

Capital Regional District **2018 Climate Action Annual Report**





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Overview

This report summarizes all of the climate action related activities undertaken by the Capital Regional District (CRD) in 2018 and satisfies the annual reporting requirements associated with the CRD's Regional Climate Action Strategy, the CRD's Corporate Climate Action Strategy and the provincial Climate Action Revenue Incentive Program (CARIP), as per the CRD's BC Climate Action Charter commitment.

The CRD has an obligation to support climate action, whether that be through the planning and management of our assets or through the delivery of our services. In February 2019, the CRD Board voted unanimously to declare a climate change emergency and assume a leadership role to work towards achieving carbon neutrality in the region by 2030. According to CRD Director Lisa Helps, "more than just a symbolic declaration, the motion means that we will take more accelerated action to reduce and eliminate carbon pollution in our Region". The CRD Board has embedded the declaration and leadership intentions to greatly accelerate greenhouse gas emissions reductions in the 2019-2022 CRD Board priorities. CRD staff continue to take steps and identify opportunities to mitigate, adapt to and reduce climate change impacts.

Why Take Action

Climate change is a critical issue facing our planet today. Whether it is impacts to our environmental, economic and social systems or human health, our communities will continue to be challenged with finding ways to reduce energy and emissions and prepare for the climate of tomorrow. An October 2018 report from the Intergovernmental Panel on Climate Change noted that limiting global emissions to 1.5°C is required to avoid catastrophic impacts and is possible with ambitious action from all parts of society, including local governments. By taking action on climate change in the capital region, we can protect valuable resources like clean air and water, maximize local economic development opportunities, reduce our risks and create a more resilient future.



Regulations & Commitments

The CRD is required to take action to reduce corporate and community-related greenhouse gas (GHG) emissions and prepare for the impacts of climate change under the following provincial regulations and commitments:

- ▶ **Local Government (Green Communities) Statutes Amendment Act** (Bill 27) requires regional districts and local governments to include targets, policies and actions for the reduction of GHG emissions in Regional Growth Strategies and Official Community Plans. The Act also provides powers to local governments to support mitigation and adaptation through development permit areas, development cost charges and parking and building code requirements.
- ▶ **Landfill Gas Management Regulation** establishes province-wide criteria for landfill gas capture from Municipal Solid Waste landfills. The regulation focuses on GHG emissions reductions from landfills with the objective of maximizing reductions of landfill gas emissions and identifying potential opportunities to increase landfill gas recovery. As a manager of the Hartland Landfill, the CRD is responsible to adhering to this regulation.
- ▶ All local governments in the region, including the CRD, became signatories of the *BC Climate Action Charter* in 2008. This includes a commitment to:
 - ▶ become carbon neutral in corporate operations starting in 2012
 - ▶ measure and report on our community's GHG emissions profile
 - ▶ work to create compact, complete, and more energy-efficient rural and urban communities



Hartland Landfill & Recycling Facility

CRD Climate Action Strategies

The CRD currently has two climate action strategies: one related to community-focused activities, the other to CRD corporate assets.

Regional Climate Action Strategy

In 2017, the CRD Board approved the **Regional Climate Action Strategy (RCAS)**, which guides the CRD's services to support community-focused climate mitigation and adaptation action over the next five years. The RCAS builds on the work that is already being done by residents, businesses, not-for-profits, local governments and First Nations, by federal and provincial governments, and the direction provided in the Regional Growth Strategy. The success of this RCAS relies on a commitment to climate action by both the CRD and our partners.

Actions related to both mitigation and adaptation within the strategy fall under the following goals:

1. Developed urban areas are compact and complete.
2. Multi-modal transportation systems are low carbon.
3. Buildings are high-performing and low carbon.
4. Natural assets are valued for reducing our contributions to climate change.
5. Waste generation is minimized and remaining waste is transformed into a resource.
6. Regional vulnerabilities to the impacts of climate change are understood.
7. Communities are prepared for, and resilient to, the impacts of climate change.
8. Natural assets are resilient to climate change.

Multiple CRD service areas are responsible for the implementation of the actions (*see Appendix A - Regional Climate Action Strategy Actions*). This report satisfies the annual reporting commitments associated with the RCAS. The full strategy can be found at: www.crd.bc.ca/climate.



Corporate Climate Action Strategy

In 2008, the CRD Board set a target to reduce operational GHG emissions **33% below 2007 levels by 2020**. In 2016, the CRD Board endorsed the Corporate Climate Action Strategy (CCAS) to guide the CRD's operational approach and decision-making through a policy framework and corresponding climate action activities and actions related to the CRD's buildings, fleet and lands.

The CCAS reflects on what the CRD has accomplished to date and renews corporate climate action efforts through seven long-term goals. These include:

- 1. Climate lens:** use a climate lens for Board decision-making that demonstrates how decisions align with the CRD's GHG reduction target, climate action objectives and strategic priorities.
- 2. Management & operational decision-making:** integrate climate change considerations into CRD management and operational decision-making.
- 3. Metrics and reporting:** Monitor, report and communicate metrics to enhance continuous improvement across the organization.

- 4. Adaptation:** Accelerate corporate climate adaptation activities to enhance resilience and prepare for future climate change impacts.
- 5. Fleet Management:** Achieve continuous, significant reductions in GHG emissions from the fleet and strive towards zero emissions for new fleet vehicles.
- 6. Existing buildings, facilities and infrastructure:** Accelerate a reduction in energy use and GHG emissions in existing buildings, facilities and infrastructure.
- 7. New buildings, facilities and infrastructure:** achieve high-performance standards and strive towards net-zero energy for all new construction.

These goals, supported by sub-policies and short-term actions, will achieve the CRD Board's priorities to integrate a climate lens into decision-making and to accelerate corporate mitigation and adaptation activities (*see Appendix B – Corporate Climate Action Strategy Actions*). The full strategy can be found at www.crd.bc.ca/climate.

Climate Mitigation | Reduce Greenhouse Gas Emissions

Direct and Indirect Control

There is a clear role for local governments to take action on climate change mitigation and adaptation, with an estimated 44% of Canada's GHG emissions within the direct or indirect control of local governments. **As climate change impacts increase in frequency and severity, many of the costs on infrastructure, social and economic systems and natural systems will be borne by communities.**

Substantially reducing the region's emissions requires significant climate action by all. As an organization, the CRD recognizes it has a valuable leadership role to play.

Creating Energy from Waste

When organic waste is deposited in a landfill, it slowly decomposes and releases methane gas – a greenhouse gas (GHG) 25 times more powerful than carbon dioxide. Since 1999, the CRD has been installing landfill gas (LFG) collection infrastructure at Hartland Landfill. In 2003, the CRD added a generator to convert a portion of this LFG into electricity – feeding 1.6MWs of electricity into the BC Hydro grid, the equivalent of supplying 1,600 homes. Remaining captured gas not used in electricity generation is flared. These efforts to capture the landfill gas have resulted in cutting regional GHG emissions from solid waste in half (approximately 105,000 tonnes CO₂e annually). The CRD has been reviewing the options of “twinning” the existing landfill gas utilization plant to utilize the biogas to generate electricity for more homes, or to introduce a renewable natural gas plant that can clean up landfill gas and put it into the natural gas pipeline system. How the CRD decides to maximize landfill gas for public benefit can have both environmental and financial benefits for the community. It also fosters a greater circular economy, using waste to generate energy. A decision on the future of landfill gas utilization will be made in 2019.

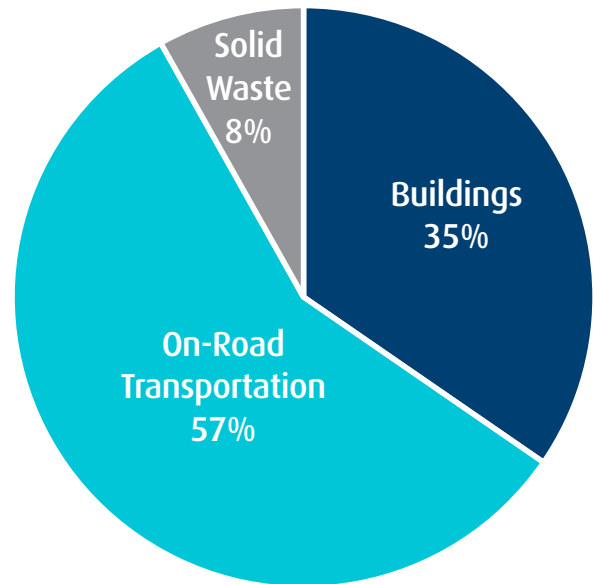
Capital Region Community Greenhouse Gas Emissions and Targets

The CRD provides data for the development of the community and provincial emissions inventories, an indicative inventory of energy consumption, GHG emissions and supporting indicators from community activities related to on-road transportation, buildings and solid waste.

The inventory was the first of its kind in North America and, though narrow in scope, it is useful in informing regional policies, programming and actions. It also helps local governments meet their BC Climate Action Charter commitment to measure and report on community GHG emissions profiles.

The most recent information available shows the capital region emits over 1.5 million tonnes of CO₂e annually.

For a more complete picture of the region's energy and GHG emissions consumption, it is important to also consider additional contributors such as cross-jurisdictional transportation (e.g., air travel) and the import and export of goods, energy and resources.



**Regional GHG emissions based on
2012 Community Energy and Emissions
Inventory (CEEI)
(with 2010 transportation)**



Hartland Landfill Gas Plant

“The CRD Regional Growth Strategy identifies a target for the capital region to reduce greenhouse gas emissions by 61% by 2038.”

Targets

The CRD Regional Growth Strategy identifies a target for the capital region to reduce GHG emissions by 61% (from 2007 levels) by 2038. This ambitious target will require a decrease of almost one million tonnes of CO₂e.

Achieving this target will not be possible without a substantial policy shift and full-scale implementation of initiatives, such as multi-modal transportation, energy-efficient home retrofits, net-zero, energy-ready new construction, renewable energy technology adoption and waste reduction.

Even with substantial local and global GHG emission reductions, our region will be impacted by climate change. Consequently, we will need to look for opportunities to integrate adaptation into our mitigation activities to create a low-carbon and resilient region.

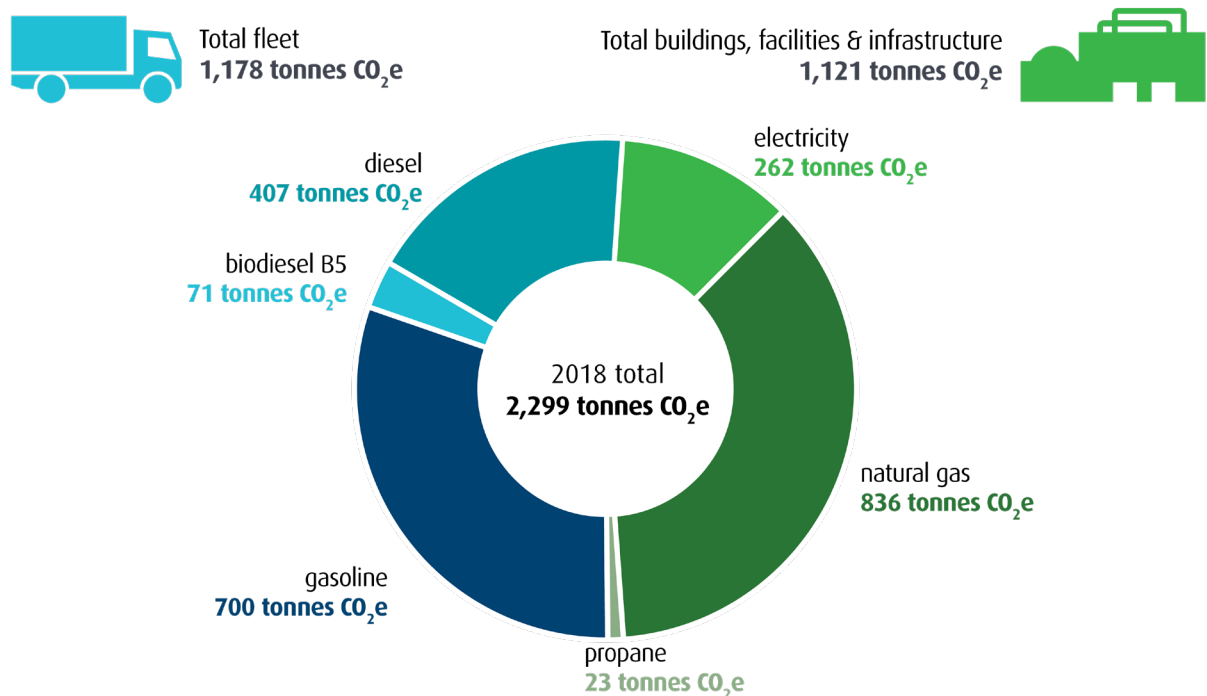


CRD Corporate Greenhouse Gas Emissions and Targets

Since 2012, the CRD has completed an annual GHG inventory and reported GHG emissions through the provincial Climate Action Revenue Incentive Program (CARIP), following the guidance provided by the provincial Green Communities Committee.

In 2018, CRD operations produced 2,299 Tonnes CO₂e. This represents an 18% reduction compared to 2007 levels.

