric Vehicle Charging Demonstration in partnership with BC Hydro and Natural Resources Canada. The FVRD will have 8 new HVUC level 2 chargers installed in the region in 2019. In this project, the transformer would be integrated into the charger, which will eliminate the need for the designated transformer reducing space requirements in the meter room, reduce the number of conduits and wiring, improve the EV charger system’s performance and reliability, while also reducing costs. A smart utility meter will be integrated into the charger to allow for individual metering and billing, as well as remote monitoring. This project aims to reduce barriers to EV uptake by Canadians living in MURBs, as well as aid EV charger installations in commercial and municipal buildings.

Q 78 For more information on actions described above contact

Micha Gutmanis, Environmental Services Coordinator

mgutmanis@fvrd.ca

604-702-5496

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

Q 79 Mitigation Programs, Partnerships and Funding

The Fraser Valley Regional District received funding for a solar panel project through Solar Now. Solar Now seeks to engage Canadians in the rapidly expanding global solar energy movement. Solar systems will be installed on prominent public sites in British Columbia communities, including municipal buildings, schools, libraries, community centres, and vehicle charging stations, to provide citizens with a tangible experience with solar power. Solar Now will translate this infrastructure into a communications opportunity, demonstrating that solar is a viable way to produce energy and take action on climate change. The partners of solar now include: Clean Energy Canada at SFU, the Community Energy Association (CEA), and the North Growth Foundation.

Every year since 2009, the Fraser Valley Regional District has carried out the Wood Stove Exchange Program which is funded through the Province of BC. This year, the rebate for a wood stove exchange has increased from \$250 to \$400, if it is being replaced with a cleaner burning fuel such as natural gas, pellets, or a heat pump.

With funding from the Green Municipal Fund (\$133,200) the FVRD in 2018 and 2019 will report on a feasibility and impact assessment analysis for an advanced recycling centre or mixed waste materials recovery process in the region to further divert more recyclable and compostable material from the garbage stream. This is a key component of the FVRD Solid Waste Management vision to bring the region closer to zero waste. The feasibility study is looking at the potential technology options, diversion rates, amount of waste and interested parties that would be interested in mixed waste materials recovery processing within the region.

Adaptation

Q 80 Adaptation Programs, Partnerships and Funding

A partnership between the FVRD and Ecoworks, a wholly owned subsidiary of Mennonite Central Committee BC, successfully secured a \$485,000 Job Creation Partnership program grant from the Employment Program of BC's Community and Partnerships Fund to build out Experience the Fraser Canyon to Coast Trail and Regional Park amenities. These improvements included:

- Island 22 Regional Park, City of Chilliwack – boat launch, bike park, equestrian area improvements, and multi-purpose workshop
- Cheam Lake Regional Park, EA D – rebuild existing viewing platform
- Mission Tree Farm License 26, District of Mission – Experience the Fraser Canyon to Coast Trail

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

Q 81 Did your local government measure corporate GHG emissions for 2018?	Yes
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)	624 tCO₂e
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)	624 tCO₂e
Q 84 TOTAL A: CORPORATE GHG EMISSIONS FOR 2018 (Direct GHGs + Contracted GHGs)	624 tCO₂e

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 (tCO₂e)) being claimed from any of the following Option 1 GHG Reduction Projects:

OPTION 1 PROJECTS	REDUCTIONS
Q 85 Energy Efficient Retrofits (in tonnes of carbon dioxide equivalent (tCO₂e))	
Q 86 Solar Thermal (in tonnes of carbon dioxide equivalent (tCO₂e))	
Q 87 Household Organic Waste Composting (in tonnes of carbon dioxide equivalent (tCO₂e))	
Q 88 Low Emission Vehicles (in tonnes of carbon dioxide equivalent (tCO₂e))	
Q 89 Avoided Forest Conversion (in tonnes of carbon dioxide equivalent (tCO₂e))	
Q 90 TOTAL B: REDUCTIONS FROM ALL OPTION 1 PROJECTS FOR 2018	0 tCO₂e

Q 91 If applicable, please report the names and 2018 GHG emissions reductions (in tonnes of carbon dioxide equivalent (tCO2e)) being claimed from Option 2 GHG Reduction Projects:

Option 2 Project Name	REDUCTIONS
Option 2 GHGs Reduced (tCO2e)	
Option 2 Project Name	
Option 2 GHGs Reduced (tCO2e)	
Option 2 Project Name	
Option 2 GHGs Reduced (tCO2e)	
Option 2 Project Name	
Option 2 GHGs Reduced (tCO2e)	
Q 92 TOTAL C: REDUCTIONS FROM ALL OPTION 2 PROJECTS FOR 2018	0 tCO2e

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 (tCO2e)) 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)	
Q 94 TOTAL D: OFFSETS PURCHASED FOR 2018	0 tCO2e

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 offsettable 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)) = 624 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
Q 98 BALANCE OF REDUCTIONS ELIGIBLE FOR CARRY OVER TO NEXT YEAR	0 tCO2e

Carbon Neutral Reporting	
Q 99 Does your local government set aside funds in a climate reserve fund or similar?	Yes

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 checked="" type="checkbox"/>	Level 3 – Accelerating Progress on Charter Commitments	✓
<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:

PROJECT NAME:
FoodMesh (mentioned above)
Source Separation Bylaw (mentioned above)
Solar Panel Installation on Corporate Office (mentioned above)