

Notice of Meeting and Meeting Agenda Environmental Services Committee

Wednesday, June 6, 2018

1:30 PM

6th Floor Boardroom
625 Fisgard St.
Victoria, BC V8W 1R7

J. Brownoff (Chair), D. Blackwell (Vice Chair), R. Atwell, B. Desjardins, A. Finall, C. Hamilton,
L. Helps, M. Hicks, N. Jensen, D. Murdock, J. Ranns, M. Tait, S. Price (Board Chair, ex-officio)

1. Approval of Agenda

2. Adoption of Minutes

2.1. [18-316](#) Minutes of the May 2, 2018 Environmental Services Committee Meeting

Recommendation: That the minutes of the May 2, 2018 Environmental Services Committee meeting be adopted as circulated.

Attachments: [Minutes](#)

3. Chair's Remarks

4. Presentations/Delegations

5. Committee Business

5.1. [18-332](#) Capital Regional District Waste Reduction Strategies and Activities

Recommendation: That the Environmental Services Committee Recommend to the Capital Regional District Board:
That this report be received for information.

Attachments: [Staff Report: CRD Waste Reduction Strategies and Activities](#)
[Appendix A: Solid Waste Education Activities - 2017-2018](#)
[Appendix B: Other Waste Avoidance Programs](#)

5.2. [18-338](#) Recycling Markets Update

Recommendation: That the Environmental Services Committee recommend to the Capital Regional District Board:
That this report be received for information.

Attachments: [Staff Report: Recycling Markets Update](#)

5.3. [18-335](#) CRD Climate Action Program - 2017 Annual Report

Recommendation: That the Environmental Services Committee recommend to the Capital Regional District Board:
That the CRD 2017 climate action annual reports, in accordance with the CRD's Climate Action Program and the Regional Climate Action Strategy, be approved.

Attachments: [Staff Report: CRD Climate Action Program - 2017 Annual Report](#)
[Appendix A: Climate Action Program - 2017 Year in Review](#)
[Appendix B: CRD Climate Action 2017 Annual Report](#)

6. New Business

7. Adjournment

Next Meeting: July 4, 2018

To ensure quorum, please advise Pat Perna (pperna@crd.bc.ca) if you or your alternate CANNOT attend.

Meeting Minutes

Environmental Services Committee

Wednesday, May 2, 2018

1:30 PM

6th Floor Boardroom
625 Fisgard St.
Victoria, BC V8W 1R7

PRESENT:

Directors: J. Brownoff (Chair), D. Blackwell (Vice Chair), R. Atwell, B. Gramigna (for J. Ranns), C. Hamilton, L. Helps, M. Hicks, L. Hundleby (for B. Desjardins), N. Jensen, D. Murdock, S. Price (Board Chair, ex-officio)

Staff: L. Hutcheson, General Manager, Parks and Environmental Services; R. Smith, Senior Manager, Environmental Resource Management; G. Harris, Senior Manager, Environmental Protection; K. Morley, General Manager, Corporate Services; P. Perna, Committee Clerk (Recorder)

The meeting was called to order at 1:30 pm.

1. Approval of Agenda

**MOVED by Director Blackwell, SECONDED by Director Hicks,
That the agenda for the May 2, 2018 Environmental Services Committee meeting
be approved as circulated.
CARRIED**

2. Adoption of Minutes

2.1. [18-296](#) Minutes of the March 7, 2018 Environmental Services Committee Meeting

**MOVED by Director Hicks, SECONDED by Director Blackwell,
That the minutes of the March 7, 2018 Environmental Services Committee
meeting be adopted as circulated.
CARRIED**

3. Chair's Remarks

The Chair remarked on the following:

- the Electric Bike Pilot Program kickoff to reduce vehicle usage by Capital Regional District source control inspectors
- the Clean Green campaign to educate residents on the environmental impact of chemical-based cleaning products and to encourage homemade cleaning products
- the Climate Action To-Go Kits in partnership with local libraries, which contain a range of practical tools and activities for residents to learn about, take action on, and prepare for climate change in their everyday lives
- Earth Day campaigns
- the Oceans Protection Plan Dialogue Forums, which solicit input on the development of a national strategy to help establish a world-leading marine safety system that provides economic opportunities while protecting coastlines

4. Presentations/Delegations - None.

5. Committee Business

5.1. [18-249](#) Business Case Analysis - Renewable Natural Gas

R. Smith spoke to a presentation on utilizing viable gas collected at the landfill.

Discussion ensued on the following:

- other by-products besides energy
- odour concerns
- use of digesters
- emissions generated
- kitchen scrap collection technology

MOVED by Director Helps, **SECONDED** by Director Blackwell,
That the Environmental Services Committee recommend to the Capital Regional District Board:

- 1) That staff proceed with the development of a Hartland RNG project plan, for approval and funding through the 2019 budget process, based on:
 - optimizing the sizing of the Hartland RNG project by considering the co-upgrading RNG from landfill gas, residual treatment facility biogas, and potential Hartland food waste anaerobic digestion biogas
 - initiating the procurement process for an appropriately sized RNG upgrading facility and associated infrastructure at Hartland landfill
 - a 25-year RNG purchase agreement, and associated FortisBC pipeline extension, that meets the BC Utilities Commission regulation rate of return requirements
 - funding the RNG project using available federal and provincial grants, ERM financial reserves, third party contributions and Municipal Finance Authority debt
 - working with CRD municipalities, in 2018, to confirm interest in participating in the RNG project by supplying feedstock materials, capital investment, and economic/ environmental dividend expectations

- 2) That staff continue to update the costs for the options to generate green energy.

CARRIED

5.2. [18-270](#) Renovation Waste Campaign Update

L. Hutcheson provided an overview of the report.

MOVED by Director Blackwell, **SECONDED** by Alternate Director Hundleby,
That the Environmental Services Committee recommend to the Capital Regional District Board:

That this report be received for information.

CARRIED

5.3. [18-278](#) Abandoned Boats Program Update

G. Harris provided an overview of the report.

Discussion ensued on the following:

- the cost to dispose boats
- ensuring there are no hazards on the boats or charging fees according to the hazards
- federal contributions and costs for municipalities
- tracking costs to-date through to next year

MOVED by Director Atwell, **SECONDED** by Director Helps,
That the Environmental Services Committee recommend to the Capital Regional District Board:

That this report be received for information.

CARRIED

6. New Business - None.

7. Adjournment

MOVED by Director Blackwell, **SECONDED** by Director Helps,
That the May 2, 2018 Environmental Services Committee meeting be adjourned at 2:22 pm.

CARRIED

Chair

Recorder

**REPORT TO ENVIRONMENTAL SERVICES COMMITTEE
MEETING OF WEDNESDAY, JUNE 6, 2018**

SUBJECT **Capital Regional District Waste Reduction Strategies and Activities**

ISSUE

To provide an overview of Capital Regional District (CRD) waste reduction strategies and activities.

BACKGROUND

At its February 2018 meeting, the Environmental Services Committee asked staff to identify the CRD's current and forthcoming programming as it relates to waste avoidance education, particularly given recent and ongoing changes to global markets for recyclable materials, as a result of the Chinese National Sword policy.

The CRD's solid waste management strategies are based on the 5R pollution prevention hierarchy (Reduce, Reuse, Recycle, Recovery and Residuals Management), with significant emphasis placed on promoting the first three R's (3R) to elevate the importance of waste prevention, including educational programming, services and policies, such as material bans.

Appendix A provides a summary of CRD educational activities, including a variety of tools and platforms used in the promotion of solid waste prevention in the region, with the following highlights:

- Waste prevention public awareness campaigns focused on single-use plastic bags, organics, and household hazardous waste reduction
- Robust website content, including a searchable *MyRecyclopedia* resource that identifies in-region reduction, reuse, recycling and disposal options
- Information Line service provided via e-mail and telephone to more than 9,000 public inquiries related to solid waste per year, including reduction, reuse, recycling and disposal options
- A waste-reduction-focused Hartland Landfill tour program for K-12 students, community groups and members of the public
- 3R school-aged programming delivered to more than 2,000 students annually
- Active presence of 3R messaging at major community events

CRD staff are continually investigating new opportunities for waste reduction and reuse activities. The CRD recently entered a three-year partnership with the National Zero Waste Council's nation-wide Love Food Hate Waste Canada campaign, aimed at preventing wasted food in Canada through consumer education and behavioural change. Further reduction of this waste in the capital region will reduce both the amount of organics that need to be managed and the greenhouse gas emissions associated with their management and disposal.

This three-year campaign is expected to launch in June 2018 and involves topics such as:

- Why Food Waste Matters – edible food doesn't belong in the green bin
- Planning and Food Storage – guides for keeping food fresh, preserving
- Using the Food You Have – navigating best before dates, recipes

An emerging topic of interest is the management of single-use items, such as the City of Vancouver's single-use item reduction strategy aimed at disposable cups, takeout containers, shopping bags and plastic disposable straws. Single-use plastics are also attracting national and international attention. Appendix B provides an overview of the City of Vancouver's waste avoidance programs and other initiatives to address the use of these types of materials. Unlike regional districts, municipalities are able to address these topics through their authority to regulate businesses.

The CRD recently resumed work on the Solid Waste Management Plan, which provides an opportunity to explore additional waste avoidance approaches with input from the Solid Waste Advisory Committee and the public. The Province asks regional districts to promote zero waste approaches by viewing waste as a resource that can be utilized in closed-loop systems, with the goal of minimizing waste generation and enabling the sustainable use and reuse of materials that will contribute to a circular economy.

CONCLUSION

Recent changes to global markets for recyclable materials have highlighted the importance of waste reduction. The CRD undertakes a number of activities to promote waste prevention using a variety of tools and platforms. CRD staff are continually investigating new opportunities, including participating in a nation-wide food waste reduction campaign and reviewing best practices for managing single-use items. The Solid Waste Management Plan will provide the forum for considering new zero waste approaches for the sustainable use and reuse of materials that will contribute to a circular economy.

RECOMMENDATION

That the Environmental Services Committee recommend to the Capital Regional District Board:

That this report be received for information.

Submitted by:	Russ Smith, Senior Manager, Environmental Resource Management
Concurrence:	Larisa Hutcheson, P.Eng., General Manager, Parks & Environmental Services
Concurrence:	Robert Lapham, MCIP, RPP, Chief Administrative Officer

RS:ac

Attachments: Appendix A – CRD Solid Waste Education Activities
Appendix B – Other Waste Avoidance Programs

**SOLID WASTE EDUCATION ACTIVITIES
2017-2018**

PROGRAM	ACHIEVEMENTS
Reduce, Reuse, Recycle Youth and Adult Programs	<ul style="list-style-type: none"> • Age-appropriate curriculum for K-12 students focused on waste reduction related to packaging, organics and resource composition • Over 2,000 K-12 students participate in 3R programs annually • 3R programming is also delivered to approximately 350 adults per year through presentations
Hartland Landfill Tours	<ul style="list-style-type: none"> • Relevant waste-reduction messaging at each tour stop • Over 1,750 K-12 students tour Hartland annually • Over 650 adults tour the Hartland Landfill each year through school, community group and public tours
Information Line Inquiries	<ul style="list-style-type: none"> • Personal responses to more than 9,000 public inquiries related to solid waste per year, including reduction, reuse, recycling and disposal options
Community Events	<ul style="list-style-type: none"> • Staff provide and promote waste reduction messaging at approximately 15 community events per year • CRD drinking water cart present at 20 events per year, promoting use of personal water bottles (single-use plastic reduction)
Website Content	<ul style="list-style-type: none"> • Robust website content that prioritizes 3R messaging and communicates disposal options • Online waste-sorting game (single-use packaging reduction) • <i>MyRecyclopedia</i> listings for more than 146 products; identifies reduction, reuse, recycling and disposal options for each product
Campaigns	<ul style="list-style-type: none"> • Several seasonal, multi-platform public awareness campaigns per year, including: <ul style="list-style-type: none"> - Household hazardous waste: batteries - Household hazardous waste: pool chemicals - Kitchen scraps reduction - 'Make memories, not garbage' holiday campaign (partnership with Metro Vancouver)
Social Media Content	<ul style="list-style-type: none"> • Seasonal social media content intended to maintain public awareness on a range of reduction and disposal topics, including: <ul style="list-style-type: none"> - Abandoned waste/illegal dumping (donate/dispose responsibly) - Household cleaners/solvents disposal (and homemade alternatives) - Invasive species disposal - Back-to-school supplies, food prep, etc. - Seasonal holiday recycling and disposal options (lights, wrap, tree chipping, etc.)
Collection Reminders and Recycle CRD App	<ul style="list-style-type: none"> • Curbside Recycling Program collection reminders to over 40,000 subscribers bi-weekly • Seasonal campaigns targeting accepted items, three stream program preparation and options for non-program items

WASTE AVOIDANCE PROGRAMS**SINGLE-USE ITEMS – SOME CURRENT APPROACHES**

Straws Suck Campaign vancouverisland.surfrider.org/straws-suck/

The Surfrider Foundation Vancouver Island Chapter is encouraging restaurants, bars and food retailers to move away from routinely distributing plastic straws and transition to paper when a straw is requested or offer reusable glass or metal straws. This follows on an initiative from the Surfrider Pacific Rim Chapter where 41 local businesses in Tofino were asked to stop using plastic drinking straws by Earth Day (2016). The Straws Suck campaign was very successful, capturing attention globally and is being used as a model to encourage other jurisdictions to reduce business-to-consumer waste.

