



Organics Diversion Strategy 2000-2020

Larry Gardner, Manager Solid Waste Services
lgardner@rdn.bc.ca

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Summary

The Regional District of Nanaimo (RDN) is achieving some of the highest waste diversion rates in North America. In 2002, the RDN adopted “zero” as its waste diversion target, meaning that the region would continuously strive to reduce the amount of waste requiring disposal. The RDN was the first jurisdiction on Vancouver Island and one of several forward-looking local governments in Canada and around the world to move beyond recycling and adopt a Zero Waste approach to eliminating waste. The 2005 Organics Diversion Strategy set out the framework to achieve organics diversion from multiple sectors, resulting in extending the life of the RDN’s landfill, reducing greenhouse gas emissions and creating a local industry of recycling and composting that supports 190 jobs, adding more than \$17 million to the local economy.

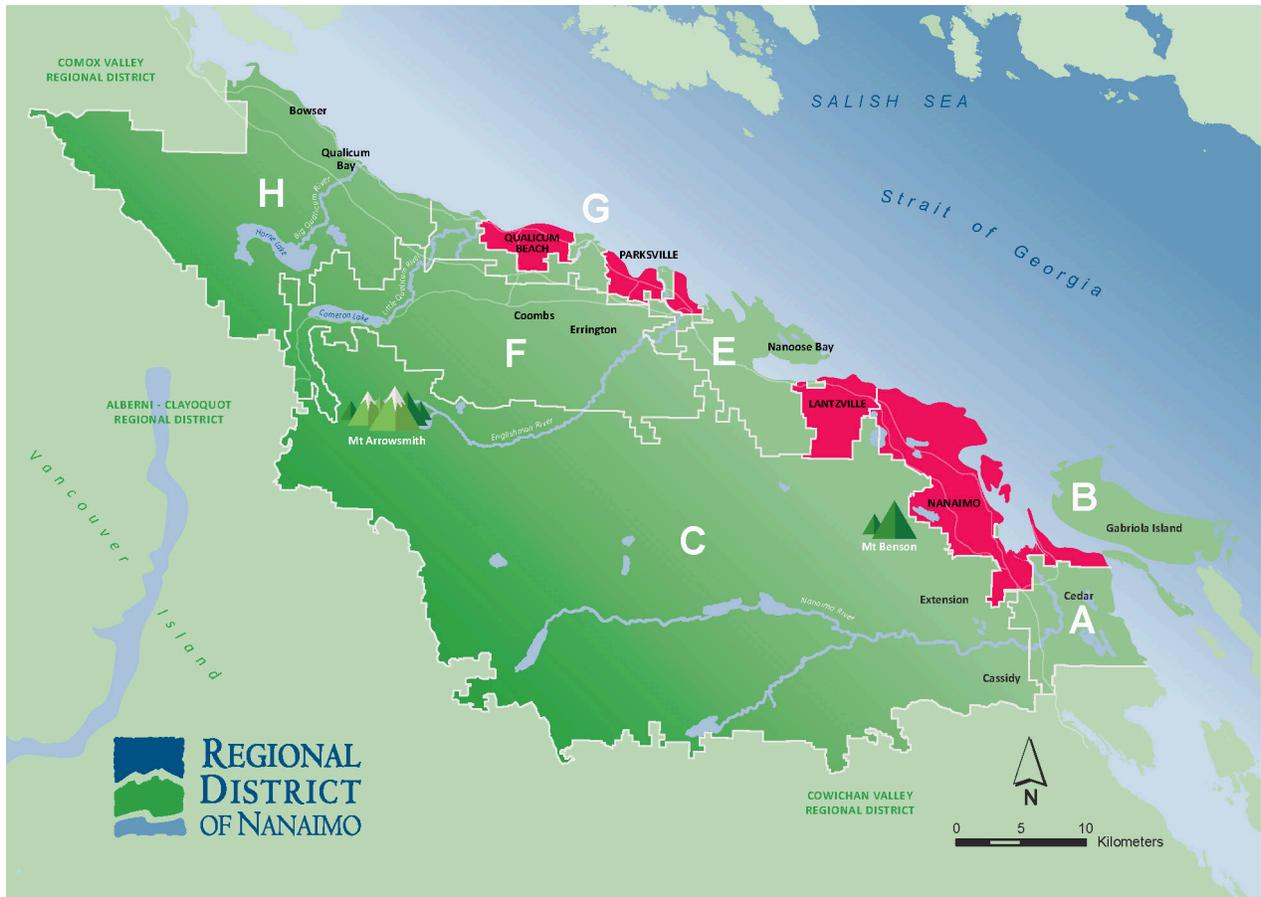
The 2018 updated Solid Waste Management Plan (SWMP) shows the RDN’s commitment to achieve an ambitious goal of 109 kg/capita disposal rate (for all sectors, not just residential) and a 90 per cent diversion rate. The plan to achieve this target addresses both waste diversion and residual waste with an updated Zero Waste Strategy that includes strengthening existing composting and waste diversion programs. The RDN Board is excited to set this new ambitious target, and to guide the region in making it a reality.

