



Regional District of North Okanagan

Solid Waste Management Plan: Five-Year Effectiveness Review



Terms and Abbreviations

ASDDF – Armstrong/Spallumcheen Diversion & Disposal Facility

BCMOE&CCS – British Columbia Ministry of Environment and Climate Change Strategy

CTS – Cherryville Transfer Station

DDF – Diversion & Disposal Facility

ECCC – Environment and Climate Change Canada

EPR - Extended Producer Responsibility

GVDDF – Greater Vernon Diversion & Disposal Facility

HHW – Household Hazardous Waste

ICI – Industrial Commercial & Institutional

KTS – Kingfisher Transfer Station

LFG – Landfill Gas

LDDF – Lumby Diversion & Disposal Facility

MARR – Major Appliance Recycling Roundtable (EPR Program)

RCBC – Recycling Council of British Columbia

RDNO – Regional District of North Okanagan

RSWMPMWG - Regional Solid Waste Management Plan Monitoring Working Group

SSTS – Silver Star Transfer Station

SWMP – Solid Waste Management Plan

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1.0 Background

In British Columbia, regional districts develop Solid Waste Management Plans (SWMPs) under the provincial *Environmental Management Act*. SWMPs are long term visions of how regional districts would like to manage their solid waste in accordance with the Pollution Prevention Hierarchy.



Figure 1: The Pollution Prevention Hierarchy (Source: BCMOE&CCS)

SWMPs are renewed on a 10-year cycle to ensure that they reflect the current needs of the regional district as well as current market conditions, technologies and regulations. The RDNO's first SWMP was completed in 1995, and updated SWMPs have been completed in 2002 and 2011. In 2017 the RDNO hired a consulting firm to help update the SWMP with the assistance of a Regional Solid Waste Advisory Working Group consisting of elected officials, stakeholders and members of the general public. The current RDNO SWMP 2018 Update was approved by the BC Ministry of Environment and Climate Change Strategy (BCMOE&CCS) in 2019. The RDNO must submit a plan renewal to the MOE&CCS by December 31, 2029.

This is a Five-Year Effectiveness Review of the current RDNO SWMP 2018 Update in accordance with Section C.3.3 of the A Guide to Solid Waste Management Planning, September 2016 and as required by BCMOE&CCS in correspondence advising of the SWMP approval dated October 9, 2019.

2.0 Regional Population and Growth Estimates

The RDNO encompasses six member municipalities (Armstrong, Coldstream, Enderby, Lumby, Spallumcheen and Vernon) and five electoral areas (B – Swan Lake/Commonage, C – BX/Silver Star, D – Rural Lumby, E- Cherryville and F- Rural Enderby). Together these communities are

home to 91,610 people (2021 Census) which was an 8.6% increase in population from the 2016 Census. Almost three quarters (73%) of the population is clustered in and around Vernon (including Coldstream, Electoral Areas B & C and the Okanagan Indian Band).

RDNO Population Distribution 2021

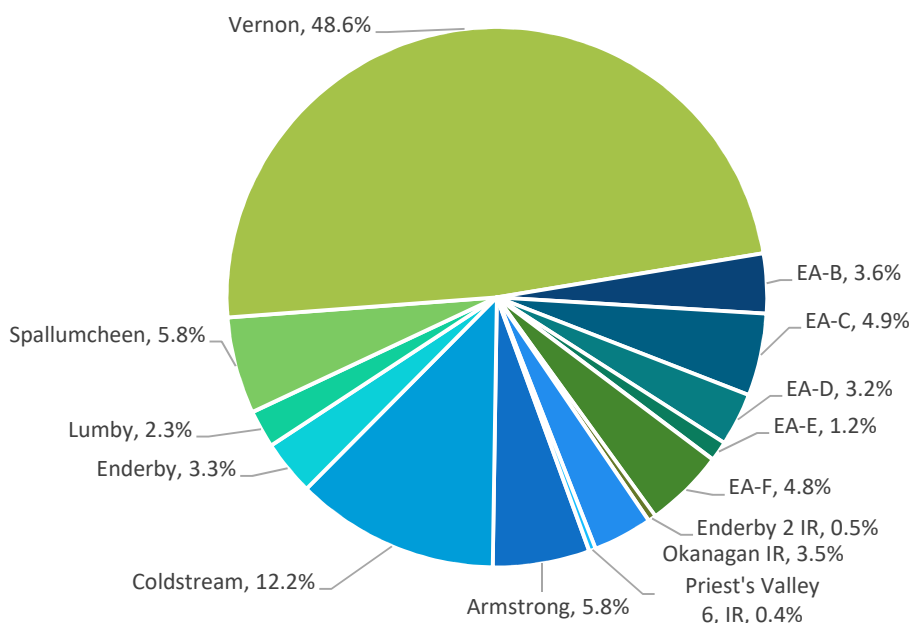


Figure 2: Distribution of population within the RDNO by Municipality, Electoral Area (EA) and Indian Reserves (IR).

The latest population projection was published in the BC Stats Population Extrapolation for Organizational Planning with Less Error model in 2020 and covers the years from 2020 to 2041. The average annual population growth rate for the Thompson Okanagan (which the RDNO is a part of) is projected at 0.9% per year for the 2020 to 2041 period.

3.0 The Solid Waste Management Network in the RDNO

The solid waste management network in the RDNO involves services from local government, private sector businesses and non-profit organizations, each of which provide varying levels of support that include drop off and collection services for waste, reuse, recycling and waste diversion. The structure of this network is intended to support the Pollution Prevention Hierarchy by encouraging residents to consider reuse and recycling options in communities where they live or shop before disposal or having to make a trip further out of local commercial centres to an RDNO Diversion & Disposal Facility (DDF). Having reuse and recycling services operated by the private and non-profit sectors in commercial centres also provides space for a developing circular economy in the region.

3.1 Regional District of North Okanagan

The RDNO provides solid waste management planning and information/education for the region and owns and manages six solid waste management facilities. This includes three Diversion & Disposal Facilities (DDFs) which contain active landfills and three transfer stations. Figure 3 shows a breakdown of the proportion of waste disposed at these facilities.

Distribution of Waste Disposal

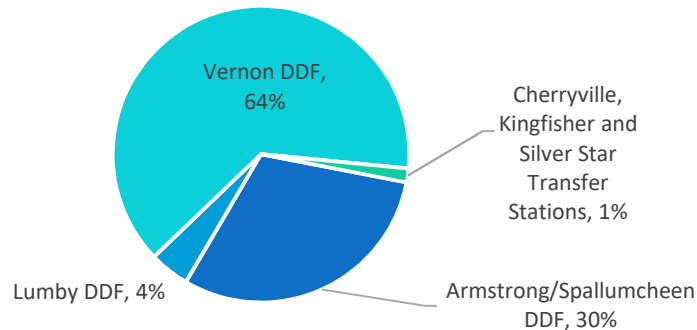


Figure 3: Distribution of waste disposed by facility in the RDNO (2022).

RDNO DDFs are intended to be the “option of last resort” for materials, where there are limited or no reuse or recycling options readily available. For instance, RDNO DDFs operate one EPR program, MARR for major appliances, as there are no other program participants in the region. Also, the MARR program provides a revenue source for the RDNO, rather than placing an additional cost burden on the RDNO. Table 1 provides an overview of the materials accepted for waste diversion at RDNO facilities in addition to refuse.

Material Type	ASDDF	GVDDF	LDDF	CTS	KTS	SSTS***
Asphalt & Concrete	✓	✓	✓			
Asphalt Shingles		**				
Cardboard	✓	✓	✓	✓	✓	✓
Drywall		*				
Logs & Stumps	✓	✓	✓			
Major Appliances	✓	✓	✓	✓	✓	
Mattresses & Box Springs	✓	✓	✓	✓	✓	
Scrap Metal	✓	✓	✓	✓	✓	
Propane Tanks	✓	✓	✓	✓	✓	
Wood	✓	✓	✓	✓	✓	
Yard & Garden Waste	✓	✓	✓	✓	✓	

Table 1: Items accepted for waste diversion at RDNO Solid Waste Management Facilities.