Single-Use Item Reduction Strategy vancouver.ca/zerowaste

The City of Vancouver recently adopted Zero Waste 2040, and an initiative of this plan, the Single Use Item Reduction Strategy, is being presented to Council on June 5.

The strategy includes the following priority actions:

- A ban on distribution of plastic straws, polystyrene foam cups and foam take-out containers to come into effect November 1, 2019.
- A requirement for businesses to have reduction plans for disposable cups and plastic/paper shopping bags beginning in 2019.
- A requirement for disposable utensils to only be given out upon customer request, as of 2019.

Vancouver's strategy also outlines reduction plans for disposable cups and plastic and paper shopping bags. Business license holders will be able to choose their approach for achieving reduction from a list of options, including:

- Distribute no disposable cups or plastic/paper shopping bags
- Do not distribute disposable cups or plastic/paper shopping bags for free
- Other mechanisms that achieve a reduction target to be proposed and finalized through consultation

All businesses will be required to track and report the amount of disposable cups and plastic and paper bags they distribute, regardless of which option they choose from the list. The strategy does not propose an immediate ban and/or specific fees, but it does commit to reviewing the need for these tools in 2021-2025, if dramatic reduction is not achieved.

In addition to these actions, the Single-Use Item Reduction Strategy allows for some flexibility and choice for businesses to manage the transition and supports continued work with Metro Vancouver towards a region wide strategy.

Bring Your Bag Challenge recyclebc.ca/bringyourbag

Launched in April 2018, Recycle BC and the Retail Council of Canada are challenging the public to go one week without using a plastic bag. The goal is for consumers to say no to single-use bags and begin to regularly carry reusable bags.

Government of Canada

Canada has made oceans health and addressing plastic pollution a priority under its 2018 G7 Presidency, with one of its five themes being “Working together on climate change, oceans and clean energy.”

In addition, the Government of Canada is seeking ideas from the public in the areas of design and production, collection and management, education and innovation through its [Dialogue on Plastic Waste](#), launched in April 2018.

European Strategy for Plastics

As part of Europe’s transition towards a circular economy, the recently-adopted European Strategy for Plastics looks to transform how plastic products are designed and used, increase plastic waste recycling rates and improved marketability of recycled plastics. Targets include:

- All plastic packaging on the EU market be reusable or recyclable by 2030
- Consumption of single use plastics be reduced
- Intentional use of micro plastics be restricted



**REPORT TO ENVIRONMENTAL SERVICES COMMITTEE
MEETING OF WEDNESDAY, JUNE 6, 2018**

SUBJECT **Recycling Markets Update**

ISSUE

To provide the committee with an update of the global market conditions for recyclable materials, their impact on Hartland landfill and proposed next steps.

BACKGROUND

At its February 7, 2018 meeting, the Environmental Services Committee received for information a report outlining the negative impact on markets for recyclable materials of a decision made by China to severely restrict the importation of recyclable materials beginning January 1, 2018. This change has effectively closed China as a market for the majority of post-consumer materials from outside sources. Since China has been the principal end market for the majority of the western world's post-consumer plastics, paper and other recyclable materials for many years, this change has left many recycling programs without a market for their recyclable materials.

The recycling industry, both locally and globally, has been adjusting to the closure of Chinese markets by finding alternative end markets in other countries, such as Indonesia, Malaysia and Vietnam. However, the ability of the markets outside of China to absorb this additional material in the short term is limited, and quality standards are higher, meaning that many recycling programs are continuing to struggle to adjust to the new global market conditions.

Capital Regional District (CRD) curbside blue box recyclables are the responsibility of, and are owned by, Recycle BC (RBC). RBC has indicated it has been able to maintain its markets for recyclable materials, including some in China, despite the new restrictions. However, some recyclables collected from commercial and multi-family sources outside the Recycle BC system are typically more contaminated than curbside materials and their marketability has been more severely impacted by loss of access to the Chinese market. As a result, contamination and unmarketable materials from these recycling programs have significantly increased and locally these residuals are currently being brought to Hartland landfill for disposal.

In order to better incent recycling and more clearly define under what circumstances recyclable materials can be accepted for disposal at Hartland landfill, CRD Bylaw No. 3881 will likely need to be revised to address tipping fees and definitions for certain material types. Given the complexity of the recent changes to global recycling markets, and its potential to impact the local recycling and waste management industries, any Hartland bylaw revisions should be done in consultation with solid waste stakeholders. Staff are planning to seek local feedback from both the Solid Waste Advisory Committee and the Joint Local Government/Industry Solid Waste Liaison Group in June/July to discuss and get feedback on the need for an update to the Hartland bylaw. Any proposed changes to the Hartland bylaw will be brought back to Environmental Services Committee's October 2018 meeting, following the completion of the local solid waste stakeholder consultation.

CONCLUSION

Changes to global recycling markets have created the need to update the Hartland Tipping Fee Bylaw to ensure consistent bylaw enforcement standards are applied to recyclable materials arriving at Hartland landfill. Staff will consult with local solid waste stakeholders to better ensure the efficacy of any changes before bringing forward a revised draft bylaw to Environmental Services Committee for consideration.

RECOMMENDATION

That the Environmental Services Committee recommend to the Capital Regional District Board:

That this report be received for information.

Submitted by:	Russ Smith, Senior Manager, Environmental Resource Management
Concurrence:	Larisa Hutcheson, P.Eng., General Manager, Parks & Environmental Services
Concurrence:	Ted Robbins, B.Sc., C.Tech., Acting Chief Administrative Officer

TW/RS:ac

**REPORT TO ENVIRONMENTAL SERVICES COMMITTEE
MEETING OF WEDNESDAY, JUNE 6, 2018**

SUBJECT **CRD Climate Action Program – 2017 Annual Report**

ISSUE

To present the CRD 2017 Climate Action annual reports associated with the CRD's Climate Action Program and the CRD Regional Climate Action Strategy.

BACKGROUND

The Capital Regional District (CRD) signed the BC Climate Action Charter in 2007 and committed to achieving carbon neutrality within corporate operations by 2012. Concurrently, the CRD Board adopted a target in 2008 to reduce greenhouse (GHG) emissions 33% by 2020 from a base year of 2007. This was in response to Bill 27, which requires local and regional governments to include emission reduction targets within Official Community Plans and Regional Growth Strategies. The Regional Growth Strategy includes a target to reduce GHG emissions by 61% by 2038, from a base year of 2007. As well, all tiers of government are recognizing the importance of understanding the impacts of climate change and developing climate adaptation strategies, in order to minimize long-term costs and reduce climate-related risks.

Reporting through the Environmental Services Committee, the CRD established the Climate Action Program in 2009. The program works to implement the Climate Action and Adaptation Service Establishment Bylaw, 2008, and directly supports stakeholders in five ways:

1. Assisting local governments in reaching corporate and community climate action goals (emissions, reductions and climate adaptation), as part of legislative requirements under Bill 27 and voluntary commitments under the BC Climate Action Charter.
2. Providing scientific information, data and indicators related to local and regional GHG emissions and projected climatic impacts.
3. Building awareness of climate change issues and catalyzing action through partnerships with public and private sectors, non-governmental organizations and community organizations.
4. Liaising with senior levels of government on climate change-related programs, policies and legislation.
5. Supporting the CRD in fulfilling its own community-focused climate objectives, including climate-related CRD Board strategic priorities.

The service also plays a critical role in disseminating and translating relevant information for the Climate Action Inter-Municipal Working Group and Task Force of municipal and electoral area staff and elected officials, providing capacity building and professional development, and assisting CRD departments in incorporating climate action within service delivery.

A summary of 2017 projects and accomplishments specific to the community-focused Climate Action Program is attached as Appendix A.

In 2015, the CRD established the Climate Action Analyst position reporting through the Corporate Services Department. This position is funded in part through the annual Climate Action Revenue Incentive Program (CARIP) rebate, and works to support the organization in meeting the CRD's corporate climate action objectives. Reporting on the CRD's progress towards corporate targets is completed through the Finance Committee. Reporting of corporate energy use, progress towards meeting Board directives, and the CRD Climate Action 2017 Annual Report will be presented to the Finance Committee at an upcoming meeting.

The CRD Board endorsed the CRD's Corporate Climate Action Strategy in 2016, and in 2017 approved the Regional Climate Action Strategy. Throughout 2017, staff across the organization focused on planning and policy initiatives, as well as implementation of projects and educational campaigns to contribute to local and regional climate goals.

A detailed summary of the corporate and community-related actions completed by the entire corporation of the CRD in 2017 is attached as Appendix B. The report 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 associated with the CRD's BC Climate Action Charter commitment.

ALTERNATIVES

Alternative 1

That the Environmental Services Committee recommend to the CRD Board that the CRD 2017 climate action annual reports, in accordance with the CRD's Climate Action Program and the CRD Regional Climate Action Strategy, be approved.

Alternative 2

That the Environmental Services Committee direct staff to provide further information.

SOCIAL IMPLICATIONS

Temperatures in the capital region are warming and the potential impacts of climate change are just beginning. The Board's strategic priorities and corporate plan for 2015-2018 highlight climate action. The sub-categories under the climate action priority inform potential program and project deliverables.

In 2017, projects and programs delivered in the community across the region included, but are not limited to: the CRD Oil to Heat Pump Top Up Incentive Program, completion of the Energy Step Code Education and Engagement Program, completion of the People Power, Active Transportation and Healthy Communities Program, support for Cool It! Climate Leadership Training in local schools, Board acceptance of the CRD Regional Climate Action Strategy and completion of the Climate Projections for the Capital Region report.

CLIMATE CHANGE IMPLICATIONS

Climate change is a critical issue facing our region. The CRD Board identified climate action as a top strategic priority, and CRD staff continue to take steps and identify opportunities to mitigate, adapt and reduce climate change impacts.

The Climate Action Program supports local governments and the CRD in reaching their mitigation and adaptation targets, policies and goals.

ECONOMIC IMPLICATIONS

In 2017, the annual requisition for the Climate Action Program was \$319,970. The program relies heavily on external grants and partnerships to undertake community programming.