Introduction

The RDN is located on the central east coast of Vancouver Island, British Columbia. Communities within the regional district include the City of Nanaimo, District of Lantzville, City of Parksville, and Town of Qualicum Beach, as well as seven unincorporated Electoral Areas. The RDN is sited within the traditional territory of several First Nations, including the Snuneymuxw, Shaw-naw-as, and Qualicum First Nations.

Governed by a 19-member Regional Board, comprised of twelve directors from locally elected municipal councils, and seven directors elected by Electoral Area residents, the RDN covers a large, diverse area of nearly 207,000 hectares.

In 2002, in response to the need to conserve landfill capacity, the Regional District of Nanaimo committed to "Zero Waste" as its waste diversion target. A new landfill siting exercise had been unsuccessful, and waste-reduction efforts had stalled at 50 per cent waste diversion. Of the two alternatives - pay to ship waste to another community for disposal or inspire the region to completely change its concept of waste - the RDN Board of Directors chose the latter route, adopting a forward-thinking solid waste management plan with a goal of 75 per cent waste diversion from landfill.



A 2004 waste composition study showed that food waste and compostable paper comprised 35% of the municipal solid waste stream within the RDN. That same year, following a review of the 1996 3Rs Solid Waste Management Plan (SWMP), a new Zero Waste SWMP was adopted to increase residential, Industrial Commercial Institutional (ICI), and Construction and Demolition (C&D) waste diversion from the current 57 per cent to 75 per cent by 2010. The four key Zero Waste programs identified in the plan were:

1. Waste Stream Management Licensing system (WSML);
2. Expanded landfill disposal bans;
3. Organics collection; and,
4. Zero Waste education and promotion.

Following closely on the Zero Waste Plan adoption, in January 2005 an Organics Diversion Strategy (ODS) was adopted to provide guidance on how organic waste would be diverted from disposal.

Disposal Bans

The practice of banning the disposal of specific wastes from the landfill, when viable recycling alternatives are in place, has been used by the RDN since 1991. Current landfill bans on recyclable/compostable materials include drywall (implemented in 1991), cardboard (1992), paper, metal and tires (1998), commercial food waste (2005), yard and garden waste (2007) wood waste (2007) and EPR materials designated under BC's recycling regulation (2007), household plastic containers

(2009) and metal food and beverage containers (2009). Disposal bans are a critical policy mechanism to drive diversion activities, particularly in the ICI sector.

Commercial Organics Ban

A cornerstone of the RDN's 2004 solid waste management plan was the diversion of organic waste from landfilling. In 2004, organic waste represented 50 per cent of the RDN's residential waste stream by weight and 40 per cent of the ICI waste stream; therefore, a focus on the diversion of organics was determined to be the single most effective means of increasing diversion of waste from landfilling.