*Drywall is currently stockpiled for isolated disposal to reduce hydrogen sulphide emissions that can occur from landfilling with mixed refuse. The market for recycling drywall requires less than 0.5% asbestos content. A new program for recycling commercial drywall is in development.

**Asphalt Shingles are currently being stockpiled and the RDNO is investigating options for this material, including mixed shingles with wood waste for use as landfill cover.

***Destination Silver Star initiated a program in December 2022 to fund and manage onsite collection bins for compost (food scraps, compostable paper and yard waste) and recycling (paper and packaging containers).

3.2 Extended Producer Responsibility Program Participants

The RDNO encourages residents to utilize Extended Producer Responsibility (EPR) Programs provided at privately owned and operated depots and at participating retailers. These options are often found in commercial centres where most residents either live or shop. The RDNO provides information regarding EPR programs on the www.rdno.ca/whatgoeswhere webpage and supports the RCBC Recycling Hotline and Recyclepedia information resources. Table 2 provides an overview of the EPR programs and the participating collection sites.

Product Type (EPR Program)	Chaser's Bottle Depot (Vernon)	Interior Recycling (Vernon)	Venture Training (Vernon)	Armstrong Bottle Depot	Venture Bottle Depot (Lumby)**	Enderby Return-It	Participating Retailers
Beverage Containers (Return-it)	✓	✓	As Donations	✓	✓	✓	✓
Packaging & Paper Products (Recycle BC)		✓	✓	*	✓		
Batteries (call2recycle)	✓	✓	✓		✓		✓
Electronics (EPRA)	✓	✓	✓	✓	✓	✓	
Light Bulbs (Product Care)	✓	✓	✓	✓	✓		✓
Light Fixtures (Product Care)	✓	✓	✓	✓	✓	✓	
Outdoor Electric Power Equipment (OPEIC)	✓	✓	✓	✓	✓	✓	
Small Appliances/Power Tools (CESA)	✓	✓	✓	✓	✓	✓	
Smoke & CO Alarms (Product Care)	✓	✓	✓		✓	✓	✓
Thermostats (HRAI)		✓					
Flammable Liquids & Pesticides (Product Care)	✓	✓					
Paint (Product Care)	✓	✓			✓	✓	✓
Medications (HPSA)							✓
Automotive Antifreeze & Containers (BCUOMA)		✓					✓
Lead-Acid Batteries (recyclemybattery.ca)							✓
Tires (tsbc.ca)							✓
Used Motor Oil, Oil Filters & Containers		✓					✓

Table 2: EPR products accepted at participating depots and retailers.

*Starting in late 2022, Armstrong Bottle Depot stopped accepting Recycle BC items that are accepted in the curbside program (cardboard, paper, plastic/metal containers). This depot currently accepts Recycle BC depot items only (flexible plastic and foam packaging).

**Venture Bottle Depot (Lumby) closed operations in August 2023.

3.3 Household Hazardous Waste (HHW) Program

Many household products are not included in provincial EPR programs. These products currently include, but are not limited to: acids, brake fluid, contaminated motor oil, diesel, fertilizers, household cleaners, insect repellants, grout sealers, non-flammable adhesives and tar or bitumen based products.

The RDNO funds a comprehensive year-round HHW program at Interior Freight and Bottle Depot in Vernon to provide residents with safe and responsible disposal options for unwanted HHW items. The program has been in operation since 2015. In 2020, a five year partnering agreement was developed between the RDNO and Interior Recycling for the continued operation of a convenient, regional HHW drop-off.



Figure 4: Interior Freight & Bottle Depot operates the HHW Program for RDNO residents.

3.4 Municipal Curbside Collection Programs

In the RDNO, individual municipalities determine the level of service provided to residents for curbside garbage and organics collection as outlined in Table 3.

	Garbage Collection	Organics Collection	Recycling Collection*
Armstrong	✓	✓	✓
Coldstream			✓
Enderby	✓		✓
Lumby	✓	✓	✓
Spallumcheen			✓
Vernon	✓	✓	✓
Electoral Areas			✓*

Table 3: Overview of Single Family Curbside Collection

*Recycling collection for Packaging and Paper Products is provided in all RDNO municipalities and in selected portions of the Electoral Areas by Recycle BC.

The RDNO considers municipal curbside collection to be an important component of accessibility for waste management systems. When garbage collection is combined with organics collection it provides substantial opportunities for residents to reduce their waste. Municipal curbside collection can also be an important factor in reducing greenhouse gas emissions and traffic that result from frequent trips to DDFs made by residents without municipal curbside collection services.

3.5 Commercial Hauling Service Providers

The ICI sector, multi-family dwellings as well as residents not served by the municipal curbside or the Recycle BC program have the choice of several hauling service providers that provide garbage, organics and recycling collection services. Also, the City of Vernon provides a mandatory recycling collection service for most commercial and industrial properties within the municipality.

4.0 Five Year Waste Disposal per Capita Trend

Waste collected in the RDNO is disposed at one of three landfills within the region (outlined in Section 3.1). A per capita disposal rate is calculated using scale data for landfilled tonnage for materials disposed at RDNO landfills and materials transferred to the landfills from RDNO Transfer Stations.

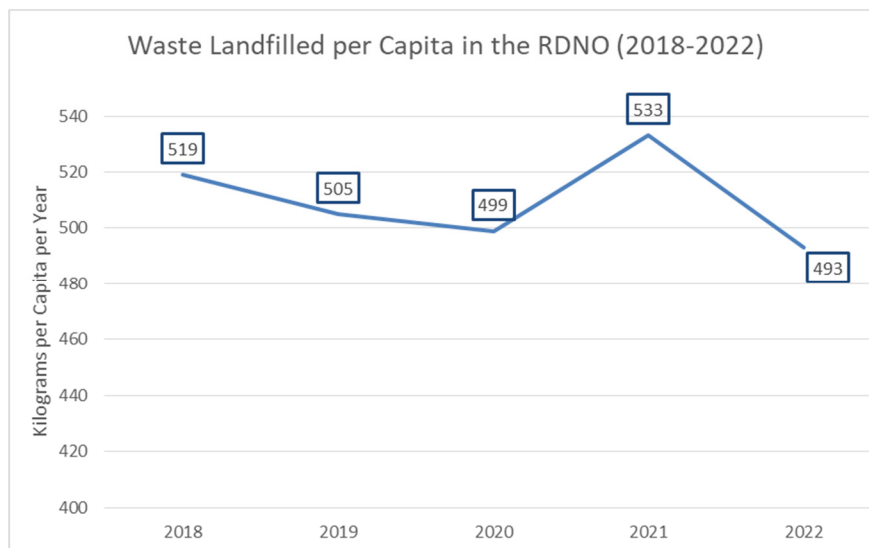


Figure 5: Kilograms of waste landfilled per capita in the RDNO.

During the last five years, there has been a consistently modest decrease each year (with the exception of 2021) in waste disposed per capita. 2021 is considered an exceptional year due to the impact of the COVID-19 pandemic where household and garage cleanups, online shopping and meal delivery activities were very active and correlated with increased waste disposal.

5.0 Waste Composition Study Summary

In the Fall of 2021 and the Spring of 2022 a waste composition study was completed at the Greater Vernon Diversion & Disposal Facility. The results of this study can be found at: <https://www.rdno.ca/rdno-services/solid-waste-management/solid-waste-planning-reports>. As identified in the 2018 SWMP Update, compostable organics remains the largest opportunity for waste reduction. The study was completed one month prior to the start of the City of Vernon residential curbside organics collection program. Since the study, it is expected that there will have been a substantial decrease in compostable organics in disposed waste as three RDNO municipalities now have residential (single-family and smaller multi-family) curbside organics collection. An increased uptake of commercial organics collection services resulting from RDNO Commercial Food Waste Regulation and increased interest in organics collection is also expected.