INTERGOVERNMENTAL IMPLICATIONS

Climate action is critical for regional municipalities, electoral areas and the CRD. This is explicitly acknowledged through the numerous targets, policies and actions found in official community plans across the region, the Regional Growth Strategy and consecutive CRD corporate strategic plans. The Board's strategic priorities and corporate plan for years 2015-2018 highlight climate action and the sub-categories under the climate action priority inform potential program deliverables. The Climate Action Program will continue to work with regional stakeholders to identify other climate action opportunities and initiatives.

CONCLUSIONS

The Climate Action Program provides support to local governments, the organization and the community on a variety of climate-related regulatory obligations, mitigation and adaptation projects, and education outreach initiatives.

The CRD currently holds two climate action strategies, one related to corporate assets, the other to community services. Throughout 2017 a number of CRD divisions completed or made progress towards actions identified in these strategies.

RECOMMENDATION

That the Environmental Services Committee recommend to the Capital Regional District Board:

That the CRD 2017 climate action annual reports, in accordance with the CRD's Climate Action Program and the Regional Climate Action Strategy, be approved.

Submitted by:	Glenn Harris, Ph.D., R.P.Bio., Senior Manager, Environmental Protection
Concurrence:	Larisa Hutcheson, P.Eng., General Manager, Parks & Environmental Services
Concurrence:	Ted Robbins, B.Sc., C.Tech., Acting Chief Administrative Officer

NE:ss

Attachments: Appendix A – Climate Action Program – 2017 Year In Review
Appendix B – CRD Climate Action 2017 Annual Report

Climate Action Program

2017 Year In Review



Capital Regional District



Through the Climate Action and Adaptation Service Establishment Bylaw No. 3510, the Capital Regional District (CRD) Climate Action Program (CAP) serves the region by acting as a resource, hub and facilitator on both climate mitigation and adaptation issues.

The program directly supports stakeholders through five important roles:

- Assisting local governments in developing and implementing emissions reductions and climate adaptation policies, plans and programs under their community and corporate portfolios.
- Providing scientific information, data and indicators related to local and regional greenhouse gas (GHG) emissions and projected climate impacts for the capital region.
- Increasing public awareness of climate change issues and catalyzing action through partnerships with public and private sectors, non-governmental and community organizations.
- Liaising with senior levels of government on climate change related programs, policies and legislation that impact the capital region.
- Supporting the CRD in fulfilling its own climate objectives, including the climate-related CRD Board strategic priorities.

The contents of this report provide an overview of the CRD Climate Action Program's achievements from 2017.

For information about CRD corporate and community climate actions undertaken by other CRD departments, divisions and services, please see the 2017 CRD Climate Action Annual Report at www.crd.bc.ca/climate.

Climate Action Program overview

The CRD Climate Action Program, a part of the Environmental Protection Division in the Parks & Environmental Services Department of the CRD, provides direct support to local governments, the CRD and residents.

In 2017, the program operated on an annual budget of \$319,970 which included 1.7, full-time employees. The program's core budget is provided through an annual requisition from all of the municipalities and electoral areas.

The program also relies on external grants and partnerships to undertake community climate action programming. See 2017 Climate Action Program Accomplishments for more information.

Supporting local governments

Each community within the region has unique climate action priorities. To respond to the diverse and ongoing needs of local governments, the CAP coordinates the CRD Climate Action Inter-Municipal Working Group (IMWG) which formally meets quarterly, and the CRD Climate Action Inter-Municipal Task Force (Task Force) which meets bi-annually. Staff and elected officials participate in these groups to share information, collaborate on projects, review current program deliverables and provide input on the direction of future work.

In addition to facilitating these groups, the CAP provides customized support to local governments, including:

- Assisting with the development of community plans, programs, information reports and education initiatives.
- Providing background information to new staff working on climate-related issues.
- Attending public events and open houses.
- Quantifying and distributing balancing credits associated with CRD-managed kitchen scraps diversion.
- Hosting capacity-building workshops for staff and elected officials. In 2017, workshop topics included the BC Energy Step Code and understanding climate risk (in partnership with Engineers Canada).

In 2017, the Climate Action Inter Municipal Steering Committee was renamed the Climate Action Task Force, with the addition of community representatives from the disbanded CRD Roundtable on the Environment.

Climate newsletter

To facilitate further information sharing, the CAP produced a monthly e-newsletter for local governments that included information on events, resources, project updates and funding opportunities. Members of the CRD Climate Action IMWG, Task Force and other interested local government stakeholders are included on the mailing list.

Provincial peer networks

To facilitate information exchange to the CRD and local governments on climate and energy related provincial policies, programs and opportunities, CAP staff participate in the following peer networks:

- BC Climate Risk Network
- BC Local Government EV Peer Network
- Local Government BC Energy Step Code Peer Network

As part of the Green Communities Committee Joint Provincial-UBCM Adaptation Working Group, the CAP provided input into the refresh of the BC Climate Action Charter, a key commitment in the BC Climate Leadership Plan.

Supporting CRD services

While implementation of climate action remains the responsibility of each CRD department, the CAP provides support to departments on an as-needed basis. This includes, but is not limited, to:

- Leading the development and associated reporting of the CRD's Regional Climate Action Strategy.
- Providing messaging and climate data for public outreach campaigns.
- Disseminating climate mitigation and adaptation information to CRD departments.
- Supporting the development of relevant CRD-led planning documents (such as the Regional Growth Strategy, strategic plans, etc.).
- Supporting the CRD Corporate Climate Analyst on annual Climate Action Revenue Incentive Program (CARIP) reporting.
- Managing CRD support and participation in two regional events: ICLEI's Livable Cities Conference and Synergy Sustainability Institute's 2017 EcoStar Awards.



Realtors tour as part of Energy Step Code education and engagement program

- Completed the **Energy Step Code Education and Engagement Program**. Working with and on behalf of the region’s local governments, CAP collected regionally-specific building industry feedback on local Step Code policy and program opportunities, designed and delivered an educational workshop series for local government staff, elected officials, real estate agents and the building industry and collaborated with other local governments on the delivery of consistent industry education. Information collected through the research, surveys and workshops was provided to local governments within the region to inform their own Step Code programming and policies. CAP received \$19,625 in external grant funding from BC Hydro Sustainable Communities for this project.
- Completed the **Food Service Establishment Water, Energy and GHG Savings** program. Over 2016/2017, in partnership with Fortis BC, BC Hydro, and CRD Water Conservation, CAP led an initiative to provide free assistance for 141 local businesses to reduce their environmental footprint and save money. Qualifying businesses in the capital region received free high-efficiency water fixtures and on-site education about further water and energy saving opportunities and rebate programs. The program will save at least 598 tonnes of CO₂e and 77,000,000 litres of water, annually. CAP received \$24,958 in external grant funding from Fortis BC in support of this project.
- Hosted the **Resilient Region Exchange Breakfast Series**. CAP continued to coordinate this quarterly breakfast meet-up designed to bring together regional stakeholders working on climate and sustainability issues in the region. With 60-70 community members (general public, local government, business, public sector and non-profit organizations) attending each meeting, and approximately 650 online members, this series has earned a reputation for partnership development, project incubation and community building.
- Supported the **People Power, Active Transportation and Healthy Communities Program**. The CAP provided promotional support for this initiative led by the CRD Regional and Strategic Planning division, made possible with support from the Victoria Foundation, the Traffic Safety Commission and the Real Estate Foundation. The program focused on motivating, supporting and encouraging residents to safely walk, roll and cycle more often, and ran in tandem with community-led infrastructure investments and data collection programs across the region. In total, 27,369 people from across the CRD were directly engaged in the program.

Continued on next page

2017 community initiatives

The CAP has a diverse portfolio that is shaped by the priorities and interests of the CRD Board and our partner local governments. Highlights from 2017 include:

- Finalized the **CRD Regional Climate Action Strategy**, a companion document to the draft Regional Growth Strategy which guides the CRD’s services to support community-focused climate mitigation and adaptation action over the next five years. Content was informed by input provided by CRD services, the CRD Climate Action IMWG and Task Force, and other local elected officials. On April 12, 2017, the CRD Board approved the Regional Climate Action Strategy.
- Finalized and communicated the results of the **Climate Projections of the Capital Region** report. Developed with assistance from CRD services and local government staff, CAP engaged the Pacific Climate Impacts Consortium to understand how the region’s climate may change in regards to precipitation and temperature by the 2050s and 2080s. The report is a resource for planners, engineers, land use managers, policy makers and decision-makers, to better understand how their work may be affected by our changing climate.

More 2017 initiatives

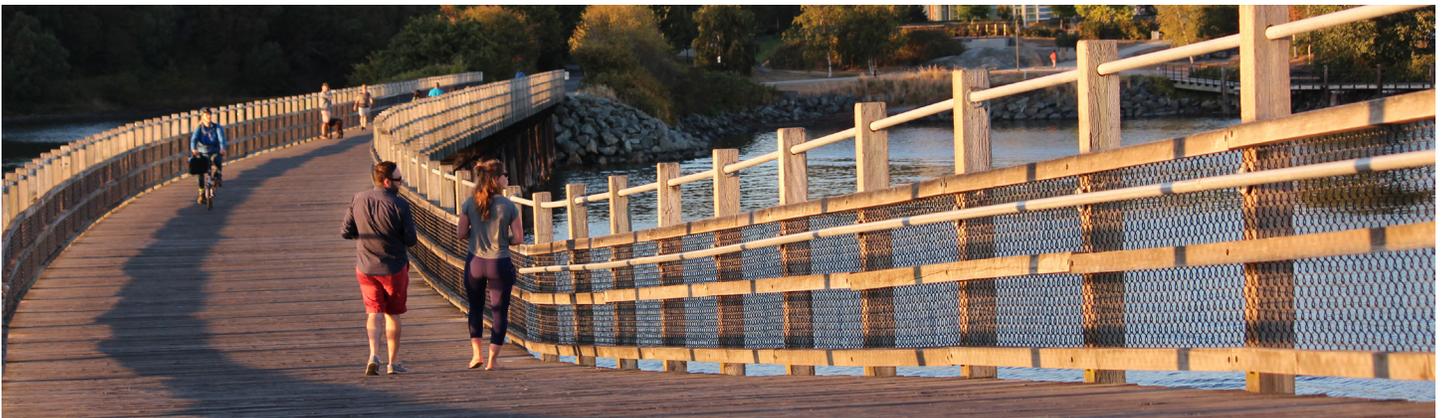
- Sponsored the **Cool It! Climate Leadership Training**. Working with the non-profit BC Sustainable Energy Association, the CAP offered 20 educational workshops that encouraged students in grades 4–7 to take action to reduce energy use and emissions at home. During the 4-week program challenge, students committed to several energy conserving and emissions saving actions at home, totalling 6,190 actions and resulting in a projected savings of 204.71 tonnes of CO₂e, if they continue their actions for one year.
- Continued to manage the CRD offer of 335 top-up incentives (\$150 each), through a partnership with CRD Integrated Watershed Management Program, to capital region residents participating in the provincial **Oil to Heat Pump Incentive Program**. Coordinated a further 180 incentives on behalf of the District of Saanich, 80 on behalf of the City of Victoria and 20 on behalf of the Township of Esquimalt. Top-up incentives were offered in 2017 on a first-come, first-served basis. Since 2015, 185 residents have participated in the program, resulting in at least 1,256 tonnes of CO₂e savings per year. Delivered by City Green Solutions on behalf of the Province of BC.
- With the CRD Integrated Watershed Management Program and various provincial partners, supported the **Keyline Water Management: Field Research and Education in the Capital Region** project, a 3-year initiative to educate farmers and other agricultural professionals on rainwater management techniques. The CRD hosted 10 free workshops and four pilot farm visits reaching over 210 farmers and other agricultural focused professionals across the region. Results can be found on the program website crkeyline.ca.

