



2022 Solid Waste Management Plan Progress Report



Making a difference...together

April 2023

TERRITORIAL ACKNOWLEDGEMENT

The CRD conducts its business within the traditional territories of many First Nations, including but not limited to BOKÉĆEN (Pauquachin), MÁLEXEŁ (Malahat), P'a:chi:da?ah̓ (Pacheedaht), Pune'laxutth' (Penelekut), Sc'ianew (Beecher Bay), Songhees, STÁUTW (Tsawout), T'Sou-ke, WJOŁŁP (Tsartlip), WSIKEM (Tseycum), and x̣ẉsepsəm (Esquimalt), all of whom have a long-standing relationship with the land and waters from time immemorial that continues to this day.



Terms and Abbreviations

3Rs - Reduce, Reuse, Recycle

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

C&D - Construction and Demolition

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

MSW - Municipal Solid Waste

PPP - Packaging and Paper Products

RNG - Renewable Natural Gas

SWAC - Solid Waste Advisory Committee

SWMP - Solid Waste Management Plan

Organizational Overview

The 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.

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Cover image: The Capital Region Food Share Network used funding from the Rethink Waste Community Grant to increase driver hours to rescue an additional 67,000 lbs (30 tonnes) of food. The collected food was redirected to different organizations for distribution in the community.



Royal Roads University used funding from the Rethink Waste Community Grant to construct sustainable compost bins for its garden.

Overview

The Solid Waste Management Plan - 2022 Progress Report highlights activities undertaken by the CRD in 2022, and satisfies the regular reporting requirements associated with the CRD's SWMP. The SWMP has a target of reducing waste in the region by more than one third over the next decade. Through zero waste and circular economy principals, the plan includes strategies for reducing all streams of solid waste to extend the life of Hartland Landfill to 2100 and beyond.

All costs associated with the CRD's 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

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 Management Planning

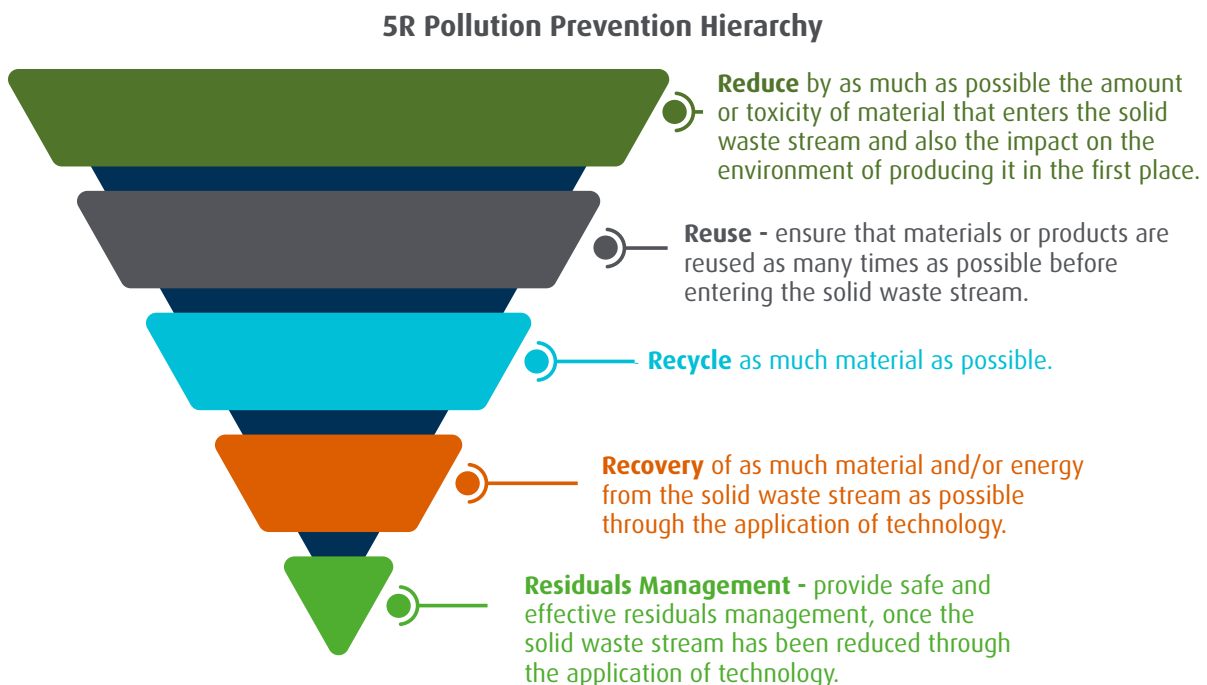
The *Environmental Management Act* requires all regional districts in BC to develop plans for the management of MSW and recyclable materials. Solid waste management planning is a proven way to reduce the amount of solid waste requiring disposal in a region, contributing to the protection of the environment.

Landfill Operating and Monitoring Requirements

Hartland Landfill is authorized through an Operational Certificate under the *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. More details can be found in the *Hartland Landfill Operating & Environmental Monitoring 2021/2022 Report*.

Solid Waste Management Plan

In BC, regional districts develop SWMPs under the provincial *Environmental Management Act* that are high-level long-term visions of how the regional district would like to manage its solid waste in accordance with the 5R Pollution Prevention Hierarchy.