The 2004 waste composition study indicated that the established practice of diverting yard waste through drop-off depots was effective, so the ODS focused on the diversion of food waste.

The ODS targeted both commercial and residential food waste diversion, albeit separately. The diversion of ICI generated food waste was the priority because of the large volumes generated at a relatively small number of locations (compared to residential organics). The RDN committed to banning ICI food waste from disposal in the landfill as long as a local alternative was available.



With the opening in 2004 of a private in-vessel composting facility that could manage ICI food waste in the region, the commercial food waste ban took effect in 2005. Disposal of raw and cooked food and other compostable organic material from commercial and institutional sources was banned at the region's solid waste facilities. Extensive consultation preceded this ban, and the RDN followed up with site visits to over 200 businesses and organizations. In addition to stakeholder information sessions, education packages were distributed to assist organizations in complying with the disposal prohibition.

All commercial and institutional facilities in the RDN, including restaurants, grocery stores, and school and hospital cafeterias are required to have food waste diversion systems in place. The RDN has taken a non-prescriptive approach to the commercial food waste ban, serving as the regulator and resource, and allowing affected businesses and organizations to comply using the most cost-effective and efficient methods for their operations. After several years of being in place and diverting as much as 300 tonnes per month of food waste and compostable paper from the landfill, the performance has plateaued. Part of the new 2018 Solid Waste Management Plan strategy to bolster organics diversion is the investment of resources to re-launch this program.

Yard Waste Ban

Yard waste was banned from landfill disposal in 2007. Yard waste such as leaves and grass clippings are not collected as part of residential waste collection services for residents outside the City of Nanaimo boundaries, and residents and businesses are encouraged to manage their yard waste in one of the following manners:

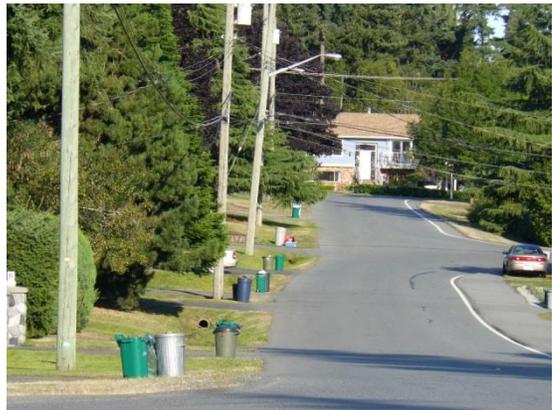
- Reducing the amount of yard waste through grass cycling and xeriscaping (a form of landscaping using plant species that require minimal water and consequently generate less yard waste);
- Backyard or on-site composting;
- Self-hauling to one of several yard waste depots in the RDN;
- Hiring a yard waste removal service; or
- Including yard waste removal in landscaping contracts.

Prior to the ban, private operators were required to apply for and comply with an RDN issued Waste Stream Management License (WSML), ensuring sound environmental practices in the processing operations, and to give the community (and operators) a degree of comfort and stability.

This approach to yard waste management has been successful at minimizing the amount of yard waste being landfilled. The 2012 waste composition study indicated that yard waste is roughly 2.5% of the residential waste sent to landfill and 5% of overall waste landfilled.

Residential Food Waste Collection – Pilot Project

In 2007 the RDN was successful in its application to the Green Municipal Fund for a grant up to \$90,000 to run a pilot project to determine the most effective methods for collection of residential food waste.



The pilot project involved a twelve-month field test involving 1,985 homes on three distinct collection routes: a large predominantly rural area, a newer suburban subdivision, and an urban route of well-established homes. The project entailed collecting food waste every week, and garbage and recycling on alternating weeks. The household garbage limit for the food waste collection

routes was reduced to one garbage can per pickup day (every second week), in effect forcing use of the food waste bin, or requiring the purchase of extra tags if the base fee limit of one can of garbage could not be met. Collection equipment in the form of a special split packer truck was leased from an equipment supplier to augment the contractor's fleet.

