Comox Strathcona Waste Management

INDUSTRIAL, COMMERCIAL, INSTITUTIONAL (ICI) AND FOOD WASTE REDUCTION (FWR) OPTIONS REVIEW

For Comox Strathcona Waste Management

Memo #7

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Table of Contents

Strategy Description ***1***

CSWM Background ***3***

Overview **3**

Interviews and Findings **5**

Approach 5

Interview Findings - ICI 6

Interview Findings – Food Waste Reduction 14

Jurisdiction Scan ***17***

Advocacy **17**

Policy **18**

Education and Technical Assistance **21**

Education Materials and Campaigns 21

Technical Assistance 22

Engagement **24**

Funding **25**

Grant programs 25

Operations and Infrastructure **26**

Civic Waste Minimization and Diversion **28**

Procurement 28

Zero Waste Stations 29

Zero Waste Events 29

Reusables 30

Strategy Options for Implementation ***30***

Strategy 1. Advocacy **31**

Estimated Diversion Impact 31

Operational and Staffing Impacts Anticipated 31

Financial Implications 31

Regulatory Authority Required 31

Strategy 2. Policy **31**

Estimated Diversion Impact 32

Operational and Staffing Impacts Anticipated 32

Financial Implications 32

Regulatory Authority Required 32

Strategy 3. Education for Policy Implementation **33**

Estimated Diversion Impact 33

Operational and Staffing Impacts Anticipated 33

Financial Implications 33

Regulatory Authority Required 33

Strategy 4. Educational Materials, Business Recognition and Engagement **34**

Estimated Diversion Impact 34

Operational and Staffing Impacts Anticipated 34
Financial Implications 34
Regulatory Authority Required 34

Strategy 5. Technical Assistance to Businesses and Organizations 34
Estimated Diversion Impact 34
Operational and Staffing Impacts Anticipated 35
Financial Implications 35
Regulatory Authority Required 35

Strategy 6. Waste Reduction and Diversion Innovation Grants 35
Estimated Diversion Impact 35
Operational and Staffing Impacts Anticipated 35
Financial Implications 35
Regulatory Authority Required 36

Strategy 7. Operations Improvements 36
Estimated Diversion Impact 36
Operational and Staffing Impacts Anticipated 36
Financial Implications 36
Regulatory Authority Required 36

Strategy 8. Civic Site Waste Minimization and Diversion 37
Estimated Diversion Impact 37
Operational and Staffing Impacts Anticipated 37
Financial Implications 37
Regulatory Authority Required 37

Summary of Strategic Actions 38

Strategy Description

Applicable Guiding Principles

- Promote and support zero waste approaches and support a circular economy.
- Promote the first 7 Rs – refuse, rethink, redesign, reduce, reuse, repair, and recycle.
- Support polluter and user-pay approaches and manage incentives to maximize behaviour outcomes.
- Prevent organics and recyclables from going into the garbage.
- Strive for equity within regions for private and public solid waste management facilities or exceed regional targets set in plans.

As part of the Comox Strathcona Waste Management (CSWM) solid waste management plan (SWMP) renewal process, this memo explores waste minimization and diversion options for the light industrial, commercial and institutional (ICI) sector. Food waste reduction (FWR) options are addressed within this context. Addressing ICI waste reduction and diversion aligns with CSWM Solid Waste Management Plan (SWMP) draft goals including supporting a circular economy approach, reducing waste to landfills, encouraging participation in the solid waste system across sectors, and ensuring changes are delivered equitably while recognizing and leveraging the unique challenges and cultures of the region's rural and remote communities.

ICI municipal solid waste (MSW) is defined as recycling, compost or other materials disposed as garbage that are generated by non-residential sources: organizations and institutions including schools, hospitals, government facilities and universities; commercial sources such as shopping centres, offices, businesses and hotels; and light industry which is generated from manufacturing and primary and secondary industries – and is managed off-site from the manufacturing operation[1].[2]

The ICI sector has high waste reduction and overall diversion potential. ICI sector materials disposed as garbage represent a significant portion of the overall waste stream[3]. In BC, over half the MSW is made up of highly recyclable or compostable material including plastics, paper, metal, glass and compostable organics; this aligns with regional metrics discussed further in CSWM Background. The Provincial Single-Use and

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[1] BC Government, 2024. Preventing Waste in British Columbia: Non-Residential Packaging & Paper Products Discussion Paper. https://engage.gov.bc.ca/app/uploads/sites/121/2024/04/Preventing-Waste-in-British-Columbia_Non-Residential-Packaging-and-Paper-Products_Discussion-Paper.pdf

[2] BC Government, 2024. Plastics / Reduce single-use. www.gov.bc.ca/reuse

[3] Statistics Canada, 2020. Disposal of waste, by source. https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=3810003201

Plastics Waste Prevention Regulation (2023) can be leveraged to support phasing out single-use plastic items and promote reuse in the region to support waste minimization[4]. There are also opportunities through the BC Plastics Action Fund to support plastics waste reduction and diversion[5].