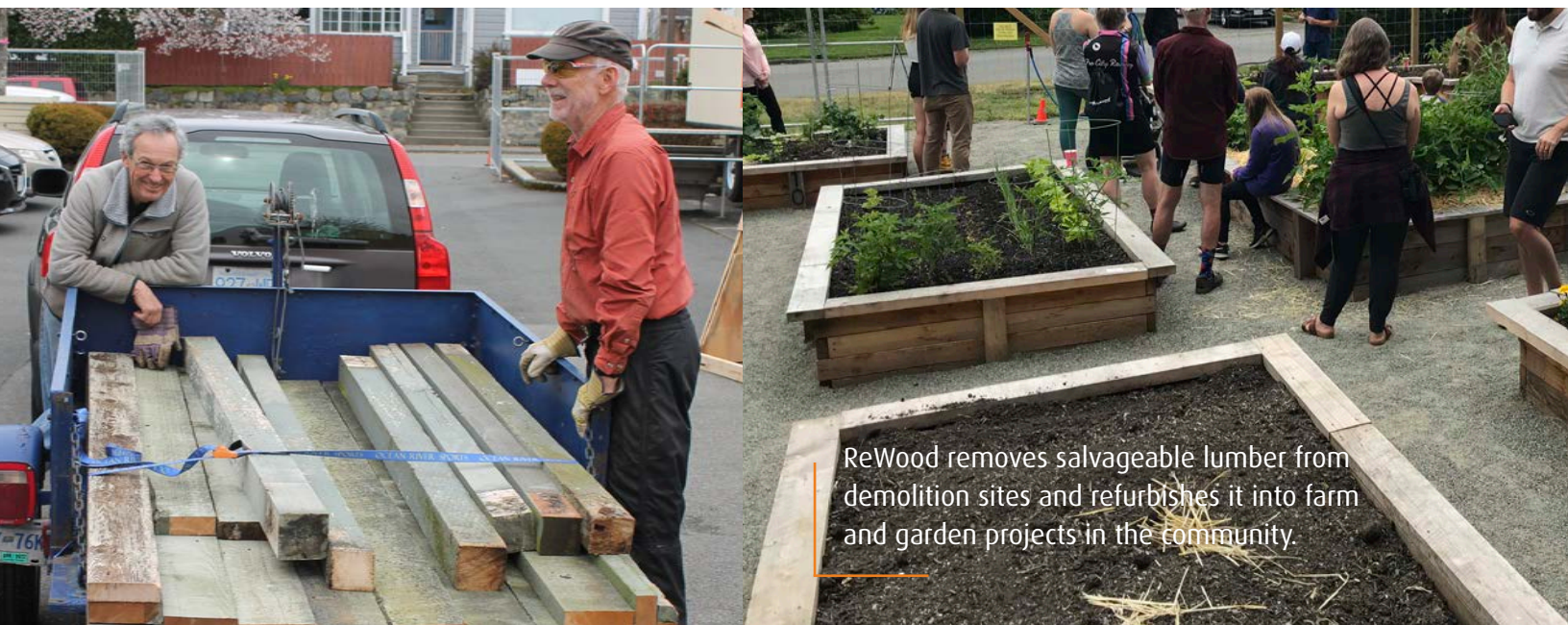
The SWMP for the region was endorsed by the CRD Board in May 2021, and was subsequently submitted to the ENV for approval. The final Plan includes strategies and actions for reducing and managing all streams of solid waste—including recyclables, compostable material and garbage—with an eye to extending the life of Hartland Landfill to 2100 and beyond.

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.

Goals

The Province's guidelines for solid waste management planning require SWMPs to have goals—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. The CRD SWMP goals are:

1. To surpass the provincial per capita waste disposal target (350 kg/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.