Looking ahead to 2018

In 2018, the CAP will continue to support the CRD and local governments in their climate action goals, while undertaking projects that reduce community and corporate emissions, and better prepare our region for climate changes. Planning includes a number of projects, such as:

- Continue to support industry and local government education on the new voluntary regulation, the **BC Energy Step Code**.
- Working with and on behalf of local governments, the CAP will seek external funding to undertake an **electric vehicle and e-bike charging strategy**.
- Revise and relaunch the **Climate Action To-Go Kits** throughout the regional library system.
- Working with the non-profit BC Sustainable Energy Association, offer the **Cool It! Climate Leadership Training** to students in grades 4–7.
- Building from the success of 2017, work with the CRD Regional and Strategic Planning division, to administer **Walk and Wheel to School Week** in October 2018.

In addition, the Climate Action Program also intends to support the organization in annual reporting associated with the **Regional Climate Action Strategy**, continue to host the **Resilient Region Exchange Breakfast Series**, continue to manage regional representation in CRD **Oil to Heat Pump Top-Up Incentive Program**, and develop adaptation awareness **public education materials**.



Capital Regional District

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Climate Action

2017 ANNUAL REPORT



CRD

Making a difference...together



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Overview

The Capital Regional District (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. The CRD Board identified climate action as a top strategic priority, and CRD staff continue to take steps and identify opportunities to mitigate, adapt to and reduce climate change impacts.

This report summarizes all of the climate action related activities the CRD undertook in 2017. The report 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) associated with the CRD's BC Climate Action Charter commitment.

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. Although the challenges are real, they are not insurmountable. 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, more energy efficient rural and urban communities
- ▶ In 2014, the **CRD Board identified climate change as a Strategic Priority**. The priority set the direction for the CRD climate action strategies.

CRD Climate Action Strategies

The CRD currently holds 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 that 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 Strategy 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 strategic 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 | Greenhouse Gas Emissions & Targets

Direct and Indirect Control

There is a clear role for local governments to take action on 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.

Did you know?

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).

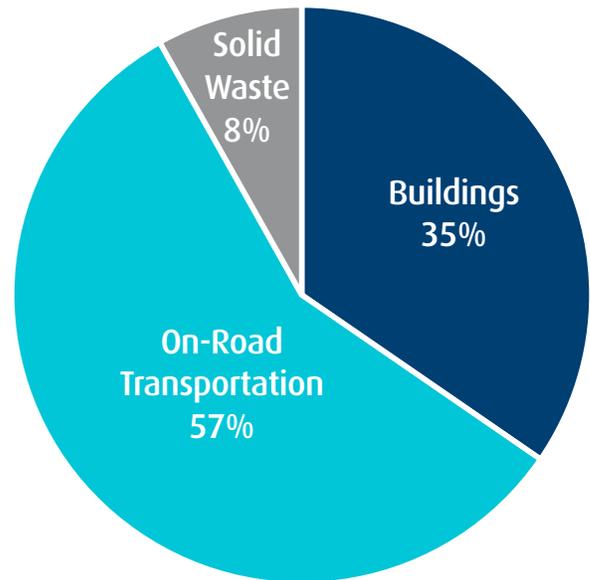
Capital Region Community Greenhouse Gas Emissions and Targets

The CRD provides data for the development of the provincial Community and Emissions Inventory (CEEI), 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 CEEI (with 2010 transportation)



“The CRD Regional Growth Strategy identifies a target for the capital region to reduce GHG 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 1 million tonnes of CO₂e.

Achieving this target will not be possible without a substantial policy shift and full-scale implementation of initiatives such as multimodal 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.

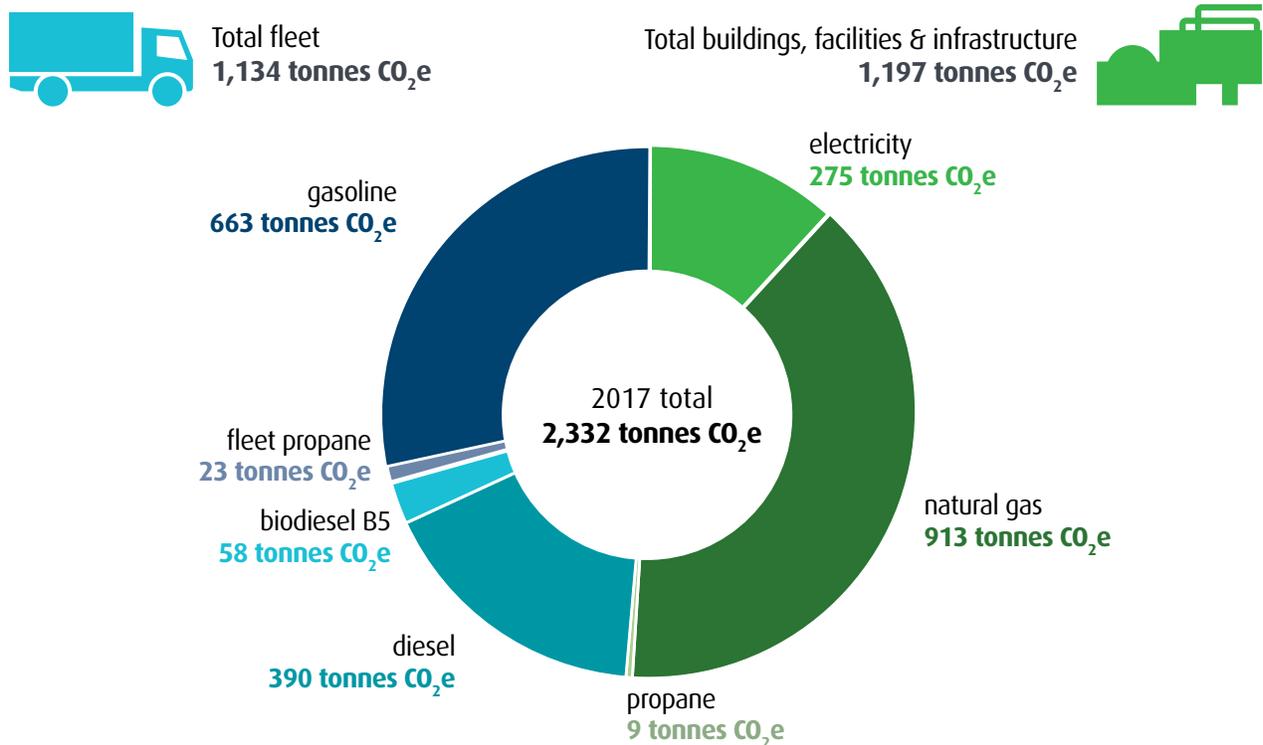


CRD Corporate Greenhouse Gas Emissions and Targets

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 2017, CRD operations produced 2,332 Tonnes CO₂e. This represents a 4.32% reduction compared to 2016, and a 17% reduction compared to 2007 levels.

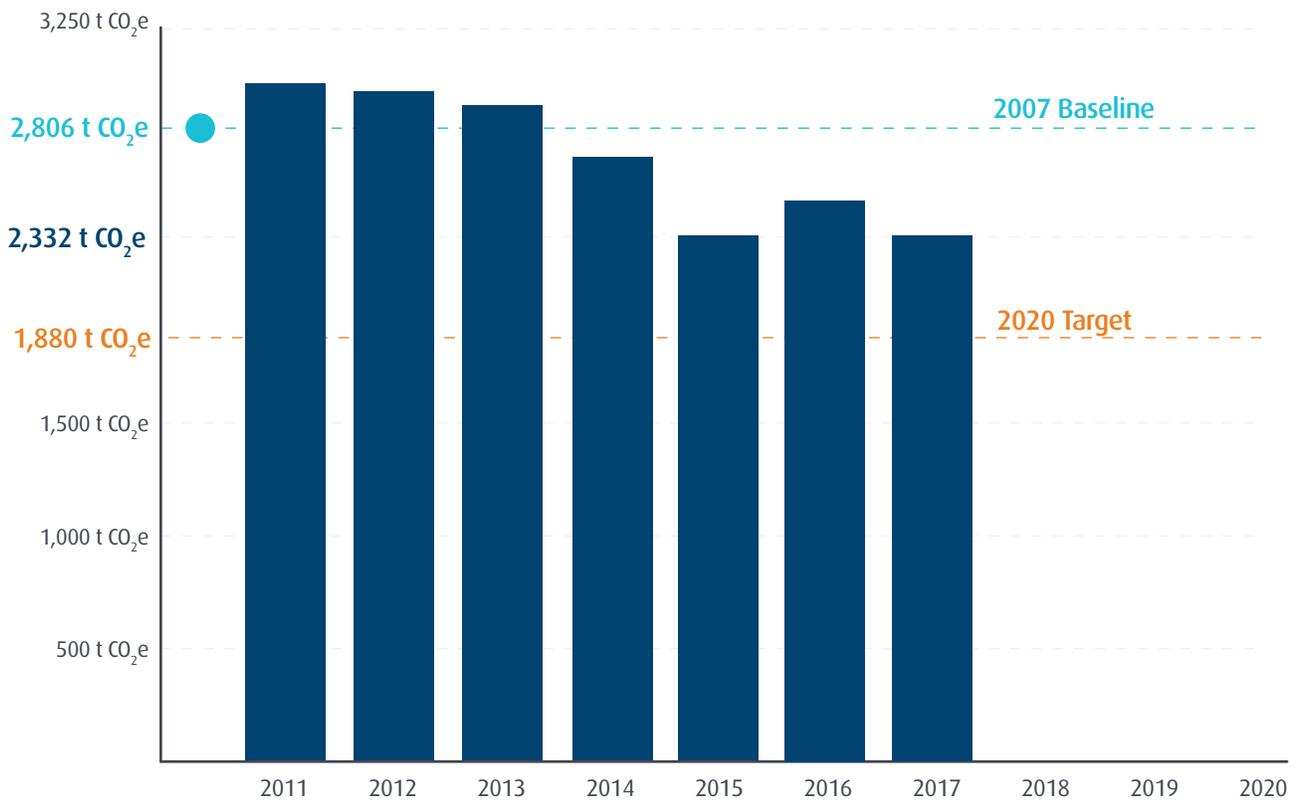
2017 Operational GHG Emissions by Source



The CRD must reduce operational GHG emissions by approximately 450 Tonnes CO₂e/year, by 2020 to meet the Corporate GHG reduction target of 33% below 2007, by 2020. The Corporate Climate Action Strategy identifies a number of emissions 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 estimated to continue to be carbon neutral in operations through 2022.

Operational GHG emissions, relative to 2020 target



Climate Adaptation| Build Resilience

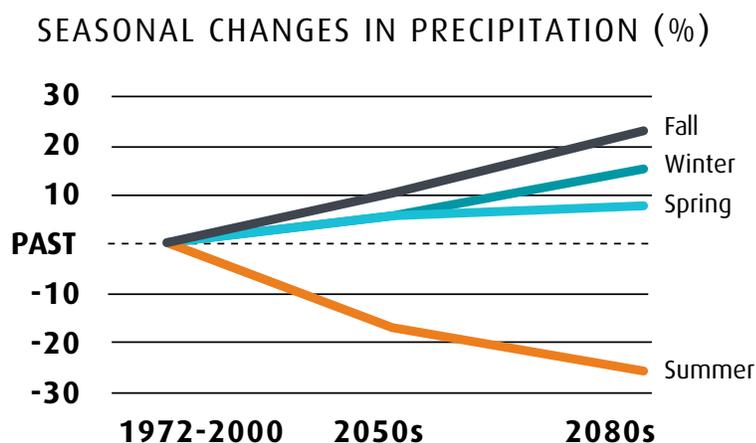
The climate is changing and the “new normal” for the region may be very unlike the past. Global climate models project an average increase of about 3°C in our region by the 2050s. In 2016 and 2017, the CRD worked with the Pacific Climate Impacts Consortium (PCIC) to undertake a comprehensive assessment 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 continue to prepare.