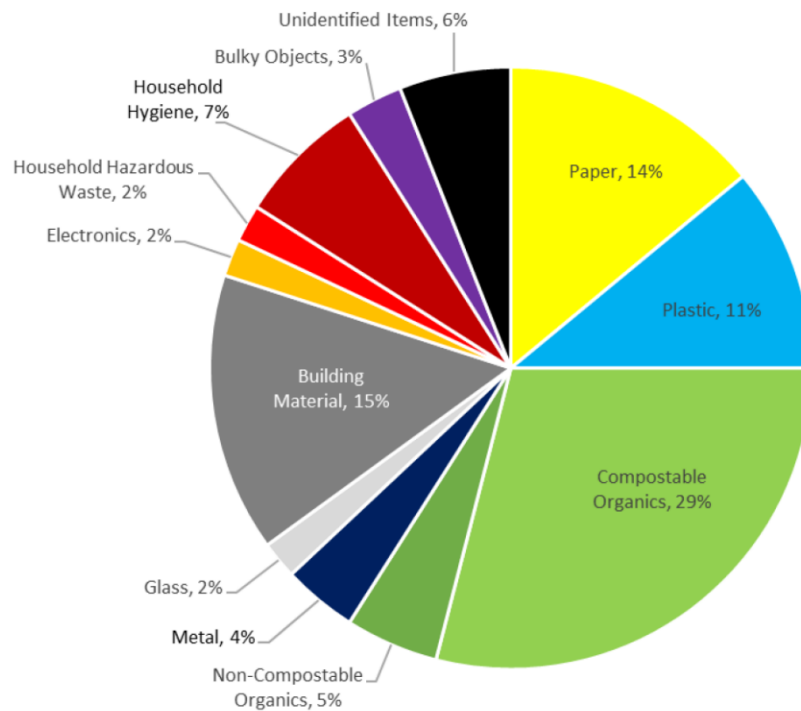


Figure 6: Composition of waste (by weight) for all sectors of the Waste Composition Study completed at GVDDF in Fall 2021 and Spring 2022.

6.0 Greenhouse Gas Emissions Relating to Solid Waste Management

Landfill gas (LFG) is monitored at GVDDF and ASDDF. In 2014, a LFG management system (LFG collection and flare) for the GVDDF was installed. Commissioning of the collection system and flare occurred in March and April 2015.

At the ASDDF in late 2018, six LFG passive vents were installed to mitigate the lateral movement of LFG by passively venting gas and relieving pressure in the waste. Table 4 (below) is a summary

of LFG and total greenhouse gas emissions (resulting from LFG emissions and operations equipment) as well as LFG emissions reductions from flaring LFG for methane destruction.

	2018	2019	2020	2021	2022
GVDDF LFG Emissions	40,624	38,677	39,169	38,780	42,128
GVDDF Total GHG Less Biomass Combustion	43,708	41,474	42,033	41,155	44,312
GVDDF Emission Reduction (Methane Destruction)	7,723	9,040	9,968	10,406	8,852
ASDDF LFG Emissions	10,643	10,994	11,345	11,670	11,996
ASDDF Total GHG Emissions	10,795	11,134	11,518	11,831	12,139

Table 4: Greenhouse Gas Emissions (Tonnes, CO2 Equivalents) at Greater Vernon and Armstrong/Spallumcheen DDF, based on projected LFG Emissions Rates from the GHG Emissions Assessment completed XCG Consulting in 2017.

7.0 Summary of Compliance Activities Taken

The RDNO operates three active landfills in the region. These are summarized in Table 5:

Landfill Site	Landfill Type	Current DOCP Update	Remaining Life
Armstrong/Spallumcheen	Natural attenuation	To be completed Spring 2024	< 3 Years
Greater Vernon	Natural attenuation	September 2023	30 Years
Lumby	Natural attenuation	To be completed Spring 2024	47 Years

Table 5: Active landfills in the RDNO

A comprehensive Environmental Monitoring Plan was completed in 2019 in accordance with site Operational Certificates to provide consistent and accurate long-term monitoring of potential environmental impacts from landfill operations. In meeting these objectives, the RDNO's scope of work included the following activities:

Water sampling performed by RDNO's Solid Waste Technician, as scheduled for the year;

- Tabulating water quality data;
- Summarizing water quality guideline exceedances from the results;
- Analyzing temporal and spatial data trends; and
- Preparing an annual Environmental Monitoring Report.

8.0 Solid Waste Management Financial Results and Forecasts

The RDNO funds solid waste management primarily through tipping fees with a relatively small tax requisition and other minor revenue sources. Revenue collected covers operating costs as well as capital projects and closure and post-closure costs and obligations. The regional Solid Waste Management service must be financially sustainable on a long-term basis so that operations, capital projects, closure costs and post closure obligations are adequately funded. The five year financial plan (2023-2027) for RDNO Solid Waste Management is provided in Table 6.

	2023	2024	2025	2026	2027
REVENUES					
Tipping Fees	\$ 6,918,000	\$ 7,274,000	\$ 7,419,480	\$ 7,567,870	\$ 7,719,227
Recycled Commodities Revenue	\$ 280,000	\$ 404,000	\$ 412,080	\$ 420,322	\$ 428,729
Tax Requisition	\$ 420,000	\$ 420,000	\$ 420,000	\$ 420,000	\$ 420,000
Other (e.g. Interest, Rental, Grants)	\$ 45,098	\$ 40,601	\$ 46,714	\$ 47,049	\$ 46,588
Transfer From Operating Reserve	\$ 1,840,904	\$ 2,133,512	\$ 2,500,000		
Transfer From Statutory Reserve	\$ 100,000	\$ 116,000	\$ 2,454,880	\$ 315,778	\$ 46,694
TOTAL OPERATING REVENUE	\$ 9,604,002	\$ 10,388,113	\$ 13,253,154	\$ 8,771,019	\$ 8,661,238
Solid Waste Management Amortization	\$ 2,209,000	\$ 819,700	\$ 836,094	\$ 852,815	\$ 869,873
TOTAL REVENUE	\$ 11,813,002	\$ 11,207,813	\$ 14,089,248	\$ 9,623,834	\$ 9,531,111
EXPENSES					
Operating Expenses	\$ 5,661,098	\$ 5,864,601	\$ 5,893,154	\$ 6,471,019	\$ 6,531,238
Capital Expenditures	\$ 2,385,904	\$ 2,273,512	\$ 5,510,000	\$ 420,000	\$ 150,000
Transfer to Reserve: Landfill Closure	\$ 1,557,000	\$ 2,250,000	\$ 1,850,000	\$ 1,880,000	\$ 1,980,000
Solid Waste Management Amortization	\$ 2,209,000	\$ 819,700	\$ 836,094	\$ 852,815	\$ 869,873
TOTAL EXPENDITURES	\$ 11,813,002	\$ 11,207,813	\$ 14,089,248	\$ 9,623,834	\$ 9,531,111

Table 6: Five Year RDNO Solid Waste Management Financial Plan (per Qestica February 29, 2024).

RDNO Solid Waste Management staff includes five staff members based out of the Solid Waste Operations Office and seventeen Scale Attendants and DDF Inspectors who work at the GVDDF, ASDDF and LDDF. RDNO Transfer Stations are staffed by contractors. All RDNO DDFs and Transfer Stations are operated by contractors.

A breakdown of budgeted operating costs related to implementation of the RDNO Solid Waste Management Plan is provided in Table 7.