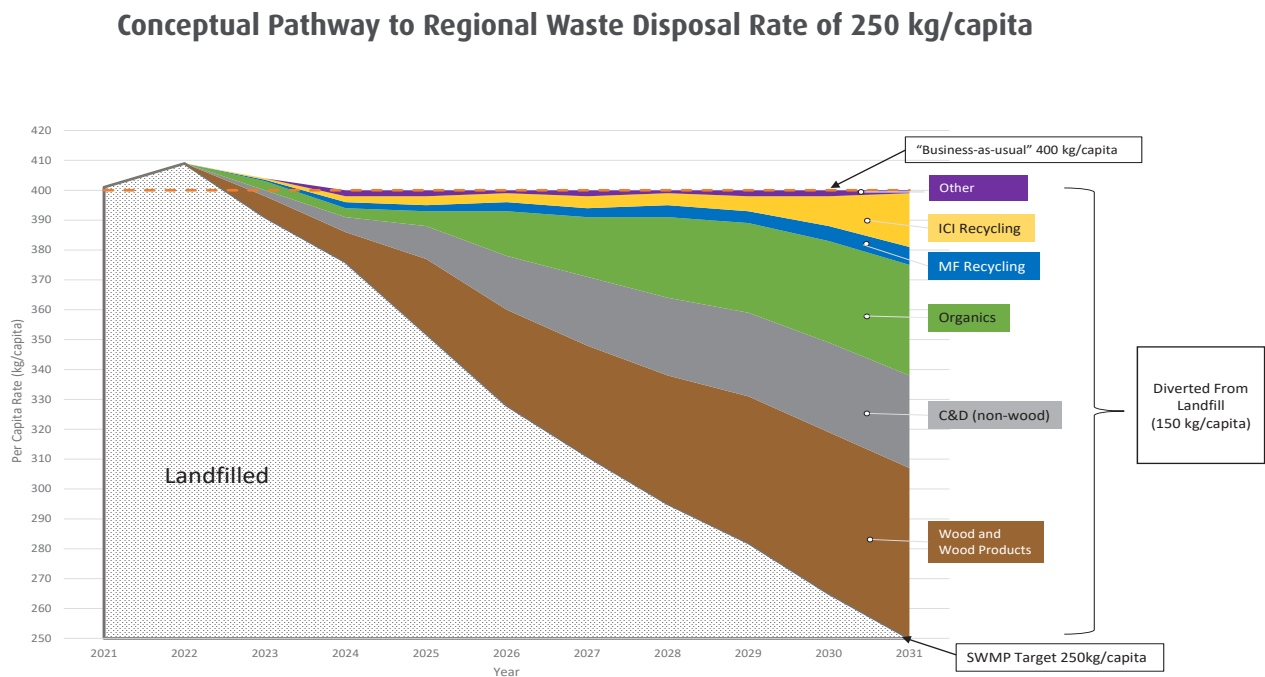


Targets and Tracking

The targets established for this plan are focused on reducing the amount of waste landfilled on a per capita basis. By the end of the 10th year of this plan, the capital region's per capita disposal rate target is 250 kg or less, surpassing the Province's long-term target of 350 kg per capita.

Below is a chart plotting one conceptual pathway to reducing the regional per capita disposal rate from 2021 levels to 250 kg per capita. The actual path taken to achieve waste reduction targets will depend on the actions the community takes to reduce waste, and the work the CRD does to support diversion activity and redirect waste material back into the economy. The chart represents an aggressive timeline to divert materials from the landfill in accordance with the strategies and actions in Appendix A: Solid Waste Management Plan Report Card.

The metrics used to track the SWMP targets in 2022 are the regional per capita disposal rates, and the Solid Waste Stream Composition Study, which provides a breakdown of categories and sectors to focus on. In 2023, in consultation with the SWAC, the CRD will develop additional indicators associated with tracking the progress of each strategy in the SWMP.



Per Capita Disposal

In 2012, the Province of BC began using per capita disposal rates as the standard solid waste metric. The provincial per capita disposal rate in 2020, the latest provincial numbers reported, was 499 kg per capita, while the capital region's rate in 2020 was 395 kg per capita, the third lowest in the province.

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. In 2021, this landfill reached its approved filling capacity and stopped receiving solid waste for disposal.

General Refuse Disposal - Per Capita Disposal Rate for Capital Region

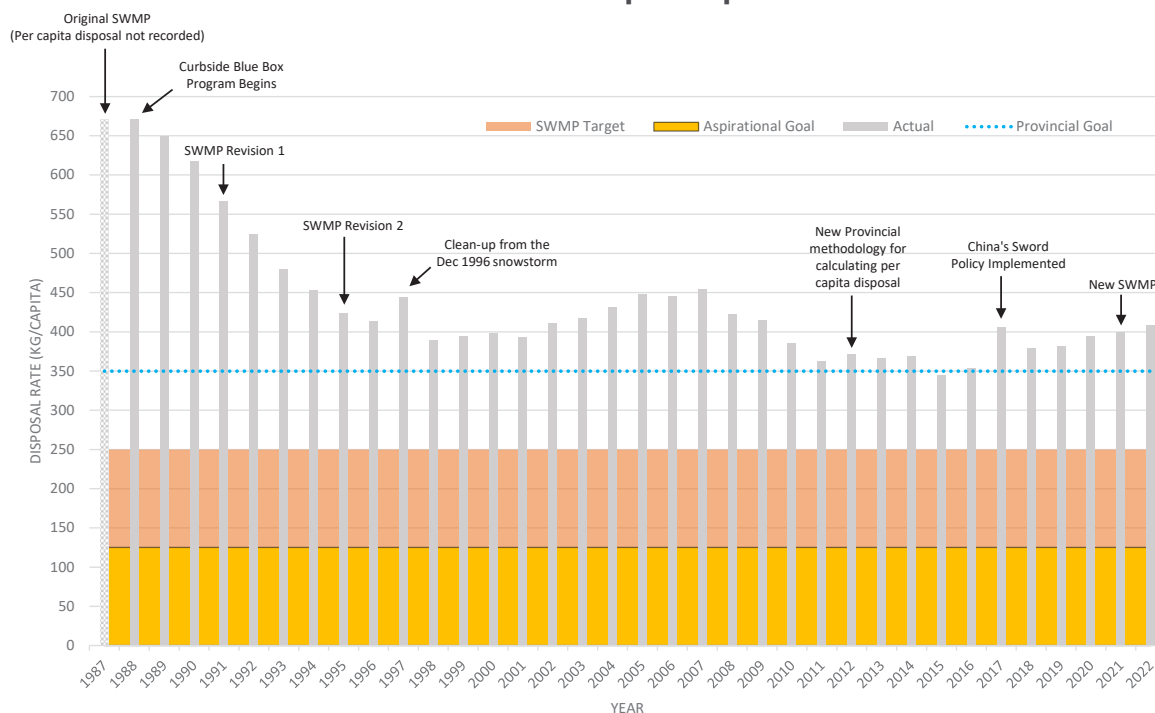
Year	Population ¹	Hartland Landfill			Tervita Highwest Landfill ³	Disposal Rate kg/person
		Received	Beneficial Use ²	Landfilled		
2012	368,935	129,279	n/a	129,279	7,880	372
2013	371,265	123,210	n/a	123,210	13,025	367
2014	372,463	120,942	-1,636	119,306	18,000	369
2015	377,810	114,476	-2,034	112,442	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
2022	440,456	185,111	-5,107	180,004	0	409

