Capital Regional District

625 Fisgard St.,
Victoria, BC V8W 1R7

Notice of Meeting and Meeting Agenda
Environmental Services Committee

Wednesday, April 20, 2022 | **1:30 PM** | **6th Floor Boardroom, 625 Fisgard St. Victoria, BC V8W 1R7**

B. Desjardins (Chair), N. Taylor (Vice Chair), D. Blackwell, L. Helps, M. Hicks, G. Holman, G. Orr, J. Ranns, K. Williams, R. Windsor, C. Plant (Board Chair, ex-officio)

The Capital Regional District strives to be a place where inclusion is paramount and all people are treated with dignity. We pledge to make our meetings a place where all feel welcome and respected.

1. Territorial Acknowledgement

2. Approval of Agenda

3. Adoption of Minutes

3.1. 22-148 Minutes of the January 19, 2022 and March 30, 2022 Environmental Committee Meetings

Recommendation: That the minutes of the Environmental Services Committee meetings of January 19, 2022 and March 30, 2022 be adopted as circulated.

Attachments: Minutes – January 19, 2022

Minutes – March 30, 2022

4. Chair's Remarks

5. Presentations/Delegations

The public are welcome to attend CRD Board meetings in-person.

Delegations will have the option to participate electronically. Please complete the online application for "Addressing the Board" on our website and staff will respond with details.

Alternatively, you may email your comments on an agenda item to the CRD Board at crdboard@crd.bc.ca.

6. Committee Business

6.1. 22-260 Capital Regional District Climate Action - 2021 Annual Report

Recommendation: There is no recommendation. This report is for information only.

Attachments: Staff Report: CRD Climate Action - 2021 Annual Report

Appendix A: CRD 2021 Climate Action Annual Report

6.2. 22-236 Meeting the Solid Waste Management Plan Targets through Material Stream Diversion

Recommendation: The Environmental Services Committee recommends to the Capital Regional District Board:
That staff be directed to initiate a procurement process for further processing of divertible materials, and return to the Environmental Services Committee in January 2023 with financial implications and proposed amendments to the Hartland Tipping Fee and Regulation Bylaw No. 3881 and associated operational implications.

[At the April 8, 2022 Solid Waste Advisory Committee meeting, the following motion arising was carried:]
The Solid Waste Advisory Committee recommends the Environmental Services Committee recommends to the Capital Regional District Board:
That further attention be focused towards construction material source separation, and information be brought back to the Solid Waste Advisory Committee on what can be done.

Attachments: Staff Report: Meeting the SWMP Targets through Material Stream Diversion

6.3. 22-262 Solid Waste - 2021 Annual Report

Recommendation: The Environmental Services Committee recommends to the Capital Regional District Board:
That the Solid Waste Advisory Committee, in its plan monitoring role, be directed to review the 2021 Plan Monitoring Update (Appendix A - of the Solid Waste 2021 Annual Report).

Attachments: Staff Report: Solid Waste - 2021 Annual Report

Appendix A: 2021 Solid Waste Annual Report

7. Notice(s) of Motion

8. New Business

9. Adjournment

The next meeting is May 18, 2022.

To ensure quorum, please advise Jessica Dorman (jdorman@crd.bc.ca) if you or your alternate cannot attend.

Meeting Minutes

Environmental Services Committee

Wednesday, January 19, 2022 **1:30 PM** **6th Floor Boardroom**
625 Fisgard St.
Victoria, BC V8W 1R7

PRESENT
Directors: B. Desjardins (Chair), N. Taylor (Vice Chair) (EP), D. Blackwell (EP), L. Helps (EP), M. Hicks (EP), G. Holman, G. Orr (EP), J. Ranns (EP), K. Williams (EP)

Staff: R. Lapham, Chief Administrative Officer; L. Hutcheson, General Manager, Parks and Environmental Services; G. Harris, Senior Manager, Environmental Protection; R. Smith, Senior Manager, Environmental Resource Management; M. Lagoa, Deputy Corporate Officer; T. Pillipow, Committee Clerk (Recorder)

EP – Electronic Participation

Regrets: R. Windsor, C. Plant (Board Chair, ex-officio)

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

1. Territorial Acknowledgement

Chair Desjardins provided a Territorial Acknowledgement.

2. Approval of Agenda

The following item was added to the agenda under New Business:
8.1.: Recycling Update (Verbal)

MOVED by Director Helps, SECONDED by Director Ranns,
That the agenda for the January 19, 2022 Environmental Services Committee meeting be approved as amended.
CARRIED

3. Adoption of Minutes

3.1. 22-051 Minutes of the October 20, 2021 Environmental Services Committee Meeting

MOVED by Director Taylor, SECONDED by Director Ranns,
That the minutes of the October 20, 2021 Environmental Services Committee be adopted as circulated.
CARRIED

4. Chair's Remarks

Chair Desjardins wished everyone a Happy New Year. The Chair acknowledged

that we as a region, will need to work together to push forward in this last year of this Board's mandate.

5. Presentations/Delegations

There were no presentations or delegations.

6. Committee Business

6.1. 22-035 2022 Environmental Services Committee Terms of Reference

MOVED by Director Ranns, SECONDED by Director Helps,
That the Environmental Services Committee receive the 2022 Terms of Reference, attached as Appendix A.
CARRIED

6.2. 22-039 2020 Regional Greenhouse Gas Inventory

G. Harris spoke to Item 6.2.

Discussion ensued on the following:
- accuracy of the sequestration figures within the report
- creating a household greenhouse gas calculator
- decreasing commercial natural gas emissions
- the impact cruise ships have on emission levels in the region
- Hartland landfill emission reductions and management
- addressing gaps in the climate action approach
- sharing reports with municipalities via the Inter-Municipal Climate Action Task Force

MOVED by Director Helps, SECONDED by Director Orr,
The Environmental Services Committee recommends to the Capital Regional District Board:
That the 2020 Regional Greenhouse Gas Inventory report be received for information.
CARRIED

6.3. 22-034 Zero-Emissions Fleet Initiative - Final Study Report

G. Harris spoke to Item 6.3.

Discussion ensued on the following:
- the effect cold weather has on the performance of electric vehicles
- consideration of adding cargo bikes to the fleet
- talking with other government bodies regarding joint procurement of e-trucks
- the target date for converting the corporate fleet

MOVED by Director Helps, SECONDED by Director Taylor,
The Environmental Services Committee recommends to the Capital Regional District Board:
That the Zero-Emissions Fleet Initiative Final Study Report be received for information.
CARRIED

7. Notice(s) of Motion

There were no notice(s) of motion.

8. New Business

8.1. Recycling Program Update (Verbal)

R. Smith provided a verbal update regarding the recycling program.

Discussion ensued on the following:
- forwarding the media advisory to people who have reached out to the CRD
- that due to a bear problem, Port Renfrew has closed the kitchen scraps transfer station
- encouraging residents to subscribe to the RecycleCRD app
- heavy volume resulting in multiple missed pick-ups for residents at the end of routes
- that staff provide a follow-up report at the next meeting of this committee

9. Adjournment

MOVED by Director Taylor, SECONDED by Director Helps,
That the January 19, 2022 Environmental Services Committee meeting be adjourned at 2:31 pm.
CARRIED

_____
CHAIR

_____
RECORDER

Making a difference...together

625 Fisgard St.,
Victoria, BC V8W 1R7

Capital Regional District

Meeting Minutes

Environmental Services Committee

Wednesday, March 30, 2022 **9:30 AM** **6th Floor Boardroom**
625 Fisgard St.
Victoria, BC V8W 1R7

Special Meeting

PRESENT
Directors: B. Desjardins (Chair), N. Taylor (Vice Chair), D. Blackwell (EP), L. Helps (9:33 am) (EP), M. Hicks (EP), G. Holman (EP), G. Orr, J. Ranns (9:35 am), K. Williams (EP), C. Plant (9:32 am) (Board Chair, ex-officio)

Staff: L. Hutcheson, General Manager, Parks and Environmental Services; K. Morley, General Manager, Corporate Services; T. Watkins, Manager, Solid Waste Operations; T. Pillipow, Committee Clerk; J. Dorman, Committee Clerk (Recorder)

EP - Electronic Participation

Regrets: Director R. Windsor

The meeting was called to order at 9:30 am.

1. Territorial Acknowledgement

Vice-Chair Taylor provided a Territorial Acknowledgement.

2. Approval of Agenda

MOVED by Director Taylor, SECONDED by Director Orr,
That the agenda for the March 30, 2022 Environmental Services Committee meeting be approved.
CARRIED

3. Chair's Remarks

Chair Desjardins spoke about how today's discussion would be an introduction to a new realm of possibilities with different kinds of waste.

4. Presentations/Delegations

There were no presentations or delegations.

5. Special Meeting Matters

5.1. 22-192 Resource Recovery - Construction Demolition and Renovation Waste Opportunities

L. Hutcheson spoke to Item 5.1.

Discussion ensured on the following:
- budget in-conjunction with biosolids pilot
- in-region transfer station
- hierarchy for building materials reuse over disposal
- gasification & thermal processing versus incineration

MOVED by Director Helps, SECONDED by Director Plant,
The Environmental Services Committee recommends to the Capital Regional District Board:
That staff return to committee in June with financial implications, timing and resource requirements to trial the beneficial use of construction, demolition and renovation waste with Lafarge and existing biosolids thermal processing proponents, along with new thermal technology vendors.
CARRIED

5.2. 22-194 Residential Curbside Recycling Program - Update

T. Watkins spoke to Item 5.2.

Discussion ensured on the following:
- financial impacts of catch up service
- tender process to address assistance if needed to mitigate disruption of service
- electoral area depots versus curbside collection impacts
- alternatives to address service impacts

MOVED by Director Orr, SECONDED by Director Plant,
The Environmental Services Committee recommends to the Capital Regional District Board:
That this report be received for information.
CARRIED

6. Adjournment

MOVED by Director Plant, SECONDED by Director Orr,
That the March 30, 2022 Environmental Services Committee meeting be adjourned at 9:54 am.
CARRIED

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CHAIR

_____
RECORDER

Making a difference...together

EEP 22-14

REPORT TO ENVIRONMENTAL SERVICES COMMITTEE
MEETING OF WEDNESDAY, APRIL 20, 2022

SUBJECT **Capital Regional District Climate Action – 2021 Annual Report**

ISSUE SUMMARY

To present the Capital Regional District's (CRD) 2021 Climate Action Annual Report, which identifies progress toward the CRD's Climate Action Strategy.

BACKGROUND

The CRD has a strong history of climate action and remains committed to addressing climate change within its own operations and at the regional level. The CRD signed the BC Climate Action Charter in 2007, established a target to reduce regional greenhouse gas (GHG) emissions by 61% by 2038, from a base year of 2007 in the Regional Growth Strategy, and declared a climate emergency in 2019.

In 2021, the Board approved a renewed CRD Climate Action Strategy and five-year action plan. The Strategy provides direction for how the CRD, under its service mandates, will show leadership on climate action, both for the CRD's corporate operations and for its community focused services. The CRD has committed to annually reporting on the progress toward achieving its climate action goals.

Found in Appendix A, the 2021 Climate Action Annual Report provides a summary of all 2021 activities and several annual indicators used to track progress of the CRD Climate Action Strategy. Multiple CRD services contributed to corporate and regional climate goals. Some of the key highlights include:

- renewed the CRD's Climate Action Strategy based on a multi-stakeholder engagement process
- developed a new Solid Waste Management Plan and advanced the Hartland Landfill renewable natural gas utilization project
- conducted research and design of a Capital Region Residential Energy Retrofit Program
- completed a regional greenhouse gas inventory for the region and its local governments
- supported climate action training in the elementary schools across the region
- work on the regional trail network continued, including the creation of 13 km of uninterrupted trail between Langford and Victoria on the E&N Rail Trail
- updated emergency response plans that address heat waves, drought and extreme weather events based on learnings from the 2021 season
- planned and hosted invasive species best practices training workshops to help build municipal staff and partner capacity
- advanced various efforts to transition the CRD's fleet to low emission vehicles, including e-bikes

The Annual Report also includes a report card that compiles self-reported progress metrics from staff responsible for advancing each of the Strategy's 127 sub-actions. These metrics were used

to produce a status measure for several informative categories, such as overall action plan progress, corporate and community-focused actions, and the six goal areas of the strategy. This systematic evaluation provides an indication of where focused efforts need to be made or increased to achieve targeted actions and outcomes within the Strategy. The overall status for the 2021 year was calculated as 'opportunity for improvement', meaning 50%-75% of the yearly target of actions were progressed as envisioned within the Strategy's five-year action plan. The Annual Report also includes a list of both corporate-focused and regional indicators that provide additional information of trends relevant to the organization, as well as broader regional climate action progress. These indicators will be updated annually and will include additional metrics related to the forthcoming regional energy retrofit and electric vehicle charging programs in the future.

IMPLICATIONS

Environmental & Climate Implications

In 2021, the CRD completed a new regional emissions inventory and report for the 2020 calendar year, building on a 2018 inventory. This followed the internationally recognized Global Protocol Community-Scale GHG Inventories BASIC+ Framework. The 2020 inventory indicated the capital region emits approximately 1.8 million tonnes of CO2e annually. This represents a 9.8% reduction from 2007 levels and a 5.2% reduction from 2018. These reductions are largely associated with the decrease in transportation-related emissions due to the early 2020 COVID-19 pandemic response. Emissions associated with buildings increased 8.1% in 2020 relative to 2018. This increase is related to increased natural gas use and the provincial energy emissions factor being adjusted to account for imported electricity. The total per capita GHG emissions has decreased by 24%, which speaks to the efforts by the CRD and regional local governments to reduce energy consumption and GHG emissions despite significant regional growth.

In 2021, CRD operations produced 3,834 tonnes of CO2e, with 1,301 tonnes associated with the corporate fleet and 2,533 tonnes coming from facilities and infrastructure. This represents a 19% increase from 2020 and 28% from the baseline level of emissions from 2007. An increase was expected in 2021 related to the Mcloughlin Point Wastewater Treatment Plant coming online. If excluding the increase from the treatment plant, corporate emissions in 2021 still increased by 6.6% above the previous year. This was influenced by the CRD's response to the COVID-19 pandemic. COVID-19 protocols increased the amount of fresh air coming into buildings, which required more energy and fossil fuels to heat. Also, the number of people per vehicle was limited, presumably increasing the number of individual vehicle trips. GHG emissions associated with Hartland Landfill and Capital Region Housing Corporation are not included in this total, as they are excluded from the provincial reporting framework.
Regardless of GHG emission reductions today, the capital region will continue to experience the impacts of climate change now and into the future. In 2021, the region experienced an unprecedented heat wave and heavy rains and flooding. The CRD and regional partners must work to reduce vulnerability in our communities and adapt to a changing climate by improving how we anticipate, respond to and recover from both extreme weather events and more gradual changes occurring over time. Climate adaptation planning and implementation will be a key aspect of future service delivery.

Intergovernmental Implications

Under Bylaw No. 3510, the CRD established a Climate Action service in 2009 with a regional collaboration mandate to directly support the organization and local governments in reaching mitigation and adaptation targets, policies and actions. The service hosts two inter-municipal networks, closely works with local government staff, senior governments, utilities and other stakeholders to identify other climate action opportunities and advance initiatives in collaboration.

To implement key initiatives within the renewed CRD Climate Action Strategy, the establishing bylaw for the maximum requisition limit for the CRD Climate Action and Adaptation service had to be raised. As such, in late 2021 and early 2022, staff embarked on a process to receive the consent of 2/3 of the participating area municipalities and electoral areas, and approval by the Inspector of Municipalities, as required by the Local Government Act. In early 2022, the CRD Board adopted Bylaw No. 4468, which amends the annual requisition of the regional climate action and adaptation service (Bylaw No. 3510).

Regional Growth Strategy Implications

The Regional Growth Strategy (RGS) includes a target to reduce GHG emissions by 61% by 2038, from a base year of 2007. The CRD climate action activities completed in 2021 align with the principles of the RGS.

Social Implications

Equity is one of the guiding principles within the Climate Action Strategy. This means that in the implementation of the Climate Action Strategy, staff will work to ensure that actions are inclusive and accessible to residents across the region, and particularly support those that are most vulnerable to the impacts to climate change.

Financial Implications

In 2021, the Climate Action service operated on an annual budget of approximately $694,000, which included three full-time employees and one two-year, full-time term position (co-funded by BC Hydro Sustainable Communities) that was renewed in late 2021. In addition, the corporation provided an annual stipend of $100,000 toward a fund to support key corporate-focused climate action planning activities. The program's core budget is provided through an annual requisition from all of the municipalities and electoral areas, and supplemental funding from corporate services.

The program also relies on external grants and partnerships to undertake corporate and community climate action programming. In 2021, external sources accounted for approximately $340,000 in additional funding to support staffing and completion of key projects. Staff also submitted several grant applications for an additional $727,000 in funds to execute several projects, starting in 2022.

Service Delivery Implications

To achieve priorities within the Climate Action Strategy, in 2021, the Board approved an increase in staff and program delivery dollars through the 2022 service planning process.

Alignment with Board & Corporate Priorities

The CRD embedded the climate emergency declaration and leadership intentions to greatly accelerate GHG emissions reductions in the 2019-2022 CRD Board priorities. In addition to the three Board priorities related to climate change, the 2019-2022 CRD Corporate Plan includes 11 additional initiatives related to climate action.

Alignment with Existing Plans & Strategies

The climate actions completed align with the CRD's Solid Waste Management Plan, Regional Transportation Plan, Regional Water Supply Strategic Plan, and Regional Parks Strategic Plan.

CONCLUSION

The CRD's 2021 Climate Action Annual Report outlines actions the CRD has undertaken to advance its new Climate Action Strategy, Board priorities, and commitments as a signatory to the BC Climate Action Charter over the past year. Overall, in 2021, the CRD progressed on several climate action initiatives, and has identified where focused efforts need to be made or increased to achieve targeted actions and outcomes. With the recent approval of the CRD's 2022 financial plan, new efforts will focus on advancing regional programs related to residential energy retrofits and electric vehicle charging infrastructure, and corporate energy management in the coming year.