There is a need to further support ICI sector waste reduction, especially for rural and remote communities. In BC, an estimated one third of MSW is packaging and packaging-like materials. The 2024 Provincial Discussion Paper – that lists diversion options for non-residential packaging and paper products – notes that, while over 99% of British Columbians have access to recycling at home or depot, recycling opportunities are not as consistent for ICI[6]. The 2021 Provincial 5-year action plan to address extended producer responsibility (EPR) developments further acknowledges that rural and remote communities have unique challenges in accessing recycling services and markets resulting in considerable volumes of these materials going to landfill[7]. It will be beneficial for CSWM to closely monitor and engage in the Province's 'Preventing Waste Outside the Home' engagement given it is running concurrently with the region's SWMP renewal process[8].

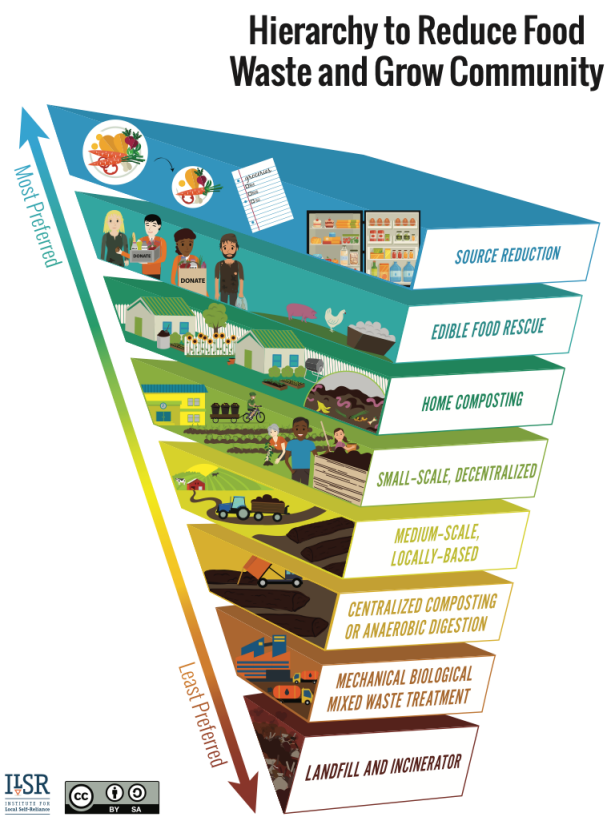


Figure 1. Hierarchy to Reduce Food Waste and Grow Community (Institute for Local Self Reliance, 2024)

[4] BC Government, 2024. Single-Use and Plastic Waste Prevention Regulation. https://www.bc.gov.ca/reuse

[5] Alacrity Canada, 2024. BC Plastics Action Fund. https://www.alacritycanada.com/plasticsactionfund/

[6] BC Government, 2024. Preventing Waste in British Columbia: Non-Residential Packaging & Paper Products Discussion Paper. https://engage.gov.bc.ca/app/uploads/sites/121/2024/04/Preventing-Waste-in-British-Columbia_Non-Residential-Packaging-and-Paper-Products_Discussion-Paper.pdf

[7] BC Government, 2021. Advancing Recycling in BC, Extended Producer Responsibility Five-Year Action Plan 2021-2026. https://www2.gov.bc.ca/assets/gov/environment/waste-management/recycling/recycle/extended_producer_five_year_action_plan.pdf

[8] BC Government, 2024. Preventing Waste Outside the Home. https://engage.gov.bc.ca/preventingwasteoutsidethehome

There are opportunities to further reduce food waste for ICI businesses and organizations involved in food management across the supply chain (production through processing, transport, consumer facing businesses), as shown in Figure 1. Some food surplus is captured to feed people and animals through private and non-profit entities in the region. There is more that can be done to support a hierarchy to reduce food waste and grow community by avoiding wasted food, edible food rescue, support local scale composting, and increasing access to the region's developing compost processing capacity[9].

