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Solid Waste & Recycling



Minimize waste disposal and maximize waste diversion

01 Strategy

STRATEGIES & PLANS

- › Solid Waste Management Plan
- › Hartland Environmental Programs
- › [Regional Growth Strategy](#)
- › [Climate Action Strategy](#)
- › [Special Task Force on First Nations Relations](#)
- › [CRD Corporate Plan](#)

CORPORATE PLAN GOALS

- 3a Maximize solid waste diversion & resource recovery from waste materials
- 3b Outreach & engagement with communities

02 Contacts

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03 Operating Context

ACHIEVEMENTS IN 2023

1. **Solid Waste Management Plan (SWMP) Approval:** following CRD Board endorsement of the Plan in May 2021, the SWMP received approval from the Ministry of Environment & Climate Change Strategy (ENV) in July 2023.
2. **Design, Operations and Closure Plan Update:** submitted the revised Design, Operations and Closure Plan to ENV for review and approval.
3. **New Policies to divert waste from Hartland Landfill:** board endorsement of policies to commence in 2024, including: 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 being sent to the landfill.
4. **Plan Monitoring and Performance Measures:** in consultation with the CRD's Solid Waste Advisory Committee, staff developed metrics for reporting on the goals of the SWMP.
5. **Hartland Landfill Operations:** Researched and piloted new technologies to maximize the densification and compaction rate at the active face. Decreased use of raw materials (such as aggregate) for cover by increasing beneficial use of select waste material, consistent with ENV guidelines.

FACTORS THAT WILL AFFECT OUR OPERATIONS IN 2024 AND BEYOND

- **Solid Waste Management Plan:** The new SWMP was endorsed by the CRD Board in May 2021, and approved by the Ministry of Environment and Climate Change (ENV) in July 2023. The SWMP has a target of reducing waste in the region by more than one third over the next decade. Though ENV approved the SWMP, the Board expressed a desire in its deliberations to achieve waste reduction levels greater than the targets laid out in it.
- **Collaboration on Waste Diversion Targets:** Despite the newly approved Plan, waste received at Hartland Landfill has increased each year since 2020, and achieving SWMP targets will require significant dedication and effort by the CRD, along with behaviour change by the public, and complementary actions by other jurisdictions and entities, including Province of BC, federal government, municipalities and stewardship agencies such as Recycle BC.
- **Material Stream Diversion:** New policies to be implemented in 2024, including landfill bans on wood waste, carpet and underlay and asphalt shingles, along with a modernization of the tipping fee structure and increased bylaw enforcement are expected to generate waste reductions in support of meeting the SWMP targets. Implementation of the material diversion policies will involve development of a material diversion transfer site at the Hartland Landfill, transport and processing contracts for newly diverted materials, and increased resourcing requirements to account for additional materials handling, processing and, in future years, increased bylaw enforcement.
- **Material Diversion Depots:** The Hartland public drop-off area continues to experience increased customer volumes, likely resulting from strong housing market activity. Increased WorkSafe BC requirements when receiving homeowner renovation and demolition materials at the landfill. As

part of the new SWMP, staff will be investigating options to increase access to depots, including expanding Hartland Depot operating hours, and establishing new depots.

- **Organics/Kitchen Scraps:** Organic waste made up 16.7% of the material received at Hartland Landfill in 2022. The kitchen scraps transfer station is being relocated on-site and will require continued staffing to ensure diversion and processing of the segregated food waste materials. The Environmental Service Committee has directed staff to explore regulating curbside organics collection from municipalities and electoral areas in the Region. Increased organics collection would require evaluation of processing capacity in region and on the Island.
- **Resource Recovery/Landfill Gas Utilization:** The existing electricity generation plant has reached end-of-life and the CRD has entered into a 25-year agreement to upgrade landfill gas generated at Hartland Landfill to RNG and sell it to FortisBC. A Renewable Natural Gas upgrade facility, to be operated by Waga Energy through its subsidiary Hartland Renewable Resource Group, will come on-line in 2024 and is expected to reduce the capital region's greenhouse gas (GHG) emission by approximately 450,000 tonnes of carbon dioxide equivalent over the next 24 years (equivalent to removing 3,900 cars from the road).
- **Landfill Operations:** As cell 3 becomes full of waste and Hartland begins landfilling waste in cell 4, commercial traffic will be moved to the North access point from Willis Point Road to accommodate the fill plan.

OPERATIONAL STATISTICS (2022 DATA)

- Received and disposed of **180,004 tonnes** of waste, **409 kg/capita**, an increase of 9kg/capita over 2021
- Issued **559 tickets** and **13 warnings** primarily related to banned materials in garbage
- Removed **30,000 m³ of overburden** and **225,000 m³ of in-situ rock** to prepare the new landfilling cell to receive future garbage.
- Achieved a **69% gas collection efficiency** based on the ENV model, and a **78% gas collection efficiency** based on the UBCi model in 2021.

04 Services

The services listed below rely on the support of several corporate and support divisions to operate effectively on a daily basis. More information about these services is available in the Corporate Services and Government Relations Community Need Summaries.

SERVICE BUDGET REFERENCES¹

- › 1.521 & 1.525 Environmental Resource Management

STAFFING COMPLEMENT

Environmental Resources Management Division: **25.7 FTE (including 3 Managers and 2 Administrative Support)**

1. DIVERSION SERVICES

Description

Responsible for solid waste management planning in the capital region, including policy and program development to increase waste reduction or recycling.