RECOMMENDATION

There is no recommendation. This report is for information only.

Submitted by:	Nikki Elliott, Manager, Climate Action Programs
Concurrence:	Larisa Hutcheson, P.Eng., General Manager, Parks & Environmental Services
Concurrence:	Robert Lapham, MCIP, RPP, Chief Administrative Officer

ATTACHMENT

Appendix A: Capital Regional District 2021 Climate Action Annual Report

APPENDIX A

2021 Climate Action Annual Report

Taking Action on the Climate Emergency

Making a difference...together

Greater Victoria,
British Columbia, Canada
Year ended December 31, 2021

TERRITORIAL ACKNOWLEDGEMENT

The CRD acknowledges that it conducts its business in the territory of the Lək ʷəŋən (Songhees) and Xwsepsum (Esquimalt) Nations here in the core area, the W̱ SÁNEĆ Nations, including W̱ JOŁEŁP (Tsartlip), BOḰEĆEN (Pauquachin), STÁUTW̱ , (Tsawout) and W̱ SIKEM (Tseycum) on the Saanich Peninsula and Gulf Islands, Sc'ianew (Beecher Bay), T'Sou-ke, and Pacheedaht to the west, as well as MÁLEXEŁ (Malahat) and Pune'laxutth' (Penelekut) Nations, all of whom have lived on these lands since time immemorial.

Organizational Overview

The Capital Regional District (CRD) delivers regional, sub-regional and local services to 13 municipalities and three electoral areas on southern Vancouver Island and the Gulf Islands. Governed by a 24-member Board of Directors, the CRD works collaboratively with First Nations and all levels of government to enable sustainable growth, foster community well-being, and develop cost-effective infrastructure, while continuing to provide core services to residents throughout the region.

Table of Contents

Overview

The Capital Regional District (CRD) has committed to annually reporting on all of the climate action related activities undertaken by the CRD. This report summarizes all 2021 activities and other annual indicators identified in the CRD's Climate Action Strategy.

Regulations and 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 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 for adhering to this regulation.
- All local governments in the region, including the CRD, are signatories of the *BC Climate Action Charter*. This includes a commitment to:
  - Become carbon neutral in corporate operations.
  - Measure and report on the community's GHG emissions profile.
  - Work to create compact, complete and more energy-efficient communities.
- United with more than 350 Canadian local governments, the CRD is a member of the **Partners for Climate Protection Program**, from the Federation of Canadian Municipalities and ICLEI - Local Governments for Sustainability, affirming its ambitious GHG reductions and participating in a five-milestone planning, implementation and reporting framework.

Climate Action Strategy

Climate action has been a CRD Board priority since 2009. The CRD is committed to taking action to address climate change within its own operations, and at the regional level, to reduce emissions and to prepare for climate impacts. This was highlighted in the Board's declaration of a climate emergency in early 2019. In response to this declaration, the CRD developed an updated five-year Climate Action Strategy in 2021.

The renewed Climate Action Strategy replaces two former strategies to provide a clear path forward for how the CRD, under its service mandates, will show leadership on climate action, both for the CRD's corporate operations and for its community-focused services. The strategy coordinates with other CRD plans and strategies and supports the overarching Regional Growth Strategy.

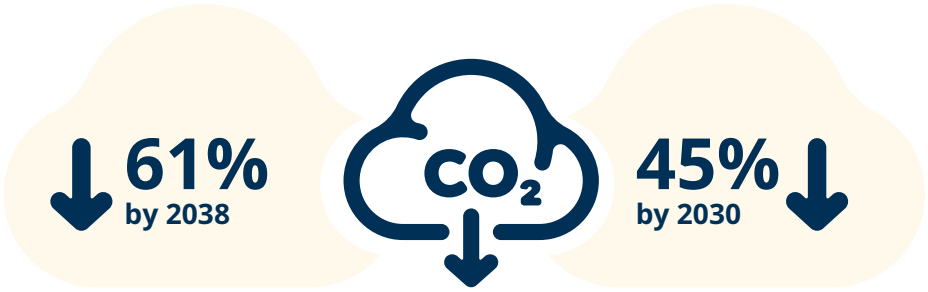
Climate Action Vision

Through collective action, we eliminate emissions and foster healthy and resilient communities and natural areas now and in the future.

This vision recognizes that the CRD must act in concert with many partners to address the climate emergency, ensuring the region is minimizing its contribution to climate change while also preparing for the changes that have already begun. In this context, "we" is inclusive of all governments, First Nations, residents, businesses, institutions, organizations and residents.

Targets and Goals

The CRD's Climate Action Strategy outlines a pathway toward net-zero emissions by mid-century, in line with the Intergovernmental Panel on Climate Change (IPCC) modelled pathways to limit warming to a 1.5°C change this century. It also established six goal areas where the CRD will focus its efforts.

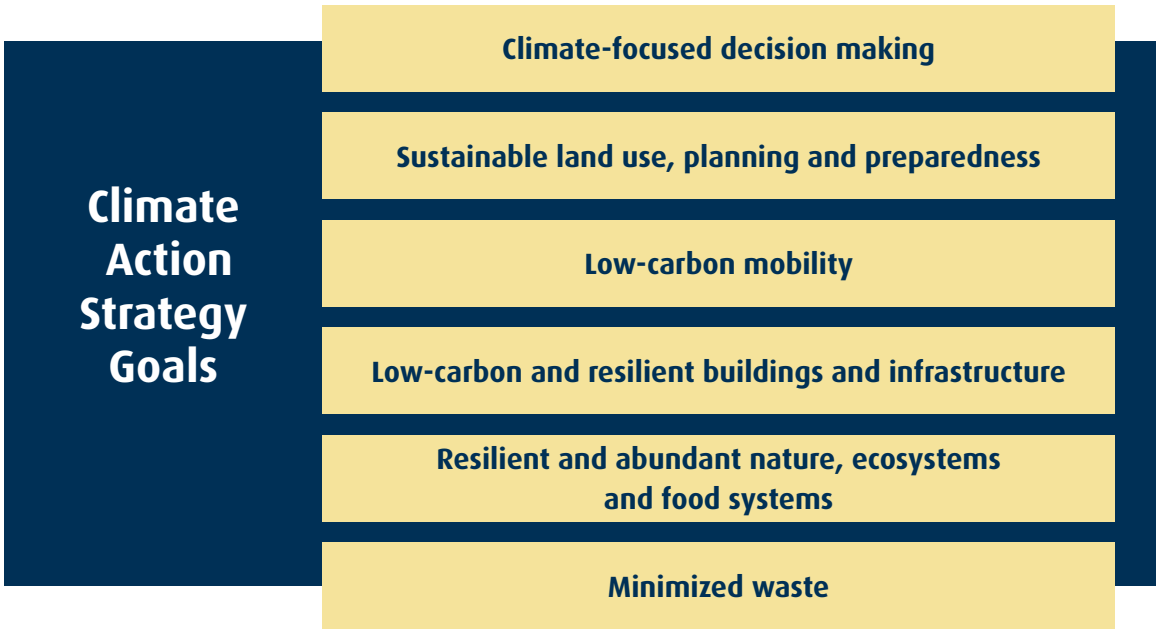


Regional target

Reduce regional greenhouse gas (GHG) emissions 61% by 2038 based on 2007 levels (as per 2018 Regional Growth Strategy).

Corporate target

Reduce corporate GHG emissions 45% by 2030 based on 2007 levels, and reach net-zero GHG emissions before 2050.



Tracking Our Emissions

The 2021 Climate Action Strategy reviewed historical emissions inventory data for the corporation and the region and analyzed the senior government policy environment to determine potential emission reduction scenarios. These scenarios provide a roadmap of how rapid emissions reductions can be achieved if all players, including the CRD, do their part. Please see the Climate Action Strategy for more details about these scenarios.

Community Emissions

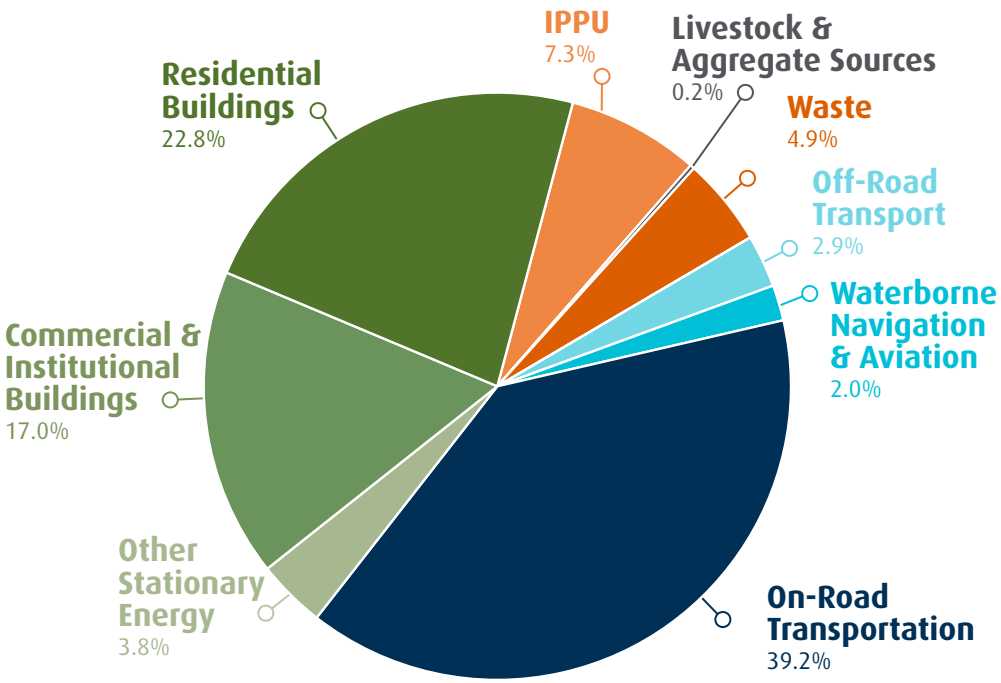
In 2021, the CRD completed a new emissions inventory and report for the 2020 calendar year, building on a 2018 inventory. This followed the internationally recognized Global Protocol Community-Scale GHG Inventories BASIC+ Framework, and included GHG emissions from: stationary energy (e.g., buildings), transportation (e.g., commuter vehicles), waste (e.g., landfills), industrial processes and product use (IPPU) (e.g., chemical industry), and agriculture, forestry and other land use (e.g., fertilizer application).

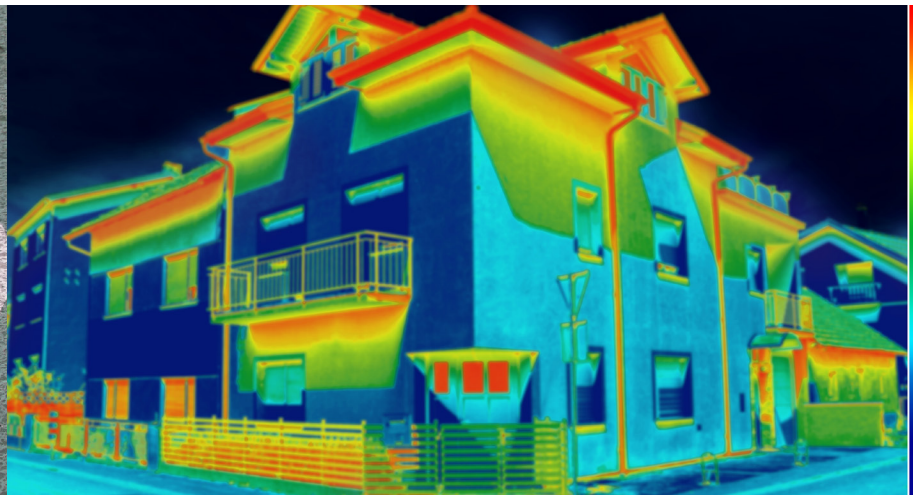
The 2020 inventory indicated the capital region emits approximately 1.8 million tonnes of C02e annually. This represents a 9.8% reduction from 2007 levels and a 5.2% reduction from 2018. These reductions are largely associated with the decrease in transportation-related emissions due to the early 2020 COVID-19 pandemic response. Emissions associated with buildings increased 8.1% in 2020 relative to 2018. This increase is related to increased natural gas use and the provincial energy emissions factor being adjusted to account for imported electricity.

The total per capita GHG emissions (t CO2e/capita) has decreased by 24%, which speaks to the efforts by the CRD and regional local governments to reduce energy consumption and GHG emissions despite significant regional growth.

Waste-related emissions were approximately 34% below 2007 levels. On-road transportation and the built environment remain the main sources of regional emissions, together accounting for approximately 79% of all emissions in 2020.

2020 Capital Region Community Energy Emissions

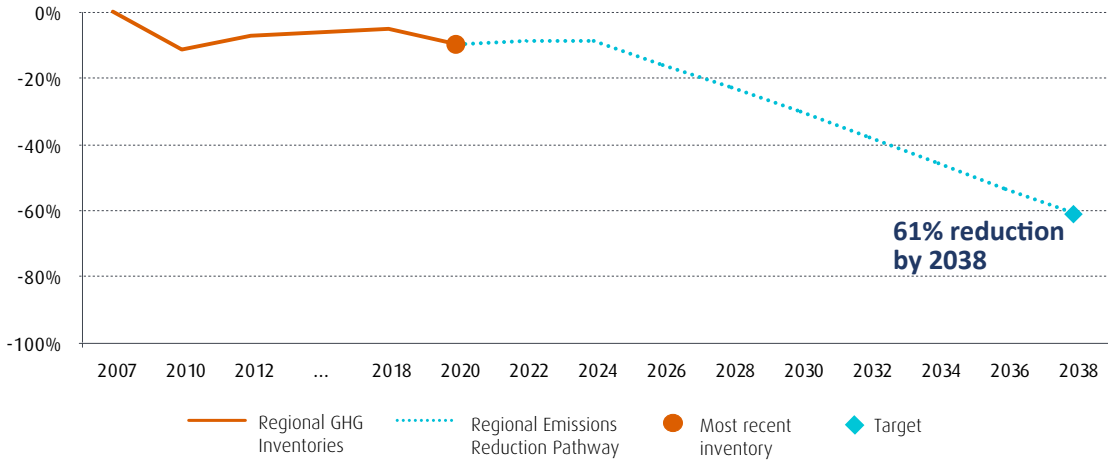




To achieve the CRD's regional GHG emission reduction target of 61% reduction by 2038, the region, and all key players, including senior levels of government, local governments, residents, business, industry and organizations, must continue to advance key initiatives, including:

- Increase uptake of transit, walking, cycling and other modes of active transportation.
- Accelerate adoption of zero-emissions vehicles.
- Retrofit existing buildings, improving energy efficiency and converting fossil fuel heating systems to electric.
- Transition to construction of net-zero ready new buildings

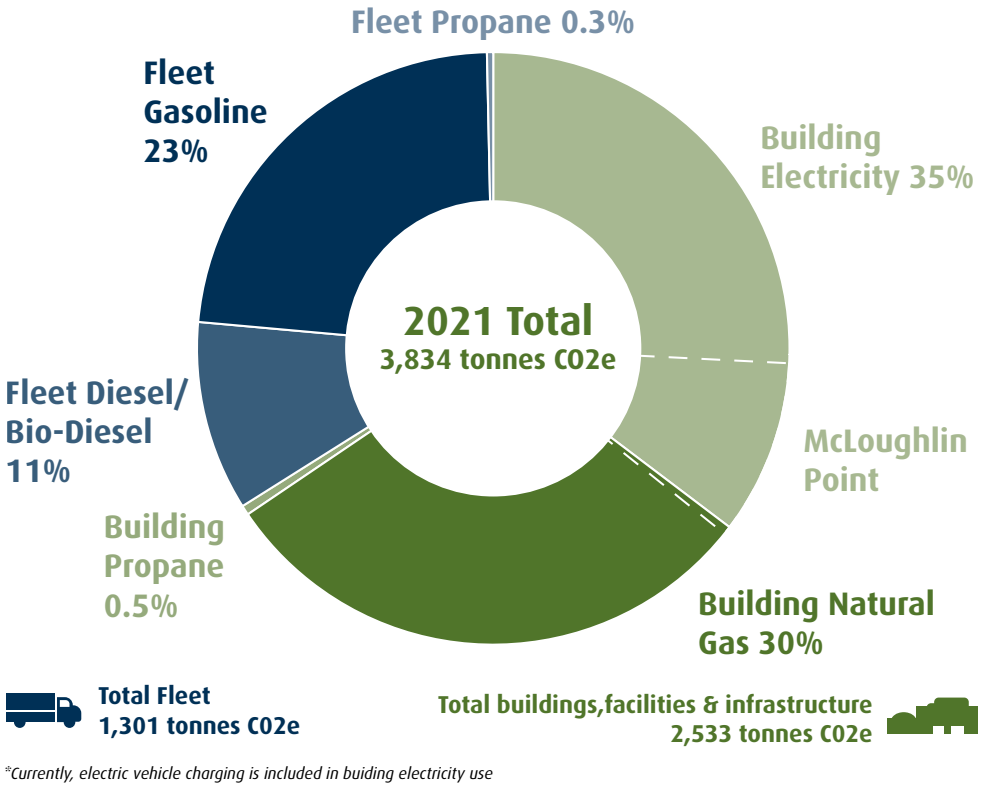
Capital Region C02e Emissions (2007 to 2020) and Climate Action Strategy pathway and target



Corporate Emissions

In 2021, CRD operations produced 3,834 tonnes of CO2e, with 1,301 tonnes associated with the corporate fleet and 2,533 tonnes coming from facilities and infrastructure. Emissions associated with Hartland Landfill and the Capital Region Housing Corporation are not included in this total, as they are excluded from the provincial reporting framework. This represents a 19% increase from 2020 and 28% from the baseline level of emissions from 2007. An increase was expected in 2021 related to the Mcloughlin Point Wastewater Treatment Plant coming online and beginning operations. If excluding the increase from the treatment plant, corporate emissions in 2021 still increased by 6.6% above the previous year. This was likely influenced by the CRD's response to the COVID-19 pandemic. CRD facilities protocols were adjusted to increase the amount of fresh air coming into buildings, which required more energy and fossil fuels to heat. COVID-19 protocols likely increased fleet emissions, as the number of people allowed in a vehicle was limited, presumably increasing the number of individual vehicle trips. In 2022, the CRD will investigate new energy-efficient protocols based on recent health and safety research to reduce this effect.