The primary deliverables from the field test included gathering information and reporting on:

- The most effective collection schedule for organics
- The preferred collection containers
- The effectiveness of various collection approaches
- Participation levels
- Diversion potential
- The impact on the garbage collection system
- Potential program challenges and solutions
- Rural and urban route differences
- Financial impacts including:
 - Overall costs of field test
 - Estimated capital costs for system-wide implementation
 - Estimated total start-up costs

- Estimated annual education/outreach costs
- Estimated annual user fee changes
- Estimated greenhouse gas reductions

Based on the pilot project’s success, both in terms of diversion and community acceptance, a full-scale residential food waste collection program was approved by the Regional Board in 2009.

Residential Food Waste Collection – Region-wide Implementation

The new curbside program officially launched October 2010. From lessons learned during the pilot project, it was clear that a wholesale change would require collaborative planning to ensure success. RDN staff created a project plan in February 2010, which included the many tasks required, assigned roles and responsibilities and helped keep the various partners on track. The plan included:

- Administration: Preparing the necessary bylaws and Council/Board reports; preparing collection and processing contracts; ensuring staffing levels were appropriate to handle the upcoming workload; and hosting/attending regular project team meetings.
- Infrastructure: The transfer station required \$5.5 million in upgrades to handle food waste and the private composting facility had to be upgraded to meet licensing requirements — both to be completed before curbside collection of food scraps could begin.
- Collection: For those serviced by contracted collection, a new collection contract was required along with the requirement for a fleet of new split-packer trucks. In addition, 52,000 collection containers had to be sourced, purchased, received and distributed.
- Communications Strategy: A multifaceted strategy was prepared which contained three distinct phases to reflect the need for information to go out during the Planning stage (look out, change is coming), the Preparation stage (green bins are being delivered), and the Implementation stage (care and use of your green bin). Communication was a top priority as it would improve the prospects of a successful program change. The budget was \$5/household, which covered everything from creating a new program "brand" to developing a website and social media presence; traditional media advertising and preparing display materials for public events; producing newsletters and local government publications; and compiling program education for each household.



Responses to one pilot project survey question indicated that 64 per cent of respondents actively composted in their backyards. Many did not initially see the value of collecting this material at the curb, but after several months, 92 per cent of the active composting households indicated they were using the green bin for at least some of their household organics. Staff anticipated the backyard composting bias would be a constant refrain in response to the new program until residents moved past the traditional backyard compost ingredients and gained an understanding of items acceptable in the new curbside green bin program, namely - cooked food, meat, fish, bones and food-soiled paper packaging. As these

items were beyond what is suitable for backyard composting, the “Beyond Composting” brand was created as it also ties into the “Beyond Recycling”, the existing brand created for the curbside recycling program in 2002.

The new program roll-out was not without its challenges. The compilation of residential addresses for the distribution proved difficult and errors were made and compounded as data in different formats was acquired from three municipalities and added to the RDN electoral area address data, then reformatted, and resorted into container distribution routes. Unfortunately, the errors did not come to light until distribution commenced in September. Despite the glitches, information packages and containers were distributed, errors fixed, and collection began on schedule for most residents, with only 6% of residents receiving containers late.

Forewarned by other municipalities who had changed their curbside programs to include food waste collection, the RDN prepared for heavy call volumes by establishing a temporary call center with three extra staff. As the distribution process unfolded and delays were encountered, call volumes increased to a maximum of 600 in one week (several hundred percent higher than the normal 60 to 80 calls a week for solid waste related inquiries). By the middle of November 2010, and with the roll-out complete, over 3,500 calls had been logged at the temporary call centre. Analysis of the call topics showed that the vast majority (78 per cent) of callers had been concerned they had missed receiving their containers by the advertised date and were not calling to complain or question the program changes. This proved the effectiveness of the communications strategy in creating awareness of the program and preparing residents for the changes ahead.

At the end of 2010 the project plan was evaluated and was deemed to have been crucial to the success. In essence, planning pain led to project gain.