2018 Operational GHG Emissions* by Source

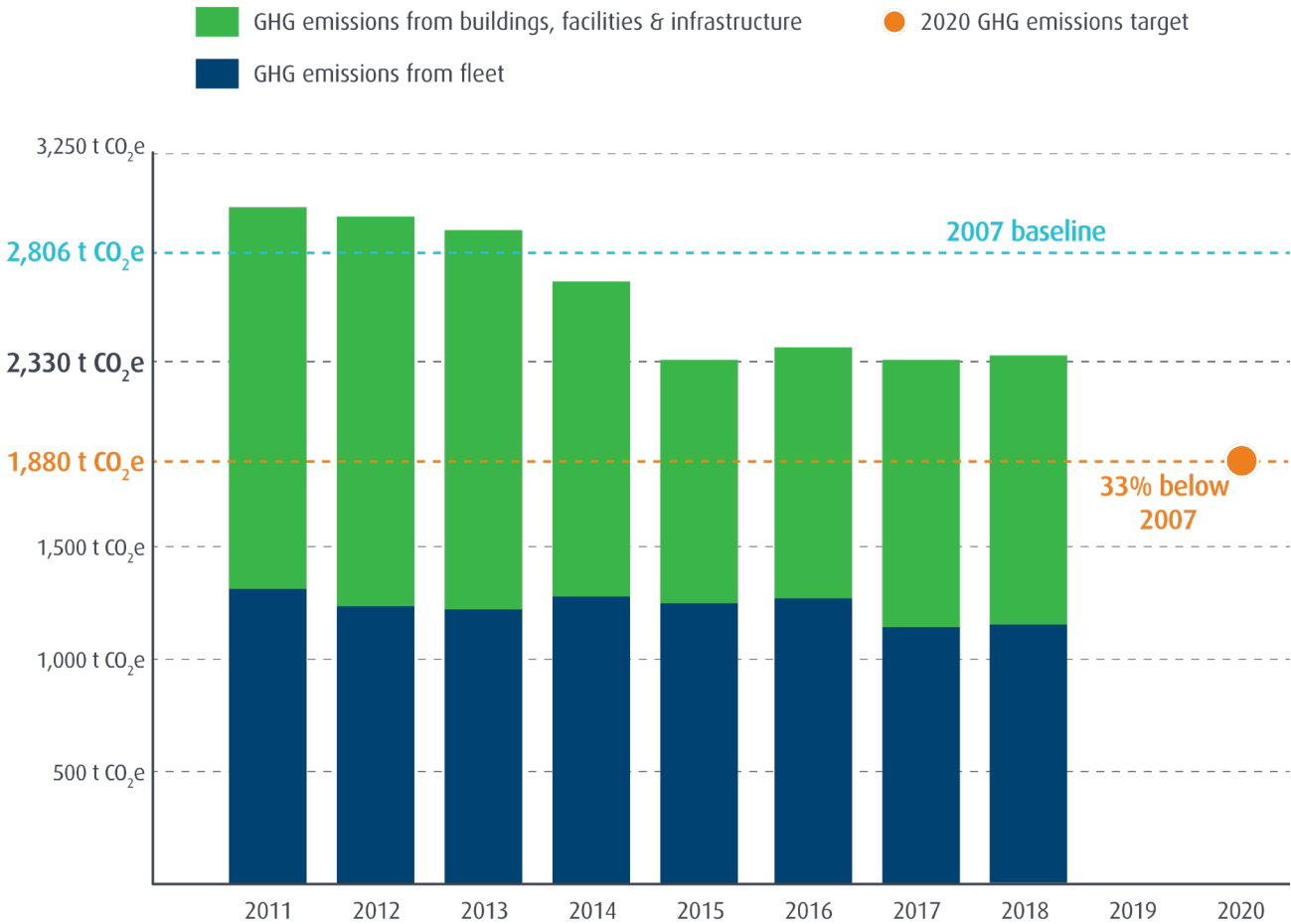


*Figures rounded to the nearest whole number

The CRD must reduce operational GHG emissions by approximately 450 Tonnes of CO₂e per year by 2020 to meet the Corporate GHG reduction target of 33% below 2007 levels by 2020. The CCAS identifies a number of emission-reductions activities.

The CRD has been carbon neutral in its operations since 2012. In 2017, carbon neutrality was achieved by applying historical carbon credits that were generated through methane destruction from the Hartland Landfill Gas Capture system. The carbon credits accumulated up to 2015 have enabled the CRD to be carbon-neutral in operations each year from 2013, and is estimated to continue through 2022.

Operational GHG emissions, relative to 2020 target



Climate Adaptation | Build Resilience

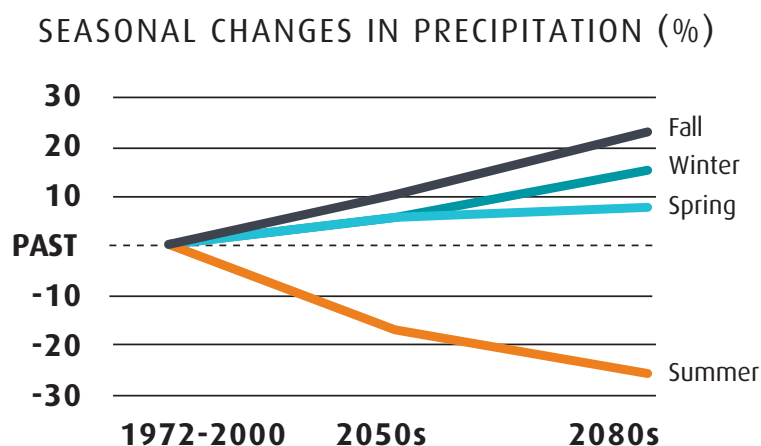
The climate is changing and the “new normal” for the region may be very unlike the past. Global climate models project an average increase of about 3°C in our region by the 2050s. In 2017, the CRD worked with the Pacific Climate Impacts Consortium (PCIC) to undertake a comprehensive assessment of the projections of global climate models for our region. This assessment shows, as a result of global warming, the capital region will experience:

- ▶ hotter summer days and nights, **longer summer dry spells**, with an extension of the dry season into September.
- ▶ milder winter days and nights, with a near **loss of frost days and snowpack** in all areas but the highest elevations in the region.
- ▶ stronger and more frequent **extreme rainfall events**.

Scientists also project the capital region will be impacted by **sea level rise**.

Without action, these changes threaten a variety of regional and local government services, as well as overall community health and wellbeing. The CRD will continue to consider the implications of a changing climate, share our learnings, and prepare.

Climate Projections for the Capital Region, 2017 Report Results



2018 Climate Action Highlights

The CRD completed and supported a number of climate actions throughout 2018 listed in [Appendix A – CRD Regional Climate Action Strategy Actions](#) and [Appendix B – Corporate Climate Action Strategy Actions](#). Some highlights are:

Electric Vehicle and Electric Bike Infrastructure Planning

Working with a multi-municipal project team, the CRD Climate Action Program completed the Capital Region Electric Vehicle (EV) and Electric Bicycle (E-Bike) Infrastructure Planning Project. This work identified opportunities that local governments in the region can take to advance EV and E-Bike charging infrastructure in public and private locations throughout the capital region. Key project deliverables included:

- ▶ best practices research to understand local government opportunities to accelerate the uptake of EVs.
- ▶ collection of feedback from the development industry and general public to better understand the barriers and opportunities for EV and E-Bike charging.
- ▶ development of an EV infrastructure gap analysis to identify priority locations for new charging stations.

In addition to hosting capacity-building events for industry, local government and residents, this initiative also included the creation of both a planning guide and policy recommendations for local governments in the capital region. This planning project developed and delivered regionally-focused analysis, education and guidance to support consistent regional EV and E-Bike planning activities that will complement future municipal efforts.





Transitioning the CRD to a Zero Emissions Vehicle Fleet

The CRD vehicle fleet includes over 300 vehicles and accounts for approximately half of all of the CRD's operational GHG emissions. In partnership with the Institute for Integrated Energy Systems at the University of Victoria, and with funding from the Green Municipal Fund, the CRD launched the Zero- Emissions Fleet Initiative. Over a three-year period, CRD staff will work to reduce GHG emissions in the CRD fleet by:

- ▶ conducting a Smart Fleet analysis to develop a suite of tools for fleet optimization.
- ▶ conducting a field trial of six fuel cell electric vehicles.
- ▶ testing and comparing the use of other zero emissions alternatives, including battery electric vehicles and electric bikes (E-bikes) where operationally appropriate.
- ▶ investigating opportunities to use EVs as an emergency power source.

In addition to tangible GHG reductions from the CRD fleet, outcomes of the project will include rigorous evidence-based comparative data on zero emissions vehicles in a fleet context; knowledge mobilization and experience for successful transition to zero emissions fleets; and new applied research findings for optimizing Smart Fleets.

Integrating Electric Bicycles into the CRD Fleet

E-bikes provide a low-carbon, quick and efficient way for getting staff and supplies short distances in urban environments. In 2018, as part of the broader Zero Emissions Fleet Initiative, 17 CRD staff participated in a pilot to trial E-bikes as transport for inspections, meetings and other operational duties. The pilot was also the subject of an Institute for Integrated Energy Systems at the University of Victoria research study. During a 4-month period, staff took 92 trips of an average distance of 6.6 kms, travelling over 600 kms in total, by E-bike. The trial found that E-bikes reduce GHGs by over 99% compared to a typical CRD fleet vehicle, and resulted in an 80% reduction in operating and capital costs. In addition to the cost and GHG savings, the use of E-bikes aligns with the CRD's commitment to sustainability and climate action. Said one E-bike pilot participant: "arriving to businesses on an E-bike sparks discussions around CRD climate action initiatives, work efficiencies, and health benefits of cycling". The CRD's E-bike pilot continues, and staff are looking at ways to expand the use of E-bikes at the CRD.



Oil to Heat Pump Incentive Program

From 2015 to September 2018, the provincial Oil to Heat Pump Incentive Program was offered across British Columbia. Funded by the BC Ministry of Energy and Mines' Innovative Clean Energy (ICE) Fund, the incentive offered up to \$1,700 to swap from carbon-intensive oil heating sources to the electric heat pump. During this time, the CRD supported regional promotions while offering \$150 top-up incentives towards participants' energy audit portion of the program. The District of Saanich, City of Victoria and Township of Esquimalt also offered an additional \$150 incentive per participating household in their communities.

By switching from oil to electric heat pumps, residents greatly reduce their home's GHG emissions and the risk of an oil spill from aging or under-maintained home heating oil tanks. Of the 472 successful applications across British Columbia, 304 heat pumps were installed in the capital region, totalling an estimated 1,270 tonnes of annual GHG emissions savings.

The CRD is now a proud partner in the new EfficiencyBC program, and will continue to offer fuel-switching incentives until September 2020. See www.crd.bc.ca/heatpump for more information.

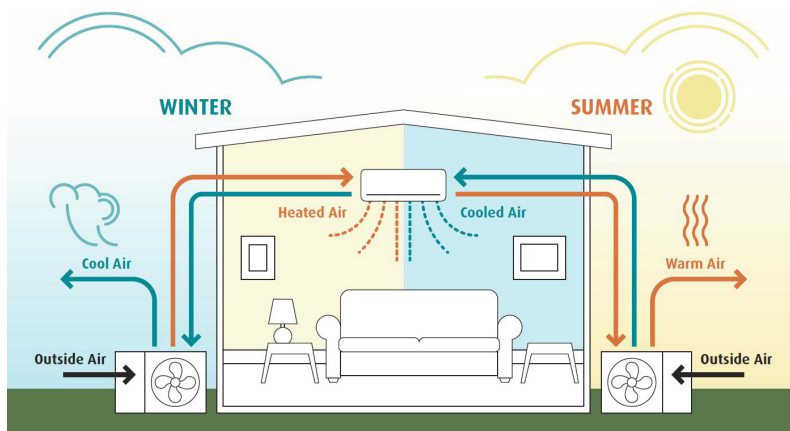




Photo Credit: J.Pakvis

FireSmart in Our Electoral Areas

In 2018, CRD Protective Services received a FireSmart Planning & Activities Grant (\$10,000) for Saturna Island to improve public safety through a collaborative approach to mitigating wildfire risk in communities.

The project will include:

- ▶ the establishment of a local FireSmart Board and engagement of a local coordinator
- ▶ public education and communications, including a community FireSmart Day, events and workshops
- ▶ conducting FireSmart home and property assessments (with consent)
- ▶ site visits and FireSmart assessments for public lands and buildings
- ▶ training for Local FireSmart Representatives and Community Champions
- ▶ reducing human-caused ignitions through the above measures
- ▶ reducing wildfire risk by improving structure protection through 'FireSmarting' public and private structures

In 2019, with support from the Union of British Columbia Municipalities (UBCM) Community Resiliency Investment funding, FireSmart programming will continue and expand on Saturna Island, Pender Island, Salt Spring Island and in the Juan de Fuca Electoral Area. The strategy will help reduce and mitigate wildland fire damage, educate the greater public and tourists regarding these high-risk fire areas, and support the goals of provincial wildfire management.



Adaptation Planning in the CRD Greater Victoria Drinking Water Supply Areas

The Resource Planning Section of Watershed Protection is using the mapping of ecosystems, forest characteristics and invasive species to identify potential vulnerabilities to the projected effects of climate change on the Greater Victoria Water Supply Area (GVWSA). In 2018, work included:

- ▶ Assessing how climate change affects identified risks to water quality and other ecosystem services provided by the GVWSA.
- ▶ Expanding the monitoring network for weather and stream flow in the GVWSA to better understand watershed hydrology in the GVWSA and the potential effects of projected changes to climate.
- ▶ Conducting a review of how the latest climate change projections for the CRD relate to the records of climate for the water supply area over the past 100 years.
- ▶ Identifying needs for additional information to better understand the effects of climate change on the GVWSA.