2021 Operational Greenhouse Gas Emissions by Source

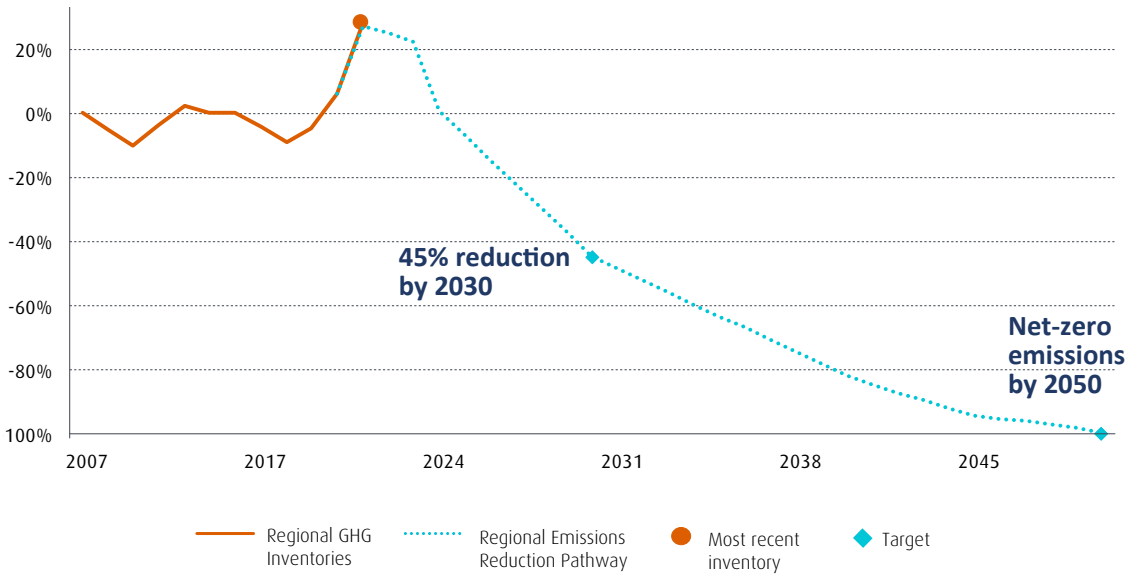


*Currently, electric vehicle charging is included in buiding electricity use

As the graph below illustrates, the anticipated addition to emissions from McLoughlin Point was incorporated into the corporate emission reduction pathway laid out in the Climate Action Strategy. To continue to follow the pathway and begin to decrease emissions and meet corporate GHG targets, the CRD will focus on accelerating the following critical actions in upcoming years:

- Switching the CRD Fisgard Headquarters heating system from natural gas to electricity.
- Installing a heat recovery system Panorama Recreation Centre.
- Investigating deep energy and GHG retrofit opportunities at SEAPARC.
- Pursuing an annual 5% improvement in electricity efficiency through energy audits.
- Moving towards complete electrification of light-duty fleet vehicles.

CRD Corporate CO2e Emissions (2007 to 2021) and Climate Action Strategy pathway and targets



Adapting to Climate Impacts

Changes to our climate are already noticeable in the capital region and will increase. In 2021, the region experienced an unprecedented heat wave and heavy rains and flooding. The CRD and the capital region must work to reduce vulnerability in our communities and adapt to a changing climate by improving how we anticipate, respond to and recover from both extreme weather events and more gradual changes occurring over time. The CRD has led or supported several data and planning initiatives to identify vulnerabilities, strategies and actions, including:

- Climate Projections for the Capital Region (2017)
- Capital Region Coastal Flood Inundation Mapping Project (2021)
- Adaptation planning for the Greater Victoria Drinking Water Supply Area (ongoing)
- Community Climate Change Adaptation Priorities for the Capital Regional District (2020)
- Corporate Climate Change Risk Assessment Report (2021)
- Various local government climate adaptation planning processes (ongoing)

As a result of climate change, the region is projected to experience:

- More extreme climate events (such as long, hot and dry summers).
- An increase in rainfall in fall, winter and spring; and a decrease in rainfall in summer.
- More intense, longer-lasting and more frequent rainfall events.
- Frequent heavy snowfalls and rain-on-snow events in the short-term, less snow in the future.
- Hotter summers and less days with freezing in winter.
- Increased likelihood of variability of climate within and between years.

Progress on the CRD's Five-year Action Plan

The CRD's Climate Action Strategy established six key goal areas, 56 actions, and 127 sub-actions that will be undertaken by several different services across the organization between 2021 and 2025. The strategy also outlined several indicators to help measure success and track important trends.

The following sections are intended to provide a high-level, easy-to-understand overview of the CRD's performance and progress related to climate action, and summarize progress made in the 2021 year for each goal area.

More information, including details on the scoring methodology and actions within each goal area, is contained in Appendix A: Climate Action Report Card.

2021 Overall Action Plan Progress

Opportunity for Improvement

Corporate Actions

Opportunity for Improvement

Community-Focused Actions

On Track

Goal Area

- **Goal 1:** Climate-Focused Decision Making
- **Goal 2:** Sustainable Land Use, Planning and Preparedness
- **Goal 3:** Low-Carbon Mobility
- **Goal 4:** Low-Carbon and Resilient Buildings and Infrastructure
- **Goal 5:** Resilient and Abundant Nature, Ecosystems and Food Systems
- **Goal 6:** Minimized Waste

Legend: Action Status

- **On Track:** 75% or greater of yearly target progress
- **Opportunity for Improvement:** 50% - 75% of yearly target progress
- **Attention Required:** less than 50% of yearly target progress
- **Future Action**

Legend: Indicators

- Direction of arrow indicates **current trend direction**
- Indicator is trending in the **desired direction**
- Indicator is trending in the **wrong direction**
- Indicator is intended to provide **contextual information**

Climate-Focused Decision Making

Goal 1: Climate action priorities are integrated at all levels of decision making across the organization.

Overall Action Status
Opportunity for Improvement

To provide its wide range of services, the CRD maintains and operates vehicles, equipment, buildings, facilities, infrastructure, landfills, paths and parks. Decisions made in each service area can have implications for greenhouse gas (GHG) emissions generated or sequestrated by CRD assets over time, as well as how prepared these assets are for the changing climate. The CRD can also improve the organizational understanding of Indigenous knowledge, laws and perspectives in relation to climate solutions to inform how the CRD approaches climate action.

Goal Progress Summary

- Several new corporate policies and evaluation tools are in development to support climate-focused decision making.
- The Climate Action Reserve Fund continued to support corporate climate initiatives, with approximately $50,000 of the fund put towards projects in 2021.
- Internal engagement with staff across the organization on key climate actions continued.
- Public health guidelines postponed gatherings that could support work on understanding perspectives on how Indigenous knowledge can inform climate action at the CRD. Additional work to further this collaboration is planned for 2022.

CRD's Roles

Operational decision making

This goal contains

15

sub-actions over the next five years

Indicators

Annual CRD Corporate GHG emissions	• 3,834 t CO2e (19% increase compared to 2020)

Sustainable Land Use, Planning and Preparedness

Goal 2: Support the region on its pathway to livable, affordable and low-carbon communities that are prepared for climate change.

Overall Action Status
On Track

How land use is managed has a strong influence on the regional emissions, by affecting how far we travel to daily amenities, school and work, how we choose to get to those places, as well as affecting how much land can be protected as carbon sinks. The 2018 Regional Growth Strategy (RGS) sets a regional vision and high-level policies for growth management. The key provision is to contain 95% of growth in designated areas, and to concentrate growth in a way that is connected.

In addition to land use, planning and preparedness efforts across the region are important to increase the resilience of the region by increasing our ability to cope with hazardous or emergency events and other impacts that result from a changing climate.

Goal Progress Summary

- Monitoring of the RGS is ongoing, and the 2021 Regional Growth Strategy Indicator Report was published.
- Guidance was provided to municipalities currently undergoing Official Community Plan updates in alignment with RGS climate policies.
- Conducted the regional and local government GHG inventories for the 2020 year, collected other relevant data pertaining to emissions from various sources, and distributed to municipalities.

CRD's Roles

Regional planning

Juan de Fuca land use planning

Emergency management in electoral areas

Inter-municipal coordination

Data management

This goal contains

24

sub-actions over the next five years

- Continued to facilitate and administer several inter-municipal groups, including the Climate Action Task Force and Climate Action Working Group, Development Planning Advisory Committee, Local Government Emergency Program Advisory Commission, and the Regional Emergency Management Partnership. These networks serve to coordinate regional climate action and priorities and help to disseminate resources, reports and information.
- Efforts on sea level rise planning in 2021 focused on refining the results of the Capital Region Coastal Flood Inundation Mapping Project and distributing data to local governments and other project stakeholders.
- Emergency response plans that address heat waves, drought and extreme weather events were updated based on learnings from the 2021 season.
- Retained a FireSmart Coordinator through successful grant applications. This role will work with the electoral areas to enhance community resilience to wildfire threats through 2022.

Indicators		
	Regional GHG emissions	• 1.8 million tonnes of C02e (5.2% decrease compared to 2018)
	Number of net new dwelling units in areas where more than 42% walk/bike/bus to work*	• Currently, the region is not meeting the desired trend.

**Progress on this indicator is reported in the Regional Growth Strategy Indicator Report.*

Low-Carbon Mobility

Goal 3: Rapidly reduce corporate fleet emissions. Support, endorse and encourage active, public and zero-emission transportation options across the region.

Overall Action Status
On Track

On-road transportation is the region's largest source of greenhouse gas (GHG) emissions. Not only do vehicles release significant GHG emissions, they also lead to increased traffic congestion in peak periods. Shifting from a vehicle focus to a low-carbon mobility focus means improving the options to get more people walking, biking and taking transit.

For trips that use a vehicle, rapidly switching to electric vehicles (EVs) will require building out charging infrastructure throughout the region – making sure they are accessible to those who live in all types of homes and at key locations across the region.

The CRD owns and operates a fleet of approximately 300 vehicles to provide its many services across the region and can reduce its GHG emissions by greening its fleet.

Goal Progress Summary

- In conjunction with the City of Victoria, the Township of Esquimalt and the Town of View Royal, applied for funding from the federal Zero Emission Infrastructure Program for over 100 charging ports to be used for both fleet and public charging.
- Planned for an education program on EVs for consumers, strata property owners, electrical and auto-mechanic trades. Applied for a grant from the federal Zero Emission Vehicle Awareness Initiative to conduct education and outreach with local government partners.

CRD's Roles

CRD fleet

Regional trail system

Regional planning

Electoral area transportation

Data management

Community programs

This goal contains

31

sub-actions over the next five years

- The CRD Board confirmed its transportation priorities and began implementing actions and advocating to senior governments.
- Monitoring of traffic and cycling volume continued and an additional six automated bicycle counters were installed. Work on the regional trail network continued, including:
  - Creation of 13 km of uninterrupted trail between Langford and Victoria on the E&N Rail Trail.
  - Development began on the first regional trail in the Southern Gulf Islands (SGI).
  - Community engagement on the SGI Transportation Integration Plan is complete, and a draft report is under review.
- BC Transit and the CRD completed the Salt Spring Island Transit Future Service Plan that identifies improvements to transit services on Salt Spring Island (SSI). The plan identified electrification of the transit fleet as a key objective for SSI.
- Continued to offer several education programs and initiatives regionally to promote and encourage active travel.
- Approximately 50 vehicle requests were reviewed as part of the green fleet policy, resulting in 21 electric vehicle orders in place or pending.
- A framework to support the coordinated deployment of corporate EV charging infrastructure is in development.

Indicators	
Regional EV Infrastructure Roadmap implementation	• Indicator(s) forthcoming
Regional GHG emissions from transportation	• 784,875 t CO2e (16% decrease compared to 2018)
Percentage of the Regional Trail Network completed*	• 48% (1% increase compared to 2020)
Annual EV ICBC registrations (region fleet size)	• 6,822, 2.26% of total registrations (0.42% increase compared to 2020)

Indicators		
↑	Annual CRD corporate fleet GHG emissions	• 1,301 t CO2e (2% increase compared to 2020)
i	Number of corporate EVs purchased/combustion vehicles replaced	• 9

Please see Appendix B for a full list of indicators for this goal
**Progress on this indicator is reported in the Regional Growth Strategy Indicator Report.*

Electric Vehicle (EV) Infrastructure Road Map

In 2021, the CRD developed this road map to support CRD and local government planning efforts around EV infrastructure. This project studied future charging station user needs and designs and outlined opportunities for collaboration between regional fleet owners and other key stakeholders. Implementation of the recommendations in the road map are anticipated to begin in 2022.

Low-Carbon and Resilient Buildings and Infrastructure

Goal 4: Accelerate energy efficiency, emission reductions and enhanced resilience in CRD buildings and infrastructure. Support and encourage the same for all buildings and infrastructure across the region.

Overall Action Status
On Track

A large portion of our regional greenhouse gas emissions (GHGs) come from energy used in buildings across the capital region, almost all of which is from fossil fuels for space heating and hot water. Shifting from relying on fossil fuels for space heating and hot water and improving the energy efficiency of our buildings are key to achieving GHG reduction targets and can support resiliency measures.

As the climate changes, it is increasingly important to prepare buildings and infrastructure. The capacity of infrastructure to be resilient to climate impacts must be considered, such as increased stormwater flows, power interruptions, poor air quality and heat waves.

Goal Progress Summary

- Received a grant from the Federation of Canadian Municipalities to conduct research and to design a Capital Region Residential Energy Retrofit Program. The first phase design study work was completed in 2021, and the results were shared with local government staff.
- Attended the provincial Step Code Peer Network and shared network information with local government staff.

CRD's Roles

CRD buildings and infrastructure

Building inspection in electoral areas

Data management

Community programs

This goal contains

30

sub-actions over the next five years

- Continued to consider climate change impacts, such as longer and higher intensity rainstorms and longer and drier summers, as part of the design criteria for water supply and wastewater systems.
- Developed a risk-based evaluation process for identifying undersize drainage structures, such as culverts, which incorporates design flow capacity needs and climate impacts.
- Advanced work on Drought Management Plans, as well as a Water Conservation Bylaw for the Southern Gulf Islands.
- Completed energy audits for eight corporate sites, with final results expected in 2022.
- Began conceptual planning to convert the Fisgard Headquarters building heating, ventilation and air conditioning system from fossil fuels to electricity.
- Supported coordination of regionally and municipally funded Cool It! Climate Leadership Training workshops through the BC Sustainable Energy Association, empowering students and their families to reduce their energy, water and carbon consumption.

Indicators	
Regional Energy Retrofit Program implementation	• Indicator(s) forthcoming
Regional GHG emissions from buildings	• 710,008 t C02e (9% increase compared to 2018)
Annual CRD corporate facilities GHG emissions	• 2,533 t CO2e (29% increase compared to 2020)

Please see Appendix B for a full list of indicators for this goal

Resilient and Abundant Nature, Ecosystems and Food Systems

Goal 5: Protect, conserve and manage ecosystem health and nature's capacity to store carbon and adapt to climate change. Support the ongoing ability of natural systems to sustain life.

Overall Action Status

Opportunity for Improvement

Green spaces, blue spaces and parks provide important services to store carbon in vegetation and soils, while at the same time providing ecological services that support the region's resilience to climate change. As temperatures in the region rise, natural areas can also serve to reduce the need for energy-intensive air conditioning and provide accessible areas of respite for all residents.

Monitoring ecological changes over time and sharing this across all levels of government, including First Nations, as well as community organizations and citizens, can increase our collective understanding of the impacts of these changes and inform how we can collectively respond to support the health of our ecosystems.

Goal Progress Summary

- Worked cooperatively with several First Nations, inviting input on various park management plans and trail place names.
- Accessed more than 50 external ecological data sets for inclusion into a biodiversity inventory.
- Updated land cover classifications, including data on tree cover canopy change
- Supported efforts to improve stream flow monitoring in the region.

CRD's Roles

Stewardship of CRD lands

Land acquisition

Community and inter-municipal coordination

Education and outreach

Regional planning

This goal contains

19

sub-actions over the next five years

- Began implementation or planning of key recommendations of the Climate Change Adaptation Strategy for the Greater Victoria Water Supply Area (GVWSA)
- Undertook various initiatives to advance forest fuel management within the GVWSA.
- Planned and hosted invasive species best practices training workshops to help build municipal staff and partner capacity.
- Established the Saanich Peninsula Harbours and Waterways Initiative. Staff are engaging with First Nations to explore involvement in the region's harbour and waterways initiatives.
- Provided administrative support to the Regional Food and Agriculture Task Force. Progressed research and development of the Regional Foodlands Trust business case.
- Interpretive program learning outcomes in Regional Parks include understanding the impacts and risks of climate change.

Indicators		
↑	Percentage of Sea-to-Sea Green/Blue Belt acquired*	• 91%
↑	Hectares of regional park land	• 13,303
i	Number of volunteer stewardship hours	• 3,511 hours by 367 volunteers

Please see Appendix B for a full list of indicators for this goal

**Progress on this indicator is reported in the Regional Growth Strategy Indicator Report.*

Minimized Waste

Goal 6: Waste generation and the resulting emissions are minimized and remaining waste is transformed into a resource. Follow the 5R pollution prevention hierarchy.

Overall Action Status

Opportunity for Improvement

Product use and the disposal of the waste contributes to GHG emissions in the region. About 5% of regional GHG emissions are associated with waste—and the majority of this comes from decomposing organic waste that was added to Hartland Landfill over the last several decades (e.g., food scraps and construction wood waste). The most effective way to reduce future emissions from the landfill is to follow the 5R hierarchy – focusing first on decreasing the amount of waste produced, then on decreasing the GHG emissions from remaining waste.