- ✓ The program launched on budget and on time.
- ✓ Beyond Composting brand recognition was achieved.
- ✓ Stronger partnerships were built.
- ✓ Infrastructure upgrades were accomplished on time.
- ✓ Contracts were in place and working well.
- ✓ Stress and headaches had stayed at the staff level (and away from the politicians).
- ✓ Good diversion and disposal participation rates were being achieved.

In the 10 years since the implementation of curbside food waste collection, over 27,560 tonnes of residential food waste, with an annual average of 115 kg per household, has been collected and diverted from landfill disposal.

Education, Outreach, Community Awareness

Education is a crucial component in helping residents and businesses achieve Zero Waste. It is the primary reason why the RDN has consistently achieved such high diversion rates and participation in diversion programs. Communication with the community has been key to making sure residents know what, when, where and how to reduce, recycle, divert and compost.

The Zero Waste Program, and its sub-set, the ODS, owes much of its success to the partnerships and collaborations developed under the program, that would not have been possible without the face-to-face contact with stakeholders. For example, with respect to policies such as disposal bans, there are roughly 45 private sector hauling companies that operate within the RDN, which has meant that RDN

staff can meet with the entire hauling community in one meeting. This smaller scale builds trust between the partners, assuring them that the aim of expanded disposal bans, and regulations results in higher waste diversion and not higher financial penalties.



The new SWMP proposes to enhance existing education, awareness and enforcement programs to help the multi-family and commercial sectors improve their food waste and recycling programs. Existing public education for Zero Waste and waste reduction may include public events, school and community presentations, advertising for campaigns, social media and more. A new focus on education and enforcement for C&D waste will help ensure waste from that sector is sorted for reuse, chipping, composting or recycling before being considered for landfill. A greater emphasis is also proposed to reach adult audiences through traditional and social media, as well as being more active in a variety of public events.

Waste Stream Management Licensing

The WSML regulatory system is innovative in that it promotes private sector rather than public sector investment in waste diversion infrastructure through regulation, collaboration, education and enforcement. The Waste Stream Management Licensing Bylaw establishes operating and reporting requirements for all facilities that handle municipal solid waste. The bylaw set high standards for the local waste management industry and create a level playing field for the industry. The result is less risk and cost to the taxpayers for clean-up of poorly operated facilities, abandoned facilities, and abandoned municipal solid waste and recyclable material (illegal dumping). Furthermore, the Bylaw sets reporting requirements making it possible to track waste diversion and progress of the SWMP.

Organics Processing

The RDN commercial food waste ban and WSML bylaw created an opportunity for the private sector to invest in a local composting facility. In June 2004, the ICC Group (later Nanaimo Organic Waste) opened the first compost facility in the RDN. The facility is able to accept and process food waste and yard waste.

Long term availability of an organics processing facility in the RDN is important. In October 2018, the RDN entered into a 20-year public-private partnership with Circular Waste BC (formerly Nanaimo Organic Waste) to secure organics waste processing for the region. Facility upgrades will cost Circular Waste BC \$6,000,000. The partnership sets that \$5,000,000 of the upgrade is to meet RDN demand. The upgrades will increase the facility's capacity offer services to other organics generators. Some of the highlights of the innovative initiatives of the agreement include:

- **Transfer Risk:** In large infrastructure projects such as this, there are often increases in operation costs, from delays, labour, materials etc., which would be passed on to the RDN. However, under a Public Private Partnership, the contractor, not the RDN, becomes responsible for those costs.
- **Innovation:** As Circular Waste BC is liable for overruns, they have an added incentive for innovation, which results in savings and a better product and service.
- **Create jobs that responds to market changes:** Circular Waste BC will be able to respond quickly and more effectively to changes in the market.
- **Attract investment:** A public-private Partnership allows investment from outside the region to replace local government investment, freeing up taxpayer dollars.