Walking the talk: CRD Recognized as One of Canada's Greenest Employers



In 2018, the CRD was recognized as one of Canada's Greenest Employers by the Canada's Top 100 Employers project. This special designation recognizes the employers that lead the nation in creating a culture of environmental awareness in their organizations. The CRD walks the sustainability talk throughout its operations, from the Health and Wellness 'take the stairs' campaign, to the employee-managed vegetable and herb garden, to the green roof and rainwater capture system at CRD headquarters. The CRD's CCAS aims to integrate climate action into everyday business across the CRD's departments, divisions and services.

Looking Ahead - 2019

In 2019, the CRD will continue to complete actions identified in its climate strategies, and endeavor to accelerate actions and explore opportunities as a response to the CRD's climate emergency declaration. The CRD will continue to pursue strategic partnerships, external funding sources, and respond to opportunities as local and senior levels of governments advance their efforts.

Some activities planned for 2019 include:

- ▶ Residential Retrofit Acceleration Project: Thanks to a Federation of Canadian Municipalities (FCM) Transition 2050 partner grant, the CRD will be working with City Green Solutions, the Home Performance Stakeholder Council and regional and local governments on Vancouver Island to implement a project aimed at facilitating a low-carbon heating system, and deep energy and emissions-reduction retrofit strategies and projects.
- ▶ Accelerating Climate Action: In response to the CRD's climate emergency declaration, in 2019, the CRD will be applying to the BC Hydro Community Energy Manager Program to obtain a two-year staff support grant to help facilitate accelerated initiatives. The CRD will also lead a regional data analysis exercise to better understand our emission scores and how to reduce them over the next 10-30 years.
- ▶ Landfill Gas Utilization: In 2019, the CRD Board will be making a decision on the future of landfill gas utilization at the Hartland landfill. How the CRD decides to maximize landfill gas for public benefit can have both environmental and financial benefits for the community. It also fosters a greater circular economy, using waste to generate energy.
- ▶ Solid Waste Management Plan Update: In 2019, the CRD will begin a process to update the CRD Solid Waste Management Plan to respond to the changing waste management context. Informed by the current waste management system, regulatory obligations, and challenges and opportunities, the CRD will embark on a planning exercise to understand the public's needs, expectations, and preferences related to how solid waste will be managed in the future.
- ▶ Corporate Adaptation Plan: Initiated in 2018, the CRD is working to develop a corporate adaptation plan to meet the organization's goal of enhancing resilience and preparing for future climate change impacts. The plan will address CRD services, natural and engineered assets and integrate with existing business practices, including asset management, risk management, business continuity and emergency management. The plan will be developed and presented to the CRD Board for endorsement in 2019.







Capital Regional District

625 Fisgard Street
Victoria, BC V8W 2S6
250.360.3000








www.crd.bc.ca
Twitter: @crd_bc
Facebook: Capital Regional District

Appendix A:




Goal 1 | Developed urban areas are compact and complete

Action	Timing	Status	Action / Project Description	External Partners
1-1. IDENTIFY OPPORTUNITIES TO SUPPORT LOCAL GOVERNMENTS and interested First Nations governments with transit-oriented development.	<i>n/a</i>	<div> Complete</div>	▸ Considered in context of Regional Growth Strategy (RGS) and policies to support urban containment	▸ All municipalities and Juan de Fuca Electoral Area (not SSI or SGI)
1-2. DEVELOP TOOLS AND UNDERTAKE RESEARCH to support local governments, and interested First Nations governments, in creating compact and complete urban areas.	<i>2017 - 2018</i>	<div> Complete</div>	▸ 2017 and 2018 Active and Safe Routes to School (ASRTS) Programs research considered density in relation to modes of transportation. Research to be posted on ASRTS website.	▸ School boards, municipalities and Electoral Areas (EA), public health, local law enforcement agencies, parents, students and school administration. ICBC Road Safety, BC Transit, Greater Victoria Cycling Coalition and Walk ON! Victoria ▸ Funders: Real Estate Foundation of BC, The Victoria Foundation, the CRD Traffic Safety Commission, Island Health
1-3. MANAGE COMPLIANCE WITH REGIONAL GROWTH STRATEGY (RGS): • Review Regional Context Statements for alignment with the RGS. • Continue to adopt Official Community Plans (OCP) for the Juan de Fuca Electoral Area that are consistent with the RGS. • Monitor and report on RGS commitments.	<i>2018 & beyond</i>	Ongoing	▸ RGS was adopted in March 2018. All new CRD bylaws and services must be consistent with RGS.	▸ Municipalities, Juan de Fuca Electoral Area
	<i>2018 - 2020</i>	Ongoing	▸ Review Regional Context Statements when submitted by municipalities.	▸ Municipalities
	<i>2017 - 2018</i>	<div> Complete</div>	▸ Groundwork done in 2017. New OCPs for East Sooke and Shirley/Jordan River in 2018.	▸ Juan de Fuca Electoral Area
	<i>2019 & beyond</i>	<div> Planned</div>		
1-4. CONTINUE TO DEVELOP GHG-RELATED TARGETS , policies and actions for the Juan de Fuca Electoral Area OCP.			▸ See Goal 1 – 3 (JdF OCPs)	
PERFORMANCE INDICATORS • Percentage of new dwelling units within the Growth Policy Area			▸ In 2017, 7.25% of new dwelling units were outside the Regional Urban Containment and Servicing Policy Area. (Target is 5). (2018 data not available at time of publication)	
• Number of people with access to destinations that fulfill daily needs			▸ Data is not available or collected by CRD.	

Goal 2 | Multi-modal transportation systems are low carbon

Action	Timing	Status	Action / Project Description	External Partners
2-1. ESTABLISH A CRD TRANSPORTATION SERVICE TO FULFILL THE MULTI-MODAL VISION OF THE REGIONAL TRANSPORTATION PLAN. <ul style="list-style-type: none">Consolidate CRD transportation functions.Apply for external funding.Requisition for future infrastructure projects.	2018	<div></div> <div>Complete</div>	▸ CRD Board decided on March 14, 2018 not to further pursue a transportation service at this time. Transportation services will not be consolidated.	
2-2. IMPLEMENT THE REGIONAL TRANSPORTATION PLAN AND THE PEDESTRIAN AND CYCLING MASTER PLAN.	2017 - 2018	<div></div> <div>Complete</div>	▸ Completed the Origin and Destination Household Travel survey	
	2018	<div></div> <div>Complete</div>	▸ Hosted 2nd annual Walk and Wheel to School Week	▸ Island Health, school boards, schools
	2019	<div></div> <div>Planned</div>	▸ Launch ongoing active school travel-planning initiative (Ready Step Roll) to work with up to 5 schools per year.	▸ School boards, municipalities and EAs, public health, local law enforcement agencies, parents, students and school administration, and ICBC Road Safety
	2019	<div></div> <div>Planned</div>	▸ Update the CRD Bike Map. Printing and distribution of 25,000 maps	▸ Municipalities, advocacy organizations and bike-related businesses.
2-3. IMPLEMENT PRIORITY PROJECTS IDENTIFIED IN THE REGIONAL TRAILS MANAGEMENT PLAN TO SUPPORT ACTIVE TRANSPORTATION.	2018	<div></div> <div>Complete</div>	▸ Supported the Songhees Wheelness Project to promote cycling amongst all ages.	
	2017	<div></div> <div>In progress</div>	<div>▸ Completed the final segment of Phase 1 of the E&N Rail Trail to add a further 1 km of cycling and pedestrian trail in View Royal and through the Esquimalt Nation and Songhees Nation communities. Planning and design for an additional 1 km segment in the City of Langford was initiated in 2018, with expected construction completion in 2020.</div> <div>▸ Total external funding (grants) for all phases of the E&N has been approximately \$17M.</div>	<div>▸ Esquimalt Nation, Songhees Nation, Ministry of Transportation and Infrastructure, Town of View Royal</div> <div>▸ Funders: Bike BC \$1 million and UBCM (a portion of \$12 million grant for Phase 1 went toward the final Phase 1 segment)</div>
	2017	Ongoing	▸ Completed the Gulf Islands Regional Trails Plan, a conceptual plan for 5 new regional trails on the Gulf Islands (50 km of new trail proposed). The plan was approved by the CRD Board in April 2018. Project implementation will require significant external funding and many years to complete.	
	2018	Ongoing	▸ Initiated a 2-stage regional trail-widening or separation feasibility study. Part A, completed in 2018, gathered existing GIS data relating to the trail corridor, such as width, legal encroachments, and natural barriers. The map book prepared will provide background information fo a consultant to conduct the feasibility study (Part B).	
	2018	Ongoing	▸ Developed and implemented an updated sign plan for the Galloping Goose and Lochside regional trails to provide easier wayfinding on the regional trails.	
2-4. IDENTIFY OPPORTUNITIES TO WORK WITH BC TRANSIT as they develop policies and plans for rapid transit, frequent transit and increased accessibility.	2017	Ongoing	▸ CRD Regional Planning is exploring opportunities.	







Goal 2 | Multi-modal transportation systems are low carbon (cont.)

Action	Timing	Status	Action / Project Description	External Partners
2-5. FACILITATE DELIVERY OF THE SALT SPRING ISLAND (SSI) COMMUNITY TRANSIT SERVICE AND IMPLEMENT MULTI-MODAL TRANSPORTATION PROJECTS , including recommendations from the Pedestrian and Cycling Master Plan: SSI Edition.	2017 - 2018	Ongoing	▸ Transit Infrastructure Review: Review and plan with BC Transit priority infrastructure actions	▸ BC Transit
	2017 - 2018	Ongoing	▸ Purchased three lots totalling three acres (1.21 hectares) for park purposes off of Starks Road on Salt Spring Island. Salt Spring Island Parks and Recreation Commission (PARC) will work with surrounding residents and trail enthusiasts to develop a plan for a connector trail on the site.	
	2018	Ongoing	▸ Scope and plan community trails and beach accesses ▸ Mouat West, Harbour House / Crofton Brook trail	
	2018	Ongoing	▸ Planning and construction of: ▸ Lower & Upper Ganges road sidewalks and bike path ▸ Lower Ganges Road upland connector	
	2018	Ongoing	▸ Explore construction of a family-style bike park, including an environmental assessment, other feasibility studies and community consultation.	▸ Salt Spring Bike Club ▸ Funding support: Salt Spring Island Lions donated \$150,000
	TBD	 Planned	▸ Consider bus shelters locations: Lower Ganges road, Fulford-Ganges road & Mobrae avenue.	
2-6. SUPPORT ELECTRIC VEHICLE (EV) AND ELECTRIC BICYCLE (E-BIKE) ADOPTION AND INFRASTRUCTURE DEPLOYMENT (including battery plug-in and fuel cell EV infrastructure) in coordination with the Province, local governments and private sector.	2018	 Complete	▸ Completed a capital region EV and E-bike infrastructure planning project, which included industry and public surveys, capacity building events, an infrastructure gap analysis and the development of a best practices guidebook to support local governments in their planning, design and implementation of future EV infrastructure and grant applications.	▸ Local governments, Victoria EV Club, Drive Electric Victoria, UDI - Capital Region ▸ Co-funder: BC Hydro
	2018	Ongoing	▸ Participate in provincial local government EV network to support capacity building and information sharing.	▸ BC Hydro, local and regional governments
	2018	 Complete	▸ Supported Songhees Wheelness cycling initiative through to completion, which included an e-bike fleet from which members could borrow.	

Goal 2 | Multi-modal transportation systems are low carbon (cont.)

Action		Timing	Status	Action / Project Description	External Partners
2-7.	DEVELOP, DELIVER AND SUPPORT EDUCATION PROGRAMS AND INITIATIVES THAT ACHIEVE REDUCTIONS IN TRANSPORTATION RELATED GHG EMISSIONS.	2018	<div><div></div><div>Complete</div></div>	▶ Promoted the SmartDrive Challenge which trained participants on fuel and GHG-saving driving techniques.	▶ Scout Environmental
		2018	<div><div></div><div>Complete</div></div>	▶ Supported delivery of Cool It! Climate Leadership workshops in twenty grade 4-7 classrooms throughout the capital region and provided tools for behaviour change.	▶ BC Sustainable Energy Association (BCSEA)
		2018	<div><div></div><div>Complete</div></div>	▶ Redeveloped and relaunched the Climate Action To-Go Kits to include active transportation tools and activities.	▶ Greater Victoria Public Library (GVPL), Vancouver Island Regional Library (VIRL), Salt Spring Island Public Library, Camosun College Library
		2018	<div><div></div><div>Complete</div></div>	▶ Walk and Wheel to School Week 2018. 33 schools from 4 School Districts registered with more than 8,000 active trips to/from school reported.	▶ Island Health, CRD Traffic Safety Commission
		2019	<div><div></div><div>Planned</div></div>	▶ Walk and Wheel to School Week 2019.	▶ Island Health, CRD Traffic Safety Commission
		2019	<div><div></div><div>Planned</div></div>	▶ Support delivery of Cool It! Climate Leadership workshops in forty grade 4-5 classrooms throughout the capital region and provide tools for behaviour change.	▶ BC Sustainable Energy Association (BCSEA), District of Saanich, City of Victoria
2-8.	DEMONSTRATE LEADERSHIP BY IMPLEMENTING THE CCAS CORPORATE FLEET ACTIONS AND POLICY.	2019	<div><div></div><div>Planned</div></div>	▶ Support local governments in industry capacity-building and policy support.	
		2017	Ongoing	▶ See Appendix B – CCAS Actions.	
		PERFORMANCE INDICATORS			
		• Reductions in GHGe from personal vehicle transportation		▶ Province is no longer providing this data. In 2018, the CRD Board requested a meeting with the BC Minister of Environment and Climate Change Strategy regarding Community Energy and Emissions Inventory to discuss needs and opportunities for the Province to support local governments through the provision of consistent and robust Community Energy and Emissions Inventory (CEEI) data. Board Chair and CRD staff met with BC Minister of Environment and Climate Change Strategy.	
		• Establishment of a CRD Transportation Service		▶ CRD Board decided on March 14, 2018 not to further pursue a transportation service at this time.	
		• Increase in transit services and related infrastructure		▶ Data not collected by CRD.	
		• Increase in active transportation infrastructure kilometres		▶ Not currently available.	
		• Percentage of all trips made by walking, biking or transit		▶ 26.6% in 2017 (Target is 45%).	
		Percentage of the Regional trail network completed	2018	▶ 95.75 km (55km Galloping Goose; 29km Lochside; 11.75 km E&N).	