Climate Projections for the Capital Region, 2017 Report Results



2017 Climate Action Highlights

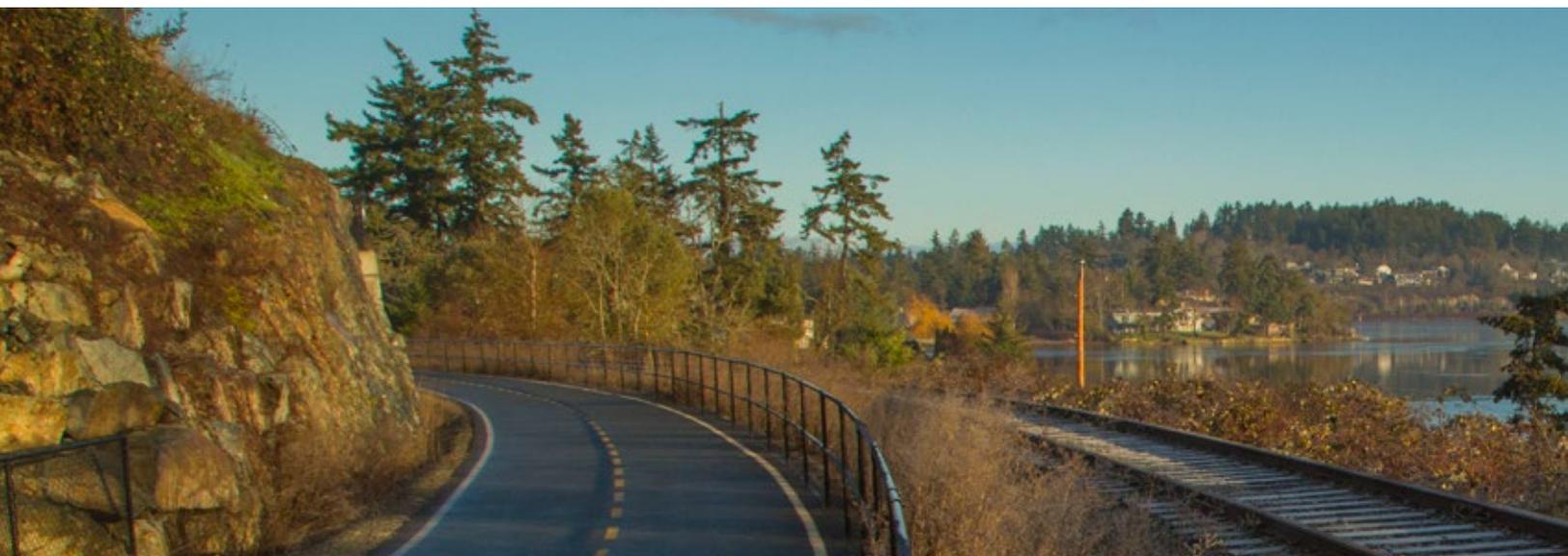
The CRD completed and supported a number of climate actions throughout 2017. An exhaustive list can be found in [Appendix A – CRD Regional Climate Action Strategy Actions](#) and [Appendix B – Corporate Climate Action Strategy Actions](#). Some highlights from 2017 are:

Climate Projections for the Capital Region Report

The CRD engaged the Pacific Climate Impacts Consortium to undertake an analysis of projected changes in temperature, precipitation, and indices of extremes due to climate change in the 2050s and the 2080s. The report is intended to support decision making throughout the region and to help community partners better understand how their work may be affected by our changing climate.

E&N Rail Trail – Planning for the Final Segment

The CRD initiated the development of the final segment of Phase 1 of the E&N Rail Trail to add a further 1 km of cycling and pedestrian trail between Langford and Victoria. The final segment of Phase 1 has been supported by a grant from Bike BC and UBCM of \$1 million. The project is expected to be complete in 2018. An additional 1 km segment will be initiated in 2018, with completion targeted in 2019. The CRD has secured a total of \$17 million in external funding grants for all phases of the E&N Rail Trail.





BC Energy Step Code Education and Engagement Program

Working with and on behalf of the region's local governments, the CRD Climate Action Program received funding from BC Hydro Sustainable Communities to collect regionally-specific building industry feedback on local Step Code policy and program opportunities, design and deliver an educational workshop series for local government staff, elected officials, real estate agents and the building industry, identify opportunities amongst local governments for regional or sub-regional consistency of BC Energy Step Code programming and/or policies, and collaborate with other local governments on the delivery of consistent industry education. Information collected through the research, surveys and workshops was provided to local governments within the region to inform their own Step Code programming and policies.



People Power, Active Transportation and Healthy Communities Program

The CRD completed a 2-year pilot program that supported residents to safely walk, roll and cycle more often in their everyday life. In partnership with local institutions and non-profits, 16 diverse capacity-building projects and initiatives were delivered to target audiences. The CRD used a "collective impact" approach to harness the skills, knowledge and networks of partner organizations to encourage use of active transportation for commuting and recreation. In total, 27,369 people from across the CRD were directly engaged in the program. The program was made possible thanks to core funding support from the CRD, the CRD Traffic Safety Commission and the Victoria Foundation.





Zero Emissions Fleet Initiative

The CRD vehicle fleet accounts for approximately half of all operational GHG emissions. In an effort to reduce these emissions, the CRD successfully applied to the Green Municipal Fund for \$350,000 to support the transition of the light duty segment of the CRD fleet to zero emissions. Over a 3-year period, in partnership with researchers at the Institute for Integrated Energy Systems at the University of Victoria, the CRD 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 (FCEVs);
- ▶ testing and comparing the use of other zero emissions alternatives, including battery electric vehicles (BEV) and electric bikes (E-bikes) where operationally appropriate;
- ▶ investigating opportunities to use electric vehicles as an emergency power source.

Adaptation Studies in the Greater Victoria Water Supply Area

In partnership with the University of Victoria and Natural Resources Canada, the CRD developed a carbon budget for the forests in the Sooke Water Supply Area (WSA) using the federal forest carbon model. The carbon budget allows users to understand historic forest productivity, growth and mortality and disturbances and examine the potential effects of projected climate change on forest growth and mortality. The partners also examined sediment cores to characterize changes in forest composition and wildfire return intervals associated with changes to climate since the end of the last ice age. Results from these and other studies, are used to inform climate adaptation strategies and actions that are being incorporated into Watershed Protection programs, projects and activities within the Greater Victoria WSA.



Implementing a Climate Lens Review on Capital Projects

In response to a Board directive, the CRD now conducts a climate lens review on capital projects. Incorporated into the capital plan and budgeting processes, the climate lens guides project teams through a series of questions related to total expected operating emissions, compliance with corporate climate action policy and strategy, and adaptation. The climate lens is conducted on all capital projects over \$100,000 and that are considered ‘in scope’ for GHG reporting purposes.

By incorporating climate action through the day-to-day decision making of the organization, the CRD ensures that projects are designed to meet the targets the organization has set.

Energy Efficiency Retrofits in Buildings

Using the Prism Puma tool, the CRD now has energy monitoring for all of its energy-consuming buildings and facilities. This data has been used to develop business cases for energy reduction. For example, in 2017, CRD Facilities Management and Engineering Services undertook an LED lighting retrofit at the CRD headquarters building (625 Fisgard Street). LEDs (light-emitting diodes) are significantly more energy efficient than the existing fluorescent lamps. A lighting audit found the upgrade will decrease operational and maintenance costs at the headquarters, and reduce electricity consumption by 44%. This equates to an energy savings of approximately 166,000 kilowatt hours, or 1,777 kg of CO₂-e annually. With the energy bill savings, the project will pay for itself in less than 5 years.

Looking Ahead - 2018

In 2018, the CRD will continue to complete of actions identified in the climate strategies. 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 2018 include:

- ▶ Investigate the feasibility of ice plant heat recovery at SEAPARC Recreation Centre. A potential 40 tonnes CO₂e reduction opportunity.
- ▶ Investigate the feasibility of waste heat recovery through integrated design at Panorama Recreation Centre. A potential 399 tonnes CO₂e reduction opportunity.
- ▶ Working with municipal and electoral area staff, undertake an Electric Vehicle and Electric-Bike Charging Infrastructure Planning Project.
- ▶ Begin the development of the CRD Solid Waste Management Plan update.
- ▶ Assess various ecosystem service characteristics in the Greater Victoria Water Supply Area to identify vulnerabilities related to projected climate change.
- ▶ Complete the Gulf Islands Regional Trails Plan which outlines a conceptual regional trail route and provides guidance on how the trails will be prioritized, developed, managed and operated on the three islands.
- ▶ Host Walk and Wheel to School Week, a fun, free, week-long campaign that celebrates and encourages students and their families to choose active travel for all or part of their journey to school throughout the region.



APPENDICES

**Appendix A | Regional Climate Action
Strategy Actions**

**Appendix B | Corporate Climate Action
Strategy Actions**

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.	2017	Ongoing	▶ Considered in context of RGS and policies to support urban containment	▶ All municipalities and JDF EA (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.	2017	Ongoing	▶ Active and Safe Routes to School Programs research considered density in relation to modes of transportation. Cost-benefits and land use connections will be shared with partners.	▶ School boards, municipalities and EAs, 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)	2018 & beyond	Ongoing	▶ RGS was adopted in March 2018. All new CRD bylaws and services must be consistent with RGS.	▶ Municipalities, JDF EA
• Review Regional Context Statements for alignment with the RGS.	2018 - 2020	Ongoing	▶ Review Regional Context Statements when submitted by municipalities.	▶ Municipalities
• Continue to adopt Official Community Plans (OCP) for the Juan de Fuca Electoral Area that are consistent with the RGS.	2017 - 2018	Ongoing	▶ Ground work done in 2017 with potential new OCP's for East Sooke and Shirley/Jordan River in 2018.	▶ JDF EA
• Monitor and report on RGS commitments.	2018 & beyond	Ongoing	▶ Shirley Jordan River and East Sooke OCPs will be considered in 2018.	
1-4. CONTINUE TO DEVELOP GHG-RELATED TARGETS , policies and actions for the Juan de Fuca Electoral Area OCP.	2017 - 2018	Ongoing	▶ See Goal 1 – 3 (JDF OCPs)	▶ Within existing
PERFORMANCE INDICATORS		n/a	▶ Data was not available at time of publication but will be available in 2018.	
• percentage of new dwelling units within the Growth Policy Area		n/a	▶ Data is not available or collected by CRD. The indicator will be removed in future reports.	
• number of people with access to destinations that fulfill daily needs		n/a		