Goal Progress Summary

- In 2021, the Solid Waste Management Plan was approved and implementation began. The plan works to reduce waste generated in the region, which results in reduced GHG emissions.
- Continued to promote increased capture and utilization of landfill gas, reducing fugitive emissions and advanced Hartland renewable natural gas initiative.
- Ongoing monitoring and improvements to management of fugitive emissions at Hartland Landfill. It is expected that fugitive GHGs will continue to decline due to improvements in gas extraction infrastructure. More information can be found in the Hartland Landfill Operating & Environmental Monitoring Report.
- Education programs were somewhat challenging with COVID-19 restrictions; however, staff live-streamed virtual tours of Hartland Landfill and offered some in-person programs later in 2021.

CRD's Roles

Solid waste management

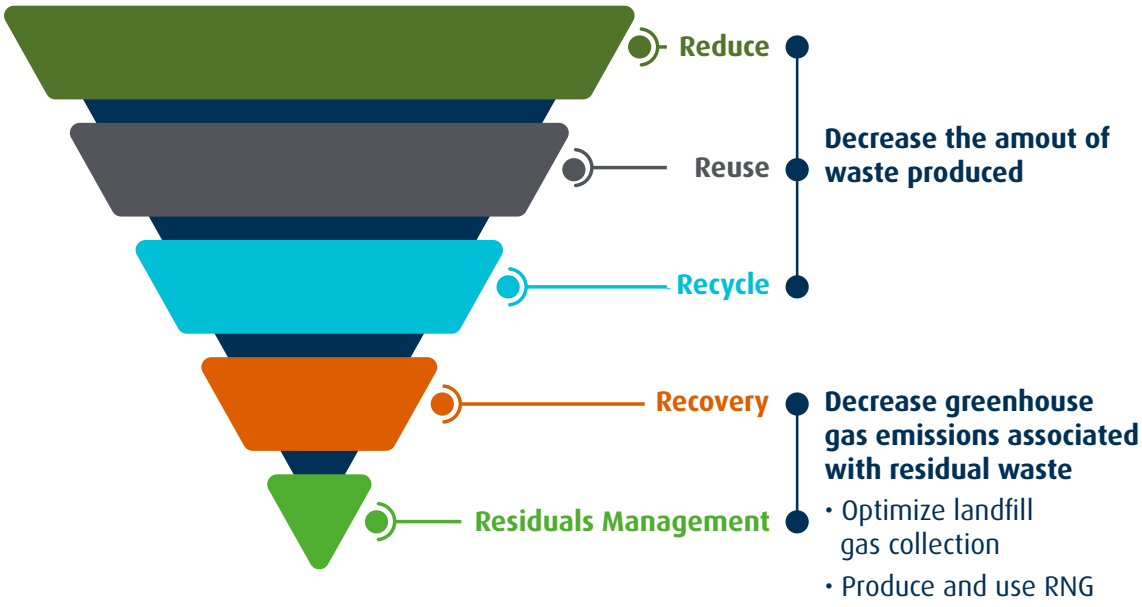
Liquid waste management

Education and outreach

This goal contains

8

sub-actions over the next five years



Indicators

CRD's per capita disposal rate	• 400 kg/per capita (1% increase compared to 2020)

Looking Ahead - 2022

The CRD will continue to show a leadership role, support inter-municipal collaborative efforts, pursue strategic partnerships and external funding sources, and respond to opportunities, as local and senior levels of governments advance their efforts.

Some activities planned for 2022 include:

- **Regional Energy Retrofit Program:** Building on the success of the Bring it Home 4 Climate program, the CRD is preparing to launch a regional service in 2022 that will support residents in the region to undertake home energy retrofits and take advantage of incentives offered by the provincial and federal retrofit programs.
- **Implementation of the Electric Vehicle (EV) Infrastructure Road Map:** In 2021, the CRD created a road map for the region on how to accelerate installation of an EV charging network and find opportunities for collaboration. The CRD anticipates initiating implementation of this plan in 2022 through coordination of funding applications and deployment, and planning support and coordination of site selection for chargers.
- **Capital Region E-mobility Awareness Initiative:** In 2021, the CRD successfully applied to the federal Zero Emissions Vehicle Awareness Initiative to launch a region-wide outreach campaign to encourage the adoption of e-mobility technology. This campaign will spread awareness of the advantages of EVs and electric bicycle (e-bike) ownership in the capital region.
- **Origin Destination Household Travel Survey:** This survey, which produces the region's transportation mode share information, is conducted every five or six years and was last completed in 2017. An updated survey is anticipated to be completed in 2022, with reporting on new mode share data available in 2023. The data is used by local governments and communities to inform decisions on future transportation options for the region.
- **Green Building Policy:** This draft policy will be reviewed in 2022 and will set standards for energy-efficient and low-carbon new construction and retrofits of corporate buildings. With this policy, the CRD can show climate leadership, progress toward climate targets, and minimize operational costs and GHG emissions.
- **Electrifying the CRD Fleet:** In 2022, the CRD anticipates building on the successful implementation of the Green Fleet Policy. At the end of 2021, nine EVs were on order or requested from vendors, and 12 additional requests for EVs were moving through the internal procurement process.

Appendix A: Climate Action Report Card

This Climate Action Report Card is intended to provide a high-level, easy-to-understand overview of the CRD's climate performance and progress.

Methodology

The Climate Action Strategy defines specific actions to guide CRD efforts over the lifespan of the strategy. These include 56 "umbrella" actions broken down into 127 sub-actions with specific timelines and responsible divisions.

The Climate Action Report Card compiles the self-reported quantitative progress metrics from services for each of the 127 sub-actions. By averaging the progress of respective sub-actions, the report card measures the current 'action status' for several informative categories, such as overall climate action status, corporate and community-focused actions, and the six goal areas of the strategy.

The report card uses a math-based system to produce a percent grade by comparing reported progress with expected progress based on the action timelines established in the strategy. For ongoing actions with no timeline, percentages are based on self-reported levels of progress satisfaction by the responsible service. Each action status score is accompanied by qualitative progress updates that summarize any actions taken or barriers encountered during the reporting year. For clarity, percentages are converted to three coloured status indicators: on track, opportunity for improvement, and attention required. In addition, several broader corporate and regional indicators are included. These are not considered in the evaluation of the action statuses.

For more information on timing, divisions involved, and sub-actions, please see Appendix C in the Climate Action Strategy.

2021 Overall Action Plan Progress

Opportunity for Improvement

Corporate Actions

Opportunity for Improvement

Community-Focused Actions

On Track

Goal Area

- **Goal 1:** Climate-Focused Decision Making
- **Goal 2:** Sustainable Land Use, Planning and Preparedness
- **Goal 3:** Low-Carbon Mobility
- **Goal 4:** Low-Carbon and Resilient Buildings and Infrastructure
- **Goal 5:** Resilient and Abundant Nature, Ecosystems and Food Systems
- **Goal 6:** Minimized Waste

Legend: Action Status

- **On Track:** 75% or greater of yearly target progress
- **Opportunity for Improvement:** 50% - 75% of yearly target progress
- **Attention Required:** less than 50% of yearly target progress
- **Future Action**

Legend: Indicators

- Direction of arrow indicates **current trend direction**
- Indicator is trending in the **desired direction**
- Indicator is trending in the **wrong direction**
- Indicator is intended to provide **contextual information**

Climate-Focused Decision Making

Goal 1: Climate action priorities are integrated at all levels of decision making across the organization.

Overall Action Status
Opportunity for Improvement

Status	Action	Update
Progress on Actions		
⏩	**1-1 Integrate and standardize the climate lens framework across processes**	• Development of a full-fledged climate lens continues through a combination of new corporate policy and evaluation tool development. • Adopted the Green Fleet Policy to accelerate the transition to and operate a low-carbon "green" fleet. • The corporate green building policy and internal carbon price policy are in development to support climate-focused decision making. • A life-cycle assessment tool is in development by Asset Management to support evaluations that consider the many priorities of the CRD. • A climate report card has been added to the 2021 annual climate reporting to provide a quick and actionable progress summary for the Board and departments.
!	**1-2 Develop internal carbon pricing policies and procedures**	• The internal carbon price policy is in development, with a draft under review by key staff.
⏩	**1-3 Identify internal funding sources for climate action**	• The Climate Action Reserve Fund continued to support climate initiatives, with approximately $50,000 put towards projects starting in 2021.
!	**1-4 Support staff capacity building and coordination**	• Internal climate action meetings for key staff continued in 2021. Introduction to the green fleet policy was provided in 2021. Staff training for climate action is a future opportunity to further increase climate action awareness internally. • An internal SharePoint site was developed to profile the updated Climate Action Strategy and key policies and procedures, and connect staff with climate action resources.
!	**1-5 Investigate how Indigenous knowledge can inform climate action at CRD**	• Public health guidelines due to the COVID-19 pandemic have postponed gatherings that could support this work. • For 2022, staff will seek out opportunities for the Board and staff to learn from Indigenous perspectives on climate action, through collaboration, relationship building and cultural perspectives training.

Additional Action Plan Indicators

Annual CRD Corporate GHG emissions	• 3,834 t CO2e (19% increase compared to 2020)

Sustainable Land Use, Planning and Preparedness

Goal 2: Support the region on its pathway to livable, affordable and low-carbon communities that are prepared for climate change.

Overall Action Status
On Track

Status	Action	Update
Progress on Actions		
⏩	**2-1 Incorporate climate hazards and vulnerabilities into corporate CRD emergency response plans**	• Planning for heat waves, drought and extreme weather events has been undertaken and has led to changes and updates to emergency response plans based on learnings from after action reports from the 2021 season. Alerting programs, awareness messaging within the organization and with public-facing considerations were refined. • New alerting software and emergency management collaboration platform has been purchased with strong capabilities for internal and public-facing dashboards and messaging to enhance awareness and preparation for emerging climate-related threats.
⏩	**2-2 Monitor Regional Growth Strategy**	• Completed the 2021 Regional Growth Strategy Indicator Report. • Provided preliminary guidance to municipalities currently undergoing Official Community Plan (OCP) updates, in alignment with Regional Growth Strategy climate policies.
!	**2-3 Integrate climate impacts into Juan de Fuca land use plans and policies**	• No changes were made to official community plans in 2021. • Continued to consult qualified professionals to determine setback and flood construction levels adjacent to the marine shoreline. The scope of changes to development permit areas or flood regulations in response to climate impacts is to be determined.
⏩	**2-4 Collect and share pertinent energy, emissions, climate projections and vulnerability data**	• Conducted the 2020 regional and local government Global Protocol Community-Scale Basic+ GHG inventories and distributed results. • Collected data from a variety of sources pertaining to emissions, including: Insurance Corporation of BC, Fortis BC, Victoria Real Estate Board, and Climate Action Secretariat. CRD staff have presented on these various data sets to inter-municipal staff from across the region. • Focused on refining results of the Capital Region Coastal Flood Inundation Mapping Project and distributing data to local governments and other project stakeholders.
•••	**2-5 Identify innovative actions to close the regional 2030 emissions reduction gap**	• Future action
⏩	**2-6 Coordinate regional climate action, collaboration and capacity building among local governments and interested First Nations**	• Staff continued to facilitate and administer several inter-municipal groups, including the Climate Action Task Force and Climate Action Working Group, Development Planning Advisory Committee, BC Hydro Community Energy Managers Network, Local Government Emergency Program Advisory Commission, and the Regional Emergency Management Partnership. These networks serve to coordinate regional climate action and priorities and help to disseminate resources, reports and information.
⏩	**2-7 Incorporate regional climate projections into electoral area emergency planning and enhance FireSmart efforts**	• Retained a FireSmart Coordinator through successful grant applications; this role will work with the electoral areas to enhance community resilience to wildfire threats through 2022. • Created a Drought Advanced Plan for the CRD during the 2021 drought and fire season that was used to effectively coordinate and lead the organization's response. This will be repeated in the 2022 season. • Collaborated with electoral area fire departments and emergency programs, organizational partners, and provincial agencies, such as BC Wildfire Services, as part of the CRD's wildfire preplanning for the 2021 fire season.

	Status	Action	Update
		2-8 Coordinate with emergency management stakeholders on planning and public outreach activities related to climate risks	• Staff continued to work with Local Government Emergency Program Advisory Commission, Regional Emergency Management Partnership and the Province to coordinate outreach and planning activities.
		2-9 Investigate Transition SSI 2.0 Climate Plan implementation	• Future action

Regional Climate Progress Indicators and Trends

Regional GHG emissions	• 1.8 million tonnes of C02e (5% decrease compared to 2018)
Number of net new dwelling units in areas where more than 42% walk/ bike/bus to work*	• Currently, the region is not meeting the desired trend.

**Progress on this indicator is reported in the Regional Growth Strategy Indicator Report.*

Low-Carbon Mobility

Goal 3: Rapidly reduce corporate fleet emissions. Support, endorse and encourage active, public and zero-emission transportation options across the region.

Overall Action Status
On Track

Status	Action	Update
Progress on Actions		
⏩	**3-1 Administer and track the new Green Fleet Policy**	• Approximately 50 vehicle requests were reviewed as part of the green fleet policy, resulting in 21 electric vehicle orders in place or pending.
⏩	**3-2 Develop electric vehicle (EV) adoption and right-sizing plan for the corporate fleet**	• Completed the Federation of Canadian Municipalities grant-funded Zero Emissions Fleet Initiative. • Consulted regularly with industry to identify new green vehicle developments. New electric vehicle (EV) opportunities have been promptly pursued, including orders for electric pickup trucks that have newly entered the market.
⏩	**3-3 Develop EV infrastructure plan for the corporate fleet**	• Developed a draft working framework for corporate EV infrastructure. • Facilities Management and Engineering Services installed EV infrastructure at several facilities. • Submitted federal grant application for new corporate EV infrastructure.
•••	**3-4 Investigate the feasibility of bio-based diesel supply and storage**	• Future action
•••	**3-5 Develop a region-wide approach to transportation demand management**	• Future action
⏩	**3-6 Collect and distribute transportation planning data regionally**	• Collected data through the volunteer bike count in spring and fall 2021. Installed six automated counters in 2021, bringing the regional total to 23. Regional and Strategic Planning will begin working on a cycling volume estimation methodology in 2022. • Completed the annual traffic count in fall 2021. Data is widely used by municipal and agency partners in their planning and forms an integral input into transportation modelling. The data is publicly available on a CRD web platform. • Received preliminary 2022 budget approval to initiate and fund the Origin Destination Household Travel Survey, which produces the region's transportation mode share information. This project is anticipated to complete in 2022, with reporting on new mode share data in 2023. • Worked closely with the City of Victoria and the District of Saanich to initiate a unique travel survey that will capture resident and business vehicle kilometres travelled. This project will help improve how those municipalities estimate transportation emissions.
!	**3-7 Accelerate infrastructure improvements that support active transportation**	• The CRD Board confirmed its transportation priorities through a comprehensive process in 2021 and began implementing actions and advocating to senior governments on priorities. • Member municipalities continue to build out the active transportation network identified in the Regional Transportation Plan (RTP) and the Pedestrian and Cycling Master Plan. CRD worked with several municipalities and BC Transit to ensure alignment between the RTP and local transportation planning processes. • Completed Phase 3 of the E&N Rail Trail - Humpback Connector, creating 13 km of uninterrupted trail between the City of Langford and the City of Victoria. • Completed a Widening and Separation Feasibility Study for the priority areas identified in the Regional Trail Management Plan. • Development of the first regional trail in the Gulf Islands (Mayne Island Regional Trail) is underway, supported by grant funding. • Worked with other partners in the Salish Sea Trail Network, which is focused on seeking assistance for the development of the regional trail route on Salt Spring Island. Completed trail work on Salt Spring Island, expanding trail network. • Completed Phase 1 and phase 2 of community engagement on the Southern Gulf Islands (SGI) Transportation Plan, and a draft report is under review by staff. The final report with service establishment recommendations will be completed in early 2022. The Service Bylaw Establishment Process is to be initiated in March 2022, with a referendum question scheduled to coincide with the 2022 General Election.

Status	Action	Update
	3-8 Lead and support regional education programs focused on zero-emission mobility	• Successfully applied for a federal Zero Emissions Vehicle Awareness Initiative grant to develop and implement a regional outreach campaign in 2022 to increase awareness of the benefits of electric vehicle and electric bicycle ownership and address perceived barriers to support their adoption. • Completed 2020/21 Ready Step Roll Active Travel Planning cohort of five schools and initiated 2021/22 cohort of five new schools. • Developed a new campaign, Let's Get Visible - be bright in low light, to promote active travel safety. • Updated the guidebook and resources for Walk & Wheel to School initiative.
	3-9 Support acceleration of transit improvements and increased service	• BC Transit and the CRD completed the Salt Spring Island Transit Future Service Plan that identifies improvements to transit services on SSI. The plan identified electrification of the transit fleet as a key objective for Salt Spring Island. • Initiated the SGI Transportation Integration Plan to support transportation options in the Southern Gulf Islands. Developed using a comprehensive community approach and grounded in sound technical analysis, the plan offers a strong foundation in support of the establishment of a transportation service (subject to elector assent and CRD Board approval).
	3-10 Support a public electric vehicle charging network and encourage uptake of zero-emission vehicles	• Planned for education roll-outs on electric vehicles for consumers, strata property owners, electrical and auto-mechanic trades. • Answered a request for proposals to the federal Zero Emission Infrastructure Program, in conjunction with the City of Victoria, the Township of Esquimalt, and the Town of View Royal for over 100 charging ports to be used for both fleet and public charging. • Creation of guidelines and other materials to support public infrastructure deployment in the capital region is scheduled to start in 2022, with budget allocated to do so.
	3-11 Implement Regional EV Charging Roadmap	• Future action
	3-12 Improve internet access on Southern Gulf Islands	• Supporting Connected Coast and other internet service improvements on the islands. Achieving service improvements requires collaboration between several private and public sector actors. • Subject to electoral assent and CRD Board approval, the SGI Electoral Area will establish a service to support community contributions towards last mile service development on islands, approved under the Connected Coast funding proposals.