	2023	2024	2025	2026	2027
Operating Expenditures Supporting RDNO SWMP					
Public Information (advertising and information materials)	\$ 50,000	\$ 40,000	\$ 40,800	\$ 41,616	\$ 42,448
Composter and Propane Tank Adapter Rebates	\$ 7,000	\$ 7,000	\$ 7,140	\$ 7,283	\$ 7,429
Composting Facility Operations	\$ 159,000	\$ 100,000	\$ 102,000	\$ 104,040	\$ 106,121
Cardboard Bin Service	\$ 42,000	\$ 60,000	\$ 61,200	\$ 62,424	\$ 63,672
Glass Recycling Program	\$ 4,000	\$ 5,000	\$ 5,100	\$ 5,202	\$ 5,306
ReTHINK Waste Grant Program	\$ 70,000	\$ 50,000	\$ 51,000	\$ 52,020	\$ 53,060
RDNO Household Hazardous Waste Program	\$ 207,000	\$ 210,000	\$ 214,200	\$ 218,484	\$ 222,854
Total Operating Expenditures Supporting RDNO SWMP	\$ 539,000	\$ 472,000	\$ 481,440	\$ 491,069	\$ 500,890

Table 7: Five year breakdown of Operating Expenses Supporting the RDNO SWMP

9.0 SWMP Implementation Status

The RDNO Solid Waste Management Plan (the Plan) Update 2018 was submitted to the Ministry of Environment & Climate Change Strategy (MOE) in June 2018. The table below, which was included in the SWMP Update 2018, provided a planned implementation schedule for goals and strategies contained in the SWMP Update 2018. The proposed timelines for strategy implementation are shown in green that address their overarching goal.

Proposed Implementation Schedule	2018	2019	2020	2021	2022
<i>REDUCE, REUSE, RECYCLE</i>					
Increase organics diversion					
Adopt Organics Diversion Strategy and develop Implementation Plan					
Reduce Disposal from SF Residential Households					
Determine best options for collection service adjustments					
Design and implement behavior change and education program					
Reduce Disposal for Sectors Served by Commercial Haulers					
Develop disposal bans					
Plan and implement an illegal dumping prevention and enforcement program					
Support level playing field and market development					
Design and implement behavior change and education programs					
Develop Programs to Active Promote Waste Reduction and Reuse Initiatives					
Compost demonstration and backyard composting programs					
Continue to administer the Waste Reduction Initiatives Fund					
Design and implement behavior change and education programs					
Establish staff positions to develop, implement and provide ongoing efficiency for program effectiveness					
Re-establish a Waste Reduction Program Planner to oversee expansion to universal collection and organics diversion					
Establish a staff position that collaborates with key stakeholders including haulers and businesses, provides educational support and other services, including providing support for organics program development and implementation					
<i>RESIDUAL MANAGEMENT</i>					
Develop centralized disposal plan with additional landfill capacity					
GVRDF Lateral Expansion					
ASRDF Transfer Station Development					
LRDF Transition to C&D Landfill					
Hesperia Landfill (City of Vernon)					
Prepare a Disaster Response Plan					
<i>PLAN MONITORING AND EFFECTIVENESS</i>					
Five Year Review					
Waste Composition study					

Table 8: Proposed RDNO SWMP Implementation Schedule

The status of the various initiatives undertaken from 2018 to 2022 (according to the proposed implementation schedule) is summarized in the following section and are identified as: Completed, In Progress or Not Started:



GOAL: INCREASE ORGANICS DIVERSION

Strategy: Adopt Organics Diversion Strategy and Develop Implementation Plan.



Progress Summary:

- A consultant completed the RDNO Organics Management Options Study (OMOS) as part of the 2018 SWMP Update.
- Based on options provided in the OMOS, staff was directed by the Board of Directors to initiate a feasibility process with member municipalities, electoral areas and businesses for an expanded organics diversion program including the development of a Request for Proposal or Expression of Interest for collection and processing organics.
- The RDNO's Request for Expressions of Interest for Organics Management Services (issued April 2019) received multiple replies that confirmed service and processing options were available for the commercial and residential sectors.
- In June 2019 the Board of Directors endorsed an ICI Food Waste Disposal Ban at RDNO DDFs – enforcement was originally planned to start in January 2022
- Upon further assessment during the COVID 19 pandemic and consideration for businesses, the ICI Food Waste Disposal Ban was placed on hold and redeveloped as Commercial Food Waste Disposal Regulation to make it consistent with the structure of the RDNO Municipal Solid Waste Management Bylaw.
- An amendment to the RDNO Municipal Solid Waste Management Bylaw effective July 1, 2022 made Commercial Food Waste a Regulated Material and enforcement commenced on January 1, 2023.
- Commercial Food Waste Disposal Regulation was implemented with an amendment to RDNO Municipal Solid Waste Management Bylaw (No.2960, 2022) on July 1, 2022 that added Commercial Food Waste as a Regulated Material and defined materials included and organizations affected. A six month implementation period occurred prior to enforcement for loads coming from large grocer and food processors.
- Three RDNO Member Municipalities proceeded with single-family organics curbside collection programs (Armstrong and Lumby in 2021, Vernon in 2022).
- Rebates continued to incentivize the purchase of backyard composters. The rebate amount was increased to cover 50% of the cost of a composter up to a maximum of \$60.
- Yard and garden waste, wood waste and logs and stumps were segregated at all DDFs (except for Silver Star Transfer Station). Material collected at GVDDF was composted and made into RDNO – Gro Compost and was chipped and used on site at other DDFs.
- RDNO DDFs continued to have Class A RDNO – Gro compost available for free pickup to the public.

GOAL: REDUCE DISPOSAL FROM SINGLE FAMILY HOUSEHOLDS

Strategy: Determine best options for collection service adjustments



Progress Summary:

- The RDNO does not provide curbside garbage collection in any area of the regional district and has no plans at this time to implement it. Member municipalities have assumed this role and provide varying levels of service to their residents, with the exception of the District of Coldstream which does not provide curbside residential garbage collection. Residents in Electoral Areas and the District of Coldstream have the option to engage a private curbside collection (subscription) service or to self-haul.
- Bulk single stream collection of Blue Bag (packaging and printed paper) materials ceased at all 6 DDF and Transfer Station sites January 1, 2019, due to issues with contamination and the limited marketability of the product. This was also considered a duplication of service to the industry funded Recycle BC program.
- In 2018 RDNO renamed its solid waste management facilities from Recycling and Disposal Facilities to Diversion & Disposal Facilities. This was done in tandem with closure of Blue Bag recycling drop off at DDFs. Residents are encouraged to consider all other options for reducing waste, including using provincial EPR programs at local private recycling depots and curbside recycling.
- The Recycle BC curbside and depot programs provides an accessible option for packaging and paper recycling, which reduces traffic to RDNO DDFs. The industry funded program operates independently of RDNO and the RDNO incurs no operational cost for the program. Recycle BC administers curbside collection of Packaging & Paper Products in six member municipalities and in adjacent areas in electoral areas.
- Corrugated cardboard continues to be accepted at RDNO DDFs and Transfer Stations.
- Staff responded to the BC MOE&CCS Recycling Regulation Policy Intentions Paper to encourage EPR program expansion for mattresses, hazardous waste and electronic and electrical products.
- A five year partnering agreement was developed and implemented with Interior Recycling for Household Hazardous Waste Collection and Management Services.

Strategy: Design and implement behaviour change and education program (Single-Family Residential Households)



Progress Summary:

- A Waste Reduction E-Newsletter that provides updates on provincial and local waste reduction developments and waste reduction tips is distributed quarterly.
- Waste reduction information outreach has been done at Farmers Markets throughout the region and at select community events during the reporting period.
- The RDNO website underwent a substantial redesign in 2021 and new Solid Waste Management webpages were developed including: ReTHINK Waste, avoiding single use items, preventing food waste, grant and rebate programs and home composting tips. These information resources are updated and expanded as required.
- Staff responded to the Government of Canada's Proposed Integrated Management Approach to Plastic Products to Prevent Waste & Pollution. As part of this process, staff communicated support for a federal ban on single-use plastics and suggested prioritization at the highest levels of the pollution prevention hierarchy (i.e. Reduce and Reuse initiatives).
- "What Goes Where" Guides were developed to inform about what DDFs and local recycling depots accept to help residents plan and prioritize trips.
- RCBC Recyclepedia search tool was embedded to the RDNO What Goes Where webpage to provide more accessibility to recycling search options.
- Facebook educational campaigns have included Earth Week, Waste Reduction Week, Holiday Waste Reduction tips (Create Memories, Not Garbage).
- Ongoing waste reduction information resources issued on Facebook and local radio stations.
- Installed new informational and directional signage at the GVDDF and ASDDF to inform customers of diversion options and how to avoid contaminating diversion streams.
- Updated Solid Waste Management Financial Guiding Principles, with an objective to maximize waste diversion through financial incentives (lower fees for diverted materials), and implemented a five year rate schedule with fees intended to incentivize source separation of divertible materials.
- Encouraged use of RCBC Recycling Hotline and Recyclepedia for callers to the Solid Waste Operations Office and other RDNO information resources (website, rate cards and E-Newsletter communications).