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 Historic Per Capita Disposal Rate

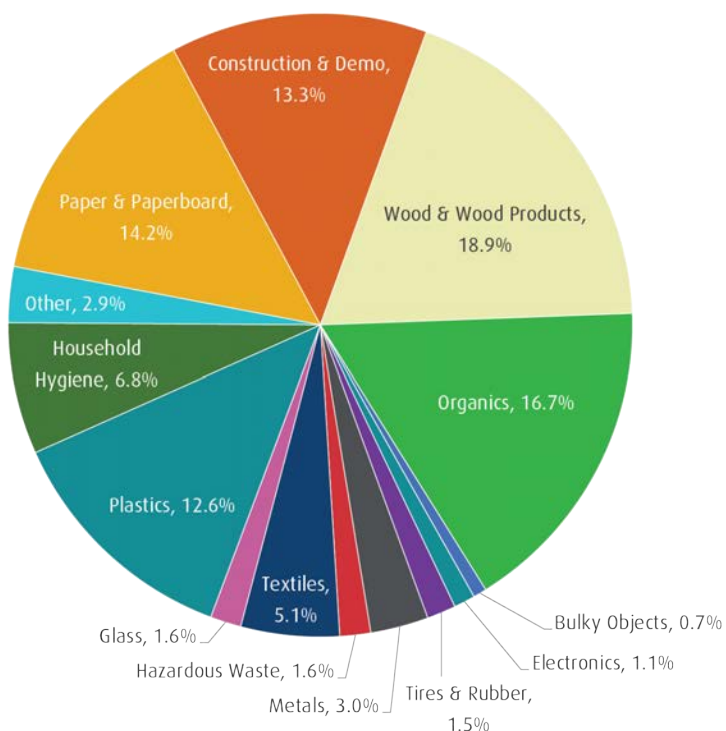


Solid Waste Stream Composition Study

Solid waste stream composition studies provide valuable benchmark data and analysis for evaluating the success of existing solid waste programs and SWMP initiatives.

Since 1990, the CRD has commissioned six studies to assess the composition of waste being landfilled at Hartland. The most recent analysis took place in 2022.

2022 Solid Waste Stream Composition Study Results



Challenges and Opportunities

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-profit associations, as well as the local waste management industry. Each of the stakeholders involved in solid waste management has a unique role to play, but there are many competing priorities.

Solid Waste Roles and Responsibilities



Hartland Landfill has the lowest general refuse tipping on Vancouver Island at \$110 per tonne. In 2022, the Cowichan Valley Regional District Board passed a bylaw amendment to raise its general refuse tipping fee to \$192 per tonne in 2023. Hartland Landfill does not accept waste that originates outside the region but, currently, there is limited ability for staff to validate and subsequently enforce this rule.

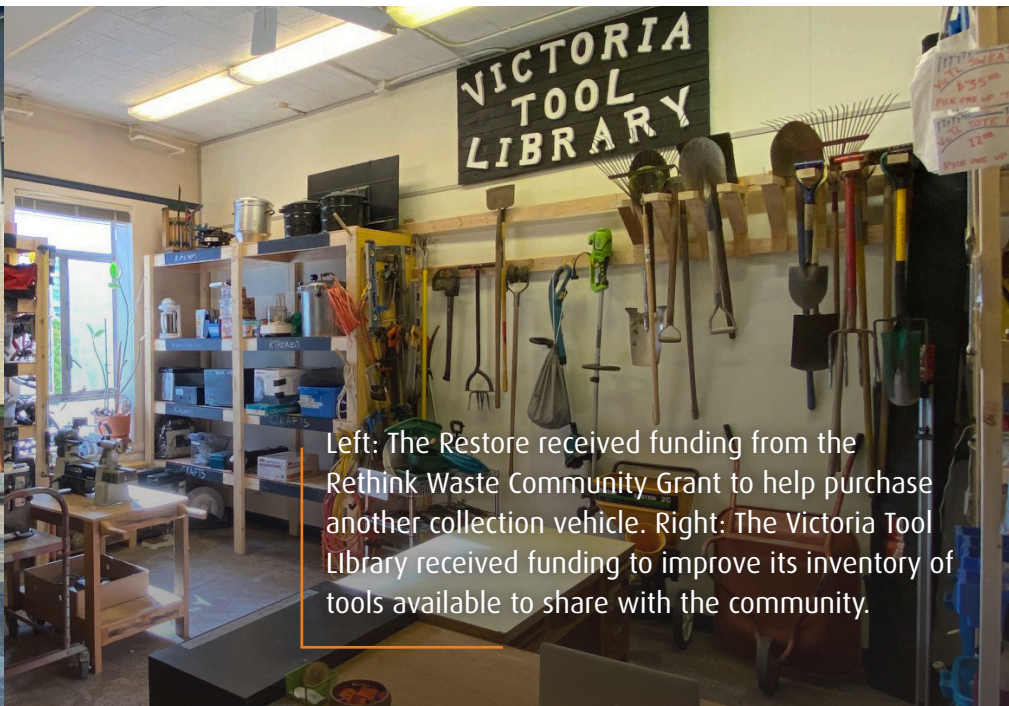
The main policy levers the CRD has over solid waste disposal are limited to what is accepted at Hartland Landfill. The CRD can drive industry to divert material from the landfill by increasing disposal fees to support diversion activity in the community, implementing waste flow management to prevent disposal of out-of-region waste, banning more material streams and broadening the scope of source-separated materials received and consolidated for off-site processing and marketing. Through implementation of the SWMP in 2023, the CRD will be reviewing the Hartland Landfill tipping fee structure and ban enforcement levels, along with investigating waste flow management.