Goal 3 | Buildings are high-performing and low carbon

Action	Timing	Status	Action / Project Description	External Partners	
3-1. SUPPORT THE TRANSITION FROM OIL HEATING TO HIGH-EFFICIENCY, LOW -MISSIONS HEATING SYSTEMS.	2017 - 2018	<div></div> <div>Complete</div>	▶ Coordinated CRD and local government top-up incentives to the provincial Oil to Heat Pump Program offering homeowners incentives to switch from oil heating to electric heat pumps. Since 2015, 187 CRD top-up incentives have been dispersed, resulting in at least 1,256 tonnes of CO ₂ e saved annually.	▶ Province of BC ▶ Funding support: District of Saanich, City of Victoria and Township of Esquimalt	
	2018 - 2020	<div></div> <div>In progress</div>	▶ Provide CRD top-up incentives to the provincial EfficiencyBC program offering homeowners incentives to switch from fossil fuel heating systems to electric heat pumps.	▶ Government of Canada, Province of British Columbia, local governments, BC Housing, BC Hydro and Fortis BC ▶ Funding support: District of Saanich and City of Victoria	
	2018 - 2019	<div></div> <div>In progress</div>	▶ Support regional promotions related to provincial EfficiencyBC program.	▶ Government of Canada, Province of British Columbia, local governments, BC Housing, BC Hydro and Fortis BC.	
	2018 - 2021	<div></div> <div>Planned</div>	▶ Supported a successful Federation of Canadian Municipalities (FCM) Transition 2050 grant application for the Residential Retrofit Acceleration Project aimed at facilitating low-carbon heating system, and deep energy and emissions reduction retrofit projects through a formalized local government collaborative cluster on Vancouver Island. Implementation planned for 2019	▶ City Green Solutions, District of Saanich, Township of Esquimalt, District of Central Saanich, City of Victoria Regional District of Nanaimo, Comox Valley Regional District, Cowichan Valley Regional District, Campbell River ▶ Funding support: FCM	
3-2. EDUCATE AND PROVIDE REGIONAL COORDINATION FOR NATIONAL AND PROVINCIAL INITIATIVES.	2018	<div></div> <div>Complete</div>	▶ Shared Step Code learnings and local policy and procedure updates through CRD Climate Action Inter-Municipal Working Group and e-newsletters		
	Examples include: • Opt-in regulations (e.g., the Energy Step Code, a tiered energy-performance standard beyond Building Code)	2018	Ongoing	▶ Participate in the provincial local government Step Code Peer Network and share learnings with capital region local governments	▶ Energy Step Code Council
		2019	<div></div> <div>Planned</div>	▶ Scope potential Energy Step Code related research project on SSI.	
	• Energy literacy initiatives such as energy benchmarking and voluntary and mandatory energy-labeling programs for buildings	2018 - 2020	Ongoing	▶ Create, update and share energy literacy materials for community displays, including a model house and building energy trivia.	▶ Local governments









Goal 3 | Buildings are high-performing and low carbon (cont.)

Action	Timing	Status	Action / Project Description	External Partners
3-3. DEVELOP, DELIVER AND SUPPORT EDUCATIONAL PROGRAMS AND INITIATIVES that achieve reductions in building-related GHG emissions and, water and energy use.	2017- 2018	<div> </div> <div>Complete</div>	<div> ▶ Synergy Hotel Water Assessment Program provided free assistance to 7 local hotels including on-site water conservation education and fixture installation resulting in 64,282 m3/yr potential water saved and related energy and GHG emissions. </div>	
	2018	<div> </div> <div>In progress</div>	<div> ▶ Relaunched the energy literacy materials and Climate Action To-Go Kits. In 2018, GVPL loaned the kits 100 times. Kits continue to be available through the libraries. </div>	<div> ▶ Libraries in the region (GVPL, VIRL, SSI Library and Camosun College) </div>
	2018	<div> </div> <div>Complete</div>	<div> ▶ Expanded Fix a Leak Week campaign. Included hot water tank leak alarm education and added faucet aerators to the kits. Distributed 526 kits to residents (single-family and multi-unit residential buildings) </div>	<div> ▶ District of Saanich, District of North Saanich </div>
	2018	Ongoing	<div> ▶ Industry Irrigation workshops include climate projections information. </div>	
	2018	<div> </div> <div>Complete</div>	<div> ▶ Residential water conservation display at local theatre aligned with the production’s messaging and theatre house’s values - no bottled drinking water sold and water bottle refill spigot installed. </div>	
	2018	Ongoing	<div> ▶ Residential native plant gardening workshops, include climate projections and regional growth. </div>	
	2018	<div> </div> <div>Complete</div>	<div> ▶ Update Every Drop Counts, grade 2 teacher’s guide. </div>	
	2018	<div> </div> <div>Complete</div>	<div> ▶ Delivered and staffed drinking water cart at 18 community events. </div>	
	2018 - 2019	<div> </div> <div>Planned</div>	<div> ▶ Undertake the Hotel Water Assessment Program to offer free assistance to 11 local hotels including on-site water and energy-saving education and fixture installation. </div>	
	2019	<div> </div> <div>Planned</div>	<div> ▶ Fix a Leak Week campaign. </div>	
	2019	<div> </div> <div>Planned</div>	<div> ▶ Deliver water conservation workshops and presentations (e.g., Girl Guides). </div>	
	2019	<div> </div> <div>Planned</div>	<div> ▶ Explore potential for non-potable rainwater harvesting on SSI. </div>	

Goal 3 | Buildings are high-performing and low carbon (cont.)

Action	Timing	Status	Action / Project Description	External Partners
3-4. PROVIDE RESEARCH, DATA AND ANALYSIS TO LOCAL GOVERNMENTS AND INTERESTED FIRST NATION GOVERNMENTS on high performing, resilient and low carbon buildings.	2017	Ongoing	▸ Participate on the provincial local government Step Code Peer Network and share learnings with capital region local governments	▸ BC Energy Step Code Council
3-5. SUPPORT AND DEVELOP PROGRAMS THAT INCREASE THE USE OF RENEWABLE ENERGY, GREEN INNOVATION AND SMART TECHNOLOGY in buildings.	2017 - 2018	<div> Complete</div>	▸ See Action 3-1 (Oil to Heat Pump Program).	
	2018	<div> In progress</div>	▸ The Summit at Quadra Village project storm water strategy uses rain gardens to reabsorb a portion of the significant roof-water runoff, reducing and /or sequencing the loads placed on municipal storm water infrastructure.	
	2018	<div> In progress</div>	▸ Implementation of The Summit at Quadra Village project. Construction will include many energy efficient measures with an anticipated savings of 632,680 kWh.	▸ The land and future building will be owned by the Capital Region Hospital District (CRHD), with Island Health funding the residential care services.
	2019	<div> Planned</div>	▸ See Action 3-1 (Transition 2050 and EfficiencyBC).	
3-6. BUILD CAPACITY AMONG BUILDING OFFICIALS AND INDUSTRY IN THE REGION by: <ul style="list-style-type: none">• sharing and promoting resources at monthly South Vancouver Island Building Officials meetings.• supporting ongoing education of building officials and industry.	2018	Ongoing	▸ Chair Chief Building Officials Association – review new policies.	
	2018	<div> Complete</div>	▸ Host 7 industry irrigation workshops, which included regional growth and climate projections.	
	2018	Ongoing	▸ Share Energy Step Code information and related training opportunities.	
	2018	Ongoing	▸ CRD Building Inspections contracts with 5 First Nations.	
	2019	<div> Planned</div>	▸ See Action 3-1 (Transition 2050 and EfficiencyBC).	
3-7. DEMONSTRATE LEADERSHIP BY IMPLEMENTING THE CCAS POLICY AND ACTIONS related to existing and new corporate buildings.	2017	Ongoing	▸ See Appendix B – CCAS Actions	
PERFORMANCE INDICATOR <ul style="list-style-type: none">• Reductions in residential and commercial building GHGe and energy use	2018		▸ Provincial data not available for this year.	
<ul style="list-style-type: none">• Volume of water used in the Greater Victoria Water Supply Area	2017		▸ 48.7 Mm3 of drinking water was delivered through the regional water supply system	










Goal 4 | Natural assets are valued for reducing our contributions to climate change

Action	Timing	Status	Action / Project Description	External Partners
4-1. WORKING WITH PARTNERS, UPDATE THE REGIONAL INVENTORY OF LAND COVER.	2018	<div> Complete</div>	▸ Regional land cover update (except Gulf Islands) completed in 2018.	▸ Data provided by Province of British Columbia Ministry of Forests Lands, Natural Resource Operations and Rural Development
	2018 - 2019	<div> Planned</div>	▸ Urban Forest Land Cover - update land cover data by watershed to show municipal and community change in vegetation and impervious surface	▸ Local municipalities, Core, Saanich Peninsula, SGI, SSI, JDF EA
	2019	<div> Planned</div>	▸ Complete a land evaluation process in support of park land acquisition.	
	2019	<div> Planned</div>	▸ Complete a land cover mapping project able to compare impervious surfaces to forest cover.	
4-2. COLLABORATE WITH LOCAL GOVERNMENTS AND INTERESTED FIRST NATIONS GOVERNMENTS TO DEVELOP AND IMPLEMENT A STRATEGY TO IMPROVE, INCREASE AREA OF, AND PROTECT RURAL, SUBURBAN AND URBAN TREE CANOPY AND ROOT SPACE.	2018	<div> In progress</div>	▸ In discussions with First Nations seeking federal funds to convert lands to Indigenous Protected Conservation Areas (IPCA).	
	2018	<div> Complete</div>	▸ Supported CRD Parks to bring neighbouring First Nations into discussions on Parks Acquisition Strategy.	
	2018	Ongoing	▸ Current regional park land base is approximately 13,000 ha. This increases periodically, as a result of land acquisitions supported by a dedicated levy on regional property tax assessments. Further acquisitions are anticipated in 2018.	
	2019	<div> In progress</div>	▸ Current Land Acquisition Strategy concludes in 2019 - developing a new strategy going forward.	
4-3. CONSIDER CARBON SEQUESTRATION AND STORAGE IN ALL CRD LAND, MARINE MANAGEMENT, ASSET MANAGEMENT AND ACQUISITION DECISIONS to reduce community GHG emissions in collaboration with stakeholders and First Nations governments.	2017 - 2018	Ongoing	▸ Carbon sequestration is considered in all park land acquisition decisions.	
4-4. DEVELOP A SILVICULTURE WORKING GROUP FOR THE JUAN DE FUCA ELECTORAL AREA in collaboration with landowners.	Unknown	<div> Planned</div>		
PERFORMANCE INDICATORS				
• Update the regional inventory of land cover			▸ Planned, see 4.1	
• Number of hectares of protected areas, forest land and tree cover			▸ Two acquisitions totalling 25 ha. Closed in 2018.	
			▸ To date, two acquisitions planned totalling 149 ha. Closed in 2019.	