What you can expect from us

- ▶ Planning & policy development activities include the SWMP and the administration of 49 contracts and agreements and Compost Facilities Bylaw
- ▶ Delivery of the recycling programs, including curbside collection from 132,232 households and packaging, printed paper and glass collection from six electoral area depots. Today, the Hartland recycling facility collects more than 80 items from 28 product categories
- ▶ Implementation of new diversion policies that will reduce the amount of waste received at Hartland Landfill and increase reuse, recycling, recovery and beneficial use
- ▶ Beginning in 2024, delivery of material stream diversion transfer service for wood waste, asphalt shingles, carpet and underlay

2. LANDFILLING SERVICES

Description

Ensure regional landfill capacity with the operation of the CRD's Hartland Landfill. Ongoing capital and operating investments are made at Hartland to ensure compliance with the ENV landfill regulations, including leachate and landfill gas management infrastructure.

¹ Service budget(s) listed may fund other services

What you can expect from us

- ▶ Administration of five contracts and agreements
 - ▶ Residential service at bin area (9am-5pm weekdays, 9am-2pm Saturdays)
 - ▶ Commercial service at Hartland Landfill active face (7am-5pm weekdays, 9am-2pm Saturdays)
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3. RESOURCE RECOVERY SERVICES

Description

Installation and operation of landfill gas collection and utilization infrastructure at Hartland Landfill to ensure landfill gas (methane) destruction, and compliance with provincial environmental regulations. Seek to maximize the environmental and financial benefits of Hartland Landfill gas utilization.

What you can expect from us

- ▶ Production of Renewable Natural Gas (RNG) from upgraded landfill gas for sale to FortisBC, reducing GHG emissions by approximately 450,000 tonnes carbon dioxide equivalent over the next 25 years (beginning in 2024).
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4. HARTLAND ENVIRONMENTAL PROGRAMS

Description

Monitoring, assessment and technical reporting to support regulatory compliance and contaminant reduction at Hartland Landfill.

What you can expect from us

- ▶ Regulatory compliance monitoring of surface water, groundwater, landfill gas and leachate

05 Initiatives

Below are the initiatives listed in the [Capital Regional District 2023-2026 Corporate Plan](#) and the related initiative business cases (IBCs), including financial and staffing impacts, proposed for 2024. The financial impacts reflect full program costs, including cost of staffing.

Initiative	Implementation year(s)	Impacts in 2024
3a-1 Develop and implement new and enhanced waste diversion policies	2024	
▶ NEW IBC 3a-3.1 Hartland 2100	2024-ongoing	\$491K fee-for-service 3 New Ongoing
3a-2 Investigate regional waste flow management	Planned for 2025	N/A
3a-3 Increase multi-family dwelling and industrial, commercial and institutional sector waste diversion	2023-2026	Impacts included in 3a-1
3a-4 Explore beneficial uses for solid waste residuals	2023-2026	Impacts included in 3a-1
3a-5 Financially sustainable service delivery	2023-2026	Impacts included in 3a-1
3b-1 Ongoing engagement and outreach on all major policies and new diversion programs and plans	2023-2026	Impacts included in 3a-1

06 Performance

GOAL 3A: MAXIMIZE SOLID WASTE DIVERSION & RESOURCE RECOVERY FROM WASTE MATERIALS

Targets & Benchmarks

The landfill and recycling metrics focus on minimizing waste disposal and maximizing waste diversion (Metric 1) while ensuring they are done efficiently (Metric 3) and environmentally sustainably (Metric 2).

Measuring Progress

	Performance Measure(s)	Type	2022 Actual	2023 Forecast	2024 Target
1	Solid waste disposal target rate of 250 kg/person per year by 2030 ¹	Quantity	410 kg/capita	375 kg/capita	350kg/capita
2	Capture 75% of landfill gas at Hartland landfill ²	Quantity	73%	75%	75%
3	Waste compaction rate at Hartland Landfill of 850 kg/m ³	Quantity	921 kg/m ³	850 kg/m ³	900 kg/m ³

¹ Annual kilos of solid waste per capita; calculation based on provincial Municipal Solid Waste methodology

² Percentage of landfill gas captured at Hartland Landfill; data from CRD staff measurement and calculation

³ Kilos per cubic metre; data from CRD staff measurement

Discussion

- Metric 1 – per capita disposal rates have been on the rise due to a very active real estate market but rates are expected to decline as market conditions cool.
- Metric 2 – landfill gas capture continues to improve with additional capital investment and enhanced landfill gas collection techniques.
- Metric 3 – recent waste volume increases have resulted in challenges associated with waste compaction effectiveness. Hartland engineering is working with our heavy equipment contractor to improve compaction.

● GOAL 3B: OUTREACH & ENGAGEMENT WITH COMMUNITIES

Targets & Benchmarks

- Following the July 2023 provincial approval of the SWMP, establish baseline data for current and new CRD programs with performance measures to be developed in subsequent years

07 Business Model

PARTICIPANTS	Service users (no requisition)
FUNDING SOURCES	Fee-for-service: landfill tipping fees, Extended Producer Responsibility and recycling programs, biogas sale revenue
GOVERNANCE	Environmental Services Committee