Progress Summary

The following sections are intended to provide a high-level, easy-to-understand overview of the CRD's progress related to implementing the SWMP and summarize progress made in 2022 in the following areas:

- Reduce and Reuse
- Recycling
- Recovery and Residuals Management

For more details on the SWMP's 15 strategies, consult Appendix A: Solid Waste Management Plan Report Card.



Left: The ReStore received funding from the Rethink Waste Community Grant to help purchase another collection vehicle. Right: The Victoria Tool Library received funding to improve its inventory of tools available to share with the community.



Reduce and Reuse

Governments, residents, non-profits, and business all have an important role to play in reducing and diverting waste from the landfill. Reducing the amount of waste created, and finding ways to repurpose and reuse waste, eliminates the need to dispose of items later.



Overall Action Status
On Track

CRD Roles

Municipal collaboration
Provincial and Federal
Government advocacy
Funding non-profits
Education and outreach

This focus
area includes

6

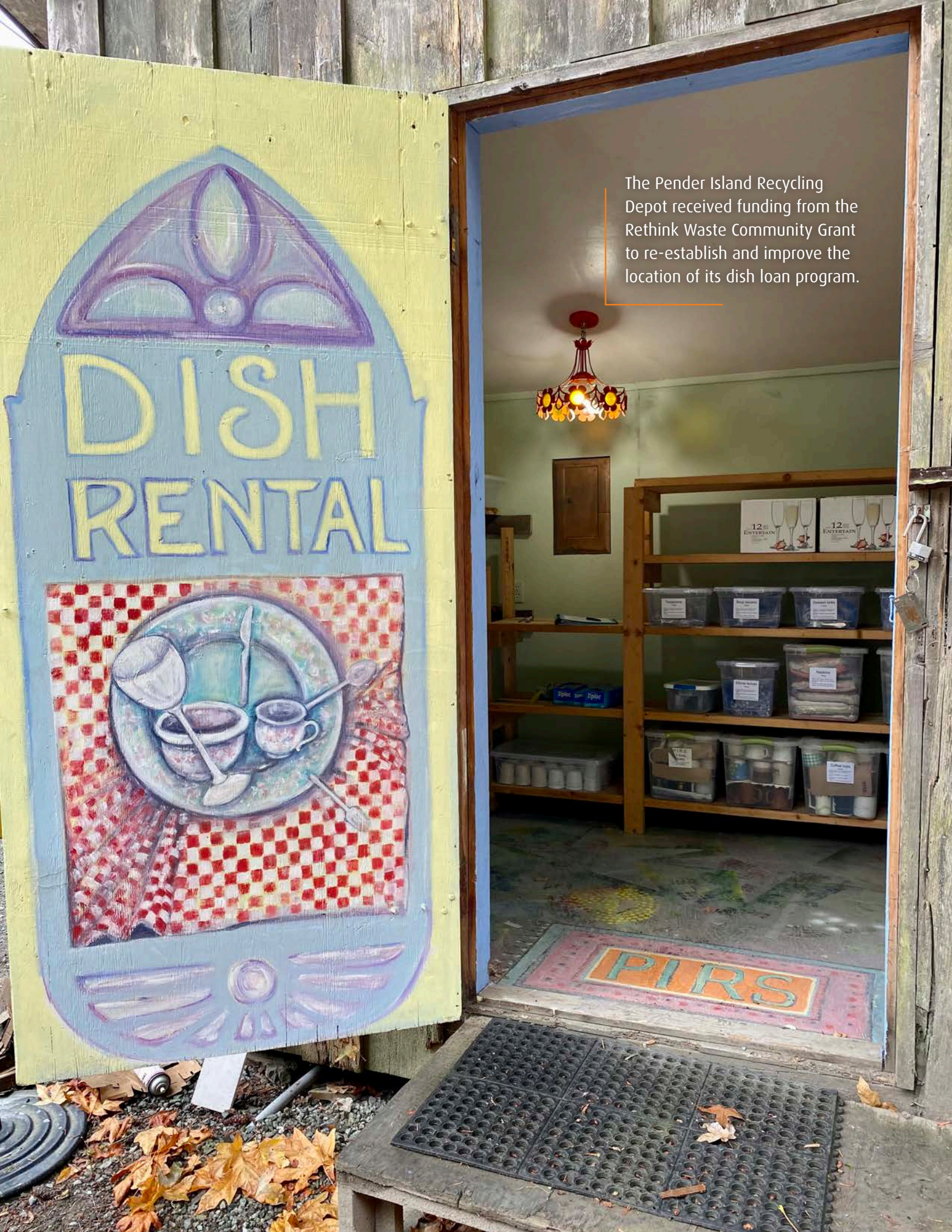
SWMP strategies

Progress Summary

- Launched the Rethink Waste Community Grant on Earth Day (April 21) to provide funding for the development and implementation of community-based projects that will reduce the amount of waste sent to Hartland Landfill. The CRD awarded 16 grants, totalling \$35,000.
- Continued to provide support (\$86,000) for 10 local non-profit reuse organizations to assist them in managing unusable donations, and partnered with five non-profit reuse organizations for the redistribution of 22 tonnes of usable textiles, bicycles, and large appliances collected at Hartland Depot.
- Resumed in-person educational programming and outreach events after COVID-19 restrictions lifted in April 2022. Between the Hartland Landfill Public Tours, Hartland Landfill Technical Tours, 3Rs K-12 program and public outreach events, the CRD connected with more than 2,000 residents.
- Launched the Rethink Waste Newsletter in August 2022 to communicate to residents and businesses about SWMP implementation, regional solid waste reduction opportunities and other solid waste related topics.
- Established a Local Government Waste Reduction Working Group. Eight meetings were held in 2022 (with nine participating municipalities) where items such as C&D activity, depot services, residential waste volumes, multi-family services, organics management, illegal dumping and disaster debris planning were discussed.



Supply Victoria



The Pender Island Recycling Depot received funding from the Rethink Waste Community Grant to re-establish and improve the location of its dish loan program.



Recycling

By participating in recycling programs, residents and businesses take responsibility for the products they've purchased and support a system where these materials can be used repeatedly.



Overall Action Status
On Track

CRD Roles

Hartland Depot

Landfill bans

Provincial and Federal
Government advocacy

Curbside recycling contract

Recycling in Electoral Areas

Education and outreach

This focus
area includes

7

SWMP strategies

Progress Summary

- Provided feedback to the ENV on implementation of its Five-Year Action Plan, and conveyed how the regulation of new products plays a key role in our region achieving its SWMP goals.