Additional Action Plan Indicators

Regional EV Infrastructure Roadmap implementation	• Indicator(s) forthcoming
Percentage of the Regional Trail Network completed*	• 48% (1% increase compared to 2020)
Annual CRD corporate fleet GHG emissions	• 1,301 t CO2e (2% increase compared to 2020)
Number of corporate EVs purchased/ combustion vehicles replaced	• 9
Number of CRD fleet EV chargers installed	• 10

Regional Climate Progress Indicators and Trends

Regional GHG emissions from transportation	• 784,875 t CO2e (16% decrease compared to 2018)
Percentage of total trips made by walking, cycling and transit in the Growth Management Planning Area*	• Not updated in 2021. Progress is being made toward the target. The past three Origin Destination Surveys show steady increases in active transportation and transit mode share over the past decade.
Annual EV ICBC registrations (region fleet size)	• 6,822, 2.26% of total registrations (0.42% increase compared to 2020)
Victoria Transit Region fuel sales	• 331,336,547 taxable litres (7% increase compared to 2020)

**Progress on these indicators is reported in the Regional Growth Strategy Indicator Report.*

Low-Carbon and Resilient Buildings and Infrastructure

Goal 4: Accelerate energy efficiency, emission reductions and enhanced resilience in CRD buildings and infrastructure. Support and encourage the same for all buildings and infrastructure across the region.

Overall Action Status
On Track

Status	Action	Update
Progress on Actions		
⏩	**4-1 Develop and implement a corporate Green Building Policy**	• Developed a draft corporate Green Building Policy that will be reviewed in 2022.
⏩	**4-2 Develop and implement a Strategic Energy Management Plan**	• With BC Hydro grant support, developed preliminary draft of corporate Strategic Energy Management Plan. • Initiated energy audits for 8 corporate sites.
•••	**4-3 Conduct energy studies for CRD facilities to identify priority emission reduction and energy efficiency projects**	• Future action
⏩	**4-4 Complete identified high impact retrofits to CRD facilities**	• Began conceptual planning to convert the Fisgard Headquarters building heating, ventilation and air conditioning system from fossil fuels to electricity. The five-year capital plan for the Fisgard HQ building includes a project to replace the natural gas boilers and currently requires 50% of the cost to be covered by grants, which must be identified and applied for. • SEAPARC is included in the GHG Reduction Pathway Study that will evaluate the costs and requirements of an energy recovery system and replacement of the fuel oil burners. The results of this study will be an essential first step towards the significant carbon reduction in SEAPARC's operations. • Continued work on a cost estimate for the energy recovery system at Panorama Recreation. New funding strategies are being investigated after the grant application to the Investing in Canada Infrastructure Program was unsuccessful.
!	**4-5 Pursue climate-friendly development and retrofits for CHRC and CRHD facilities**	• Work is ongoing to secure grant funding to support energy and GHG savings in housing facilities. New development has higher performing energy-efficient equipment, wherever possible. • Partnerships are being explored to cost share the installation with facility operators to reduce ongoing energy costs and improve efficiency. • Climate considerations were incorporated into the demolition at Oak Bay Lodge and plans to reduce the amount of waste being landfilled.
!	**4-6 Consider climate impacts in risk assessments and infrastructure upgrades**	• Continued to consider climate change impacts, such as longer and higher intensity rainfall and longer and drier summers, as part of the design criteria for water supply and wastewater systems. • Developed a risk-based evaluation process for identifying undersize drainage structures, such as culverts, which incorporates design flow capacity needs and climate impacts. • Work is ongoing on a Drought Management Plans, as well as a Water Conservation Bylaw for the Southern Gulf Islands. • Due to concerns with the quantity of future water supply within some of the smaller gulf islands, different technologies such as desalination are being considered, in the event that the groundwater or surface water supplies are negatively impacted by climate change.
•••	**4-7 Implement a Regional Energy Retrofit Program**	• Future action
⏩	**4-8 Develop, deliver and support building-related energy, emissions and water education**	• Supported coordination of 40 (20 funded by CRD, 20 by municipal partners) regionally and municipally funded Cool It! Climate Leadership Training workshops through the BC Sustainable Energy Association, which provides free interactive climate education to elementary and high school classes in the region. Empowers students and their families to reduce their energy, water, and carbon consumption.

Status	Action	Update
	4-9 Support acceleration of regional building energy benchmarking and local government regulation approaches	• Partnered with Building Benchmark BC to disclose headquarters building energy and emissions data. The aim of the program is to inform and inspire public and private sector leadership.
	4-10 Coordinate high-performance building policy support and capacity-building activities	• Attended provincial Step Code Peer network and shared network information with capital region municipal staff via an Inter-municipal Working Group (IMWG). • Received a grant from the Federation of Canadian Municipalities to conduct research and design a Capital Region Residential Energy Retrofit Program. • First phase design study work was completed in September 2021, and the results were shared with capital region municipal staff via the IMWG.
	4-11 Collect and share data and research on building energy use and emissions	• Conducted the 2020 regional and local government Global Protocol Community-Scale Basic+ GHG inventories and distributed results, which included data on building energy use and emissions.
	4-12 Promote green infrastructure and improved stormwater management approaches	• Executed 'Live Green in your Backyard' campaign, incorporating messaging about the use of rain gardens and rainwater harvesting and their value in reducing pollution and conserving water. Animated videos were created showing how to reduce pollution from properties.
	4-13 Understand climate impacts on groundwater resources in Juan de Fuca Electoral Area	• Hosted a provincial presentation to the community regarding the nature of groundwater resources, well registration, and well protection in the Juan de Fuca Electoral Area.
	4-14 Investigate regional renewable energy and storage potential	• Future action
	Number of site energy audits completed	• 8

Additional Action Plan Indicators

Annual CRD corporate facilities GHG	• 2,533 t CO2e (29% increase compared to 2020)
Number of critical emissions reduction projects completed	• 0
Number of site energy audits completed	• 8

Regional Climate Progress Indicators and Trends

Regional Energy Retrofit Program implemenation	• Indicator(s) forthcoming
Annual FortisBC natural gas consumption numbers^	• 6,769,810 GJ (2020) (4% increase compared to 2019)
Annual FortisBC natural gas connections^	• 56,446 (2020) (0.7% increase compared to 2019)
Regional GHG emissions from buildings	• 710,008 t C02e (9% increase compared to 2018)

^2021 data not available at the time of reporting.

Resilient and Abundant Nature, Ecosystems and Food Systems

Goal 5: Protect, conserve and manage ecosystem health and nature's capacity to store carbon and adapt to climate change. Support the ongoing ability of natural systems to sustain life.

Overall Action Status
Opportunity for Improvement

Status	Action	Update
Progress on Actions		
▶▶	**5-1 Integrate climate considerations into regional parks strategic and management planning**	• Worked cooperatively with the W̱SÁNEĆ Leadership Council and its designates on the development of the Mount Work Regional Park Management Plan and have sought First Nations names for four park trails. • Invited input from T'Sou-ke and Beecher Bay First Nations on preliminary work on East Sooke Regional Park and Matheson Lake/Roche Cove Regional Park management plans. • Initiated update of the Regional Parks Strategic Plan, to be completed in 2022. Climate action will be represented in this new plan.
!	**5-2 Monitor ecosystem health in the Greater Victoria Water Supply Area (GVWSA) and investigate expanding regionally**	• The Watershed Hydrology Program is upgrading existing monitoring sites and instrumentation in the Sooke and Goldstream water supply areas (WSA) and expanding the number of streams being monitored in the Sooke WSA. • In 2022, an update of the Terrestrial Ecosystem Mapping will refine the mapping of forest ecosystems. An acquisition of LiDAR data is planned for 2023 that will enable forest characteristics in the WSA to be more accurately classified and mapped.
!	**5-3 Undertake climate adaptation initiatives to increase the resilience of the GVWSA**	• Key recommendations of the Climate Change Adaptation Strategy for the GVWSA are being implemented or are in the planning stage. • Completed updated risk assessments for major threats to water quality in the Greater Victoria WSA (e.g., wildfire) to incorporate climate change.
!	**5-4 Provide regional and local ecological data to support planning and policy efforts**	• Identified and downloaded more than 50 external ecological datasets for inclusion into a biodiversity inventory. Initiated conversations with municipal partners. • Completed updated land cover classifications, which includes data on tree cover canopy change and impervious cover over time. Deliverables included a higher accuracy for canopy cover, change in canopy cover over time, and canopy height model and tree plan. • Ongoing efforts to improve stream flow monitoring in the region. Provided technical and financial assistance to a non-profit to upgrade their hydrometric monitoring station.
!	**5-5 Coordinate regional invasive species program**	• Planned and hosted invasive species best practices training workshops to help build municipal staff capacity to increase partner capacity. • Planned an online regional invasive species symposium with the Invasive Species Council of British Columbia.
•••	**5-6 Support regional forest and urban tree programs**	• Future action
!	**5-7 Support Indigenous-led monitoring and restoration programs**	• The CRD is building relationships with First Nations to help understand their priorities and interest and identify where the CRD can collaborate. Staff are working with the help of a consultant to determine best practices and next steps for supporting Indigenous employment within the CRD. • Established the Saanich Peninsula Harbours and Waterways Initiative. Staff are engaging with First Nations to explore involvement in the region's harbour and waterways initiatives.
▶▶	**5-8 Support local food and agriculture planning and programs**	• Provided administrative support to the Regional Food and Agriculture Task Force. • Progressed research and development of the Regional Foodlands Trust business case. Regional and Strategic Planning will seek further Board direction in spring 2022. • Participated in the Vancouver Island Agriculture Adaptation Working Group

	Status	Action	Update
		**5-9 Integrate climate impacts and solutions into environmental education and outreach campaigns**	• Regional Parks interpretive programs address the role and benefits of parks, including their importance in preserving biodiversity and mitigating the effects of climate change. Interpretive program learning outcomes include understanding the impacts and risks of climate change. • Participated in a regional UN Decade of Restoration committee, and promoted the UN Decade of Restoration and "Make a Difference Week", an annual week of global restoration action. • Developed engagement materials to build awareness of backyard biodiversity.

Additional Action Plan Indicators

 **Hectares of regional park land**	• 13,303
 **Number of volunteer stewardship hours**	• 3,511 hours by 367 volunteers

Regional Climate Progress Indicators and Trends

 **Percentage of Sea-to-Sea Green/Blue Belt acquired***	• 91%
 **Hectares of farmland in the Growth Management Planning Area***	• Data from the 2021 census will be the first opportunity to measure progress toward this target.

**Progress on these indicators is reported in the Regional Growth Strategy Indicator Report.*

Minimized Waste

Goal 6: Waste generation and the resulting emissions are minimized and remaining waste is transformed into a resource. Follow the 5R pollution prevention hierarchy.

Overall Action Status
Opportunity for Improvement

Status	Action	Update
Progress on Actions		
!	**6-1 Implement the Solid Waste Management Plan**	• Adopted in 2021, the Solid Waste Management Plan works to reduce waste generated in the region, which results in reduced GHG emissions. The plan continues to promote increased capture and utilization of landfill gas, reducing fugitive emissions and producing renewable natural gas to displace fossil fuel usage.
!	**6-2 Develop and deliver education programs to promote a circular economy, zero waste and the 3 Rs**	• Education programs were somewhat challenging with COVID-19 restrictions; however, staff live-streamed virtual tours of Hartland Landfill on Earth Day, April 22nd reaching approximately 1,000 participants and offered some in-person programs later in 2021.
!	**6-3 Support education and engagement on waste management to be delivered by and for First Nations communities**	• Relationships are being established to support this collaborative action.
!	**6-4 Continue to maximize and optimize the capture of landfill gas for beneficial use**	• Monitoring and improvements to the management of fugitive emissions are ongoing. It is expected that fugitive greenhouse gas emissions will continue to decline due to improvements in gas extraction infrastructure. More information can be found in the Hartland Landfill Operating & Environmental Monitoring Report.
...	**6-5 Consider climate change impacts in liquid waste management**	• Future action

Regional Climate Progress Indicators and Trends

CRD's per capita disposal rate	• 400 kg/per capita (1% increase compared to 2020)

Capital Regional District

625 Fisgard Street
Victoria, BC V8W 2S6
250.360.3000

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

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ERM 22-12

REPORT TO ENVIRONMENTAL SERVICES COMMITTEE
MEETING OF WEDNESDAY, APRIL 20, 2022

SUBJECT **Meeting the Solid Waste Management Plan Targets through Material Stream Diversion**

ISSUE SUMMARY

To seek direction from the Capital Regional District Board on implementation of the Solid Waste Management Plan.

BACKGROUND

The Capital Regional District's (CRD) Solid Waste Management Plan (SWMP), approved by the Board in May 2021, targets an annual disposal rate of 250 kg per capita by 2031. The plan also sets a goal to surpass the provincial per capita waste disposal target and aspires to achieve a disposal rate of 125 kg per capita annually.

The plan enables the CRD to take action in several interconnected areas to increase diversion of materials from the landfill in support of waste reduction targets. On this basis, staff propose implementing a suite of policies designed to divert material from the mixed general refuse (garbage) stream at Hartland Landfill and recycle, repurpose or recover these materials for beneficial use, supporting a circular economy. These policies include:

- expanding landfill bans to new material streams that that can be recycled, repurposed or otherwise recovered
- developing new reduced tipping fee rates for source-separated materials to encourage source separation of banned materials that could be recycled or recovered
- increasing the Hartland tipping fee for mixed general refuse to discourage materials that could be separated from ending up in the general refuse stream, and to partially offset the cost of reduced tipping fees for source-separated recyclable/recoverable materials
- expanding material stream diversion services at Hartland to ensure that banned materials diverted from the general refuse end up in alternative processing streams or end markets
- expanding enforcement of landfill material bans

The expanded diversion services would apply to material streams, such as wood, roofing shingles, textiles, carpet and backing, flooring, rigid plastics, furniture and mattresses, accounting for approximately 35% of the waste stream[1]. The CRD is also investigating expanding landfill bans to these material streams. The effectiveness of the proposed policies in diverting materials out of the general refuse stream and into source-separated streams is largely dependent on the rate that tipping fees are set, along with the level of enforcement on the new material bans.

The tipping fee for general refuse will need to increase over time, while the tipping fee for separated loads of some divertible materials will need to be set at a rate below general refuse, in order to incent segregation. Amendments to the tipping fee are being considered for implementation starting June 1, 2023.

[1] Based on 2016 waste composition data. The CRD is conducting a new waste composition study in 2022.

One potential unintended consequence of these policies is waste migration. This is where waste is exported to out-of-region landfills, avoiding the region's waste diversion policies. Waste migration is counter to the aim of reducing waste overall, and can make the CRD's waste system financially unsustainable, as the tipping fees for waste generated within the region are paid to out-of-region facilities, leaving a smaller portion of the waste to cover the entirety of the system's fixed costs.

To mitigate against waste migration, staff recommend initially setting tipping fees and enforcement levels, with a view to aligning with the current market conditions. This is anticipated to result in waste diversion consistent with the SWMP targets and to set the region on a path to meeting the SWMP target of 250 kg per capita per year by 2031. Staff recommend continually evaluating the effectiveness of waste diversion policies, and modifying as necessary for efficacy, and to meet the diversion targets. Staff will be returning to the Environmental Services Committee in May 2022 with additional approaches to addressing the risk of waste migration through waste flow management.

Once materials are diverted from the general refuse stream, they are available for further processing (reuse, recycle or resource recovery) to become part of a circular economy. In the short term, materials that are collected through the expanded diversion services at Hartland will be processed on site, or by the private sector through contract. The CRD may also consider providing an incentive to the private sector to operate transfer or processing facilities at other locations. The CRD's investigation into integrated resource management identified that material stream pre-processing is required for many of the resource recovery technologies evaluated. Strategy 15D of the SWMP is to continue to conduct research, investigate and report out on emerging waste management technologies (including alternatives to landfilling, such as integrated resource management and gasification). Materials diverted from the general refuse stream could be used as a feedstock for such technology in the future.

The next steps for material stream diversion are outlined below:

- initiate a procurement process to understand private sector options and costs for further processing (reuse, recycle or resource recovery) of materials that are diverted from the general refuse stream
- return to the Environmental Services Committee with detailed financial implications based on information received through the procurement
- return to the Environmental Services Committee in January 2023 with proposed revisions to the Hartland Tipping Fee and Regulation Bylaw No. 3881 to come into effect June 1, 2023

Staff will also bring this report to the Solid Waste Advisory Committee for information and will present proposed policies to the Local Government and Industry Solid Waste Working Groups.

ALTERNATIVES

Alternative 1

The Environmental Services Committee recommends to the Capital Regional District Board:
That staff be directed to initiate a procurement process for further processing of divertible materials, and return to the Environmental Services Committee in January 2023 with financial implications and proposed amendments to the Hartland Tipping Fee and Regulation Bylaw No. 3881 and associated operational implications.

Alternative 2

That staff be directed to return with further information.

IMPLICATIONS

Financial Implications

As solid waste diversion alternatives are implemented, diverted waste streams are expected to result in lower revenues and higher costs to the service. The magnitude of the changes will be sensitive to which policy alternatives are implemented, pricing levels within the market, and the waste industry's response to these changes.

Tipping fee rate alternatives are being evaluated to offset the incremental impacts of reaching diversion targets and will be considered by committee in advance of a proposed amendment to the Hartland Tipping Fee and Regulation Bylaw No. 3881 in January 2023.

Service Delivery Implications

Beginning in mid-2023, new material categories will be banned from the general refuse stream and new tipping fee categories will be established for source-separated loads of these materials. Staff will determine which material categories can be banned from the general refuse stream based on the results of the procurement process. It is anticipated that material bans will include clean wood waste and mixed/contaminated wood waste, and could also include:

- flooring, carpeting and textiles
- asphalt shingles
- mattresses and box springs and furniture
- rigid plastics

The tipping fee for these materials will be set lower than general refuse tipping fees to encourage source separation. The CRD will consolidate separated loads of these materials and contract with the private sector for subsequent processing, recycling, repurposing or recovery.

General refuse is inspected when it is delivered to Hartland, and if a load contains excessive amounts of banned items, the hauler is subject to ticketing under the Hartland Tipping Fee and Regulation Bylaw No. 3881, in addition to the cost of disposal.