GOAL: REDUCE DISPOSAL FOR SECTORS SERVED BY COMMERCIAL HAULERS

Strategy: Develop disposal bans



Progress Summary:

- The RDNO Board of Directors endorsed ICI Food Waste Disposal Ban in June 2019 for implementation in 2020 (which was delayed due to the COVID-19 pandemic)

Commercial Food Waste Disposal Regulation was implemented in 2022 that involved making Commercial Food Waste a Regulated Material in the RDNO Municipal Solid Waste Management Bylaw. The term “ban” was not used in consideration of terminology of the bylaw referencing “Regulated Material” and that it is not considered feasible to prohibit landfill disposal of a ubiquitous material that is not regulated in all sectors.

Strategy: Plan and implement an illegal dumping prevention and enforcement program



Progress Summary:

- No action taken. This issue is considered to be outside of RDNO jurisdiction as occurrences often take place on provincial crown land. RDNO Solid Waste Management Facilities are reasonably accessible throughout the region and Diversion & Disposal Fees provide residents with cost effective waste diversion and disposal options.
- Illegal dumping within municipal boundaries continues to be address by the municipalities.
- The RDNO offers a rebate of disposal fees paid for refuse collected during community clean-ups.

Strategy: Support level playing field and market development



Progress Summary:

- Implemented a five year rate schedule (2020-2024) to inform DDF customers in advance of fee increases and encourage source separation of divertible materials.
- In 2020 staff responded to the BCMOE&CCS Recycling Regulation Policy Intentions Paper and urged that ICI generated Packaging & Paper products be included in the Recycling Regulation.
- In 2022 Staff provided input on Canada’s proposed Single-Use Plastics (SUP) Prohibition Regulations and Guidance on Alternatives suggesting additional regulation for more SUPs categories, prohibiting the export of export of problematic SUPs and opportunities for more clear and practical solutions for alternatives in the guidance documents.

**Strategy: Design and implement behaviour change and education programs
(Sectors Served by Commercial Haulers)**



Progress Summary:

- Established an RDNO Commercial Food Waste Disposal webpage which includes background information, rationale, guides and FAQs.
- Established a Notification Card program for applicable commercial haulers informing about the Commercial Food Waste Disposal Regulation and about the higher fees for loads found to contain food waste.

GOAL: DEVELOP PROGRAMS TO ACTIVELY PROMOTE WASTE REDUCTION AND REUSE INITIATIVES

Strategy: Compost demonstration and backyard composting programs



Progress Summary:

- The licence of occupation for the property in Polson Park where Xerendipity Garden was located was not renewed in 2019. Xerendipity Garden was a centrally located and provided a location for composting and water conservation demonstration and information.
- Continued the rebate program for backyard composters and increased the amount of the rebate and the scope of compost systems supported by this program.
- Partnered with the Compost Education Centre in Victoria to share informative compost factsheet on the www.rdno.ca/composting webpage.
- The demand for compost demonstration and backyard composting programs has decreased with curbside residential organics collection for single family and small multi-family residences in three RDNO municipalities (Armstrong, Lumby and Vernon).

Strategy: Continue to administer the Waste Reduction Initiatives Fund



Progress Summary:

- In 2019 \$11,655 in grant funding supported the establishment of compost bins in local community gardens, repairing a mechanical compost system at Vernon Secondary School and organics diversion at the IPE.
- In 2020 the Waste Reduction Initiatives Fund (WRIF) was revamped to a program with increased annual funding of \$50,000/year and was rebranded as the – ReTHINK Waste Project Grant Program.

- In 2020 \$21,163 in funding was awarded through the ReTHINK Waste Project Grant program to projects that included: community food scraps collection, producing reusable bags, zero waste workshops, a kitchen fixture salvage program, source separation and presenting historical approaches to conserving resources and waste reduction.
- In 2021 \$47,915 in funding was awarded through the ReTHINK Waste Project Grant program to projects that included: food scraps composting, producing reusable bags and a kitchen fixture salvage program. Due to challenges facing organizations due to COVID-19, some organizations requested and were granted extensions to complete their projects in 2022.
- In 2022 \$13,355 in funding was awarded through the ReTHINK Waste Project Grant program to projects that included compost collection, wood recovery and reuse, and responsible tobacco waste disposal. 2022 was a low intake year for grant program applications, which may have been a result of COVID-19 challenges for organizations.

Strategy: Design and implement behaviour change and education program (Promoting Waste Reduction and Reuse Initiatives)



Progress Summary:

- Promoted reuse with establishment of a Propane Tank Adapter Hose Rebate Program to promote reusable propane cylinders as a more sustainable option than single-use cylinders. More information at: www.rdno.ca/propane. This popular program reached its budgeted capacity for the maximum number of rebates in its first year in 2021.
- Developed ReTHINK Waste webpage and graphics to promote waste reduction at the highest levels of the Pollution Prevention Hierarchy (Reduce & Reuse). Linked this resource to radio ads, social media posts and public outreach event resources.
- Developed a Reduce Single-Use webpage and graphics. Adapted educational materials (Superhabits) created by Metro Vancouver. Directed residents to these resources on radio ads, social media posts and public outreach event resources.
- Adapted the Create Memories, Not Garbage holiday waste reduction resources created by Metro Vancouver (with permission and crediting creative content) and promoted content through a dedicated RDNO webpage, social media posts and radio ads.
- Promoted the Love Food Hate Waste Program from 2019-2021 (on website, social media and event outreach) during the three year commitment period between the Province and the National Zero Waste Council which provided program resources and educational materials to Local Governments.
- Established a guided tour format of GVDDF and provided tours for several high school and elementary school classes.
- Staff supported outreach with the Climate Action Ripple Effect (CARE) an initiative lead by the Fresh Outlook Foundation and School District 22 to raise awareness to local students about solutions to climate change. The initiative provides an opportunity to link waste prevention to climate action education.
- Highlighted successful grant projects that worked to reduce waste at the highest levels of the Pollution Prevention Hierarchy on E-newsletters, social media and event outreach.

GOAL: ESTABLISH STAFF POSITIONS TO DEVELOP, IMPLEMENT AND PROVIDE ONGOING EFFICIENCY FOR PROGRAM EFFECTIVENESS

Strategy: Re-establish a Waste Reduction Program Planner to oversee expansion to universal collection and organics diversion



Progress Summary:

- Position has not been created or filled.
- Municipalities continue to be responsible for providing curbside garbage and organics collection services to their residents.
- The RDNO does not provide curbside garbage or organics collection in any area of the regional district. Member municipalities have assumed this role and provide varying levels of service to their residents, with the exception of the District of Coldstream which does not provide curbside residential garbage collection. Residents in Electoral Areas and the District of Coldstream have the option to engage a private curbside collection (subscription) service or to self-haul.
- The RDNO has no plans at this time to implement or expand curbside collection of garbage and/or organics in the Electoral Areas. Residential curbside garbage and/or organic collection programs will continue to be the responsibility of RDNO member municipalities.

Strategy: Establish a staff position that collaborates with key stakeholders including haulers and businesses, provides educational support and other services, including providing support for organics program development and implementation



Progress Summary:

- An Environmental Coordinator position was established and has been staffed since February 2019.

**RESIDUAL MANAGEMENT: DEVELOP CENTRALIZED DISPOSAL PLAN WITH
ADDITIONAL LANDFILL CAPACITY**

GVDDF Lateral Expansion



Progress Summary:

- A consultant was retained to develop a preliminary conceptual design lateral expansion of the GVDDF in preparation for a potential application to the BCMOE&CCS for amendments to the GVDDF Operational Certificate to increase the allowable fill area.
- Due to a wide range of issues, the potential lateral expansion of the GVDDF is not being pursued at this time.
- Lateral expansion of the GVDDF may be pursued in future.