- Continued to partner with 12 EPR stewards for local collection of 20,562 tonnes of provincially-regulated recyclables through the Hartland Depot, Electoral Areas Depots and the Curbside Blue Box Program.
- Secured a collection contractor for the 2024-2029 Curbside Blue Box Program. The new contractor will be using 23 compressed natural gas vehicles and two electric vehicles.
- Continued to provide consolidation, transfer and processing services for kitchen scraps collected by municipalities and private service providers. In 2022, 9,567 tonnes of source-separated kitchen scraps were received.
- Piloted separate collection bins for clean unfinished wood and C&D material streams at Hartland Depot, and began the procurement process for processing and marketing of new source-separated materials.
- Completed the MFD Market Research, which will be used to guide the creation of communication and education materials, like consistent signage for MFD residents, property managers and the broader community.



Hartland Depot

In 2022, Hartland Depot collected 19,916 kgs of household batteries, which earned it a Leader in Sustainability award from Call2Recycle. Call2Recycle is the provincially-approved consumer battery collection and recycling program for BC.





Recovery and Residuals Management

Once material has been reduced and technology has been applied to recover as much energy as possible, residuals management provides a safe and effective way to manage materials that don't have a next and best use.



Overall Action Status

Opportunity for Improvement

CRD Roles

Landfill bans and enforcement

Hartland Landfill

Technology research

Landfill Gas Management

This focus area includes

2


SWMP strategies

Progress Summary

- Calculated a disposal rate of 409 kg/capita, an increase of 9 kg/capita over the previous year.
- Hired a technical advisor and commenced work on developing a material diversion and beneficial use strategy.
- Conducted a solid waste stream composition study to analyze materials sent to landfill.
- Issued 559 tickets and 13 warnings primarily related to banned materials in garbage.
- Conducted a shredding trial with specific material streams to manage incoming volumes and further densify material.
- Removed 30,000 m³ of overburden and 225,000 m³ of in-situ rock to prepare the new landfilling cell to receive future garbage.
- Contracted Waga Energy, through its subsidiary Hartland Renewable Resources Group to design, build and operate a new CRD facility that will upgrade the biogas generated at Hartland Landfill to RNG. This project is expected to reduce the capital region's GHG emissions by approximately 450,000 tonnes of carbon dioxide over the next 25 years, a 73% improvement from initial projections of 260,000 tonnes in 2019.
- Achieved a 69% gas collection efficiency based on the ENV model, and a 78% gas collection efficiency based on the UBCi model in 2021. More details can be found in the 2021 Landfill Gas Monitoring Report.



Landfill Gas Plant



In the fall of 2022, the CRD hired a consultant to perform a solid waste stream composition study at Hartland's active face. Garbage from residential and commercial sources are sampled and materials are sorted into 94 categories.



The active face at Hartland Landfill.

Looking Ahead

The CRD will continue to show a leadership role by supporting local, municipal and federal waste diversion efforts, and continue to move waste up the 5R Pollution Prevention Hierarchy to its next and best use.