Staff will be seeking to amend the Hartland Tipping Fee and Regulation Bylaw No. 3881 to enable various enforcement strategies to ensure banned materials stay out of the general refuse stream. This could include denying the use of Hartland to those who repeatedly ignore disposal bans.

CONCLUSION

The CRD's Solid Waste Management Plan, approved by the Board in May 2021, targets an annual disposal rate of 250 kg per capita by 2031. The plan enables the CRD to take action in several interconnected areas to increase diversion of materials from the landfill in support of waste reduction targets. Staff propose implementing a suite of policies designed to divert material from the mixed general refuse stream and, as a first step, initiating a procurement process to understand private sector options and costs for further processing (reuse, recycle or resource

recovery) of materials that are diverted from the general refuse stream. Staff will return with the results of the procurement process before proposing modifications to the Hartland Tipping Fee and Regulation Bylaw No. 3881 to meet the SWMP targets.

RECOMMENDATION

The Environmental Services Committee recommends to the Capital Regional District Board:
That staff be directed to initiate a procurement process for further processing of divertible materials, and return to the Environmental Services Committee in January 2023 with financial implications and proposed amendments to the Hartland Tipping Fee and Regulation Bylaw No. 3881 and associated operational implications.

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

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ERM 22-15

REPORT TO ENVIRONMENTAL SERVICES COMMITTEE
MEETING OF WEDNESDAY, APRIL 20, 2022

SUBJECT **Solid Waste – 2021 Annual Report**

ISSUE SUMMARY

To present the Capital Regional District's (CRD) 2021 Solid Waste Annual Report (Appendix A), which summarizes solid waste service activities for 2021, identifies initiatives being pursued in 2022, and reports progress toward implementation and monitoring of the new CRD Solid Waste Management Plan (SWMP).

BACKGROUND

Based on the 5R hierarchy of reduce, reuse, recycle, resource recovery and residual management, the CRD's solid waste services strive to minimize waste generation and disposal needs, and maximize diversion and recovery opportunities. Work in these areas focuses on conserving airspace in an effort to ensure enough landfill capacity to meet the residuals disposal needs of the community in the future. Highlights for 2021 include:

- Board endorsement of the new SWMP and submission to the Province of BC
- identification of SWMP priority areas and development of short-term work plan
- hiring for two new positions to support communications and new initiatives
- approval of supply contract between the CRD and FortisBC approved by the BC Utilities Commission
- debut of first live-streamed landfill tour of Hartland for schools on Earth Day
- continued expansion of waste reduction and consumer responsibility messaging
- reminder subscription reach of 90,000+ for Curbside Blue Box Recycling Program
- expansion of reusable items collection at Hartland Depot to include appliances for Restore
- partnership with Return-it to host an Express & Go station at Hartland Depot for beverage container deposit refund
- expansion of on-site beneficial use of source-separated material streams (e.g., unusable books)
- grind and transfer pilot of clean wood waste for offsite energy recovery

The disposal rate for the capital region was 400 kg/per capita in 2021, up from 395 kg/per capita in 2020. With a provincial average hovering around 500 kg/per capita, the CRD continues to maintain one of the lowest per capita disposal rates in the province. In an effort to accelerate waste diversion and meet/exceed the CRD's 250 kg/capita waste disposal rate target, material stream diversion has been prioritized and is outlined in a separate staff report on today's Environmental Services Committee agenda.

ALTERNATIVES

Alternative 1

The Environmental Services Committee recommends to the Capital Regional District Board:
That the Solid Waste Advisory Committee, in its plan monitoring role, be directed to review the 2021 Plan Monitoring Update (Appendix A – of the Solid Waste 2021 Annual Report).

Alternative 2

That this report be referred back to staff for additional information.

IMPLICATIONS

Environmental & Climate Implications

Extensive engineering controls are in place at Hartland to prevent or reduce landfill-related impacts to groundwater, surface water and air. The effectiveness of these controls are assessed through the CRD's environmental monitoring program, conducted in accordance with all regulatory requirements, including the Operational Certificate and the BC Contaminated Sites Regulation.

In early 2022, an exceedance of the water quality guidelines in one of the landfill's northern surface water drainages was reported under the landfill's monitoring program. Staff and professional consultants are completing an investigation to determine the cause of the exceedances and to identify appropriate actions to address the issue and to ensure surface water quality meets provincial guidelines into the future. The Province, and the impacted land owner, have been advised of the exceedance, and while this is now being managed, additional site improvements will continue to be implemented as landfilling occurs in areas that are newly opened.

Intergovernmental Implications

Implementation of the Canada-wide Action Plan on Zero Plastic Waste is underway. Adopted by the federal, provincial and territorial governments, the plan sets out tangible actions and clear timelines to better prevent, reduce, reuse, recover, capture and clean up plastic waste and pollution in Canada, create economic opportunities to recover the value of used plastics and achieve the goal of zero plastic waste by 2030.

Work is also underway with the proposed *Single-Use Plastics Prohibition Regulation*, which will, at the national level, prohibit manufacture and import (by December 2022) and sale (by December 2023) of problematic plastics, such as straws, stir sticks, ring carriers, cutlery and checkout bags, and regulates the production of food service ware.

Provincial initiatives to address plastic waste and expansion of Extended Producer Responsibility, as well as organics diversion and food waste prevention, progressed in 2021

In addition to the work being conducted at the federal and provincial levels, municipalities within the region, through their services, policies and planning activities, are primary partners in implementing SWMPs, and play an essential role in our region achieving its solid waste goals. Actions within the SWMP involve collaboration with municipalities in many areas. A new Local Government Waste Reduction Working Group was formed in early 2022 with staff from nine jurisdictions meeting on a monthly basis.

The WSANEC Leadership Council (WLC) and CRD staff have started meeting as the WLC/CRD Solid Waste Working Group to develop a partnership agreement that addresses WLC/CRD discussions on the SWMP and Hartland Landfill.

Financial Implications

Solid waste services continued to be self-funded (no requisition) in 2021, with surplus funds held in reserve for future capital works, operating shortfalls and closure/post-closure work.

CONCLUSION

The CRD's solid waste service continues to strive to maximize diversion and recovery options and minimize waste generation and disposal needs in an effort to conserve valuable air space at Hartland Landfill. Opportunities for the community to further waste reduction and diversion activity were realized in 2021, with the CRD Board endorsement of a new Solid Waste Management Plan for the region. The 2021 Solid Waste Annual Report provides an initial plan monitoring framework encompassing activities identified in the plan, and identifies the priority areas adopted for early implementation.

RECOMMENDATION

The Environmental Services Committee recommends to the Capital Regional District Board:
That the Solid Waste Advisory Committee, in its plan monitoring role, be directed to review the 2021 Plan Monitoring Update (Appendix A – of the Solid Waste 2021 Annual Report).

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

ATTACHMENT

Appendix A: 2021 Solid Waste Annual Report

APPENDIX A

Rethink waste

2021 Solid Waste Annual Report

CRD
Making a difference...together

Greater Victoria
British Columbia
Year ended December 31, 2021

Territorial Acknowledgement

The CRD acknowledges that it conducts its business in the territory of the Lək̓ʷəŋən (Songhees) and Xwsepsum (Esquimalt) Nations here in the core area, the W̱SÁNEĆ Nations, including W̱JOŁEŁP (Tsartlip), BOḴEĆEN (Pauquachin), SṮÁUTW̱, (Tsawout) and W̱SIKEM (Tseycum) on the Saanich Peninsula and Gulf Islands, Sc'ianew (Beecher Bay), T'Sou-ke, and Pacheedaht to the west, as well as MÁLEXEŁ (Malahat) and Pune'laxutth' (Penelekut) Nations, all of whom have lived on these lands since time immemorial.

Terms and Abbreviations

3Rs - Reduce, Reuse, Recycle

5Rs - Reduce, Reuse, Recycle, Recovery and Residual Management

CEC - Compost Education Centre

CRD - Capital Regional District

EPR - Extended Producer Responsibility

ENV - Ministry of Environment & Climate Change Strategy

GHG - Greenhouse Gas

ICI - Industrial, Commercial and Institutional Sector

MFD - Multi-family Dwelling

PPP - Packaging and Paper Products

RNG – Renewable Natural Gas

SWMP - Solid Waste Management Plan

Organizational Overview

The Capital Regional District (CRD) delivers regional, sub-regional and local services to 13 municipalities and three electoral areas on southern Vancouver Island and the Gulf Islands. Governed by a 24-member Board of Directors, the CRD works collaboratively with First Nations and all levels of government to enable sustainable growth, foster community well-being, and develop cost effective infrastructure, while continuing to provide core services to residents throughout the region.

Table of Contents

Overview

This report summarizes solid waste management activities undertaken by the CRD in 2021 and satisfies the annual reporting requirements associated with the CRD's SWMP.

All costs associated with the CRD solid waste service are funded through tipping and user fee revenues at Hartland Landfill, collection agreements with product producers, sale of electricity and sale of recyclables.

Regulations and Commitments

Solid Waste Disposal

The CRD became responsible for solid waste disposal for the region in 1973 when, at the request of the CRD Board, the Province of BC established solid waste disposal as a regional function of the CRD. In 1975, the CRD acquired Hartland Landfill and subsequently assumed direct operation of the site in 1985.

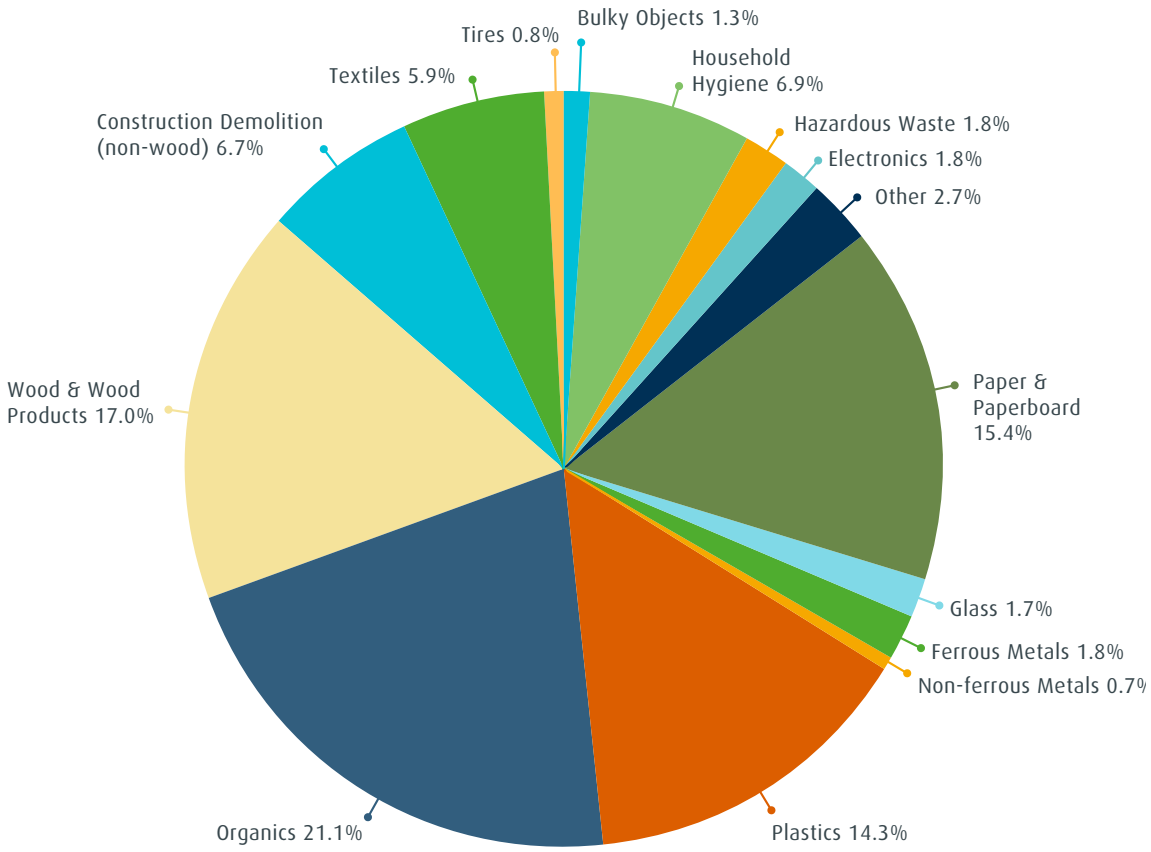
The site currently operates under a Design, Operations and Closure Plan in accordance with an Operational Certificate issued by the ENV, as well as the BC Landfill Criteria for Municipal Solid Waste. There is also a provincial authorization in place for asbestos management.

Solid waste originating from outside of Canada is managed at Hartland Landfill in accordance with the International Waste Directive under the authority of the Canada Border Service Agency and the Canadian Food Inspection Agency.

Solid Waste Stream Composition

Since 1990, the CRD has commissioned six studies to assess the composition of waste being landfilled at Hartland. These studies provide valuable benchmark data and analysis for evaluating the success of existing solid waste programs and planning future initiatives. The most recent analysis took place in 2016, and the next study is scheduled to take place in 2022.

2016 Solid Waste Stream Composition Study Results



Provincial Requirements

Solid Waste Management Planning

The Environmental Management Act requires all regional districts in BC to develop plans for the management of municipal solid waste and recyclable materials. Solid waste management planning is a proven way to reduce the amount of solid waste requiring disposal in a region, contributing to the protection of the environment.

The original plan for the CRD was approved by the ENV in 1989. There have been two subsequent revisions to the original plan plus eight amendments.

A new SWMP for the region was endorsed by the CRD Board in May of 2021 and was subsequently submitted to the ENV for approval. The new plan includes a number of actions aimed to reduce waste disposal with a measurable target of 250 kg/capita/year by 2030. The plan also includes an aspirational goal to achieve a disposal rate of 125 kg/capita/year. See the SWMP section (page 22) for more details.

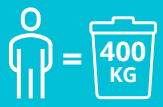
Landfill Operating and Monitoring Requirements

Hartland Landfill is authorized through an Operational Certificate under the BC Environmental Management Act. The Operational Certificate specifies the relevant environmental legislation applicable to the site, and sets out requirements for environmental monitoring and annual reporting. Under this regulatory framework, the CRD has established a comprehensive environmental monitoring program to ensure Hartland is not impacting the surrounding environment.

Per Capita Disposal

In 2012, the Province of BC began using per capita disposal rates as the standard solid waste metric.

Regional districts are required to report total tonnage disposed of at all landfills operating within their boundaries. In 2008, the privately owned and operated Highwest Landfill was incorporated into the CRD's SWMP at the direction of the ENV. The facility is located in the District of Highlands and primarily manages construction and demolition material generated from both within and outside of the region. In 2021, this landfill reached its approved filling capacity, stopped receiving solid waste for disposal, and is subsequently being capped while a material recovery facility continues to operate on the site. Given the rise in volumes at Hartland in the latter part of 2021, it is believed that much of the material previously being landfilled at Highwest is now being directed to Hartland for disposal.



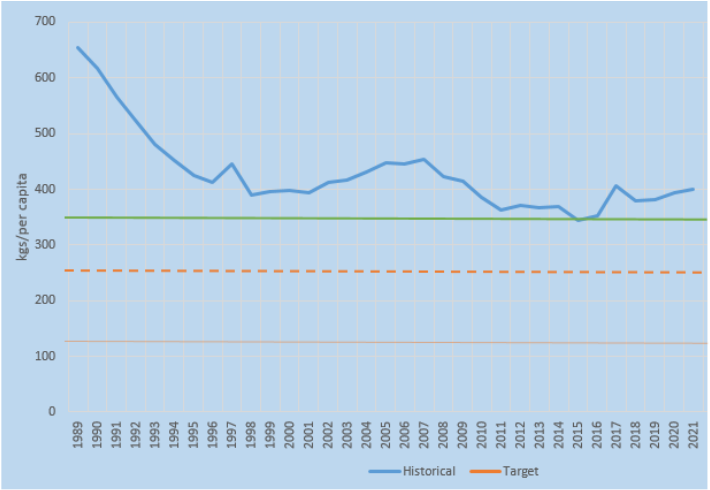
Based on the provincial government's calculation method, the disposal rate for the capital region was 400 kg/capita in 2021.

General Refuse Disposal - Per Capita Disposal Rate for Capital Region

Year	Population[1]	Hartland Landfill			Tervita Highwest Landfill[3]	Disposal Rate kg/ person
		Received	Beneficial Use[2]	Landfilled		
2012	368,935	129,279	n/a	129,279	7,880	372
2013	371,265	123,210	n/a	123,210	13,025	367
2014	372,463	120,942	-1,636	119,306	18,000	369
2015	377,810	114,476	-2,034	112,442	18,000	345
2016	382,645	134,167	-971	133,196	2,056	353
2017	392,046	145,285	-917	144,368	15,000	407
2018	413,406	148,551	-2,120	146,431	10,500	380
2019	418,511	146,544	-1,142	145,402	14,625	382
2020	425,503	155,014	-5,476	149,538	18,506	395
2021	432,062	167,169	-1,013	166,156	6,730	400

1 BC Stats
2 2021 tonnage decreased due to timing of material grinds and movement of material off-site
3 percentage of facility's total disposal in recognition of out-of-region waste being landfilled at site

CRD Per Capita Disposal Rate



CRD 2021: 400 kg/capita

Provincial target: 350 kg/capita

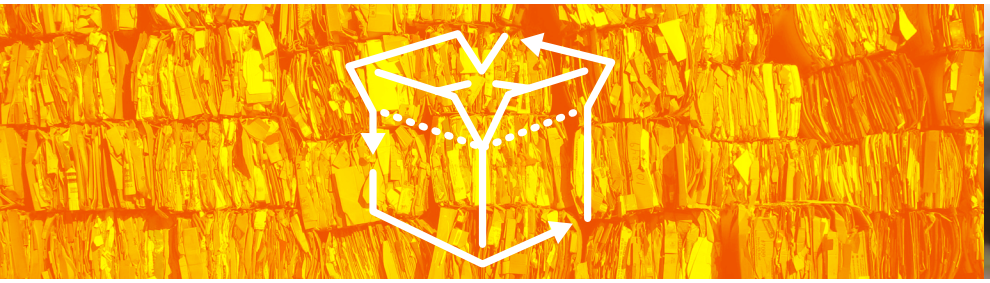
CRD SWMP Target: 250 kg/capita

CRD SWMP aspirational goal: 125kg/capita

Extended Producer Responsibility

The BC Recycling Regulation, under the authority of the Environmental Management Act, sets out the requirements for producers of designated products to take responsibility for the life-cycle management of their products, including collection and recycling. The CRD supports the EPR model and partners with producers for the collection of their products through curbside and depot recycling programs.