LDDF Transition to C&D Landfill



Progress Summary:

- Not being pursued at this time.
- Current service levels, consistent with other RDNO DDFs, to be maintained at this facility.
- Long term use of the LDDF may be reviewed in future.

PLAN MONITORING AND EFFECTIVENESS

FIVE YEAR REVIEW

Achieved with this document.



WASTE COMPOSITION STUDY

Completed in 2022



10.0 Assessing SWMP Accomplishments and Opportunities

The current SWMP involves a multi-faceted approach to waste management and waste reduction with a priority on organics diversion. There are sector specific approaches for the reduction of waste from single-family and multi-family residential households and sectors served by commercial haulers. Additional components of the plan include programming to actively promote waste reduction and reuse initiatives and the establishment of staff positions to support SWMP initiative implementation. The SWMP also involves long term solid waste management planning with consideration of the future development of RDNO Solid Waste Management Facilities.

10.1 SWMP Implementation Schedule Accomplishments

Progress with Organics Diversion

Organics diversion is increasing in the RDNO. An Expression of Interest for Organics Management Services issued by the RDNO in 2019, identified that there was adequate collection and processing infrastructure available in the private sector to manage organic waste generated in the region. The 2021-22 Waste Composition Study at GVDDF identified 29% of waste as Compostable Organics compared to 37% in the 2012 study. Increases in organics diversion are expected to continue with the implementation of food waste diversion initiatives occurring since the last Waste Composition Study, the most significant of which is the implementation of curbside residential organics collection in the City of Vernon which began in May 2022.

The RDNO Municipal Solid Waste Management Bylaw was amended in 2022 to include Commercial Food Waste in the definition of Regulated Material. Enforcement on single source roll-off bin loads from grocers and food processors has been ongoing since January 2023 and has resulted in a decrease in commercial food waste disposal.



Figure 7: Resources for preventing commercial food waste are on the RDNO website. Guides were adapted from shared Metro Vancouver Resources.

The North Okanagan Food Recovery Network (an initiative led by FoodMesh and supported by the ReTHINK Waste Project Grant program started in April 2023) is working to recover and redistribute surplus food from businesses so that it can be put to its highest use and kept out of landfills.

There has been substantial progress in residential food waste diversion. Three municipalities (Armstrong, Lumby and Vernon) have implemented curbside residential collection programs for food waste. For residents without curbside organics collection there are resources on www.rdno.ca/composting that provide information on home composting options for a wide range of households. The ongoing composter rebate was expanded in scope and value in 2020 to further incentivize resident uptake. Residents and business throughout the region also have the option to subscribe to private organics collection services.



Figure 8: City of Vernon started weekly curbside organics collection in May 2022.

Behavior Change and Education Programs

The RDNO encourages residents to ReTHINK Waste and consider the numerous waste prevention options through online and public information. The RDNO website was redesigned in 2021 with new webpages dedicated to ReTHINK Waste (reduce and reuse), What Goes Where, avoiding food waste and single-use items, composting and seasonal campaigns (i.e. Spring Cleaning, Create Memories, Not Garbage). Additional resources include: quarterly e-newsletters, media releases, social media posts, newspaper, and radio ads. Staff also provided outreach information tables at various community events including farmers markets and trade shows to extend the reach of this messaging and have provided tours of GVDDF to local students.



Figure 9: Waste Reduction Information Table at Vernon Farmers Market.



Figure 10: School tour at GVDDF.

At GVDDF directional and information signage was added to waste diversion areas to inform customers about what materials can be diverted onsite. Information on acceptable and not

acceptable materials were included on the signage to help decrease contamination in diverted waste streams.

For the commercial sector, haulers and their customers were informed about the Commercial Food Waste Disposal Regulation through public presentations, website, emails, media releases as well as notification cards provided at DDF scales.

Waste Reduction Initiatives Fund

For the Waste Reduction Initiatives Fund, the RDNO enhanced the program with increased annual funding of \$50,000/year and rebranded it to the ReTHINK Waste Project Grant Program. The RDNO ReTHINK Waste Project Grant aims to support innovative community projects that reduce waste at the highest levels of the Pollution Prevention Hierarchy.

RDNO

ReTHINK Waste Project Grant Program

We are very grateful for the support!

The funds we received from the RDNO have really helped Habitat for Humanity Okanagan to accelerate the launch of the kitchen salvage program. The service this program offers to our community ultimately helps drive our mission to provide affordable home ownership.

- ANDREA MANIFOLD
CEO Habitat for Humanity Okanagan

kitchen salvage program

ReStore

The grant from RDNO has enabled Men's Shed Vernon to reclaim materials destined for the waste bin and to repurpose them in making useful projects. Our members see great possibilities in repurposing materials to save money and to reduce pressure on disposal facilities.

- David Friesen
Leadership Team

Funding innovative projects that REDUCE WASTE

Find more information at: rdno.ca/rethink
Contact: rethinkwaste@rdno.ca

Crafting a Change Program
Participants repurposing fabrics to produce reusable bags.

Food Synergy
Gala Productions filming a future documentary on food waste prevention.

Figure 11: Event poster featuring ReTHINK Waste Grant Project highlights.

Increased awareness of this grant program has resulted in increases in applications and grant awards. From 2019-2022, over \$94,000 has been awarded to community projects that include community composting, reusable bags, kitchen fixture salvage, cigarette butt litter prevention and wood waste salvaging.

Residual Management – ASDDF Landfill Closure and Transfer Station Development

Plans for construction of a new transfer station at ASDDF are well underway with construction anticipated in 2025. The landfill at the ASDDF is expected to reach capacity in 2025 with final closure to follow. Public consultation took place in late 2022 on the transfer station conceptual design and the transition to a residential only transfer station at the site. Commercial loads for the Armstrong/Spallumcheen area will be redirected to GVDDF starting in 2024.