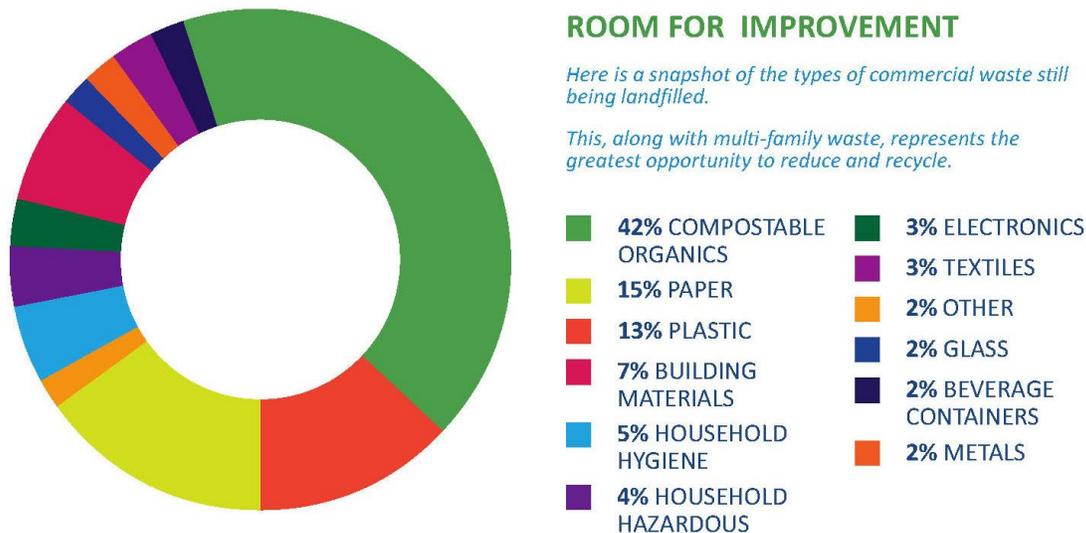
The RDN partnership with Circular Waste BC is expected to result in the following outcomes:

- Reduce GHG emissions, by reducing the quantity of unprocessed organic wastes sent to landfill;
- Expand the processing capacity for municipal and commercial organic wastes within our region;
- Encourage local and regional initiatives that will result in significant and measurable diversion of organic wastes to higher value end uses;
- Work towards achieving the RDN solid waste disposal target of 109 kg/person/year for all sectors;
- Support the existing landfill ban on disposal of organic waste;
- Increase exposure and awareness of food waste prevention;
- Provide a facility capable of accepting organics from outside the RDN including First Nations and other Regional Districts;
- Producing a higher quality marketable compost product;
- Support partnerships and collaboration among organizations committed to reducing organic waste;
- Support the use of nutrient recovery and nutrient transformation technologies in the agricultural sector; and,
- Prolong the life of the existing Regional Landfill.

Future Bylaws

As part of the updated SWMP, the RDN is proposing to continue with the existing Waste Stream Management Licensing bylaw as well as create two new additional bylaws — “Mandatory Waste Source Separation” and “Waste Hauler Licensing.”

Mandatory Waste Source Separation Regulation is a regulatory tool that will help ensure recyclables and compostables don't end up being landfilled. While many businesses and multi-family buildings already have recycling programs, this proposed regulation would expand to require all existing and new ICI buildings have separate containers for recyclables, organics and garbage.



Waste Hauler Licensing is a proposed new regulation that would require waste hauling businesses to obtain a license from the RDN. Similar to the Waste Stream Management Licensing Bylaw, under the new SWMP, licensing waste haulers provides the ability for the RDN to change the existing financial model to one where the waste industry is more profitable if they divert waste rather than dispose of it. The intent is to promote the “business of diversion” and foster industry innovation to achieve the lowest system cost with the highest waste diversion.

Both proposed regulations require additional provincial approvals. Subject to provincial approval and subsequent adoption of the SWMP, the RDN will conduct further consultation on the introduction of mandatory waste source separation regulation as a potential tool to help ensure these recyclables and compostables are kept out of the landfill.