Goal 5 | Waste generation is minimized and remaining waste is transformed into a resource

Action	Timing	Status	Action / Project Description	External Partners
5-1. MINIMIZE COMMUNITY GHG EMISSIONS BY COMPLETING THE CRD INTEGRATED SOLID WASTE AND RESOURCE MANAGEMENT PLAN.	2018 - 2019	<div></div> Planned	▸ Development of Solid Waste Management Plan.	
5-2. WORK WITH LOCAL GOVERNMENTS TO PLAN WASTE REDUCTION STRATEGIES BASED ON WASTE COMPOSITION STUDY RESULTS.	2018 - 2019	<div></div> Planned	▸ Development of Solid Waste Management Plan.	
5-3. DEVELOP AND DELIVER PROGRAMS TO PROMOTE THE 3RS (reduce, reuse, recycle) and ZERO WASTE APPROACHES to reduce the amount of community solid waste (e.g. food preservation).	2018	Ongoing	▸ Maintain and promote use of myrecyclopedia online diversion directory.	
	2018	Ongoing	▸ Support curbside recycling education (e.g., subscription for service reminders and updates, seasonal diversion, “extra material”, warm weather tips education).	
	2018	Ongoing	▸ Love Food Hate Waste education and awareness campaign.	▸ Zero Waste Council; Metro Vancouver
	2018	Ongoing	▸ Delivered and staffed the drinking water cart to 18 community events, distributing 12m³ of water, which is equivalent to 12,000 water bottles diverted from waste & recycling streams.	
	2018	Ongoing	▸ InfoLine is an essential part of education and outreach programs. This service responds to waste reduction, waste management and general Hartland Landfill inquiries.	
	2018	Ongoing	▸ Under contract with the CRD, the Compost Education Centre (CEC) offers presentations, workshops, and educational demonstrations. CEC also engages with volunteers, publishes an e-newsletter and fact sheets, and maintains the CEC Hotline and website. For more information, see the CRD Environmental Resource Management’s 2018 Progress Report.	
	2018	Ongoing	▸ MyRecyclopedia.ca tool was developed to encourage sustainable practices and to reinforce the 3Rs of reduce, reuse and recycle. Items listed received 228,000 web visits in 2018.	
	2018	Ongoing	▸ Ten organizations participated in the diversion funding program.	
	2018	Ongoing	▸ Partner with five not-for-profit organizations for the management of donated items received in the Hartland depot.	
	2018	Ongoing	▸ Hartland Public Drop-Off Depot - Over 80 items from 28 product categories are accepted for recycling.	
	2018	Ongoing	▸ Under agreement with Recycle BC, the CRD provided 123,629 single-family dwellings with curbside recycling service for packaging and paper products. Since 1989, over 468,000 tonnes of recyclables have been collected.	
	2018	Ongoing	▸ Residents on Salt Spring Island and the Southern Gulf Islands are provided recycling services through drop-off programs set up at depots in their communities. The CRD, under agreement with Recycle BC, partners with local non-profit associations for recycling services for packaging and paper products at these depots.	
	2018	Ongoing	▸ The CRD supports industry-led product stewardship. Through 2018, the CRD continues to have one of the highest medication return rates per capita amongst regional districts in the province and a total of 17,522 tonnes of Paper and Plastic Packaging (PPP) was collected through CRD programs.	

Goal 5 | Waste generation is minimized and remaining waste is transformed into a resource (cont.)

Action	Timing	Status	Action / Project Description	External Partners
5-3. (CONTINUED) DEVELOP AND DELIVER PROGRAMS TO PROMOTE THE 3RS (reduce, reuse, recycle) and ZERO WASTE APPROACHES to reduce the amount of community solid waste (e.g., food preservation).	2018	Ongoing	<ul style="list-style-type: none"> ▶ In 2018, just over 900 tonnes of source-separated yard and garden material was received at Hartland where it was ground and used onsite. 	
	2018	Ongoing	<ul style="list-style-type: none"> ▶ Under a local service funded by the community of Port Renfrew, residents and businesses access a transfer station for drop-off of general refuse, kitchen scraps and recycling. 	
	2018	<div>  Complete </div>	<ul style="list-style-type: none"> ▶ Piloted 4 general public landfill tours. 	
	2018	<div>  Complete </div>	<ul style="list-style-type: none"> ▶ Delivered 3R school programs and landfill tours (81), community group programs and landfill tours (16), and community presentations, as requested. 	
	2018	<div>  Complete </div>	<ul style="list-style-type: none"> ▶ Updated programming (added food-waste reduction education, expanded reduction education program and added custom tours). 	
	2018	<div>  Complete </div>	<ul style="list-style-type: none"> ▶ Increased outreach and education role to full-time and diversified focus to include other environmental education topics. ▶ Piloted FTE Environmental Services Infoline position. 	
	2018	<div>  Complete </div>	<ul style="list-style-type: none"> ▶ Developed and implemented a number of seasonal, multi-medium public education campaigns to promote and provide information in the following areas: <ul style="list-style-type: none"> • end-markets for recyclable materials • safe renovation waste disposal • illegal dumping prevention • abandoned boat reporting and prevention • household hazardous waste disposal • avoidable food waste reduction • holiday season waste reduction 	
	2018	<div>  Complete </div>	<ul style="list-style-type: none"> ▶ Ready, Set, Sort! online game was played 5,435 times with the most commonly misunderstood depot items being plastic shopping bags and Styrofoam. 	
	2019	<div>  Planned </div>	<ul style="list-style-type: none"> ▶ Offer general public landfill tours and pilot family workshop and landfill tours. 	
	2019	<div>  Planned </div>	<ul style="list-style-type: none"> ▶ Develop new programming. 	
	2019	<div>  Planned </div>	<ul style="list-style-type: none"> ▶ Coordinate a waste summit and direct outreach to First Nations around waste management. 	






Goal 5 | Waste generation is minimized and remaining waste is transformed into a resource (cont.)

Action	Timing	Status	Action / Project Description	External Partners
5-4. PROMOTE ORGANIC MATERIAL DIVERSION (kitchen scraps, yard and garden waste) and facilitate the responsible recovery of resources locally.	2017 - 2018	Ongoing	▶ Deliver 3R school programs, school and community group tours, youth summer programs, presentations and workshops.	▶ School districts, schools
	2018	Ongoing	▶ Support Greater Victoria Compost Education Centre to develop and deliver programs and workshops.	▶ Greater Victoria Compost Education Centre
	2018	Ongoing	▶ Member of the Greater Victoria Compost Education Centre Board.	▶ Greater Victoria Compost Education Centre
	2018	Ongoing	▶ Hartland Landfill and Recycling Facility received 10,446 tonnes of source separated kitchen scraps in for offsite composting and marketing.	
	2018	Ongoing	▶ RFP for in region kitchen scraps and garden waste processing facility.	
	2018	<div></div> Planned	▶ Regional Invasive Species Symposium to discuss proper disposal of invasives.	▶ LG's and Capital Region Invasive Species Intergovernmental Working Group (CRISP)
5-5. IDENTIFY AND EVALUATE ADDITIONAL OPPORTUNITIES TO OPTIMIZE LANDFILL GAS RECOVERY and energy production from organic waste.	2018	Ongoing	▶ Annual installation of landfill gas collection infrastructure (2017 collection rate at 69% collection efficiency)	
	2018 - 2019	<div></div> In progress	▶ Landfill Gas model comparison.	
	2018	<div></div> Complete	▶ Presented landfill gas utilization business plan to Environmental Services Committee.	
	2018	Ongoing	▶ Annual installation of landfill gas collection infrastructure. (In 2018, three landfill gas models were run to better assess current and future gas generation and utilization potential. The average collection efficiency across the models was 68%.)	
	2019	<div></div> Planned	▶ Monitor landfill gas emission composition every 2 years.	
PERFORMANCE INDICATORS				
• Completion of the CRD Integrated Solid Waste and Resource Management Plan			▶ Planned for 2020, see Action 5.1	
• Percentage of methane gas captured at Hartland landfill	2018		▶ Rate was 68% collection efficiency (BC Ministry of Environment and Climate Change Strategy target rate = 75% by 2016)	
• Per capita waste disposal rate	2018		▶ 380 kg per capita (a reduction from 407kg per capita in 2017). In 2016, BC's average was 472 kg per capita.	

Goal 6 | Regional vulnerabilities to the impacts of climate change are understood

Action	Timing	Status	Action / Project Description	External Partners
6-1. CONTINUE AND EXPAND DATA COLLECTION AND MAPPING EFFORTS TO IDENTIFY VULNERABILITIES TO THE IMPACTS OF CLIMATE CHANGE AND ACQUIRE RESOURCES to help prepare for a changing climate (e.g., Light Detection and Ranging (LIDAR) data).	2017 - 2018	<div> </div> <div>Complete</div>	<ul style="list-style-type: none"> Increased number of monitoring locations near Hartland Landfill. Data collection includes odour, wind and temperature. 	
	2018	<div> </div> <div>Complete</div>	<ul style="list-style-type: none"> Submitted an application for an National Disaster Mitigation Program grant for Sea Level Rise and Tsunami data collection and modelling project. 	<ul style="list-style-type: none"> CRD Climate Action Inter-Municipal Working Group, CRD Local Government Emergency Programs Advisory Committee
	2018	<div> </div> <div>Complete</div>	<ul style="list-style-type: none"> New Greater Victoria Water Supply Area (GVWSA) wildfire risk modelling 	<ul style="list-style-type: none"> Work completed by National Resources Canada - Canadian Forest Service - Pacific Forestry Centre
	2018	Ongoing	<ul style="list-style-type: none"> Addition of LIDAR for Salt Spring Island and Southern Gulf Islands and continued orthophoto project. 	
	2018	Ongoing	<ul style="list-style-type: none"> Capture of past and ongoing snow coverage data for the GVWSA from satellite imagery 	
	2018	Ongoing	<ul style="list-style-type: none"> Survey of GVWSA tree damage from forest insects, diseases and climate 	
	2018 - 2019	Ongoing	<ul style="list-style-type: none"> Install leach monitors to assess capture efficiency in real time. Project considers climate projections. 	
	2018 - 2019	Ongoing	<ul style="list-style-type: none"> Master Filling Plan - Landfill engineering phasing design for 2020 that includes current projections (e.g. leachate and landfill gas collection) 	
	2019	<div> </div> <div>Planned</div>	<ul style="list-style-type: none"> Continue orthophoto project (every 2 years). Increased resolution and elevation information for the JdF. Addition of LIDAR for Salt Spring Island and Southern Gulf Islands. 	
	2019	<div> </div> <div>Planned</div>	<ul style="list-style-type: none"> Work with interested First Nations in LIDAR planning discussions. 	
	2019 - 2020	<div> </div> <div>Planned</div>	<ul style="list-style-type: none"> Harbours Inventory and Atlas 	
	2019 - 2020	<div> </div> <div>Planned</div>	<ul style="list-style-type: none"> Complete regional sea-level rise modelling and mapping project (grant dependent) 	<ul style="list-style-type: none"> CRD Climate Action Inter-Municipal Working Group

Goal 6 | Regional vulnerabilities to the impacts of climate change are understood (cont.)

Action	Timing	Status	Action / Project Description	External Partners
6-2. CONDUCT REGION-WIDE CLIMATE RISK AND VULNERABILITY ASSESSMENTS FOR NATURAL AND SOCIAL IMPACTS (e.g.,ecosystem shifts, invasive species, drought, disease) every five years, or sooner as new information (e.g., climate projects) becomes available, in partnership with local governments and interested First Nations governments.	2018	<div>Complete</div>	► Finalized region-specific priority invasive species list.	
	2018	<div>Complete</div>	► Cascadia Receding Exercise. Participated in a 2-day full scale, multi-agency, multi-region exercise based on a tsunami event in the Portland/Clackamas County, Oregon area.	
	2018	<div>In progress</div>	► Invasive species coordinator staff hired.	
	2018	Ongoing	► Conduct regional hazard and vulnerability assessment through the Regional Emergency Management Partnership (REMP)	
	2018	Ongoing	► Stakeholder engagement on the Community Health and Wellbeing Plan.	
	2018	Ongoing	► Coordinate the Regional Outcomes Monitoring Group (operates as a Community Health Network for the CRD). Collect and share data and indicators around the social determinants of health. Identified Healthy Safe Environments as a priority goal area for 2019. Develop educational workshops around the social determinants of health and their impact on policy planning and program development.	► Island Health, GVPL, Inter-Cultural Association, Community Social Planning Council, Capital Region Food and Agriculture Initiatives Roundtable, United Way of Greater Victoria, University of Victoria, Children’s Health Foundation of Vancouver Island
	2018	Ongoing	► Supporting research at the University of Victoria and Natural Resources Canada that is examining sediment cores from a wetland and Sooke Lake Reservoir to characterize changes in forest composition and wildfire return intervals associated with changes to climate since the end of the last ice age and examine the effects of wildfires and disturbances within the past several hundred years on Sooke Lake Reservoir.	
	2018 - 2019	Ongoing	► Offer Greenshores Training (level 1) for local government representatives.	► Core local governments
	2018	<div>In progress</div>	► The Resource Planning Section of Watershed Protection is: <ul style="list-style-type: none">· Using mapping of ecosystems, forest characteristics, and invasive species to identify potential vulnerabilities to the projected effects of climate change on the GVWSA.· Assessing how climate change affects identified risks to water quality and other ecosystem services provided by the GVWSA.· Expanding the monitoring network for weather and stream flow in the GVWSA to better understand watershed hydrology in the GVWSA and the potential effects of projected changes to climate. Conducting a review of how the latest climate change projections for the CRD relate to the records of climate for the water supply area over the past 100 years.· Identifying needs for additional information to better understand the effects of climate change on the GVWSA.	
	2019	<div>Planned</div>	► Implement rapid response program for priority invasive species and create alert sheets for public education.	

Goal 6 | Regional vulnerabilities to the impacts of climate change are understood (cont.)