Recycling Regulation Product Category	Quantity Collected through CRD Programs (tonnes)
Beverage Container	19
Residual Producers (e.g. hazardous wastes)	384
Electronics and Electrical	821
Tires	133
Packaging and Paper Products	21,874
Total 2021	23,231



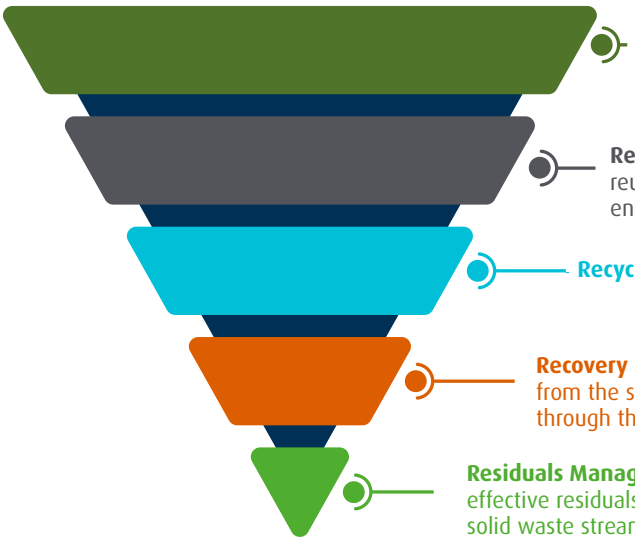
Solid Waste Service

Waste Reduction and the 5Rs

The roles and responsibilities for managing solid waste include a combination of government, private and non-profit sectors and consumers themselves. Consideration of the 5R hierarchy is integral for looking at opportunities to improve a solid waste management system. The order of preference is for waste management at one level to only be undertaken when all feasible options for a higher level have been explored.

The CRD views waste as a commodity, and seeks the highest and best use for these resources by applying the 5R hierarchy. The goal is to extend the life of Hartland Landfill by minimizing waste generation (reduce/reuse) and disposal needs and maximizing diversion opportunities (recycle/recovery), supporting a circular economy.

Waste reduction, reuse and recycling can reduce GHG emissions both by lowering the demand for new materials and products (reducing upstream environmental impacts), and by minimizing downstream environmental impacts, such as transporting waste over long distances and disposing of it in landfills.



Reduce by as much as possible the amount, or toxicity of material that enters the solid waste steam and also the impact on the environment of producing it in the first place.

Reuse - ensure that materials or products are reused as many times as possible before entering the solid waste stream.

Recycle as much material as possible.

Recovery of as much material and/or energy from the solid waste stream as possible through the application of technology.

Residuals Management - provide safe and effective residuals management, once the solid waste stream has been reduced through the application of technology.

Reduce and Reuse

Diversion funding for non-profit reuse organizations

Ten organizations participated in the program in 2021, receiving a total of $86,000 of funding.

Hartland Reusable Materials Program

Partnered with five non-profit reuse organizations for the redistribution of usable textiles, bicycles and large appliances.

22 tonnes of reusable items collected at Hartland Depot in 2021

Recycle

Curbside Recycling

Under an agreement with Recycle BC, the CRD will provide 130,364 single-family dwellings with curbside recycling service in 2021. Residents can sign up for reminders and service alerts via the Recycle CRD app, email, voicemail or Twitter.

90K+ reminder subscriptions	90,027 reminder subscriptions are sent out each collection cycle (12,929 new subscribers in 2021)
500K+ tonnes since 1989	Since the program inception in 1989, over 527,350 tonnes of recyclables have been collected

Hartland Public Drop-off Depot

Over 80 items from 28 product categories are accepted at the depot, including household hazardous waste items.

Tonnes (2021)	Item
336	Appliances
56	Batteries
13	Books
418	Electronics and Electrical Items
3	Fire Extinguishers
11,772	Food Waste
52	Household Hazardous Waste
11	Light Bulbs, Tubes, Ballasts
292	Mattresses
1,348	Metals
121	Motor Oil, Filters Containers, Antifreeze
263	Paint, Solvents, Pesticides
813	Packaging and Paper Products
23	Propane Tanks
19	Refundable Containers
22	Reusable Goods
133	Tires
1,579	Yard and Garden Materials
229	Wood Waste (sent off-site)
17,526	Total

Partnered with Encorp Pacific to host a Return-it Express & Go station at Hartland Depot for beverage containers

Gulf Islands Depots

Partnered with five local community groups to provide recycling services to residents on Salt Spring, Pender, Mayne, Galiano and Saturna Islands.

900K+ tonnes residential

902 tonnes of residential Packaging and Paper Products collected in 2021

Port Renfrew Transfer Station

Through the local service funded by the community of Port Renfrew, garbage and recyclables are received from residents and businesses.

Organics Management

With material bans on the disposal of yard and garden material (2006) and kitchen scraps (2015) in place, the CRD provides drop-off services for source separated material at the Hartland site.

11.5K- tonnes composted

11,772 tonnes of source separated kitchen scraps received and transferred for composting in 2021

1.3K+ tonnes yard waste

1,389 tonnes of yard and garden material were received and either ground for use on-site or transferred for composting in 2021

Recovery

Hartland Landfill Gas Capture and Utilization

Landfill gas is produced from decomposing garbage. This gas is mainly made up of carbon dioxide and methane. Methane is an energy source, but is also a GHG. It is flammable and explosive in certain concentrations, which is why it needs to be controlled.

Landfill gas is collected at Hartland using a network of wells and pipes that were first installed in the early 1990s and are expanded on a regular basis. Between 1991 and 2003, the gas collected was burned using a flare to reduce GHGs. In 2003, a landfill gas-to-electricity plant was built next to the flare station to utilize the methane in the landfill gas to produce electricity.

1,600 homes powered

The electricity produced is fed into the existing BC Hydro distribution system on site. The facility produces close to 1.6 megawatts of green power — enough electricity to supply about 1,600 homes.

In 2012, a site-specific Landfill Gas Management Plan was approved, which detailed a strategy for capturing landfill gas and meeting collection targets set by the ENV, and is regulated under the Landfill Gas Management Regulation. The plan includes installation, operation and maintenance of collection infrastructure and routine reporting.

CO_2 50% less

Collection infrastructure continues to be installed in accordance with the plan, and GHGs have been reduced by more than 50% since 2011.

Efforts to optimize the landfill gas collection and increase collection efficiency continued into 2021, and included wellfield optimization efforts to reduce nitrogen and increase methane concentrations, and activation of key wells to improve gas collection and reduce fugitive emissions.

71% EVN

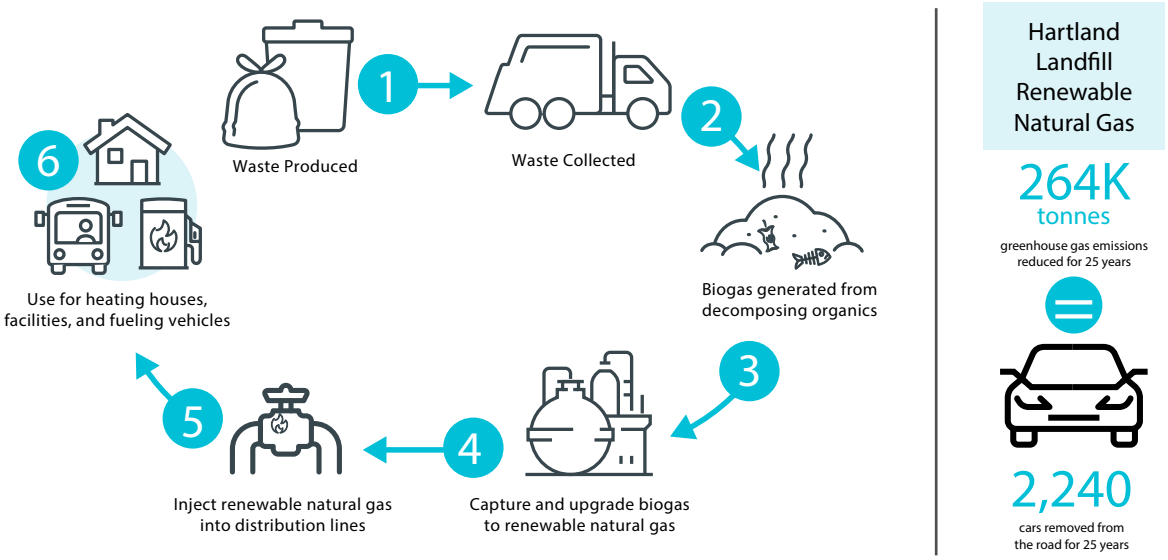
Collection efficiency for 2021 was 71%, using the required Ministry of Environment & Climate Change Strategy model.

In 2022, additional strategies will be implemented to improve landfill gas collection and mitigate fugitive emissions, including use of engineered biocover systems to mitigate fugitive emissions.

Future of Gas Utilization

With the volume of landfill gas exceeding the electric conversion plant's operating capacity, and the equipment reaching the end of life, the CRD is pursuing a system that will upgrade landfill gas to RNG (a carbon-neutral form of biogas) for sale to FortisBC.

Blending seamlessly with conventional natural gas, RNG is carbon-neutral energy made by capturing and upgrading the biogas released from decomposing organic waste in the landfill.



Converting the biogas generated at Hartland Landfill to RNG will reduce our region's emissions by approximately 264,000 tonnes of carbon dioxide over the project's life—the equivalent to removing 2,240 cars from the road.

A lifecycle GHG assessment found that decommissioning the electricity plant, a facility nearing the end of its life, and building a new RNG facility at Hartland Landfill is a more effective, beneficial use of this resource from a climate change perspective.

The CRD and FortisBC have executed a supply contract approved by the British Columbia Utilities Commission in 2021. The CRD will continue to be responsible for the ownership and operation of the Hartland Landfill, the landfill gas collection system and the upgrade facility. FortisBC will pay a fixed price per gigajoule for the RNG, and will be responsible for the costs associated with injecting it into the natural gas distribution system. The CRD expects the RNG facility to be operational in 2023.

Residuals Management

Hartland Landfill is a multi-purpose site that, in addition to landfill services for general refuse and controlled waste, provides drop off for source-separated recycling, EPR products, compostables and household hazardous waste at the Hartland Depot.

Landfilling

Disposal of materials in a landfill is the least preferred management option in the waste management hierarchy. However, landfilling of materials that cannot practicably be removed from the waste stream through reduction, reuse, recycling or recovery is an essential component of the solid waste management system.

The municipal solid waste generated in the region is landfilled at Hartland using the advanced terracing method. This technique enables the management of surface runoff and leachate flow, and control of long-term settlement. It consists of advancing the filling area with vehicular access provided atop the preceding day's refuse. A landfill compactor is used to grade and compress refuse while maintaining the desired slope at a constant width.

TOTAL REFUSE BY TYPE (tonnes)

Type of Waste Declared	2020	2021	% Change
General Refuse	149,538	166,156	11%
Controlled Waste	13,207	19,920	51%
Asbestos Containing Material	3,093	4,134	34%
Total	**165,838**	**190,210**	**15%**

A minimum compaction target of 850 kg/m^3 is set for general refuse landfilled at Hartland.

Landfill Disposal Rates

Landfill tipping fees support user pay and provide a financial incentive to reduce the quantity of solid waste being brought to the landfill for disposal. The tipping fee structure for 2021 included:

Controlled and Demolition Wastes

Landfilling of certain waste streams creates a potential nuisance, health and safety issues and environmental concerns beyond those expected from regular household refuse. These material streams are classified as controlled waste at Hartland, as they require special handling to protect the health and safety of employees and customers and to minimize nuisance, odours, and scavenging by wildlife.

Accepted for disposal with a permit:

- Asbestos-containing material
- Controlled waste (e.g., sewage sludge, condemned food, animal carcasses)
- Clean demolition waste (commercial)
- Renovation waste (residential)

The risks associated with these regulated wastes vary and so each type is managed differently. These wastes require permits and usually an appointment for disposal. The number of permits issued has been increasing annually since 2013.

Controlled waste, such as sewage sludge, condemned food and animal carcasses, is landfilled in trenches dug in completed waste lifts and covered daily with chipped wood waste,

aggregate or clay to reduce odours. Asbestos is landfilled in segregated areas of the site and is covered daily with aggregate or soil.

Landfill Material Restrictions

Landfill restrictions have been part of the CRD waste diversion strategy since 1991 and are only implemented when viable and sustainable recycling alternatives exist.

Banned from garbage disposal:

- Aggregate, clean soil, rubble
- Asphalt road material and concrete
- Biomedical waste
- Corrugated cardboard *
- Drywall
- Fire extinguishers *
- Hazardous wastes (including empty containers)
- Ignitable wastes
- Kitchen scraps (food waste and soiled paper products) *
- Mixed paper (paper fibres) *
- Motor vehicle bodies and farm implements
- Newspaper *
- PCBs (Polychlorinated Biphenyls)
- Propane tanks *
- Radioactive wastes
- Reactive wastes
- Scrap metal *
- Waste that is on fire or smoldering
- Yard and garden material *
- EPR products *
  - beverage containers
  - lead acid batteries
  - PPP (residential only)
  - paint
  - pharmaceuticals (not accepted at Hartland)
  - solvents and flammable liquids, gasoline and pesticides
  - tires
  - used lubricating oil, filters, containers and antifreeze
  - electronics and electrical
  - batteries
  - cell phones
  - electronic equipment and devices
  - information, technology and telecommunications equipment
  - lamps, bulbs and lighting equipment
  - large appliances
  - outdoor power equipment
  - small appliances, tools, sports and hobby equipment
  - smoke and carbon monoxide alarms
  - thermostats

** Indicated materials accepted at Hartland Depot*

Bylaw Enforcement

CRD Bylaw 3881 (Hartland Landfill Tipping Fee and Regulation Bylaw) regulates activities at the Hartland site. CRD bylaw enforcement officers and landfill staff ensure Hartland customers adhere to site regulations.

In 2021, 60 written warnings and 416 enforcement tickets were issued primarily related to prohibited items in garbage

Landfill Reforestation

The long-standing vision for the Hartland site is to restore the land to a condition that will blend in naturally with the surrounding forest. Planting of native species began in 2004 and includes Douglas Fir, Big Leaf Maple and Red Alder, as well as ocean spray, Indian plum and mock orange.

Invasive species are removed annually throughout the site. These areas are maintained through an annual invasive species removal to encourage the growth of new plant species and protect those already established. New plants were protected with deer fencing and areas equipped with temporary irrigation after invasive species removal.

35K trees

Closed areas rehabilitated with over 35,000 indigenous trees and shrubs planted to date.

Landfill Capital Works

Each year, the CRD invests approximately $3 million in landfill construction and improvements, including rock excavation and crushing, leachate collection, gas collection and utilization infrastructure, environmental controls, roads and other site improvements. In 1997, Phase 1 of the landfill site was closed and the filling of Phase 2 (Heal Basin) was initiated. It is expected that Phase 2 will continue to receive landfill materials until about 2047, at which time it will have reached its current design capacity.

In 2019, a new Landfill Master Filling Plan was finalized that optimizes site capacity, maximizes gas and leachate collection, and other environmental management systems.

2021 Engineering Achievements Include:

- Project management for the landfill's heavy equipment services
- The annual installation of new combined gas/leachate collection infrastructure
- Paving for dust control and improved stormwater management
- Completion of two new weigh scales plus design and tender for a new scale building at Hartland North
- Preparation of a new landfilling cell to receive garbage in the future
- Construction of a new water main on the landfill property
- Completion of twin RNG gas pipes from Hartland Landfill to the Residual Treatment Facility
- Additional tree planting and hydro-seeding of closed landfill areas
- Reconfiguration of existing gas and leachate collection pipes to expand Cell 3 garbage volume
- Assist Residual Treatment Plant commissioning activities with safe sewer cake disposal
- Gravel stockpile development works in the Northeast corner for landfill operation needs
- Planning and design of kitchen scraps transfer station
- Planning and technical studies for the RNG Facility
- Planning and design of fibre optic cable installation – connecting Hartland North Scale Building

Environmental Monitoring

Extensive engineering controls are in place at Hartland to prevent or reduce landfill-related impacts on groundwater, surface water and air. The effectiveness of these controls is assessed through the CRD's environmental monitoring program. Monitoring is conducted in accordance with all regulatory requirements, including the Operational Certificate and the BC Contaminated Sites Regulation. Groundwater and surface water is regularly monitored at over 150 stations both on and off the landfill site.

Groundwater water quality monitoring data obtained in 2020/2021 was similar to previous years and indicated that landfill leachate continues to be effectively contained and controlled on-site. Surface water monitoring in 2020/2021 indicated that nearby surface water bodies, Tod Creek, Durrance Creek, Durrance Lake and Killarney Lake, are not impacted by leachate. Leachate quality monitoring confirmed that leachate discharged from the site was in compliance with CRD Bylaw 2922 (Sewer Use Bylaw), which regulates discharges to the sanitary sewer.

Landfill gas monitoring confirmed that the landfill gas collection system worked effectively to control emissions. Landfill gas infrastructure continues to be installed as part of a long-term gas management plan.

Communications, Outreach and Education Programs

A number of communications, education and outreach programs are used to support the 5R hierarchy and promote awareness and participation in waste reduction, diversion and disposal services.

Information phone line and email, as well as robust website resources

- Infoline - received 21,863 calls and 3,932 emails
- Myrecyclopedia.ca directory received 353,431 visits
- Ready, Set, Sort! received 7,528 gameplays

Curriculum-linked educational workshops and tours for students from Kindergarten to Grade 12

- Delivered six 3Rs school programs to 173 participants.
- Debuted the first Hartland Landfill live-streamed virtual tours for schools on Earth Day (April 22, 2021). Two live-streamed virtual tours were delivered to 57 registered classes with approximately 1,000 participants.