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. 	2017	n/a	▶ CRD Board decided on March 14, 2018 not to further pursue a transportation service at this time.	
	2017	n/a	▶ CRD Board decided on March 14, 2018 not to further pursue a transportation service at this time, which means transportation services will not be consolidated.	
2-2. IMPLEMENT THE REGIONAL TRANSPORTATION PLAN AND THE PEDESTRIAN AND CYCLING MASTER PLAN.	2017	 Complete	▶ CRD Regional Planning delivered People Power, an Active Transportation & Healthy Communities Program to encourage residents to travel without automobiles. Projects included the Active and Safe Routes to School project, a strategic approach to address infrastructure, behavior, and safety and education needs for schools, districts and local governments. In total, 27,369 people from across the CRD were directly engaged in the program.	<ul style="list-style-type: none"> School boards, municipalities and EAs, 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
	2017	 Complete	▶ CRD applied for and received funding from Island Health to deliver a Walk and Wheel to School Week program.	▶ Island Health
	2017-2018	Ongoing	▶ Completion of Origin and Destination Household Travel survey	
2-3. IMPLEMENT PRIORITY PROJECTS IDENTIFIED IN THE REGIONAL TRAILS MANAGEMENT PLAN TO SUPPORT ACTIVE TRANSPORTATION.	2017	Ongoing	▶ Included multimodal pathway as part of the Bowker Creek restoration in Oak Bay.	
	2017 - Future	 Planned	▶ Submitted funding requests to support a 1.5 km multi-modal transportation trail in the core area of Port Renfrew.	▶ Funding dependent
	2017	Ongoing	<ul style="list-style-type: none"> ▶ CRD Parks initiated final segment of Phase 1 of E&N Rail Trail, to add a further 1 km of cycling and pedestrian trail between Langford and Victoria. Project completion is expected in 2018. An additional 1 km segment will be initiated in 2018, with completion targeted in 2019. ▶ The final segment of Phase 1 has been supported by a \$1M grant.. ▶ Total external funding (grants) for all phases of the E&N has been approximately \$17M. 	▶ Funders: Bike BC and UBCM (final segment, Phase 1)
	2017	Ongoing	▶ CRD Parks initiated planning for regional trails on the Gulf Islands in 2017. Plan approval expected in 2018. 50 km of new trails are identified in the plan. Project implementation will require significant external funding and many years to complete.	
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	Ongoing	▶ Consider bus shelters locations : Lower Ganges Rd, Fulford-Ganges Rd & Mobrae.	
	2017	Ongoing	▶ Transit Infrastructure Review: Review and plan with BC Transit priority infrastructure actions	▶ BC Transit
	2017	 Complete	▶ Develop a Draft Gulf Islands Regional Trails Plan for Galiano, Mayne, North and South Pender, Salt Spring and Saturna Islands. The plan will identify a conceptual regional trail route on each of the islands, and include direction for implementation.	
	2017	Ongoing	▶ Purchased three lots totaling 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	 Planned	▶ Scope and plan community trails and beach accesses ▶ Mouat West, Harbour House / Crofton Brook trail	
	2018	 Planned	▶ Planning and construction of: ▶ Lower & Upper Ganges Rd sidewalks and bike path ▶ Lower Ganges Road upland connector	
	2018	 Planned	▶ Explore construction of a family style bike park, including an environmental assessment, other feasibility studies and community consultation.	▶ Salt Spring Bike Club ▶ Funders: Salt Spring Island Lions donated \$150,000
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.	2017	 Complete	▶ Support Songhees Wheelness cycling initiative grant application for a bike share (same day ride-and-return) program at the Songhees Wellness Centre for Songhees Nation members and staff and for bike skills and safety training programs for children. Through the grant each child who successfully completes the course will receive a used bike, helmet and light.	▶ Songhees Nation, B.C. Healthy Communities Society, IsleShare Cycle, Bike to Work Society
	2018	 Planned	▶ Develop a capital region EV and E-bike infrastructure strategy, including a best practices guidebook to support LG's in their planning, design and implementation of future EV infrastructure and grant applications.	▶ BC Hydro, municipalities and EAs
	2018	 Planned	▶ Participate in provincial local government EV network to support capacity building and information sharing.	▶ BC Hydro, province-wide local and regional governments

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.	2017	 Complete	▶ (See 2-2 People Power, an Active Transportation & Healthy Communities Program)	
	2017	 Complete	▶ Promoted the SmartDrive Challenge which trained participants on fuel and GHG saving driving techniques. Included data tracking and online learning.	▶ Scout Environmental, MetroVancouver
	2017 / 2018	Ongoing	▶ Supported delivery of Cool It! Climate Leadership workshops in 20 grade 4-7 classrooms throughout the capital region and provide tools for behaviour change.	▶ BC Sustainable Energy Association (BCSEA)
2-8. DEMONSTRATE LEADERSHIP BY IMPLEMENTING THE CCAS CORPORATE FLEET ACTIONS AND POLICY.	2017	Ongoing (since 2014)	▶ Curbside recycling collection using renewable natural gas fleet (Emterra)	
	2017	Ongoing	▶ See Appendix B – CCAS Actions	
PERFORMANCE INDICATORS			▶ CRD Board decided on March 14, 2018 not to further pursue a transportation service at this time.	
• establishment of a CRD Transportation Service				
• reductions in GHGe from personal vehicle transportation			▶ Province no longer providing this data.	
• increase in transit services and related infrastructure			▶ Data not collected by CRD. Indicator will be removed in future reports.	
• increase in active transportation infrastructure kilometres			▶ Not currently available	
• percentage of all trips made by walking, biking or transit			▶ Not currently available	
• percentage of the Regional trail network completed	2017		▶ 94.39 km (55km Galloping Goose; 29km Lochside; 10.4 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 EMISSIONS HEATING SYSTEMS.	2017	Ongoing	<ul style="list-style-type: none"> Coordinate 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 CO2e saved annually. Met with Province to review oil spill response call-out process. 	<ul style="list-style-type: none"> Province of BC, Saanich, Victoria and Esquimalt
3-2. EDUCATE AND PROVIDE REGIONAL COORDINATION FOR NATIONAL AND PROVINCIAL INITIATIVES. Examples include: <ul style="list-style-type: none"> opt-in regulations (e.g. the Energy Step Code, a tiered energy performance standard beyond Building Code) energy literacy initiatives such as energy benchmarking and, voluntary and mandatory energy labeling programs for buildings 	2017	 Complete	<ul style="list-style-type: none"> Designed, developed and implemented a capital region specific Energy Step Code education and engagement program. Program included a building industry survey and workshop, building officials workshop, workshops and tours for elected officials and Realtors and inter-regional network coordination. 	<ul style="list-style-type: none"> BC Hydro, Saanich, Victoria, RDN, UDI- Capital Region, Victoria Realtors Association, CHBA- Vancouver Island, Passive House Canada Funding support: BC Hydro Sustainable Communities
	2017	 Complete	<ul style="list-style-type: none"> CRD Building inspection staff participated in regional Step Code education program, including providing feedback on proposed provincial reporting forms. CRD JDF Planning staff participated regional Step Code education program. 	
	2017	 Complete	<ul style="list-style-type: none"> Produced energy literacy materials for community displays including a model house and building energy trivia. 	<ul style="list-style-type: none"> BC Home Energy Coach, BC Hydro, Victoria, Saanich
	2018	 Planned	<ul style="list-style-type: none"> Participate on the provincial local government step code peer network and share learnings with capital region local governments. 	<ul style="list-style-type: none"> Energy Step Code Council
3-3. DEVELOP, DELIVER AND SUPPORT EDUCATIONAL PROGRAMS AND INITIATIVES that achieve reductions in building-related GHGe and, water and energy use.	2017	 Complete	<ul style="list-style-type: none"> Developed water and energy conservation information brochures. 	
	2016/2017	 Complete	<ul style="list-style-type: none"> Completed the Food Service Establishment Water, Energy and GHG Savings program to provide free assistance for 141 local businesses. Participants received free high-efficiency water fixtures and on-site education about further water and energy saving opportunities and rebate programs. The program will save at least 598 tonnes of CO2e and 77,000,000 litres of water, annually. 	<ul style="list-style-type: none"> Funding support: Fortis BC, BC Hydro
	2018	 Planned	<ul style="list-style-type: none"> Revise and re-launch the energy literacy materials and Climate Action To Go Kits. 	<ul style="list-style-type: none"> Libraries in the region (GVPL, VIRL, SSI Library and Camosun College)
3-4. PROVIDE RESEARCH, DATA AND ANALYSIS TO LOCAL GOVERNMENTS AND INTERESTED FIRST NATION GOVERNMENTS on high performing, resilient and low carbon buildings.	2017	 Complete	<ul style="list-style-type: none"> See Goal 3 – 2 (Energy Step Code Program) 	
	2018	 Planned	<ul style="list-style-type: none"> Participate on the provincial local government step code peer network and share learnings with capital region local governments. 	<ul style="list-style-type: none"> BC Energy Step Code Council

Goal 3 | Buildings are high performing and low carbon

Action	Timing	Status	Action / Project Description	External Partners
3-5. Support and develop programs that increase the use of renewable energy, green innovation and smart technology in buildings.	2017	Ongoing	▶ See Action 3-1 (Oil to Heat Pump Program)	
	2017	Ongoing	▶ Planning for The Summit at Quadra Village, a 320-unit residential care facility with environmentally sustainable building features. The CRHD will design and build the Summit on behalf of Island Health.	
	2017	 Complete	▶ Lighting upgrades (LED) for CRD owned buildings leased to VIHA.	
	2018	 Planned	▶ 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 CRHD, with Island Health funding the residential care services.
	2018-2019	 Planned	▶ Potential energy efficient heating upgrades to VIHA facilities.	
	2018 - 2019	 Planned	▶ Energy assessments of two CRD owned buildings leased to VIHA.	
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 	2017	 Complete	▶ See Goal 3-2 (Energy Step Code Program)	
	2017	Ongoing	▶ Chair Chief Building Officials Association – review new policies	
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				
• Reductions in residential and commercial building GHGe and energy use	2017		▶ Provincial data not available for this year.	
• Volume of water used in the Greater Victoria Water Supply Area	2017		▶ 46.5M m3 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.	2017	 Complete	▸ Land cover digital data collected.	
	2017	Ongoing	▸ Regional land cover update (except Gulf Islands) initiated in 2017, completion expected in 2018. Data was provided by Province of British Columbia Ministry of Forests Lands, Natural Resource Operations and Rural Development	
	2018 - 2019	 Planned	▸ Update land cover data by watershed to show municipal and community change in vegetation and impervious surface	▸ Habitat Acquisition Trust
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.	2017	 Complete	▸ Provide comment on OCP's (e.g. Oak Bay Urban Tree Strategy and Blueprint)	▸ Local municipalities
	2018	 Planned	▸ Plan and host Natural Asset Workshop series	▸ Water Sustainability Inter-Regional Education Initiative
	2018	 Planned	▸ 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.	
4-3. CONSIDER CARBON SEQUESTRATION AND STORAGE IN ALL CRD LAND, MARINE MANAGEMENT, ASSET MANAGEMENT AND ACQUISITION DECISIONS to reduce community GHGe in collaboration with stakeholders and First Nations governments.	2017	 Complete	▸ Natural asset policy language included in RGS	
	2017	Ongoing	▸ Carbon sequestration is considered in all park land acquisition decisions.	
	2017	Ongoing	▸ Develop a carbon budget for the forests in the Sooke Water Supply Area (by University of Victoria and Natural Resources Canada) using the federal forest carbon model. The model looks at the carbon budget of the forests from the establishment of Sooke Lake Reservoir in 1911 to 2012, factoring in forest productivity, growth and mortality and the disturbances that occurred in the area during that period. ▸ Natural Resources Canada has also modelled the carbon budget of the forests in the Sooke WSA examining the potential effects of projected climate change on forest growth and mortality (not factoring in disturbance).	▸ University of Victoria and Natural Resources Canada
4-4. DEVELOP A SILVICULTURE WORKING GROUP FOR THE JUAN DE FUCA ELECTORAL AREA in collaboration with landowners.	Unknown	 Planned		
PERFORMANCE INDICATORS			▸ Planned for 2018	
• Update the regional inventory of land cover				
• number of hectares of protected areas, forest land and tree cover			▸ Data not currently available	

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

Action	Timing	Status	Action / Project Description	External Partners
5-1. MINIMIZE COMMUNITY GHGE BY COMPLETING THE CRD INTEGRATED SOLID WASTE AND RESOURCE MANAGEMENT PLAN.	2018 - 2019	 Planned	▸ Development of Solid Waste Management Plan	
5-2. WORK WITH LOCAL GOVERNMENTS TO PLAN WASTE REDUCTION STRATEGIES BASED ON WASTE COMPOSITION STUDY RESULTS.	2017	 Complete	▸ Worked with municipal staff to inform their plastic bag ban model bylaw	
	2018 - 2019	 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).	2017	 Complete	▸ Recycling and Waste Reduction Coordinator (term position) to identify issues, develop strategies and deliver workshops at Songhees Wellness Centre. Wendy Final Report	
	2017	Ongoing	▸ Deliver 79 3R school programs, 68 school tours, 25 community group tours, 25 youth summer programs and community presentations and workshops.	
	2017	Ongoing	▸ Staff booth at 26 communities events highlighting 3R messaging	
	2017	Ongoing	▸ Maintain and promote use of myrecyclopedia online diversion directory	
	2017	Ongoing	▸ Support curbside recycling education (e.g. subscription for service reminders and updates, seasonal diversion, "extra material", warm weather tips education	
	2018	 Planned	▸ Pilot general public landfill tours	
	2018	 Planned	▸ Love Food Hate Waste education and awareness campaign	▸ Zero Waste Council; Metro Vancouver