Some activities planned for 2023 include:

- **New Policies to Divert Waste from Hartland Landfill:** Actions include consideration of modifying the tipping fee structure to incent diversion, expanding landfill material bans for streams where viable alternatives exist, facilitating the diversion of material and energy recovery of diverted material and enhancing bylaw enforcement to reduce the amount of banned materials and recyclables from being sent to the landfill.
- **Waste Flow Management:** Investigate waste flow management to increase the diversion of recyclable materials, as well as prevent disposal of out-of-region MSW at Hartland Landfill.
- **MFD/ICI Sector Strategy:** Using the data and analysis from the 2022 Solid Waste Stream Composition Study, programs and strategies will be created to target materials that are banned from the landfill, such as organics.
- **Rethink Waste Communications Plan:** Develop key messages around the SWMP to consistently inform residents and businesses of the ongoing activities associated with the SWMP.
- **Plan Monitoring Performance Measures:** In consultation with the SWAC, develop metrics beyond the Solid Waste Stream Composition Study and per capita disposal rate for reporting on the four goals of the SWMP.
- **Hartland Landfill Operations:** Research and pilot new technologies to maximize the densification and compaction rate at the active face. Decrease use of raw materials (such as aggregate) for cover by increasing beneficial use of select waste material, per the ENV guidelines.



Pender Island Recycling Depot.

Appendix A: Solid Waste Management Plan Report Card

The SWMP Report Card is intended to provide a high-level, easy-to-understand overview of the CRD's progress related to implementing the SWMP and to summarize progress made in 2022.

Methodology

The 2021 SWMP identifies specific actions to guide the CRD's efforts over the lifespan of the Plan. These include 15 strategies with 72 sub-actions and associated timelines divided into the following focus areas:

- Reduce and Reuse
- Recycling
- Recovery and Residuals Management

Performance indicators in this report have been analyzed and assessed by CRD staff. In 2023, in consultation with the SWAC, the CRD will develop indicators associated with each strategy to complement the metrics provided by the Solid Waste Stream Composition Study and per capita disposal rate for reporting on the four goals of the SWMP.



2022 Overall SWMP Progress

On track

Focus Area



Reduce and Reuse



Recycling



Recovery and Residuals
Management

Legend: Action Status



On Track



Opportunity for Improvement



Attention Required



Future Action

Legend: Indicators

Indicators will be developed in
2023, in consultation with SWAC.



Reduce and Reuse

Reducing the amount of waste created and finding ways to repurpose and reuse waste, eliminates the need to dispose of items later.



Overall Focus Area Status
On track

Status	Strategy	Update
Progress on Strategies		
	1 Continue and enhance education programs	<ul style="list-style-type: none">• Launched CRD Rethink Waste Newsletter; sent out issues in August and October• Responded to 21,769 Infoline inquiries via phone and email and received 439,309 visits to myrecyclopedia.ca• Delivered 51 3R programs to 1,431 K-12 students, and sent a spring and fall Educators Newsletter to 591 teachers• Conducted 6 public education campaigns, including advertorials, digital advertising, print advertising and bus shelter advertising• Delivered 4 public landfill tours to 84 residents, 12 community group tours to 255 residents and 13 technical landfill tours to 200 industry partners• Attended 5 events with a 3R display• Received 11,788 new RecycleCRD app installs and received 6,953 Ready, Set, Sort! game plays by residents• Added 13,731 residents to receive reminders and alerts via RecycleCRD app, email, voicemail and mobile calendar for the Curbside Recycling Program• Continued participation in Coast Waste Management Association communications/educators working group• Continued sponsorship of Ecostar awards• Completed review of solid waste webpages, identified gaps and opportunities to communicate to a broader audience (e.g., MFD, ICI)• Identified need for a broader communications plan, to be developed in 2023
	2 Encourage waste prevention	<ul style="list-style-type: none">• Launched the CRD Rethink Waste Community Grant and supported 16 projects (\$35,500) in 2022• Participated in national 2022 Waste Reduction Week• Participated in Coast Waste Management Association Single-Use Items working group, quarterly meetings in 2022• Federal Government - single-use plastics regulation on import and manufacturing implemented in December 2022• Town of Sidney - Adopted bylaw to regulate single-use items
	3 Support reduction of avoidable food waste	<ul style="list-style-type: none">• Conducted a fall Love Food Hate Waste (LFHW) education campaign, which featured bus shelter ads, social media, local print and digital media ads• Work in collaboration with the District of Saanich to design LFHW branded signs for its municipal garbage trucks• Partnered with the Compost Education Centre for provision of composting and conservation education
	4 Support reuse activities in the region	<ul style="list-style-type: none">• Continued to provide support (\$86,000) for 10 local non-profit reuse organizations to assist them in managing unusable donations• Collected 22 tonnes of reusable goods at Hartland Depot for redistribution by local non-profit reuse organizations• Supported 8 reuse projects through the CRD's Rethink Waste Community Grant
	5 Support local governments in working towards zero waste and a circular economy	<ul style="list-style-type: none">• Established a Local Government Waste Reduction Working Group, 9 municipalities participating, 8 meetings held in 2022• Continued work with WSANEC Leadership Council (WLC)/CRD Solid Waste Working Group to develop a partnership agreement that addresses WCL/CRD discussions regarding Hartland Landfill and the SWMP• Worked with Pacheedaht First Nation to clean up illegal dumping activity in their community
	6 Continue and enhance policy development	<ul style="list-style-type: none">• Hired technical advisor to advise on expanded material bans, tipping fee rate structure and bylaw enforcement• Began market research and procurement for the processing and marketing of new source-separated material streams• Issued Request for Expressions of Interest for processing of material diverted through potential material bans• Began investigation of regulatory mechanisms to regulate MSW and recyclable materials• Began investigation of licensing waste management facilities in the region• Continued to administer the solid waste service for the Port Renfrew community



Recycling

By participating in recycling programs, residents and businesses take responsibility for the products they've purchased and support a system where these materials can be used repeatedly.