Action	Timing	Status	Action / Project Description	External Partners
6-2. (CONTINUED) CONDUCT REGION-WIDE CLIMATE RISK AND VULNERABILITY ASSESSMENTS FOR NATURAL AND SOCIAL IMPACTS (e.g., ecosystem shifts, invasive species, drought, disease) every five years, or sooner as new information (e.g., climate projects) becomes available in partnership with local governments and interested First Nations governments.	2019	<div><div></div><div>Planned</div></div>	▸ Greenshores in harbour (road ends).	▸ DFO Marine Stewardship Council
	2019	<div><div></div><div>Planned</div></div>	▸ Bowker Creek Daylighting Feasibility Study.	
	2019	<div><div></div><div>Planned</div></div>	▸ Work with municipalities to create a municipal toolkit (e.g., OCPs, bylaws) to operationalize improved hydrological function and greenways.	
	2018 - 2020	<div><div></div><div>Planned</div></div>	▸ Partner in the forWater: Natural Sciences and Engineering Research Council of Canada (NSERC) Network for Forested Drinking Water Source Protection Technologies investigating/trialing forest management solutions to adapt to climate change with the aim of maintaining long-term source water quality.	▸ forWater NSERC Network - University of Waterloo, University of Alberta, Halifax Water, Epcor, etc.
	2019	<div><div></div><div>Planned</div></div>	▸ Finalize GVWSA Climate Change Adaption Strategy.	
6-3. CONVENE APPROPRIATE PARTNERS TO IDENTIFY AND FILL GAPS IN MARINE MONITORING PROGRAMS , to determine whether changes in the marine environment are related to climate impacts and advocate for the coordination of marine science data collection and research in region by the federal government.	2018	Ongoing	▸ Ongoing seafloor monitoring every 2-3 years.	
	2017	Ongoing	▸ CRD Environmental Protection continues to standardize our monitoring methods to those used by other agencies such as PollutionTracker, Washington State Department of Ecology, etc. This standardization allows us to compare our results to results from other jurisdictions, thereby also ensuring a broader spatial coverage to detect environmental change.	
	2017	<div><div></div><div>Complete</div></div>	<div>▸ In 2017, the CRD Environmental Protection supported a University of Victoria graduate student’s project, which involved deploying a number of moorings to assess the impacts of our outfalls on dissolved oxygen and ocean acidification around the Macaulay outfall and nearby locations. It has been hypothesized that the areas around the outfalls may be potential ‘canaries in a coal mine’ for broader environmental changes such as climate change. However, the work determined that outfall impacts are dwarfed by the dissolved oxygen and ocean acidification impacts of the deeper water that comes into the Salish Sea from the Pacific Ocean.</div> <div>▸ In 2018, the Scientific Journal Article published at: www.sciencedirect.com/science/article/pii/S0025326X18303254</div>	▸ Ocean Networks Canada (ONC), Fisheries and Oceans Canada, and UVic
	2017 - 2018	Ongoing	▸ CRD Environmental Protection monitoring program staff maintain connections with local academics and federal researchers to keep abreast of others’ research into this topic. Staff attend relevant conferences, seminars, etc. to learn about what others are detecting within the Salish Sea.	▸ Local academics and federal researchers

Goal 6 | Regional vulnerabilities to the impacts of climate change are understood (cont.)

Action	Timing	Status	Action / Project Description	External Partners
6-4. SHARE WITH STAKEHOLDERS AND FIRST NATIONS GOVERNMENTS, AND FACILITATE THE UPDATING OF REGIONAL CLIMATE PROJECTIONS , as the latest climate data becomes available.	2018	Ongoing	▸ Collect and share king tide information with all initiatives (4 years of pictures including Portage, Gorge, Esquimalt Lagoon and Victoria harbour) and began exploring use of an online crowd-sourcing platform.	
	2018	<div> </div> Complete	▸ Developed climate projection infographics and other public outreach materials for use by CRD services and local government.	
	2018	Ongoing	▸ Industry irrigation workshops include climate projections information.	
	2018	Ongoing	▸ Residential native plant gardening workshops, including climate projections and regional growth.	
	2018	Ongoing	▸ Share climate projections with interested First Nations.	
6-5. COMPILE RESEARCH ON ECOSYSTEM SHIFTS TO INCLUDE IN NATURAL AREA AND WATERSHED MANAGEMENT PLANNING for stakeholders, and interested First Nations (e.g., watershed report cards).	2017 - 2018	Ongoing	▸ Elk/Beaver Lake sampling and surveying (e.g., bacteria, phosphorus inputs, fish and weeds)	
	2018	Ongoing	▸ Elk/Beaver Lake sampling and surveying. Watershed plan (lake watershed).	
	2018	Ongoing	▸ Long-term forest monitoring plots, as well as hydrological-meteorological stations, aim to capture climate and ecosystem changes in the GVWSA.	▸ CRD is a partner in the Climate Related Monitoring Program with BC, BC Hydro, RioTinto, MetroVan and others
	2018	Ongoing	▸ Develop a Watershed Management Plan to reduce external inputs to the Elk/Beaver Lake. Include First Nations in process.	
	2018	<div> </div> Complete	▸ Planned and hosted Natural Asset Workshop series.	▸ Water Sustainability Inter-Regional Education Initiative
	2019	<div> </div> Planned	▸ Install hydrological meters in Elk/Beaver Lake.	
	2019	<div> </div> Planned	▸ Elk Lake background research for understanding lake issues.	
6-6. COLLABORATE WITH LOCAL GOVERNMENTS, AND INTERESTED FIRST NATIONS GOVERNMENTS, TO INCLUDE REGIONAL CLIMATE CHANGE PROJECTIONS IN INFRASTRUCTURE PLANNING STANDARDS (e.g., revise design storms, Intensity Duration Frequency curves).	2017 - 2018	Ongoing	▸ Identified need for advocacy for updated Intensity-Duration-Frequency (IDF) curves, endorsed by the CRD Board and communicated in a letter to Environment Canada.	

Goal 6 | Regional vulnerabilities to the impacts of climate change are understood (cont.)

Action	Timing	Status	Action / Project Description	External Partners
6-7. INCLUDE REGIONAL CLIMATE CHANGE PROJECTIONS IN HAZARD, RISK AND VULNERABILITY ASSESSMENTS for the three Electoral Areas' Emergency Operations Work Plans and share regional climate change projections with local authorities' emergency programs.	2018	<div><div></div><div>Complete</div></div>	▶ Gulf Islands Community Wildfire Protection Plan Working Group Spring Meeting (March 2018)	
	2018	<div><div></div><div>In progress</div></div>	▶ Began search for new Emergency Operations Centre (EOC) – more resilient/effective/stable EOC on SSI	
	2018	<div><div></div><div>Planned</div></div>	▶ Firehall: Southern Gulf Island referendum vote to build new fire hall successful	
6-8. DEMONSTRATE LEADERSHIP BY DEVELOPING A CORPORATE CLIMATE CHANGE ADAPTATION PLAN.	2018	<div><div></div><div>In progress</div></div>	▶ See Appendix B	
PERFORMANCE INDICATORS				
• Number of stakeholders and residents engaged through educational programming and outreach			▶ 29,738 for Environmental Services	
• Completion of the Climate Projections for the Capital Region report and integration of the results into CRD plans, strategies and processes			▶ The report was completed in 2017. ▶ The CRD continues to seek opportunities to incorporate results into CRD plans, strategies and processes.	
• Completion of an updated list of Species at Risk and critical habitats in regional parks			▶ Ongoing data sharing agreements with the province of BC's Conservation Data Centre and the Department of Environment and Climate Change Canada.	
			▶ Planned (2020) installation of a final station at the headwaters of Colquitz (just downstream of Beaver Lake).	
• Updated habitat survey for core area harbours			▶ Planned (2019-2020) by Environmental Protection Division	
• Number of streams with water quality and flow monitoring stations			▶ 4 streams with continuous water quality and CRD flow-monitoring stations. ▶ 7 streams with water quality monitoring (not continuous) and flow-monitoring stations.	








Goal 7 | Communities are prepared for, and resilient to, the impacts of climate change

Action	Timing	Status	Action / Project Description	External Partners
7-1. COLLABORATE AND COORDINATE WITH STAKEHOLDERS AND INTERESTED FIRST NATIONS GOVERNMENTS TO INCLUDE CLIMATE CHANGE PROJECTIONS AND RISKS IN STRATEGIES, PLANS AND POLICIES.	2018	<div> </div> <div>Complete</div>	<div> ▶ Participated on the Province’s Hazard, Risk and Vulnerability Analysis (HRVA) Tool Advisory Committee in assisting to develop an updated HRVA tool (to be released June 2019), which includes assessment of climate-based impacts, climate action mitigation, preparedness based on climate change data </div>	
	2018	<div> </div> <div>Complete</div>	<div> ▶ Regional Emergency Coordinators Advisory Commission workshop focused on community/regional climate impacts including federal and regional presentations </div>	
	2018	<div> </div> <div>Complete</div>	<div> ▶ CRD staff training within EOC-specific roles. </div>	
	2018	<div> </div> <div>Complete</div>	<div> ▶ Attended the BC Risk Reduction Seminar that included discussion on climate change. </div>	
	2018	Ongoing	<div> ▶ Progressive closure of Hartland phase 2 (use of green tarps) for surface water management. </div>	<div> ▶ Songhees First Nation </div>
	2018	Ongoing	<div> ▶ Support integration of CRD climate projection information in climate adaptation planning efforts led by regional municipalities. </div>	
	2017 - 2018	Ongoing	<div> ▶ Support climate change emergency preparedness. Working with the Development and Planning Advisory Committee to extend to and include First Nations. </div>	
	2017 - 2018	Ongoing	<div> ▶ Support rainwater recovery through building permit and building bylaws. </div>	<div> ▶ Islands Trust; Juan de Fuca Electoral Area </div>
	2018- 2019	<div> </div> <div>Planned</div>	<div> ▶ Evacuation Route Planning Grant (applied 2018 - awarded 2019). </div>	
	2017- 2018	On hold	<div> ▶ Supported Tsawout First Nation Adapt Program grant application. </div>	<div> ▶ Tsawout First Nation </div>
	2019	<div> </div> <div>Planned</div>	<div> ▶ Opening of shelter in JdF due to extreme weather events </div>	

Goal 7 | Communities are prepared for, and resilient to, the impacts of climate change (cont.)

Action	Timing	Status	Action / Project Description	External Partners
7-2. WORK WITH STAKEHOLDERS AND INTERESTED FIRST NATIONS GOVERNMENTS ON AN INTEGRATED WATERSHED MANAGEMENT APPROACH TO ADAPT TO CHANGES in flows, groundwater storage and other stressors due to climate change.	2018	<div><div></div><div>Complete</div></div>	▸ Finalized the Green Stormwater Infrastructure Common Design Guidelines.	
	2017 - 2018	<div><div></div><div>Complete</div></div>	▸ Hosted 10 free Keyline Design workshops and 4 pilot farm visits for farmers, planners, and engineers. Project included working with local farmers to increase awareness and develop skills for improved rainwater management on their properties. The project reached over 210 farmers and other agricultural-focused professionals across the region. Results of the field studies can be found of the project website www.crkeyline.ca .	▸ Growing Forward 2, Investment Agriculture Foundations of British Columbia, Ardcorp, Climate Action Initiative BC Agriculture and Food, Province of BC, Federal Government
	2017 - 2018	Ongoing	▸ Climate adaptation strategies and actions are being incorporated into Watershed Protection programs, projects and activities within the GVWSA. A watershed-based approach is being taken to the assessment of vulnerability and adaptation to climate change. Climate adaptation strategies and actions are being developed in collaboration with federal and provincial agencies and other large water supply utilities in the Pacific Northwest.	
	2018	Ongoing	▸ Measure number of wet-weather-related sewer volume permit exceedances (8 wastewater outfalls - 2 on SSI, 2 on Pender, 1 in Sidney, 1 in Port Renfrew, 2 in the Core). 98 events/days	
	2018 - 2019	Ongoing	▸ Daylighting Bowker Creek Project RFP and Implementation of Feasibility Study.	▸ Province of BC, City of Victoria, District of Saanich, District of Oak Bay, Bowker Creek Initiative
	2019	<div><div></div><div>Planned</div></div>	▸ Launch the Green Stormwater Infrastructure Common Design Guidelines.	
7-3. WORK WITH STAKEHOLDERS AND INTERESTED FIRST NATIONS GOVERNMENTS TO ADDRESS THE CAPACITY OF WASTEWATER TRANSMISSION AND TREATMENT SYSTEMS to manage and minimize elevated flows as a result of increased inflow and infiltration due to climate change-induced storms.	2018	Ongoing	▸ Funded 2 First Nation Liaison positions through the Wastewater Treatment Plant project.	
7-4. INCORPORATE CLIMATE-RELATED DISASTER PLANNING AND COMMUNICATIONS INTO PUBLIC OUTREACH ACTIVITIES.	2018	<div><div></div><div>Complete</div></div>	▸ Prepare Yourself Workbook – updated preparedness informational guidebook, which includes updates to preparedness in relation to severe weather risks due to climate changes in the region.	
	2018	<div><div></div><div>Complete</div></div>	▸ 26 Weeks to Preparedness Twitter campaign.	
	2018	<div><div></div><div>Complete</div></div>	▸ Measuring Regional Public Preparedness. Through the Regional Emergency Management Partnership, conducted survey to measure levels of personal preparedness throughout the region.	

Goal 7 | Communities are prepared for, and resilient to, the impacts of climate change (cont.)