Goal 5 | Waste generation is minimized & 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	Ongoing	▶ Support Greater Victoria Compost Education Centre to develop and deliver programs and workshops	▶ Greater Victoria Compost Education Centre
	2017	Ongoing	▶ Deliver 3R school programs, school and community group tours, youth summer programs, presentations and workshops	▶ School districts, schools
	2017	Ongoing	▶ Staff booth at 19 communities events including kitchen scraps initiative information	
	2017	 Complete	▶ 6500 tonnes of kitchen scraps by private waste haulers transferred through Hartland	
	2017	 Complete	▶ Chip and reuse 600 tonnes of yard waste onsite for beneficial use at Hartland	
	2017	 Complete	▶ Develop food waste preparation tips: warm weather and wildlife	▶ Parks; Co existing with Carnivores Alliance
	2018	 Planned	▶ RFP for in region kitchen scraps and garden waste processing facility	

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

Action	Timing	Status	Action / Project Description	External Partners
5-5. IDENTIFY AND EVALUATE ADDITIONAL OPPORTUNITIES TO OPTIMIZE LANDFILL GAS RECOVERY and energy production from organic waste	2017	Ongoing	▶ Annual installation of landfill gas collection infrastructure (2017 collection rate at 69% collection efficiency)	
	2017	 Complete	▶ Improved landfill gas collection through gas plant (blower) modifications.	
	2017	 Complete	▶ Monitor landfill gas emission composition every 2 years. In 2017, additional monitoring parameters were included.	
	2017	 Complete	▶ Prepared the Landfill Gas Utilization Business Plan	
	2018 (April/May)	 Planned	▶ Present landfill gas utilization business plan to Environmental Services Committee	
PERFORMANCE INDICATORS			▶ Planned to start in 2018	
• completion of the CRD Integrated Solid Waste and Resource Management Plan		 Planned		
• percentage of methane gas captured at Hartland landfill	2017	Ongoing	▶ Rate was 69% collection efficiency (BC MOE target rate = 75% by 2016)	
• per capita waste disposal rate	2016	n/a	▶ 2016 rate = 348 kg/person (BC average 490 kg/person)	

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 data).	2017	 Complete	<ul style="list-style-type: none"> Finalized the Climate Projections of the Capital Region report. Engaged the PCIC to understand how the region's climate may change in regards to precipitation and temperature by the 2050s and 2080s. The report is a resource for planners, engineers, land use managers, policy makers and decision-makers, providing a better understand how their work may be affected by our changing climate. 	<ul style="list-style-type: none"> Pacific Climate Impacts Consortium (PCIC), CVRD, MetroVancouver
	2017	 Complete	<ul style="list-style-type: none"> Added LIDAR for Salt Spring Island and Southern Gulf Islands & continue orthophoto project including increased resolution and elevation information for the JDF. 	
	2017	 Complete	<ul style="list-style-type: none"> Liaised inter-regionally on chemical analysis of seaweed harvest sites. 	<ul style="list-style-type: none"> Washington, Mainland BC and Vancouver Island
	2017	 Complete	<ul style="list-style-type: none"> Acknowledged in RGS 	
	2017 - 2018	Ongoing	<ul style="list-style-type: none"> Increase number of monitoring locations near Hartland Landfill. Data collection includes odor, wind and temperature. 	
	2017	 Complete	<ul style="list-style-type: none"> Installed a new weir at Hartland landfill will help measure future changes in surface water flow. 	

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.	2017	Ongoing	<ul style="list-style-type: none"> Investigated and created new invasive species coordinator position in 2017. Position will be staff in 2018. 	
	2017	Ongoing	<ul style="list-style-type: none"> Expanded hydrological data collection (e.g. Bowker, Colquitz and Mount Doug creeks) 	
	2017	Ongoing	<ul style="list-style-type: none"> Supported GreenShores presentations and workshops (2x level 1; 1x level 2) Worked with City of Victoria to adopt GreenShores approach to Heron Cove and Harbour pathway. 	<ul style="list-style-type: none"> James Bay Association, Oak Bay Association, GWI, ELSI, City of Victoria
	2017	 Complete	<ul style="list-style-type: none"> Considered climate projections in the hydrological testing at Hartland North. 	
	2017	Ongoing	<ul style="list-style-type: none"> Stakeholder engagement on the Community Health and Wellbeing Plan. 	<ul style="list-style-type: none"> Funding Partner – Island Health a healthy communities planner to advance the CHWB plan.
	2017	Ongoing	<ul style="list-style-type: none"> Conduct regional hazard and vulnerability assessment through Regional Emergency Management Partnership (REMP) 	<ul style="list-style-type: none"> Province of BC
	2017	 Complete	<ul style="list-style-type: none"> Addressed wildfire risk in egress route for Lively Peak Park, SSI. 	
	2017	Ongoing	<ul style="list-style-type: none"> 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 Greater Victoria Water Supply Area (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. 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. Supporting research at the University of Victoria that is analyzing tree rings to identify the frequency and magnitude of drought periods over the past 600 years and estimate the effects on watershed hydrology. This work will improve our understanding of the range in natural variability of drought and streamflow and how this variability could be affected with projected changes to climate. 	
2018	 Planned	<ul style="list-style-type: none"> Update Regional Emergency Management Partnership strategic plan with climate lens. 		

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

Action	Timing	Status	Action / Project Description	External Partners
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.	2017	Ongoing	▶ CRD Environmental Protection added far field reference stations during the Macaulay/Clover outfalls seafloor sampling years (2014/2017). These stations will hopefully provide enhanced spatial coverage to detect any climate or broader environmental changes relative to our outfall impacts. CRD Environmental Protection will continue to monitor these stations as part of the ongoing seafloor monitoring every 2-3 years.	
	2017	Ongoing	▶ CRD Environmental Protection continue 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	 Complete	▶ 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. ▶ <i>This work is summarized in the thesis (https://dspace.library.uvic.ca/handle/1828/8023) and was accepted by the scientific journal Marine Pollution Bulletin (anticipated publication date in 2018).</i>	▶ Ocean Networks Canada (ONC), Fisheries and Oceans Canada, and UVic
	2017	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
6-4. SHARE WITH STAKEHOLDERS AND FIRST NATIONS GOVERNMENTS, AND FACILITATE THE UPDATING OF REGIONAL CLIMATE PROJECTIONS , as the latest climate data becomes available. Compile research on ecosystem shifts for stakeholders, and interested First Nations, to include in natural area and watershed management planning (e.g. watershed report cards).	2017	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.	
	2017	 Complete	▶ See goal 7-1 (workshop)	▶ Pacific Climate Impacts Consortium
	2018	 Planned	▶ Develop climate projection info graphics and other public outreach materials for use by CRD services and local governments.	
6-5. COMPILE RESEARCH ON ECOSYSTEM SHIFTS FOR STAKEHOLDERS, AND INTERESTED FIRST NATIONS, TO INCLUDE IN NATURAL AREA AND WATERSHED MANAGEMENT PLANNING (e.g. watershed report cards).	2017	Ongoing	▶ Elk/Beaver Lake sampling and surveying (e.g. bacteria, phosphorus inputs, fish and weeds)	
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	Ongoing	▶ Identified need for advocacy for updated IDF curves, endorsed by the CRD Board and communicated in a letter to Environment Canada.	
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.				
6-8. DEMONSTRATE LEADERSHIP BY DEVELOPING A CORPORATE CLIMATE CHANGE ADAPTATION PLAN.	2017		▶ See Appendix B	

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

Action	Timing	Status	Action / Project Description	External Partners
PERFORMANCE INDICATORS • number of stakeholders and residents engaged through educational programming and outreach.	2017	 Complete	<ul style="list-style-type: none"> ▶ 48,897 for all Parks & Environmental Services 	
• completion of the Climate Projections for the Capital Region report and integration of the results into CRD plans, strategies and processes	2017	 Complete & Ongoing	<ul style="list-style-type: none"> ▶ Finalized the CRD Climate Action Projections for the Capital Region report which received input from local government staff and elected officials during working group sessions, the CRD Climate Action Inter-Municipal Working Group, CRD Climate Action Steering Committee and the CRD Forum of All Councils. 	
• completion of an updated list of Species at Risk and critical habitats in regional parks	2017		<ul style="list-style-type: none"> ▶ For 2017, data compilation is underway. ▶ Regional Parks regularly updates species at risk information for parks through data sharing agreements with the Province of BC's Conservation Data Centre and the Department of Environment and Climate Change Canada. 	
• updated habitat survey for core area harbours	2018	 Planned	<ul style="list-style-type: none"> ▶ By Environmental Protection Division 	
• number of streams with water quality and flow monitoring stations	2017	 Complete		

Goal 7 | Communities are prepared for & 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.	2017	 Complete	<ul style="list-style-type: none"> Planned and hosted a workshop for CRD, local government staff and interested First Nations on climate risks related to stormwater and the PIEVC protocol. 	<ul style="list-style-type: none"> Engineers Canada
	2017	 Complete	<ul style="list-style-type: none"> Supported Tsawout First Nation Adapt Program grant application 2018: pending award, implementation 	<ul style="list-style-type: none"> Tsawout First Nation
	2017	Ongoing	<ul style="list-style-type: none"> Support Pacheedat Climate Change emergency preparedness 	<ul style="list-style-type: none"> Pacheedat First Nation
	2017-2018	Ongoing	<ul style="list-style-type: none"> Support rainwater recovery through building permit and building bylaw 	<ul style="list-style-type: none"> Islands Trust; JDF EA
	2018	 Planned	<ul style="list-style-type: none"> Progressive closure of Hartland phase 2 (use of green tarps) for surface water management. 	<ul style="list-style-type: none"> Songhees First Nation

Goal 7 | Communities are prepared for & 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.	2017	 Complete	▶ Developed Green Stormwater Infrastructure Common Design Guidelines. Draft completed 2017, to be released spring 2018.	
	2017	Ongoing	▶ Daylighting Bowker Creek Project. Initiate study (create an inter-municipal working group, develop the terms of reference, apply for grant funds for planning)	▶ Province of BC, Victoria, Saanich, Oak Bay, Bowker Creek Initiative
	2017	Ongoing	▶ Bylaw amendment is on hold. May be included in the servicing bylaw.	
	2017	Ongoing	▶ Climate adaptation strategies and actions are being incorporated into Watershed Protection programs, projects and activities within the GWWSA. <i>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.</i>	
	2017- 2018	Ongoing	▶ Hosted 10 free Keyline Design workshops and 4 pilot farm visits for farmers, planners, and engineers.	▶ Growing Forward 2, Investment Agriculture Foundations of British Columbia, Ardcorp, Climate Action Initiative BC Agriculture and Food, Province of BC, Federal Government
	2018	 Planned	▶ Daylighting Bowker Creek Project RFP and implementation	
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.	2017	 Complete	▶ Chapter within the Green Stormwater Infrastructure Common Design Guidelines addresses this issue.	
7-4. INCORPORATE CLIMATE-RELATED DISASTER PLANNING AND COMMUNICATIONS INTO PUBLIC OUTREACH ACTIVITIES.	2017	Ongoing	▶ Public alert notification system started.	
	2017-2018	Ongoing	▶ Improve sever weather notification program to better prepare and respond.	
7-5. WORK WITH THE PROVINCE AND THE REGIONAL EMERGENCY PARTNERSHIP TO REDUCE THE RISK OF INTERFACE FOREST FIRES.	2017	Ongoing	▶ Collaborate with partners to address interface forest fires.	▶ Province, BC Wildfire Branch and Communities