Overall Action Status
On Track

Status	Strategy	Update
Progress on Strategies		
	7 Increase residential diversion	<ul style="list-style-type: none">Partnered with Recycle BC for local collection of 19,104 tonnes of residential PPP through the Hartland Depot, the curbside single-family home recycling program and depot services for rural/island residentsSecured collection contractor for 2024-2029 for Curbside Blue Box ProgramIssued Request for Expressions of Interest for local processing of materials diverted from the landfill
	8 Increase multi-family diversion	<ul style="list-style-type: none">Finalized MFD market research analysisDeveloped waste sorting area signage for use by MFD managers to help reduce contamination and increase diversionPrepared specific waste sorting area signs to be piloted with CRD Housing
	9 Increase diversion from industrial, commercial and institutional (ICI) facilities	<ul style="list-style-type: none">Provided information, resources and a landfill tour for the Department of National Defence to aid in their waste diversion initiativesBC Government - conducted an ICI sector Waste Flow Study
	10 Support existing and new extended producer responsibility (EPR) programs	<ul style="list-style-type: none">Continued to partner with 12 EPR stewards for local collection of 20,562 tonnes of provincially-regulated recyclables through the Hartland Depot, Gulf Islands and Port Renfrew Depot and the Curbside Blue Box ProgramProvided feedback to the Province on implementation of their Five-Year Action Plan, and conveyed how the regulation of these new products plays a key role in our region to achieve its SWMP goalsParticipated in Recycle BC's 2024-2028 program plan consultationBC Government - Province indicated through its Five-Year Action Plan the expansion of the Recycling Regulation in 2023 to include mattresses/foundations, compressed canisters, fire extinguishers, additional battery types and electronic accessories and medical sharps. It is expected programs would be operational beginning in 2025BC Government - The Province is working with other jurisdictions toward national EPR consistency
	11 Increase organics diversion and processing capacity	<ul style="list-style-type: none">Provided consolidation, transfer and processing services for 9,567 tonnes of kitchen scraps collected by municipalities and private service providersProvided transfer and processing services for 1,627 tonnes of yard and garden material collected at Hartland DepotConducted planning and design for new kitchen scraps transfer stationProvided safe disposal for invasive speciesCity of Victoria - launched Sustainable Takeout Guide
	12 Increase construction, renovation and demolition (CR&D) material diversion	<ul style="list-style-type: none">Began procurement process for processing and marketing of new source-separated material streamsIntroduced separate collection bins for clean, unfinished wood and C&D material streams at Hartland DepotTransitioned clean wood material stream from onsite beneficial use to offsite use as alternative fuelCity of Victoria - Demo and Deconstruction Bylaw - stepped implementation began September 2022City of Victoria - Deconstruction Industry Training sessions
	13 Encourage proper public space waste management activities	<ul style="list-style-type: none">Conducted an education campaign on illegal dumping/abandoned waste, highlighting how residents can dispose of items according to the 5Rs



Recovery and Residuals Management

Once material has been reduced, and technology has been applied to recover as much energy as possible, residuals management provides safe and effective ways to manage materials that don't have a next and best use.



Overall Action Status
Opportunity for improvement

Status	Strategy	Update
Progress on Actions		
	14 Optimize landfill gas management	<ul style="list-style-type: none">• Achieved a gas collection efficiency of 70% (ENV model) 81% (UBCi model), exceeding the 75% requirement• Produced 1.6 megawatts of green power, providing green power for the equivalent of 1,600 homes• Began construction of new methane to RNG facility• Implemented strategies to improve gas collection and mitigate fugitive emissions• Partnered with the University of Victoria on fugitive emissions study
	15 Enhance Hartland disposal capacity	<ul style="list-style-type: none">• Calculated a disposal rate of 409 kg/capita, an increase of 9 kg/capita over the previous year• Launched thermal pilot to study disposal alternatives for managing C&D material• Hired a technical advisor and commenced work on developing a material diversion and beneficial use strategy• Initiated tipping fee rate and associated fines review work for a bylaw amendment in 2023• Conducted a solid waste stream composition study to analyze materials sent to landfill• Received Board approval to increase tipping fee for international high-risk cruise ship waste from \$157 to \$500 tonne beginning January 2024• Continued to expand onsite beneficial use opportunities with 5,107 tonnes of select waste material streams processed and utilized onsite in place of virgin material as per ENV guidelines• Conducted a shredding trial, with specific material streams in an effort to manage incoming volumes and further densify material• Achieved a landfill utilization factor of 0.67 t of refuse/m³ of airspace• Updated Design Operations Closure Plan in 2022, and submitted to ENV with 2021 SWMP submission• Removed 30,000 m³ of overburden and 225,000 m³ of in-situ rock to prepare the new landfilling cell to receive future garbage.• Constructed new scale building at Hartland North and installed new gate at entrance• Produced and applied biosolids growing medium as a topsoil alternative, as outlined in the approved biosolids beneficial use contingency plan• Received 17,832 tonnes of controlled waste• Measured average controlled waste trench compaction 0.93 t/m³• Received 4,145 tonnes of asbestos containing material• Issued 559 tickets and 13 warnings, primarily related to banned materials in garbage



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