Action	Timing	Status	Action / Project Description	External Partners
7-4. (CONTINUED) INCORPORATE CLIMATE-RELATED DISASTER PLANNING AND COMMUNICATIONS INTO PUBLIC OUTREACH ACTIVITIES.	2018	<div> Complete</div>	▸ FireSmart Grant for EAs was received and FireSmart education was delivered.	
	2017 - 2018	Ongoing	▸ Improve severe weather notification program to better prepare and respond..	
	2018	<div> Complete</div>	▸ Participated in a regional Hazard, Risk and Vulnerability Analysis (HRVA) workshop through which climate change was acknowledged in two of the hazards examined: extreme heat and snow storms. The information/ data obtained can be used to inform preparedness initiatives.	
	2018	Ongoing	▸ Radio Communications – ongoing systems improvements and participation in yearly “Sweeper Exercises” as well as Swiftsure International Yacht Race.	
	2019	<div> Planned</div>	▸ PrepareYourself.ca website overhaul.	
7-5. WORK WITH THE PROVINCE AND THE REGIONAL EMERGENCY MANAGEMENT PARTNERSHIP TO REDUCE THE RISK OF INTERFACE FOREST FIRES.	2018	<div> Complete</div>	▸ Gulf Islands Community Wildfire Protection Plan Working Group Spring Meeting (March 2018).	
	2018	<div> Complete</div>	▸ CRD staff deployments to wildfire events in central/north BC.	
	2018	<div> In progress</div>	▸ FireSmart Grant for EAs received and FireSmart education delivered.	
	2017 - 2018	Ongoing	▸ Collaborate with partners to address interface forest fires.	▸ Province, BC Wildfire Branch and Communities
7-6. INTEGRATE AVAILABLE INFORMATION ON CLIMATE CHANGE RISKS AND VULNERABILITIES INTO JUAN DE FUCA ELECTORAL AREA OCP development and educate residents on how to avoid or reduce damage and personal injury from storms and flooding (e.g., preparing buildings).	2018	<div> Complete</div>	▸ Included flood hazard area in Shirley OCP.	
	2018	Ongoing	▸ Implement shoreline protection in development permits in JdF.	

Goal 7 | Communities are prepared for and resilient to the impacts of climate change (cont.)

Action	Timing	Status	Action / Project Description	External Partners
7-7. DEVELOP, DELIVER AND SUPPORT EDUCATIONAL PROGRAMS AND INITIATIVES THAT PROMOTE LOCAL FOOD SYSTEMS.	2018	<div><div></div><div>Planned</div></div>	▸ Present chemical analysis of seaweed harvest sites data to First Nations to interpret information as it applies to food security.	▸ Washington, Mainland BC and Vancouver Island
	2018	<div><div></div><div>Complete</div></div>	▸ 3x Backyard Edible Garden workshops focussed on converting lawns to edible gardens.	
	2018	<div><div></div><div>Complete</div></div>	▸ Supported traditional food systems gathering (2-day event).	▸ Tsawout First Nation
7-8. DEMONSTRATE LEADERSHIP BY INTEGRATING CLIMATE CHANGE AND SUSTAINABILITY CONSIDERATIONS INTO CORPORATE ASSET MANAGEMENT.	2018	Ongoing	▸ See Appendix B – CCAS Actions	
PERFORMANCE INDICATORS				
• Incorporation of climate adaptation into emergency preparedness			▸ Ongoing action by Planning and Protective Services	
• Completion of Green Infrastructure Common Design Guidelines			▸ Launch planned for 2019.	
• Number of partnerships focused on local food education			▸ Four, through traditional food systems gathering	▸ Included local governments; SGI Community; Economic Sustainability Commission; Parks Canada, SGI farmers, Ministry of Agriculture; Victoria Foundation, CR FAIR, Food Share Victoria, Island Health
• Number of high priority stormwater discharges			▸ n/a. Data collected by Province of BC	
• Number of shoreline closure days and locations			▸ n/a . Data collected by Island Health	
• Length of staged water restrictions			▸ May 1 - Sept 30 (CRD Stage 1)	
• Number of high priority stormwater discharges			▸ In the Core and Saanich Peninsula: 41 (4 more than 2017)	
• Number of shoreline closure days and locations			▸ n/a	

Goal 8 | Natural assets are resilient to the impacts of climate change

Action	Timing	Status	Action / Project Description	External Partners
8-1. DEVELOP A REGIONAL BIODIVERSITY STRATEGY WITH STAKEHOLDERS AND INTERESTED FIRST NATIONS that includes a species inventory, planting guidelines and planning for natural areas. The Strategy should reflect regional climate change projections and adaptation priorities (e.g., sea level rise, flood inundation) and advocate to senior levels of government to protect biodiversity.				
8-2. FOSTER THE REGION’S NATURAL AREAS RESILIENCY TO CLIMATE-INDUCED CHANGE (e.g., sea level rise, flood inundation) in collaboration with stakeholders and interested First Nations.	2017 - 2018	Ongoing	▸ Support invasive species removal events with First Nations.	
	2018	Ongoing	▸ Distributed 404 Watershed Warden badges to youth who participated in watershed stewardship actions, including beach clean-ups, learning about local watershed and benefits of source control, creek restoration and marking stormdrains.	
	2018	Ongoing	▸ Since the Invasive Species Program started in June 2018, the Program participated in 15 community events, engaging more than 2,000 people.	
8-3. INCLUDE THE VALUE OF NATURAL AREAS IN REGIONAL CLIMATE ADAPTATION IN ALL CRD LAND AND MARINE MANAGEMENT, ASSET MANAGEMENT AND ACQUISITION DECISIONS , and work collaboratively with stakeholders and interested First Nations.	2017 - 2018	Ongoing	▸ The Summit at Quadra Village landscape design in consultation with community association.	
	2017 - 2018	Ongoing	▸ The Summit at Quadra Village project storm water strategy uses Rain Gardens to reabsorb a portion of the significant roof-water runoff, reducing and/or sequencing the loads placed on municipal stormwater infrastructure.	
	2018	Ongoing	▸ The effects of climate change on forests, wetlands, streams fish, and wildlife in the GVWSA are being considered in assessing vulnerability and developing adaptation strategies and actions. An assessment of fish and wildlife and their habitat is being carried out in the GVWSA. Species diversity has been incorporated into vegetation assessments and plantings in the GVWSA.	
	2019	Planned	▸ A significant area will be graded and fenced for a community-based association to operate and develop as urban allotment gardens.	
8-4. ADVOCATE FOR INCREASED GROUNDWATER PROTECTION.				
8-5. CONTINUE TO USE ENVIRONMENTAL DEVELOPMENT PERMIT AREAS, COVENANTS and other mechanisms to improve the resiliency of shoreline and marine habitats in the Juan de Fuca Electoral Area.				
PERFORMANCE INDICATORS				
• Completion of a regional biodiversity strategy			▸ Not undertaken in 2018	
• Percentage change in the amount of tree canopy cover			▸ Data not currently available but will be included in the Urban Forest mapping.	
• Watershed evaluations that incorporate environmental and hydrological monitoring			▸ Intensively evaluated 3 watersheds through water quality and biological monitoring. Took water quality measurements (dissolved oxygen, pH, conductivity, temperature, orthophosphorus, nitrate, turbidity, E.coli) at the mouth of 19 other creeks. Measured just E.coli in approximately 10 others.	▸ Environmental Monitoring Programs
• Number of volunteer hours leveraged in restoration or stewardship activities			▸ CRD Parks, 1,336 hours by 154 volunteers.	


Additional | Regional climate action

Action	Timing	Status	Action / Project Description	External Partners
A-1. FACILITATE REGIONAL CLIMATE ACTION EFFORTS AND SHARE INFORMATION ON THE BROAD RANGE OF CLIMATE ACTION TOPICS.	2018	Ongoing	▸ Administered the CRD Climate Action Inter-Municipal Working Group (staff) and Task Force (elected officials). Held four meetings and one meeting, respectively.	▸ Municipalities and EAs
	2018	Ongoing	▸ Developed and distributed a monthly climate action e-newsletter to local governments.	
	2018	Ongoing	▸ Hosted the Resilient Region Exchange Breakfast Series designed to bring together regional stakeholders working on climate and sustainability issues in the region. 30-50 community members attended each meeting, with a growing number of online members (nearly 700).	▸ Co-Hosts: BC Climate Action Secretariat, District of Saanich, Victoria EV Club, Vancity, District of Central Saanich and Michell's Farm.

Appendix B

Goal 1 | Climate lens

Use a Climate Lens for Board decision-making that demonstrates how decisions align with the CRD's greenhouse gas reduction target, climate action objectives and strategic priorities

Action	Timing	Status	Action / Project Description
1-1. IMPLEMENT THE CLIMATE LENS TEMPLATE TO PROVIDE A CLIMATE LENS REVIEW ON CAPITAL PROJECTS.	2017	 Complete	▶ The CRD has implemented a climate lens on all capital projects greater than \$100,000 in value, and all capital projects 'in scope' for GHG reporting. The climate lens review is conducted during the capital budgeting and planning cycle, and elected officials are provided ongoing updates on CRD's climate policy and Corporate Climate Action Strategy during the annual Climate Action Revenue Incentive Program reporting. Where appropriate, climate lens implications are incorporated into staff reports to the CRD Board and Committees.
1-2. PROVIDE MEMBERSHIP OF ALL COMMITTEES AND COMMISSIONS AN ORIENTATION TO THE CRD'S CORPORATE CLIMATE POLICY AT THE START OF EACH NEW SESSION.	Annually	Ongoing	
1-3. INCLUDE CLIMATE LENS CONSIDERATIONS WITHIN STAFF REPORTS TO THE CRD BOARD AND COMMITTEES.	Ongoing	Ongoing	






Goal 2 | Management & operational decision-making

Integrate climate change considerations into CRD management and operational decision-making

Action	Timing	Status	Action / Project Description
2-1. INCORPORATE CLIMATE CHANGE CONSIDERATIONS INTO BUDGET PLANNING CYCLE	<i>Annually, with service planning</i>	Ongoing	<p>► The CRD continues to integrate climate change considerations into CRD management and operational decision-making.</p> <p>The CRD Corporate Asset Management Policy and Strategy, developed in 2018 and endorsed by the CRD Board in spring 2019, incorporates a climate change lens to ensure the CRD's climate policies are considered throughout the asset's lifecycle (ongoing operations and maintenance, and at the time of asset renewal and replacement). A review of the CRD's procurement policy was initiated in 2018 to determine how best to incorporate climate policy consistently within the CRD's procurement process. Staff are regularly engaged in climate action through use of the GoTo CRD internal web portal. Through the capital budgeting process, climate change policy and targets are considered at the time of project initiation. In 2018, the CRD developed a seed fund to provide financing for studies or components of capital projects, with total funding of \$350,000 available by the end of 2019.</p> <p>All of these actions are resulting in recognition for the CRD. In 2018, the CRD was recognized as one of Canada's greenest employers.</p>
2-2. PREPARE AN ANNUAL SUMMARY ACROSS DIVISIONS to present to senior management prior to service plan reviews.	<i>Annually, with service planning</i>	Ongoing	
2-3. UPDATE THE PROJECT MANAGEMENT PROCESS TO INCORPORATE CLIMATE ACTION POLICY into project requirements documents and project level decision making.	<i>2018</i>	Ongoing	
2-4. UPDATE THE ASSET MANAGEMENT PROCESS to incorporate evaluation of most energy-efficient and/or low-carbon technologies at time of renewal.	<i>N/A</i>	 In progress	
2-5. INCLUDE CLIMATE CHANGE POLICY AND TARGET CONSIDERATIONS DURING CAPITAL PROJECT INITIATION PROCESS	<i>Ongoing</i>	 Complete	
2-6. DEVELOP A MECHANISM TO PROVIDE FINANCING (SEED FUNDING) FOR STUDIES or components of capital projects that support the CRD's corporate climate action policy.	<i>2018</i>	 Complete	
2-7. INTEGRATE A REQUIREMENT TO DOCUMENT ALIGNMENT WITH THE CRD'S CORPORATE CLIMATE ACTION POLICY INTO STRATEGIC ASSET MANAGEMENT PLANS for new and retrofit facilities and infrastructure.	<i>2017</i>	 Complete	
2-8. ESTABLISH A STAFF CLIMATE ACTION ENGAGEMENT PROGRAM that includes a climate action recognition program that acknowledges climate leadership among CRD employees.	<i>2018</i>	 In progress	
2-9. ESTABLISH AN ONGOING STAFF CLIMATE ACTION WORKING GROUP TO SHARE KNOWLEDGE ACROSS THE ORGANIZATION and continually evaluate best opportunities for accelerating climate action.	<i>Ongoing</i>	 In progress	
2-10. UPDATE THE PROCUREMENT POLICY TO ALIGN PROCUREMENT AND VENDOR SELECTION WITH THE CRD'S CORPORATE CLIMATE POLICY and develop supporting decision criteria and matrix.	<i>2018</i>	 In progress	





Goal 3 | Metrics & reporting

Monitor, report and communicate metrics to enhance continuous improvement across the organization.