Adult educational programs and tours

- Deliver three 3Rs presentations and tours to 83 participants
- Delivered three technical tours to 104 participants

Seasonal, research-based public education campaigns and instructive materials. Topics for 2021 included:

- End markets for recyclable materials
- Illegal dumping prevention
- Curbside glass separation
- Safe household hazardous waste disposal
- Love Food, Hate Waste
- Waste Reduction Week
- Holiday season waste reduction

Active media relations to support public awareness of solid waste programs and opportunities

- Curbside Blue Box Recycling Program
- CRD Board approved the new SWMP
- Waste Reduction Week

Funding to support groups conducting clean-up events in the community

- In 2021, the CRD provided funding for nine projects in the community.

Partnership with the Greater Victoria Compost and Conservation Education Society

- The CEC communicated with 565,770 residents, and ran 95 community workshops/ learning events with 3,959 residents participating.
- The CEC also delivered 153 school programs to 3,149 preschool to Grade 12 students and their guardians or teachers.

Solid Waste Management Plan

Overview

The CRD has spent the last several years developing a new SWMP to reduce how much material is sent to Hartland Landfill and guide how the region's solid waste is managed in a safe, secure and sustainable way now, and in the future.

In 2021, the CRD Board approved a new SWMP for the region and has submitted it to the Province of BC for approval.

The final Plan includes strategies and actions for reducing and managing all streams of solid waste—including recyclables, compostable material and garbage—with an eye to extending the life of Hartland Landfill to 2100 and beyond.

Principles, Goals and Targets

Guiding Principles

1. Promote zero-waste approaches and influence others in support of a circular economy;
2. Promote the first 3Rs (Reduce, Reuse and Recycle);
3. Maximize beneficial use of waste materials and manage residuals appropriately;
4. Support polluter-pay and user-pay approaches and manage incentives to maximize positive behaviour outcomes;

5. Prevent organics, recyclables and household hazardous waste from going into the garbage, wherever practical;
6. Collaborate with other jurisdictions, wherever practical;
7. Develop collaborative partnerships with interested parties, both within and outside of the CRD, to achieve regional targets set in plans; and
8. Level the playing field within regions for private and public solid waste management facilities

Plan Goals and Targets

The Province's guidelines for solid waste management planning require SWMPs to have goals and targets. Goals are the long-term aims to be achieved as an outcome of the plan. A goal may be achieved within the timeframe of this plan, but a goal may also be aspirational; something for the CRD to strive for beyond the timeframe of this plan. Targets are a way of measuring the plan's progress and have clear timelines.

Goals:

1. To surpass the provincial per capita waste disposal target (350kg/capita/year) and aspire to achieve a disposal rate of 125 kg/capita/year;
2. To extend the life of Hartland Landfill to the year 2100 and beyond;
3. To have informed citizens that participate effectively in proper waste management practices; and
4. To ensure that the CRD's solid waste services are financially sustainable.

Targets:

1. By the end of the 3rd year of this plan, the CRD's per capita disposal rate will be 340 kg or less.
2. By the end of the 5th year of this plan, the CRD's per capita disposal rate will be 285 kg or less.
3. By the end of the 10th + year of this plan, the CRD's per capita disposal rate will be 250 kg or less.

Subsequently, 72 actions (see Appendix A) were developed based on the following objectives:

- Improve participation in waste reduction activities and diversion services
- Decrease contamination levels in waste streams
- Facilitate processing and markets for organics, recyclables and wood waste, as appropriate
- Maximize local solid waste disposal capacity
- Establish a long-term sustainable financial model for the CRD's solid waste service

As the management of unwanted materials is a shared responsibility, successful implementation of the SWMP will require involvement from the entire community, including residents, businesses, institutions, First Nations, municipalities and non-profits associations, as well as the local waste management industry.

Highlights for 2021

Following CRD Board endorsement of the SWMP and submission of the plan to the Province, six priority areas for the first three years of implementation, and a short-term work plan was prepared.

1. **Targeted material stream diversion** – Develop new programming and tools to reduce the four largest waste streams (wood waste, organics, paper and plastic) being landfilled.
2. **MFD/ICI strategy** – Build on success with SFD sector to address the 53% of waste stream generated by multi-family and ICI sectors.
3. **Municipal collaboration** – Partner with local governments to develop programming, regulations and bylaws within municipal authority that will incent diversion.
4. **Community grant program** – Provide support for community based initiatives.
5. **Technology research** – Continue to research, investigate and report out on emerging waste management technologies.
6. **Waste flow management** – Investigate policies to control movement of recyclables and waste material generated in the region.

A summary of 2021 activity is listed below. Further details and a complete list of the SWMP actions can be found in Appendix A – 2021 Plan Monitoring Update.

- Board endorsement of the SWMP and submission to the Province of BC
- Hiring for two new positions to support communications and new initiatives
- Piloting a live-streamed, virtual tour of Hartland for 1,000 students
- Expansion of reusable items collection at Hartland Depot to include appliances
- Partnered with Return-it to host an Express & Go station at Hartland Depot for beverage containers
- Expansion of on-site beneficial use of source separated material streams

Looking Ahead to 2022

- Solid Waste Stream Composition Study
- Finalization of MFD market analysis
- Development of supports to increase diversion activity from the ICI sector
- Establishment of a Local Government Waste Reduction Working Group
- Launch of Rethink Waste Community Grant
- Advancement of policy options regulating waste flow
- Adjustment to tipping fee structure for Hartland Landfill
- Investigation into expansion of material bans from landfill
- Implementation of off-site beneficial use for source separated material streams

Appendix A

CRD Solid Waste Management Plan – 2021 Plan Monitoring Update

Strategies and Actions		Timing	Update
Reduce & Reuse Strategies			
Strategy #1 Continue and enhance education programs			
1A.	Ensure ongoing, up-to-date promotion and education resources to enable effective participation in CRD programs and initiatives	Ongoing focus area	• New CRD communications liaison position hired August 2021 • New CRD solid waste initiatives position hired January 2022 • Sponsorship of 2021 Ecostar Awards • Debuted live-streamed virtual tour of Hartland Landfill for schools (April 2021, 52 classes, 1,000 students) • Initiated MFD market research project to inform future education and engagement strategies • Created CRD Educators e-newsletter to expand reach and promotion of 3Rs school programs (the first issue released February 2022) • Participation in Coast Waste Management Association Communications/Educators Working Group
1B.	Incorporate behaviour change components, wherever possible, using a variety of education and communication strategies and tools	Future focus area	
1C.	Expand and prioritize education programs for the multi-family and ICI sectors	Short-term focus area	
1D.	Enhance the K-12 school program to include concepts of zero waste and the circular economy	Future focus area	
1E.	Collaborate with stakeholders on education campaigns (in partnership with First Nations communities, municipalities and product stewards)	Ongoing focus area	
1F.	Continue supporting environmental stewardship recognition	Ongoing focus area	
1G.	Continue to engage residents on solid waste matters; using the appropriate level of consultation	Ongoing focus area	

Strategies and Actions		Timing	Update
Reduce & Reuse Strategies			
Strategy #2 Encourage waste prevention			
2A.	Promote less consumption and advocate for consumer responsibility	Future focus area	• Reduce/Reuse webpage and resources added to the website • In October 2021, the CRD promoted Waste Reduction Week with daily social media posts, press releases and Hartland Landfill tours. • CRD Waste Reduction Grant – pilot, launched in January 2022 • The Province of BC granted municipal authority for regulating the distribution of single-use items • Proposed Federal Single-Use Plastics Regulation for 2022-2023 – straws, stir sticks, ring carriers, food service ware, cutlery, check out bags • Participation in the Coast Waste Management Association's single use plastics working group
2B.	Establish a community-based waste reduction grant program	Short-term focus area	
2C.	Support municipal, provincial and federal single-use item reduction efforts	Ongoing focus area	
2D.	Promote sustainable and/or packaging-free purchasing options	Future focus area	
2E.	Advocate provincially and federally to limit or eliminate the manufacturing, distribution or sale of single-use items and non-recyclable materials	Future focus area	
2F.	Advocate provincially and federally for sustainable product and packaging design	Future focus area	

Strategies and Actions		Timing	Update
Reduce & Reuse Strategies			
Strategy #3 Support reduction of avoidable food waste			
3A.	Continue to support residential food waste reduction through campaigns and composting promotion	Ongoing focus area	• Renewed a three-year contract with the national Love Food Hate Waste (LFHW) campaign. • Fall LFHW education campaign, which featured bus shelter ads, radio sponsorship, social media contests, local print and digital media ads. • The CRD staff worked in collaboration with Saanich to design LFHW branded signs for its municipal garbage trucks. • Focused the annual Make Memories, Not Waste campaign for 2021 on reducing the amount of holiday kitchen waste produced. Advertorials were written for Victoria Buzz, Used Victoria and BlackPress Impress, as well as weekly social media posts throughout December. • Provided $93,338 in funding to the CEC to deliver a wide variety of programs about composting and gardening in the capital region.
3B.	Continue to encourage the donation of edible food and support food recovery organizations	Ongoing focus area	
3C.	Advocate for regulations that support avoiding food waste	Future focus area	

Strategies and Actions		Timing	Update
Reduce & Reuse Strategies			
Strategy #4 Support reuse activities in the region			
4A.	Continue to provide funding to non-profits to help offset garbage tipping fees for unusable donated items	Ongoing focus area	• Provided $86,000 of funding to non-profit reuse organizations • Participated in Restore donation event • Expand reusable items collection at Hartland Depot to include appliances for Restore
4B.	Continue to support and promote donations to reuse establishments	Ongoing focus area	
4C.	Support reuse, renting and sharing programs and other materials exchange activities	Ongoing focus area	
4D.	Investigate free store at Hartland or other facilities	Future focus area	

Strategies and Actions		Timing	Update
Reduce & Reuse Strategies			
Strategy #5 Support local governments in working towards zero waste and a circular economy			
5A.	Develop model language for bylaws, best practices, official community plans, and economic development strategies for use by local municipalities using research and collaboration to guide this process	Future focus area	• Established a Local Government Waste Reduction Working Group with the first meeting to take place in February 2022
5B.	Work with local municipalities to identify the need for solid waste facilities and zoning for waste management activities	Short-term focus area	
5C.	Use policy tools to enable local recycling infrastructure	Future focus area	
5D.	Investigate 'pay-as-you-throw' principles to use as tools to incent less waste disposal	Future focus area	
5E.	Investigate the use of clear bags for garbage or recyclables collection to encourage proper recycling of materials, where practicable and enforceable	Future focus area	

Strategies and Actions		Timing	Update
Reduce & Reuse Strategies			
Strategy #6 Continue and enhance policy development			
6A.	Develop model procurement policies for use by local governments, non-profits, etc.	Future focus area	• Identified as a priority, staff are exploring the diversion of specific material streams from the landfill through regulations and service changes.
6B.	Continue to expand material bans when viable alternatives exist	Short-term focus area	
6C.	Investigate licensing waste management facilities in the region to encourage transparency, consistency, and a requirement that all facilities protect public health and the environment	Short-term focus area	
6D.	Investigate regulatory mechanisms to manage municipal solid waste and recyclable materials in the region	Short-term focus area	
6E.	Investigate options for debris from extreme weather	Future focus area	

Strategies and Actions		Timing	Update
Recycling Strategies			
Strategy #7 Increase residential diversion			
7A.	Continue to promote the diversion of recyclable materials (including organics), ensuring that education strives to minimize contamination in these streams	Ongoing focus area	• Conducted an education campaign to reduce the amount of co-mingled glass in the residential recycling stream. • On November 18, 2021, the Hartland Express & Go station opened at Hartland's recycling depot. With a collaboration between the CRD and Return-It, residents now have the opportunity to receive a refund for beverage containers at Hartland
7B.	Collaborate with municipal and private sector service providers to support depot diversion efforts in the region for non-curbside materials	Short-term focus area	
7C.	Encourage local processing and markets for residential recyclables	Future focus area	
7D.	Develop tools, such as a guide, to support event recycling	Future focus area	

Strategies and Actions		Timing	Update
Recycling Strategies			
Strategy #8 Increase multi-family diversion			
8A.	Allocate resources to support MFD recycling, for example, by developing standardized education materials	Short-term focus area	• New CRD solid waste initiatives position hired in January 2022
8B.	Work with local governments and private sector service providers to develop MFD waste source separation requirements	Short-term focus area	
8C.	Develop policy guidelines and recommendations for recycling, composting and garbage space and access in MFD developments	Future focus area	
8D.	Collaborate with stakeholders (e.g. private haulers, property managers) to implement support for MFD recycling	Future focus area	

Strategies and Actions		Timing	Update
Recycling Strategies			
Strategy #9 Increase diversion from industrial, commercial and institutional (ICI) facilities			
9A.	Allocate resources to increase ICI diversion, for example, a business waste reduction liaison	Short-term focus area	• New CRD solid waste initiatives position hired in January 2022 • Province has listed 'Evaluating opportunities and policy options for ICI materials in their EPR Five-Year Action Plan 2021-2026 • National Zero Waste Council has published a Circular Economy Business Toolkit
9B.	Advocate to expand the packaging and paper product EPR program to the ICI sector	Ongoing focus area	
9C.	Create a business waste reduction toolkit, including education about how to apply circular economy principles	Future focus area	
9D.	Encourage municipalities to require waste management plans with business licenses	Future focus area	
9E.	Develop a policy guide for ICI waste management space and access requirements	Future focus area	
9F.	Work with local governments and private sector service providers to develop ICI waste source separation requirements	Short-term focus area	
9G.	Investigate shifting disposal ban enforcement to the ICI generator rather than hauler	Future focus area	

Strategies and Actions		Timing	Update
Recycling Strategies			
Strategy #10 Support existing and new extended producer responsibility (EPR) programs			
10A.	Advocate to the Province to expand EPR programs	Ongoing focus area	• Province has listed a number of products in their 2021-2026 action plan for EPR expansion, including mattresses, propane tanks, fire extinguishers and additional battery types (EPR Five-Year Action Plan) • The province is working with other jurisdictions toward national EPR consistency
10B.	Collaborate with stewards to increase consumer awareness about EPR programs	Ongoing focus area	
10C.	Advocate for increased return-to-retailer opportunities	Ongoing focus area	
10D.	Advocate federally to standardize EPR programs across Canada	Ongoing focus area	

Strategies and Actions		Timing	Update
Recycling Strategies			
Strategy #11 Increase organics diversion and processing capacity			
11A.	Continue to promote organics waste diversion	Future focus area	• Increased kitchen scraps tipping fee to $140 per tonne
11B.	Continue to utilize existing private sector organics processing capacity and seek to develop a facility at the Hartland site should processing capacity not meet the region's requirements	Future focus area	
11C.	Support compost markets by purchasing back materials	Future focus area	
11D.	Collaborate with service providers and users to develop guidelines for the use of compostable products and packaging	Future focus area	

Strategies and Actions		Timing	Update
Recycling Strategies			
Strategy #12 Increase construction, renovation and demolition (CR&D) material diversion			
12A.	Develop a comprehensive strategy, including characterization of materials, best practices, and pilot projects	Future focus area	• Identified as a priority, staff are exploring the diversion of specific material streams from the landfill through regulations and service changes • Participation in the Coast Waste Management Association's construction and demolition working group
12B.	Develop educational tools to support CR&D material diversion (e.g., create an industry toolkit, a deconstruction guide, and/or guidelines for diverting and utilizing reused materials)	Future focus area	
12C.	Promote green building standards	Future focus area	
12D.	Continue collaboration with local governments to develop and use policy tools to maximize diversion and to align management plans (e.g., construction permits, building codes)	Future focus area	
12E.	Investigate beneficial uses of CR&D waste, including a clean wood waste ban	Short-term focus area	
12F.	Investigate banning or surcharging mixed CR&D loads at the landfill to encourage source separation	Short-term focus area	
12G.	Further, develop programs for managing hazardous materials (e.g., asbestos)	Future focus area	

Strategies and Actions		Timing	Update
Recycling Strategies			
Strategy #13 Encourage proper public space waste management activities			
13A.	Develop educational materials to prevent and reduce litter and abandoned materials in our neighbourhoods and public spaces	Future focus area	• Supported District of Saanich's campaign to reduce illegal dumping activity
13B.	Continue promoting alternatives to abandoned materials and illegal dumping by educating about proper management and disposal	Ongoing focus area	
13C.	Collaborate with stakeholders, including local governments and private sector facilities, to develop a regional approach to the prevention of illegal dumping	Future focus area	
13D.	Investigate developing regionally-aligned litter bylaws	Future focus area	
13E.	Develop and pilot methodologies to 'observe, record, and report' on abandoned materials and illegal dumping incidents throughout the CRD	Future focus area	
13F.	Investigate options for large bulky item disposal, (e.g. free drop-off days or large item pick-up days)	Future focus area	

Strategies and Actions		Timing	Update
Recovery & Residuals Management Strategies			
Strategy #14 Optimize landfill gas management			
14A.	Continue to maximize and optimize the capture of landfill gas for beneficial use	Ongoing focus area	• Analysis to optimize landfill gas management is underway in conjunction with the RNG initiative
14B.	Investigate collaboration opportunities with educational institutions to research new beneficial uses and technologies	Short-term focus area	

Strategies and Actions		Timing	Update
Recovery & Residuals Management Strategies			
Strategy #15 Enhance Hartland disposal capacity			
15A.	Review Hartland tipping fee structure and ban enforcement levels, subject to recycling market conditions	Short term focus area	• The opportunity to use beneficially on site material streams previously being directed to active face is underway. Unusable books are being shredded and used to displace rock as cover material for some areas.
15B.	Continue to operate Hartland Landfill using best practices	Ongoing focus area	
15C.	Develop design options to maximize the disposal capacity of Hartland Landfill to 2100 and beyond	Future focus area	
15D.	Continue to conduct research, investigate and report out on emerging waste management technologies	Short term focus area	

Capital Regional District

625 Fisgard Street
Victoria, BC V8W 2S6
250.360.3000

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