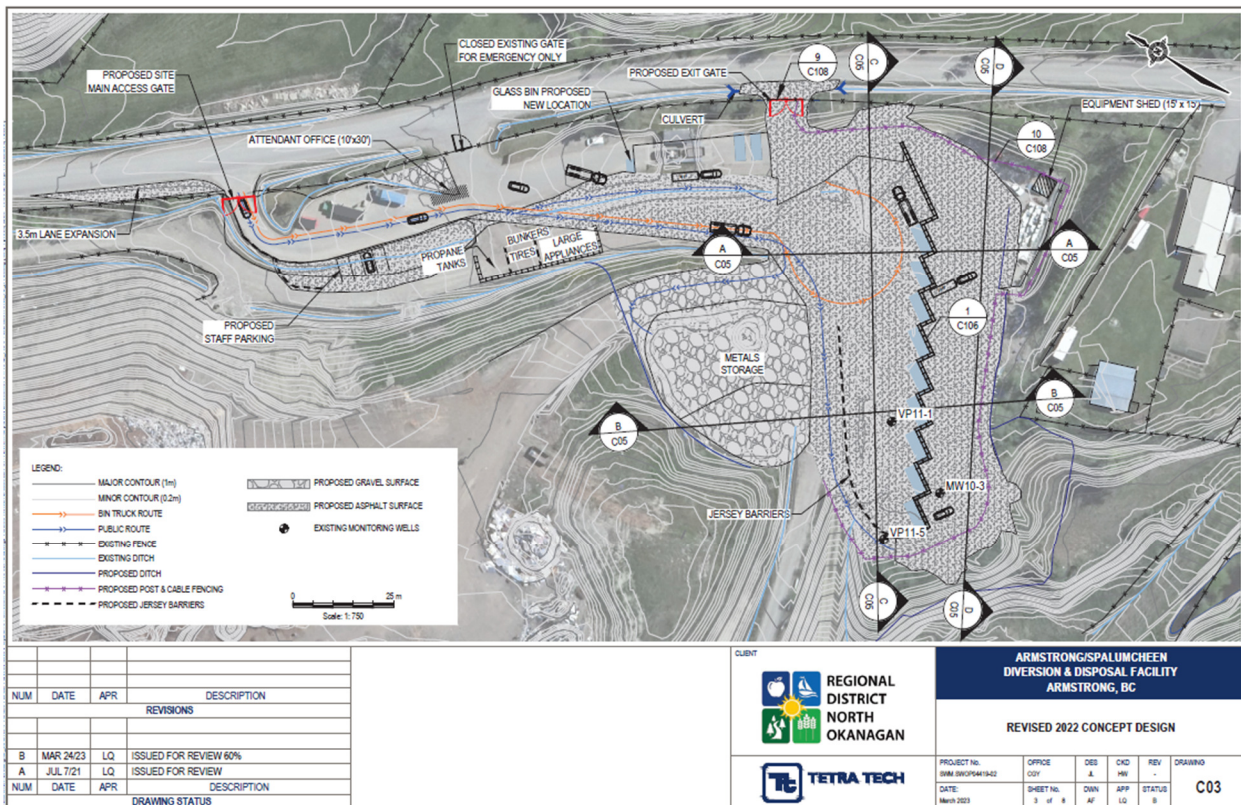


Figure 12: Proposed design layout for the Armstrong/Spallumcheen Transfer Station

10.2 SWMP Implementation Schedule Opportunities

The 2018 RDNO SWMP Update indicates that implementation of the goals and strategies contained in the plan are expected to reduce the annual per person disposal rate in the RDNO from 550 kg per capita to 350 kg per capita by 2028. Despite the progress with the SWMP Implementation Schedule, the RDNO disposal rate per capita remains close to 500 kg per capita.

This appears to be a consistent trend with other regional districts around the province, with the provincial disposal rate per capita consistently hovering at 500 kg per capita over the last 5 years. It will be a significant challenge to meet 350 kg per capita disposal rate by 2028.

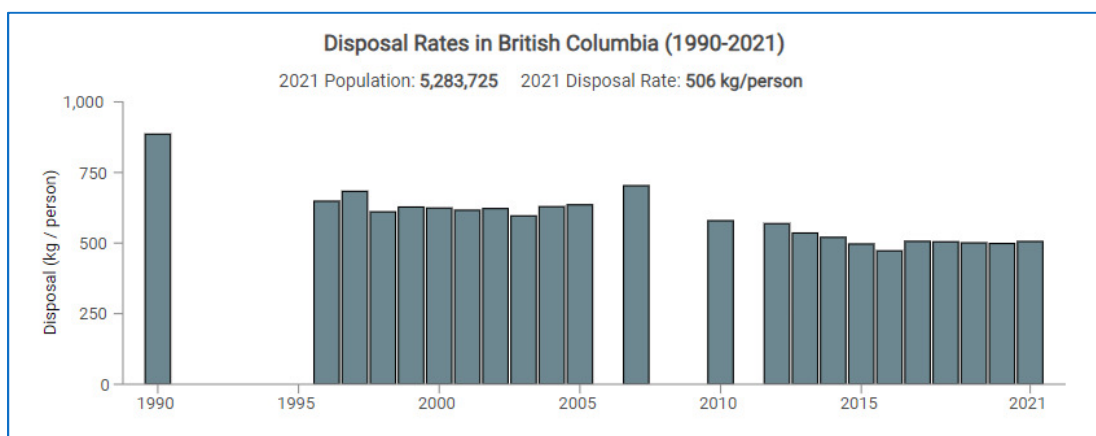


Figure 13: Municipal Solid Waste disposed per capita in BC (source: Environmental Reporting BC)

The Waste Composition Study completed in 2022 identified some key opportunities for reducing waste tonnage by prioritizing focus on certain waste materials. The most frequent material categories found in the waste stream during the study included Avoidable Food Waste (14.4%), Small Yard and Garden (9.1%), Dirty Wood (5.4%), Food Soiled Paper (4.9%), Textiles (4.6%) and Corrugated Cardboard (4.0%). Dedicated awareness campaigns focused on these particular materials can be an approach to addressing some of these more frequently disposed materials.

Organics Diversion Strategy

The extent of the RDNO's Organics Diversion Strategy and Implementation Plan involved three primary components:

1. Organics Management Options Study in 2018
2. Request for Expression of Interest for Organics Management Services to evaluate collection and processing capacity in the private sector for organic waste.
3. Regulation of Commercial Food Waste which is focusing enforcement on single source roll off bins from grocers and food processors.

Current gaps in organics diversion include:

- Enforcement of Commercial Food Waste Disposal Regulation on mixed sourced loads.
- Lack of reasonable access to organics collection for multifamily residential.
- Lack of curbside organics collection in Coldstream, Enderby, Spallumcheen and Electoral Areas.

To address these gaps, substantial policy changes would likely be required including: regulating organics to a further extent in the Municipal Solid Waste Management Bylaw, incentivizing source separation or expanding collection services.

Collection Service Adjustments

There is a varied patchwork of residential curbside garbage and organics collection services in the RDNO. Member municipalities provide varying levels of service to single family and multi-family residences that include both organics and garbage collection or garbage collection only, or neither.

The RDNO does not provide curbside garbage or organics collection, and there are no local government provided curbside collection services in the Electoral Areas. Over 43% of RDNO residents live in communities without municipally provided single family or multi-family curbside collection programs for organics; almost half of these residents are in the municipalities of Coldstream, Enderby and Spallumcheen. Also, multi-family and ICI sectors are served by a variety of commercial collection service providers. Residents without curbside garbage collection have the option to subscribe to a private curbside collection service or to self-haul garbage to RDNO DDFs.

Expanding collection services in the region was a strategy of the current SWMP and has not proceeded as municipalities have maintained control over the collection services provided to their residents. Collection services are available in areas not served by municipal collection programs through the private sector.

The RDNO may maintain the status quo of not being involved in curbside collection or may choose to take a more active role in curbside collection policies and/or services. There may be opportunities to encourage certain municipalities to implement or expand their curbside collection services.

Extended Producer Responsibility

The RDNO recognizes that responsibility for products defined in the BC Recycling Regulation has shifted from local governments to producers and industry. The RDNO does not currently take an active role in operating EPR programs as this service has long been provided by the private sector in the region. The RDNO's long standing position has been to allow the private sector to provide solutions through local, privately operated and funded recycling depots and participating retailers and to not be a source of competition to this network by duplicating these services at RDNO DDFs. Also, EPR programs operated by the private sector typically have the benefit of operating in commercial areas of municipalities where most residents live and or shop. This aligns with circular economy applications where residents can both purchase and recycle products in their community and waste is designed out of the system.

The closure of the Venture Bottle Depot in Lumby in 2023 created a gap in EPR programs access for Lumby and areas residents. There are also opportunities for the EPR system to better serve to residents in and around the communities of Enderby and Armstrong, however this area is well served by the curbside Recycle BC program for packaging and paper products. Access to EPR

programs in Greater Vernon (RDNO's largest commercial centre) is considered adequate for Greater Vernon residents and is within a 45 minute drive for the vast majority of RDNO residents.

Throughout the province, regional districts have varying levels of involvement in EPR programs. Table 9 shows a comparison of the kilograms per capita collected by EPR programs in neighbouring regional districts as well as a provincial average. The RDNO is at or above the provincial average for the major EPR programs listed. For some EPR programs the RDNO is lower and for some the RDNO is higher than neighbouring regional districts for the quantity of material per capita collected.