Action	Timing	Status	Action / Project Description
3-1. ESTABLISH A CORPORATE ENERGY MANAGEMENT PROCESS FOR BUILDINGS, FACILITIES AND INFRASTRUCTURE that includes: monitoring and reporting of facility energy consumption and energy management in existing buildings using the real-time utility data metrics that communicate progress towards the CRD's GHG target contextual information on changes in level of service, e.g., total corporate GHG emissions; GHG emissions/square foot of buildings operated by CRD	Ongoing	 In progress	<p>► Accurate GHG emissions measurement is required to achieve significant reductions in emissions. In 2018, the CRD focused on expanding and refining processes for GHG collection. The CRD is initiating a fleet fuel card system, which will allow for consolidated, fleet-wide fuel consumption data. This system is expected to roll out fleet-wide in 2019. In 2018, as part of the broader Zero Emissions fleet initiative, CRD also piloted use of telematics data-logging devices within a segment of the CRD fleet.</p> <p>Since 2016, the CRD has been using an energy management system to track and consolidate utility billing information (natural gas, hydro and water) at the facility level. This information allows for easier GHG reporting, and also helps facility managers identify when a building isn't performing as expected. In 2018, the CRD began expanding access to the energy management system across departments and, in 2019, workshops will be held with facility managers across the organization.</p> <p>Annually, the CRD participates in the Climate Action Revenue Incentive Program (CARIP) and additionally reports out on climate actions through the Climate Action Annual Report.</p>
3-2. ESTABLISH A PROCESS TO COLLECT THE GHG EMISSIONS FOR ALL CONTRACTED SERVICES CONSIDERED "IN SCOPE" FOR GHG REPORTING	Ongoing	 In progress	
3-3. ESTABLISH A FLEET MANAGEMENT SYSTEM that includes: GHG footprint calculations installing/engaging a monitoring system to improve fleet performance; evaluating and expanding a telematics system to the whole fleet, as appropriate; issuing an annual report of total vehicles, utilization, volume of fuel consumed, GHGs emitted and costs of ownership and maintenance; reviewing data collected to inform fleet policy and asset management and procurement processes	Ongoing	 In progress	
3-4. INCORPORATE OUTCOMES OF ENERGY MANAGEMENT MONITORING INTO AN ADAPTIVE MANAGEMENT PROCESS to ensure continuous improvement	2018	 In progress	
3-5. DEVELOP A COMMUNICATIONS PLAN TO SHARE CORPORATE PROGRESS ON CLIMATE ACTION with staff and public.	2017	 Complete	
3-6. COORDINATE THE ANNUAL CARIP REPORTING REQUIREMENTS , on behalf of the organization	Annually	Ongoing	

Goal 4 | Adaptation

Accelerate corporate climate adaptation activities to enhance resilience and prepare for future climate change impacts.





Action	Timing	Status	Action / Project Description
4-1. COMPLETE DOWNSCALED CLIMATE PROJECTIONS REPORT AND IDENTIFY POTENTIAL IMPACTS OF CLIMATE CHANGE FOR THE REGION	2017	 Complete	<p>► The Climate Projections for the Capital Region Report, completed in 2017, identifies that temperatures in the capital region are warming. Global climate models project an average annual warming of about 3 degrees C in our region by the 2050s. While that may seem like a small change, it is comparable to the difference between the warmest and coldest years of the past.</p> <p>To prepare for these changes, the CRD has included climate adaptation policy and considerations into the climate lens review that is conducted on capital projects. In 2018, the CRD began work on developing a Corporate Adaptation Plan, which aims to meet the organizations adaptation goal of 'accelerate(ing) corporate climate adaptation activities to enhance resilience and prepare for future climate impacts'. The plan will address all services that the CRD delivers on behalf of the region and will provide a framework for integrating adaptation into existing business practices including asset management, risk management, business continuity and emergency management. The Corporate Adaptation Plan will be completed in 2019.</p>
4-2. IDENTIFY POTENTIAL IMPACTS OF SEA LEVEL RISE ON CRD ASSETS	2018	 In Progress	
4-3. DEVELOP A CORPORATE CLIMATE ADAPTATION PLAN FOR THE CRD	2018	 In Progress	
4-4. CONSIDER IDENTIFIED CLIMATE IMPACTS WITHIN RISK REGISTERS in the enterprise risk management process.	Ongoing	Ongoing	
4-5. CONSIDER CLIMATE ADAPTATION IN ALL NEW CAPITAL PROJECTS THROUGH THE CLIMATE LENS review template.	Ongoing	Ongoing	
4-6. IDENTIFY OPPORTUNITIES FOR GREATER REGIONAL RESILIENCE in the CRD fleet (emergency preparedness) by: researching possibilities to use electric vehicles as a power source during outages; incorporating strategies to enhance emergency preparedness and resiliency through the use of electric vehicles into corporate plans, where appropriate.	2018-2020	 In Progress	

Goal 5 | Fleet management

Achieve continuous, significant reductions in greenhouse gas emissions from the fleet and strive towards zero emissions for new fleet vehicles.




Action	Timing	Status	Action / Project Description
5-1. CONTINUE TO REPLACE END-OF-LIFE GAS AND DIESEL VEHICLES WITH ZERO EMISSIONS VEHICLES when possible, including adding more battery electric vehicles to the fleet.	Ongoing	Ongoing	<ul style="list-style-type: none"> ▶ The CRD's goal of achieving continuous, significant reductions in GHG emissions from the fleet is being implemented through the Zero Emissions Fleet Initiative. ▶ In February 2018, the Zero Emissions Fleet Initiative launched. Over a three-year period, in partnership with researchers at the Institute for Integrated Energy Systems at the University of Victoria, the CRD is working to reduce GHG emissions in the CRD fleet by: <ul style="list-style-type: none"> ▶ Conducting a smart fleet analysis to develop a suite of tools for fleet optimization; ▶ Conducting a field trial of six fuel cell electric vehicles; ▶ Testing and comparing the use of other zero emissions alternatives, including battery electric vehicles and electric bikes (E-bikes), where operationally appropriate; ▶ Investigating opportunities to use electric vehicles as an emergency power source. ▶ The initiative has been designed to address all 12 actions under goal 5 of the corporate climate action strategy. In September 2018, the Honourable George Heyman, Minister of Environment and Climate Change Strategy, presented CRD with a Climate and Energy Action Award in the Public Sector Collaboration category for the Zero Emissions Fleet Initiative. Further information on the initiative can be found on the CRD webpage at www.crd.bc.ca/project/zero-emission-fleet.
5-2. IDENTIFY, DEVELOP OR PROCURE A TOOL TO SUPPORT SELECTION OF NEW VEHICLES based on utilization, operational needs, potential for electric vehicles and right-sizing.	Ongoing	 In progress	
5-3. REVIEW AND IDENTIFY PATH TO MEETING HIGHEST LEVEL OF THE WEST COAST ELECTRIC FLEET PLEDGE (striving towards purchasing at least 10% zero emissions vehicles for all new light-duty fleet purchases).	2017	 Complete	
5-4. BETTER UTILIZE SAP ASSET MANAGEMENT SYSTEM to support preventative maintenance program and track all costs (including purchase-card purchases) associated with each fleet unit.	Ongoing	Ongoing	
5-5. CONDUCT AN IN-DEPTH ANALYSIS OF THE ENTIRE CRD FLEET to identify ways to optimize fleet utilization and efficiency and to reduce emissions and cut costs	2017-2020	 In Progress	
5-6. IDENTIFY, DEVELOP OR PROCURE A TOOL TO SUPPORT PREPARATION OF HIGH-LEVEL BUSINESS CASES that demonstrate lifecycle costs and payback (fuel and maintenance) for investing in efficient vehicles.	2017-2020	 In Progress	
5-7. INSTITUTE FLEET MANAGEMENT BEST PRACTICES by: engaging all fleet vehicle operators in energy-efficient driver training program; recognizing staff who demonstrate efficient driving practices as part of the climate action recognition program	2017-2020	 In progress	
5-8. RENEW THE DRAFT CORPORATE FLEET POLICY (2007) AND DEVELOP OR IDENTIFY TOOLS TO SUPPORT IMPLEMENTATION OF THE POLICY , including: guidelines and/or a tool to evaluate operational needs in advance of vehicle purchase based on industry best practices, a tool to incorporate lifecycle costs and GHG emissions impacts as priorities during fleet purchasing process.	2017-2020	 In Progress	

Goal 5 | Fleet management (cont.)

Action	Timing	Status	Action / Project Description
5-9. ADD TWO ADDITIONAL BATTERY ELECTRIC VEHICLES TO THE CRD FLEET to be available for staff to test out and determine the locations and uses where a battery electric vehicle is a good fit to replace gas or diesel vehicles.	2017-2020	 Complete	
5-10. TEST THE USE OF ELECTRIC BIKES FOR THE SOURCE CONTROL PROGRAM INSPECTIONS to replace existing gas-powered vehicle use, and evaluate opportunities for other downtown or short trip applications.	2017-2020	 Complete	
5-11. TEST HYDROGEN FUEL CELL ELECTRIC VEHICLES to replace existing gas-/diesel-powered vehicles that are used for longer trips and heavier-duty applications.	2017-2020	 In progress	
5-12. MOVE TOWARDS CENTRALIZED RESPONSIBILITIES FOR FLEET VEHICLE ACQUISITION, USE AND MAINTENANCE while maintaining a distributed approach to day-to-day operational activities (scheduling, fueling, determining local needs and performing maintenance and repairs), based on a renewed corporate fleet policy.	2017-2020	 In progress	





Goal 6 | Existing buildings, facilities & infrastructure

Accelerate a reduction in energy use and greenhouse gas emissions in existing buildings, facilities and infrastructure

Action	Timing	Status	Action / Project Description
6-1. INCORPORATE ENERGY EFFICIENCY INTO ALL REGIONAL WATER SUPPLY INFRASTRUCTURE RENEWAL PROJECTS through strategic asset management plans.	N/A	Ongoing	<ul style="list-style-type: none"> ▶ The CRD continues to address operational GHG emissions, with a focus on the facilities that produce the greatest operational GHG emissions, including Panorama and SEAPARC recreation centers, and the Fisgard Headquarters building.
6-2. COMPLETE RECOMMENDATIONS FROM THE PANORAMA AND SEAPARC ENERGY ASSESSMENTS that minimize GHG emissions and energy use, including upgrading to high-efficiency natural gas boilers, implementing ice plant heat recovery at SEAPARC and investigating the waste heat recovery opportunity at Panorama.	2018-2020	 In progress	<ul style="list-style-type: none"> ▶ In 2018 Panorama Recreation Centre initiated a waste-heat recovery review that is examining opportunities to eliminate GHG emissions from facility operations. SEAPARC recreation center has implemented a high-efficiency condensing natural gas boiler, eliminating the use of GHG intensive heating oil in 2018 operations. The CRD's Fisgard headquarters is a LEED Gold certified building, however, staff continue to seek out opportunities to further reduce energy demand, and in 2018 initiated a review of the building's Direct Digital Control (DDC) system.
6-3. REDUCE GHG EMISSIONS THROUGH FUEL SWITCHING TO RENEWABLE NATURAL GAS (RNG), AND CONDUCT A BUSINESS CASE ANALYSIS TO PRODUCE RNG.	2018-2020	Ongoing	<ul style="list-style-type: none"> ▶ In 2018, staff also conducted a business case analysis on the generation of renewable natural gas from waste landfill gas. Renewable natural gas is generated when biological sources of methane are captured and repurposed as Renewable Natural Gas, rather than being released directly into the atmosphere. By capturing and repurposing methane, rather than adding new methane (fossil fuels) into the carbon cycle, renewable natural gas has a low global warming potential (GWP) and contributes no (or very little) net CO₂-e into the atmosphere. The CRD Board will make a decision on the future of landfill gas utilization in 2019, and CRD is investigating opportunities to use renewable natural gas from the Hartland Landfill within CRD operations, to meet the GHG reduction target.
6-4. DEVELOP CONSERVATION DEMAND MANAGEMENT PROGRAM FOR STAFF TO RAISE AWARENESS ABOUT ENERGY-SAVING HABITS AND BEHAVIOURS	2018	 In progress	
6-5. COMPLETE A REVIEW OF THE 15 LARGEST ENERGY CONSUMING BUILDINGS AND FACILITIES every four years to develop a list of priority opportunities for energy and GHG emissions reductions and incorporate opportunities into service plans.	2018	 In progress	

Goal 7 | New buildings, facilities & infrastructure

Achieve high-performance standards and strive towards net-zero energy for all new construction.

Action	Timing	Status	Action / Project Description
7-1. ESTABLISH TECHNICAL STANDARDS FOR NEW CONSTRUCTION TO ENSURE HIGH ENERGY PERFORMANCE AND LOW-CARBON CRITERIA ARE INCORPORATED INTO DESIGN OF NEW FACILITIES , including: aligning standards with new provincial Energy Step Code (e.g., Passive House Standard); ensuring standards are incorporated in requests for proposals as baseline.	2018	 In progress	<ul style="list-style-type: none"> ▶ The best time to address energy consumption and GHG emissions is at the very beginning of new capital projects. Through the climate lens, the CRD is working to ensure that every new capital project meets the policy, targets and objectives identified within the corporate climate action strategy. ▶ Work on actions 7-3 to 7-5 will begin in 2019.
7-2. DESIGN HEATING, VENTILATION AND AIR CONDITIONING SYSTEMS THAT MINIMIZE THE USE OF FOSSIL FUELS (heating oil and natural gas) and consider renewable energy sources.	N/A	Ongoing	
7-3. INCORPORATE LIFE CYCLE COSTING TO CALCULATE THE BUSINESS CASE FOR ALL CAPITAL PROJECTS OVER \$100,000 IN VALUE	2019	 Planned	
7-4. UPDATE THE PROJECT MANAGEMENT PROCESS TO REQUIRE COMMISSIONING OF ALL NEW BUILDINGS to ensure they are operating at maximum efficiency.	2019	 Planned	
7-5. INCLUDE CLIMATE ACTION CONSIDERATIONS IN THE FACILITIES AND RISK MANAGEMENT PROJECT INITIATION PROCESS : require established technical standards; use building materials that sequester carbon (e.g., choose wood over concrete); consider renewable energy options.	2019	 Planned	