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

Action	Timing	Status	Action / Project Description	External Partners
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).	TBD	 Planned		
7-7. DEVELOP, DELIVER AND SUPPORT EDUCATIONAL PROGRAMS AND INITIATIVES THAT PROMOTE LOCAL FOOD SYSTEMS.	2017	 Complete	▶ Education support included a Canada 150 initiative to include distribution of 100 trees from a local nursery. Establish, coordinate and liaise Task Force. Report to the Planning and Protective Services Committee	▶ Regional Food Agriculture Task Force, local nursery
	2017	 Complete	▶ Bike2Farm project helped youth experience their local food systems by exploring community gardens, edible boulevards, urban farms and grocery stores by bike, combining food security education with a fun and safe active transportation experience.	▶ CR-FAIR Society
	2018	 Planned	▶ 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
7-8. DEMONSTRATE LEADERSHIP BY INTEGRATING CLIMATE CHANGE AND SUSTAINABILITY CONSIDERATIONS INTO CORPORATE ASSET MANAGEMENT.	2017	Ongoing	▶ See Appendix B – CCAS Actions	
PERFORMANCE INDICATORS • incorporation of climate adaptation into emergency preparedness	2017	Ongoing	▶ By Planning and Protective Services	
• completion of Green Infrastructure Common Design Guidelines	2017	 Complete	▶ By Environmental Protection Division	
• number of partnerships focused on local food education	2017	Ongoing	▶ 23 through Food & Agriculture Strategy development	▶ 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	2017	annually	▶ May 1- Sept 30 (CRD Stage 1) ▶ In 2017, Provincial drought levels ranged between 2-3 (measured differently than CRD levels)	

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	 Complete	▶ Port-Renfrew pump station improvements to prevent flooding (culvert drainage)	
	2017	 Complete	▶ Support invasive species removal events with First Nations	
	2017	Ongoing	▶ Coordinate Integrated Watershed Management Inter-Municipal Working Group meetings and considered climate change impacts, infrastructure and stormwater management.	▶ Municipalities and EAs
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	 Complete	▶ Acknowledged in RGS	
	2017 - 2018	Ongoing	▶ The Summit at Quadra Village landscape design in consultation with community association	
	2017	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.	
	2017	Ongoing	▶ Modified the service bylaw to include activities around groundwater protection on Salt Spring Island.	▶ SSI Watershed Protection Alliance
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	n/a		▶ Not completed in 2017	
• percentage change in the amount of tree canopy cover	n/a		▶ Data not currently available	
• watershed evaluations that incorporate environmental and hydrological monitoring	2017	Ongoing	▶ Evaluated twelve (12) watersheds through water quality, (and some biological and hydrological) monitoring. This was more than usual, because eight (8) Sooke watersheds were completed with help from municipal staff. Most years, we complete 2 to 4 watersheds.	▶ Sooke municipal staff, Environmental Monitoring Programs
• number of volunteer hours leveraged in restoration or stewardship activities	2017	Ongoing	▶ CRD Parks - 5100 hours by 434 volunteers ▶ CRD Environmental Protection- 500 hours	

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.	2017	Ongoing	<ul style="list-style-type: none"> Administered the CRD Climate Action Inter-Municipal Working Group (staff) and Task Force (elected officials). Held 4 meetings and 2 meetings, respectively. Planned continuation in 2018 	<ul style="list-style-type: none"> Municipalities and EAs
	2017	Ongoing	<ul style="list-style-type: none"> Developed and distributed a monthly climate action e-newsletter to local governments. Planned continuation in 2018 	
	2017	Ongoing	<ul style="list-style-type: none"> Hosted the Resilient Region Exchange Breakfast Series designed to bring together regional stakeholders working on climate and sustainability issues in the region. 60-70 community members attended each meeting, and approximately 650 online members. Planned continuation in 2018 	<ul style="list-style-type: none"> Co-Hosts: Pacific Climate Impacts Consortium, Township of Esquimalt and the City of Victoria.

Appendix B

Goal 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

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 Board has made climate change a priority and has requested a climate lens be provided for Board decision making. In 2017, the Climate Lens was incorporated into the capital budgeting and planning process to ensure that climate change considerations are incorporated into projects at the time of project planning and design.
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	<ul style="list-style-type: none"> ▶ In 2017, Corporate Climate Action activities included updating corporate processes as appropriate, to ensure that climate change is considered throughout the day-to-day decision making of the organization.
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	<ul style="list-style-type: none"> ▶ During the budget planning for 2018, Corporate Climate Action staff prepared a summary across divisions and departments of planned 2018 climate action activities, prior to service plan reviews.
2-3. UPDATE THE PROJECT MANAGEMENT PROCESS TO INCORPORATE CLIMATE ACTION POLICY into project requirements documents and project level decision making.	2018	Ongoing	<ul style="list-style-type: none"> ▶ In 2017, a climate action reserve fund 'seed fund' was also developed, and included into the 2018 budget ask. This fund will be available to: <ul style="list-style-type: none"> ▶ Conduct feasibility analysis, energy efficiency or emissions savings studies, business case analysis and climate lens reviews; ▶ Provide matching funding for grant applications for projects that will tangibly reduce CRD's operational GHG emissions; ▶ Fund the incremental cost component of the portion of capital projects that support CRD's corporate climate action policy and strategy; ▶ Fund activities, actions and projects identified within or aligned with the Corporate Climate Action Strategy.
2-4. UPDATE THE ASSET MANAGEMENT PROCESS to incorporate evaluation of most energy-efficient and/or low-carbon technologies at time of renewal.	N/A	 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.	2017	 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.	2017	 Complete	
2-8. ESTABLISH A STAFF CLIMATE ACTION ENGAGEMENT PROGRAM that includes a climate action recognition program that acknowledges climate leadership among CRD employees	2018	 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.	2018	 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 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	<i>Ongoing</i>	 In progress	<ul style="list-style-type: none"> Addressing the service-oriented goals in the corporate climate action strategy requires a coordinated effort to collect targeted data, report on progress and communicate performance to various internal and external audiences. In 2017, staff made good progress in continuing to automate data collection to allow for a more complete and accurate overview of our current progress towards meeting our targets, and to remove the possibility of human error in data accounting. For example, the Facility Management department initiated an energy management process for buildings, facilities and infrastructure, through the use of an online energy monitoring tool. The tool captures energy consumption data for buildings and facilities, and gives facility managers a digital representation of their consumption patterns, and helps identify opportunities for energy savings. On the fleet side, CRD received support through the BC Fleet Champions program to install data logger devices into the CRD fleet, to gain an understanding of the fuel usage patterns of the CRD fleet. This data will be shared with the Institute for Integrated Energy Systems at U Vic, and used in 2018 to conduct an electric vehicle suitability assessment of the CRD fleet to identify opportunities to cost-effectively transition to electric vehicles, as part of the Zero Emissions Fleet Initiative.
3-2. ESTABLISH A PROCESS TO COLLECT THE GHG EMISSIONS FOR ALL CONTRACTED SERVICES CONSIDERED "IN SCOPE" FOR GHG REPORTING	<i>Ongoing</i>	 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	<i>Ongoing</i>	 In progress	
3-4. INCORPORATE OUTCOMES OF ENERGY MANAGEMENT MONITORING INTO AN ADAPTIVE MANAGEMENT PROCESS to ensure continuous improvement	<i>2018</i>	 Planned	
3-5. DEVELOP A COMMUNICATIONS PLAN TO SHARE CORPORATE PROGRESS ON CLIMATE ACTION with staff and public.	<i>2017</i>	 Complete	
3-6. COORDINATE THE ANNUAL CARIP REPORTING REQUIREMENTS , on behalf of the Organization	<i>Annually</i>	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>► Projected climate changes in our region may pose challenges and opportunities to CRD Operations. Understanding these projections in detail will allow CRD divisions to anticipate future impacts and prepare for the changes ahead. In 2017 CRD completed a Climate Projections for the Capital Region study, in partnership with the Pacific Climate Impacts Consortium. The future projected temperature and precipitation in the Capital Region is intended to support decision making throughout the region and to help community partners better understand how their work may be affected by our changing climate. Through the climate lens process, all CRD capital projects greater than \$100,000 in value now consider adaptation at the time of project initiation. The Climate Projections for the Capital Region report provides valuable information for planners, architects, engineers and project managers to ensure climate impacts are considered. In 2018, CRD will be using the information from the Climate Projections for the Capital Region report to inform a risk assessment and Corporate Climate Adaptation Plan.</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 GHG 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 owns and operates approximately 350 vehicles and pieces of equipment to support service delivery throughout the region. The emissions that come from operating the fleet account for approximately half of CRD's total operating emissions.
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	<ul style="list-style-type: none"> ▶ CRD has successfully applied to the Green Municipal Fund for \$350,000 to support a Zero Emissions Fleet Initiative, with a goal to transition the light duty segment of the CRD fleet to zero emissions. ▶ Over a 3-year period, in partnership with researchers at the Institute for Integrated Energy Systems at the University of Victoria, CRD will work 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 (FCEVs); ▶ Testing and comparing the use of other zero emissions alternatives, including battery electric vehicles (BEV) and electric bikes (E-bikes) where operationally appropriate; ▶ Investigating opportunities to use electric vehicles as an emergency power source.
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 life cycle costs and payback (fuel and maintenance) for investing in efficient vehicles.	2017-2020	 Complete	<ul style="list-style-type: none"> ▶ Work on this initiative began in earnest in 2017, and CRD has acquired 3 electric vehicles and 3 electric bicycles that are currently in operation within the CRD fleet, and installed 7 electric vehicle charging ports at CRD facilities. CRD is also actively working with partners at other levels of government and industry to see if it's possible to test the use of hydrogen fuel cell vehicles within the CRD fleet.
5-7. INSTITUTE FLEET MANAGEMENT BEST PRACTICES by: engaging all fleet vehicle operators in energy-efficient driver training program recognizing staff that demonstrate efficient driving practices as part of the climate action recognition program	2017-2020	 Planned	<ul style="list-style-type: none"> ▶ The aim of the initiative is to significantly reduce, if not eliminate the emissions coming from the light duty segment of the CRD vehicle fleet. ▶ 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.
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 life cycle 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	 In Progress	
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	 In Progress	
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	 Planned	

Goal 6 | Existing buildings, facilities & infrastructure

Accelerate a reduction in energy use and GHG 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"> Energy consumption in CRD's buildings, facilities and infrastructure accounts for approximately half of the total GHG emissions, representing a significant opportunity for reductions.
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 2017, CRD undertook a LED lighting retrofit at the Fisgard headquarters building. LEDs (light-emitting diodes) are significantly more energy efficient than the existing fluorescent lamps. A lighting audit found the upgrade will decrease operational and maintenance costs at Fisgard, and reduce electricity consumption by 44%. This equates to an energy savings of approximately 166,000 kilowatt hours, or 1,777 kg of CO₂-e annually. With the energy bill savings, the project will pay for itself in less than 5 years.
6-3. REDUCE GHG EMISSIONS THROUGH FUEL SWITCHING TO RENEWABLE NATURAL GAS (RNG), AND CONDUCT BUSINESS CASE ANALYSIS TO PRODUCE RNG.	2018-2020	 In progress	<ul style="list-style-type: none"> This project is joined by other planned and completed energy reduction projects at SEAPARC and Panorama recreation centers, and the Integrated Water Service building.
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	<p>► The best time to address energy consumption and GHG emissions is at the very beginning of new capital projects. Through the climate lens, CRD is working to ensure that every new capital project meets the policy, targets and objectives identified within the corporate climate action strategy. In 2017, CRD worked to complete a climate lens review on the Hartland Renewable Natural Gas Initiative. This review will ensure that as the project moves forward from feasibility and into the project design stages, climate change considerations are included within the project requirements.</p>
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	

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