	RDNO	CSRD	RDCK	RDCO	TNRD	Provincial Average
Recycle BC (Packaging & Paper Products)	46.0	49.1	40.8	54.8	45.2	46.0
Encorp Return-it (Beverage Containers)	23.1	24.1	18.6	22.4	19.9	17.2
Tire Stewardship BC (Tires)	18.4	17.5	15.3	11.7	24.5	10.6
EPRA (Electronics)	2.9	2.7	2.2	4.0	2.3	2.6
CESA (Small Appliances & Power Tools)	1.4	1.0	0.8	1.8	1.1	1.0

Table 9: Summary of major EPR collection performance in RDNO compared to other Regional Districts (Kilograms per capita collected, averaged from 2021-2023 data taken from annual reports for each EPR Program)

MOE&CCS is currently progressing with a Five-Year Action Plan (2021-2026) for EPR in the province. This involves expanding the range of products covered under the Recycling Regulation to include electric vehicle batteries, mattress and foundations, compressed canisters, medical sharps, emerging electronics and moderately hazardous products. Also as part of this plan MOE&CCS will evaluate options for recovering ICI packaging and paper products, which are currently not included in BC Recycling Regulation. Producers will need to come up with stewardship plans for managing these materials and the RDNO and other participants in the region will need to determine their future level of involvement in collecting these materials.

The RDNO has an opportunity to continue to define its position with respect to EPR by raising awareness of producer responsibility and advocating for improved EPR for RDNO residents. Decisions will need to be made with respect to RDNO's position with respect to new EPR materials added to the Recycling Regulation, while considering the Pollution Prevention Hierarchy, the advancement of the circular economy in the region and the goal to reduce per capita waste disposal.

Increasing Awareness of Regulated Materials

The RDNO Municipal Solid Waste Management Bylaw No. 2960, 2023 (“the Bylaw”) is the RDNO’s enforcement tool for supporting waste diversion and responsible disposal. For instance, DDF customers who choose to dispose of divertible materials such as yard waste, metal and EPR products are charged the much higher Regulated Materials (R03) fee for disposal. Controlled Waste and Prohibited Materials, as defined in the Bylaw, have disposal restrictions.

Enforcement of the provision of the Bylaw at Solid Waste Management Facilities can be challenging. The RDNO has recently implemented awareness campaigns for residents and commercial haulers for materials including: commercial food waste, yard and garden waste and cardboard. These campaigns have included contacting haulers and generators directly, notification cards and media releases to help raise awareness and encourage responsible recycling or disposal of Regulated Materials as defined in the Bylaw. RDNO staff will continue looking at opportunities to communicate fair and practical application and implementation of the provisions of the Bylaw to encourage responsible solid waste management in RDNO communities, well before it becomes an issue at RDNO DDFs.

Divertible Material Management Challenges

Options for receiving and processing of some divertible materials at RDNO DDFs are posing increasing challenges due to the quantity of materials in circulation, increasing transportation and processing costs and a lack of recycling options. This is the case with wood waste, asphalt shingles and drywall. Potential processing options have been identified, however issues including processing and transportation costs, tipping fees imposed, cost recovery and contamination need to be addressed in order to develop sustainable, long term diversion for these materials. The RDNO encourages development of offsite, private sector diversion solutions for these materials whenever possible and supports the potential development of offsite diversion initiatives with the RDNO ReTHINK Waste Grant.

Continuous Improvement: Behavior Change and Education Programs

There are opportunities to develop information/education resources that resonate more effectively with RDNO residents and businesses. This may involve development of professional marketing campaigns, improved branding opportunities, enhanced media uptake of communications, school engagement or expanded campaigns in conjunction with other local governments. Key objectives would be to make residents aware of the numerous options to prevent waste (reduce and reuse) and to use existing diversion options already available in their communities (thrift stores for quality second hand items and EPR programs for recyclables for example).

The need and approach for compost education/demonstration and backyard composting programs could be re-evaluated. With the implementation of expanded curbside organics collection programs and access to subscription collection services, curbside collection appears to be the preferred approach to addressing food waste for the residents. Community and backyard composting are effective tools for outreach and education and behaviour change to foster participation in curbside programs. Having residents see the transformation of food scraps to compost and having compost used locally show the circularity of the process. Online resources and the composter rebate program are potential approaches to keep information and resources available for residents.

Staff Positions to Ensure Program Effectiveness

In the SWMP two new staff positions were proposed. The roles of these positions would be to develop, implement and provide ongoing support for waste reduction programs. One position was a Waste Reduction Program Planner to oversee expansion to universal collection and organics diversion. The other position was a support role for the organics diversion program development and implementation.

During the SWMP review period, two new staff positions were created: Environmental Coordinator and Assistant Manager of DDF Operations. The scope of work for these positions differs from the two positions outlined in the SWMP. There may be opportunities to evaluate if staff resources could be refocused to more directly support RDNOs waste reduction goals.

Plan Monitoring Working Group

A Regional Solid Waste Management Plan Monitoring Working Group (RSWMPMWG) was not established as scheduled in March 2020 due to the onset of the COVID-19 pandemic. RDNO staff resources were not allocated to establish the RSWMPMWG during the remainder of the SWMP Review period. Staff has reported SWMP progress through annual reports and e-newsletters that are publically available. Initiating an SWMP renewal in advance of the scheduled renewal date would provide opportunity for extensive public consultation and to evaluate options for establishing a RSWMPWG in future.

Residual and Greenhouse Gas Emissions Management

Long term solid waste management planning (>25year) will need to consider the development of additional landfill capacity if per capita disposal rates do not significantly decrease and population continues to increase. The remaining capacity at GVDDF is estimated to be 30 years and the site will receive approximately 95% of the region's waste after the planned closure of the landfill at ASDDF in 2025.

Conserving landfill air space and optimizing landfill capacity and potential expansion opportunities will provide a more environmental and financially sustainable future for RDNO Solid Waste

Management. Given current waste disposal trends and infrastructure, the school aged children of today could potentially face substantial challenges in addressing solid waste management issues during their lifetimes.

Municipal solid waste landfills are responsible for 23% of Canada's methane emissions (ECCC). Because methane is a potent greenhouse gas with 86 times more warming potential than carbon dioxide over a 20 year period (ECCC), reducing landfill methane emissions provides an opportunity for impactful action with near term benefits. Reducing organic waste entering our landfills is the most impactful solution to landfill methane emissions, however landfill gas infrastructure is necessary for addressing the issue of organics already landfilled and incoming materials. The added refuse coming to GVDDF from ASDDF after its landfill closure provides an opportunity for exploring options for increased and more optimal LFG recovery at GVDDF.

11.0 External Factors Impacting the Solid Waste Management System

According to the 2021 census, the RDNO population increased by 8.6% and is expected to continue to increase. Current landfill capacity is expected to be sufficient to meet the needs of the region over the next three decades.

Economic activity and waste generation are closely linked. Traditionally agriculture has been a major driver in the local economy. However in recent decades construction, tourism, retail and manufacturing activities are increasing. These activities produce significantly more solid waste than prior economic activities. For example, waste from construction activity was observed in the last Waste Composition Study in the region to make up 15% of total observed waste during the study period.

There are upcoming and ongoing regulatory changes occurring in BC that will impact solid waste management. As part of a five-year action plan (2021-2026) there will be an expanded range of products added to the Recycling Regulation including electric vehicle batteries, mattress and foundations, compressed canisters, medical sharps, emerging electronics and moderately hazardous products. Also, MOE&CCS is banning certain single-use plastics through the CleanBC Plastics Action Plan, this is in concert with a federal single-use plastics plan, which is intended to reduce single-use plastic pollution and landfilled waste.

The increasing prevalence of climate change related weather events such as forest fires and flooding will result in increased potential for large quantities of disaster debris which will require timely management.

It will become increasingly important for the RDNO to ensure its solid waste management infrastructure has capacity to handle the pressures of increased population, and respond to waste generated from climate change related weather events.

12.0 Next Steps

The current SWMP is due for renewal by December 31, 2029. RDNO staff are not recommending revisions to the current SWMP, however staff would recommend that a full plan renewal be completed in advance of the renewal due date to ensure there is ample opportunity for robust public review and consultation. A Waste Composition Study completed before initiating the next plan renewal will be useful for assessing the progress of organics diversion and will provide an updated assessment of waste disposal in the RDNO.

This review has provided an overview of the solid waste management network in the RDNO and some strengths and opportunities in the context of the current SWMP. The next steps will involve prioritization of strategies to be addressed for the remaining duration of the plan and identifying key components for the next SWMP renewal.