CSWM Background

Overview

According to the 2021 census, the largest sectors of employment in the CVRD were health care and social assistance, retail trade, construction and public administration[10]. In the Strathcona Regional District (SRD), the largest sectors were health care and social assistance, retail trade, construction, and agriculture, forestry, fishing and hunting[11]. According to the 2010 Comox Valley Regional District (CVRD) Regional Growth Strategy (RGS), major economic sectors and opportunities are tourism, the Comox Valley airport, agriculture and aquaculture, public sector employment, forestry and other resource industries, retail and human services, and K'ómoks First Nation[12].

According to the 2017 CSWM waste audit, approximately 60% of the materials disposed by the ICI sector could have been diverted as organics or recyclables. While there are major food banks in Comox Valley and Campbell River that are recovering food, the largest component of ICI sector waste is still food waste (25%). There is also a large agricultural sector, which produces surplus food and organic waste and may take organic

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[9] Institute for Local Self Reliance, 2024. Hierarchy to Reduce Food Waste and Grow Community. https://ilsr.org/articles/food-waste-hierarchy/

[10] Statistics Canada, 2023. 2021 Census of Population Comox Valley, Regional district (RD) https://www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/details/page.cfm?Lang=E&SearchText=Comox%20Valley&DGUIDlist=2021A00035926&GENDERlist=1,2,3&STATISTIClist=1,4&HEADERlist=0

[11] Statistics Canada, 2023. 2021 Census of Population Strathcona, Regional district (RD) https://www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/details/page.cfm?Lang=E&SearchText=Strathcona&DGUIDlist=2021A00035924&GENDERlist=1,2,3&STATISTIClist=1,4&HEADERlist=0

[12] Comox Valley Regional District, 2010. Regional Growth Strategy. https://www.comoxvalleyrd.ca/sites/default/files/uploads/bylaws/bylaw-120_comox_valley_regional_district_regional_growth_strategy.pdf

waste for animal feed or diversion. Recyclables were close to 30% of the waste stream and included paper (7%), paper packaging (8%), plastics (7%), metal (3%), and hazardous products and electronics (4%). Therefore, there is still a lot of potential to prevent and divert waste from the ICI sector. The 2012 SWMP had a goal to increase organics processing capacity in the region. Since then, a facility has been built, residential organics including food scraps are being collected starting in 2023, but the facility does not yet accept ICI organics.

ICI waste is typically collected by private haulers in more densely populated areas. Most of the collected materials are taken to Regional waste management centres. In rural areas, materials are collected privately, by local government or self-hauled by businesses to landfills or waste transfer stations. The exact amount of waste generated by the ICI sector is not known, since commercial customers are grouped with other customers. The total amount of waste disposed at Regional waste management centres from commercial customers, self-haul customers, multi-family dwellings, and transfers was 31,812 tonnes in 2022, which was 49% of the total waste disposed.

As per the 2012 SWMP[13], a variable tipping fee is charged to the ICI sector to encourage waste diversion; recyclables are charged 25% of the regular tipping fee (@ $60/tonne), yard waste is charged at $65/tonne, scrap metal has no tipping fee, MSW is $155/tonne and MSW or C&D waste containing recyclable materials or prohibited waste is charged $365/tonne[14]. CSWM has also encouraged local governments to introduce mandatory recycling policies for businesses to increase diversion of organics and recyclables and require space allocation in new buildings for multi-stream waste collection. Currently the Village of Cumberland collects commercial garbage and recycling under a solid waste utility fee[15].

To date, Comox[16] and Courtenay[17] have included a requirement in their solid waste bylaws for businesses to have collection services for organic waste and recyclables. It was unclear if the bylaw is enforced at this time.

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[13] Comox Strathcona Waste Management, 2012. Solid Waste Management Plan. https://www.cswm.ca/sites/3/files/docs/536030300_2013_final_cswm_solid_waste_management_plan.pdf

[14] Comox Strathcona Waste Management, 2024. Fees. https://www.cswm.ca/fees

[15] Village of Cumberland, 2024. Utility Rates and Charges. https://cumberland.ca/utility-rates-and-charges/

[16] Town of Comox, 2023. Bylaw No. 2027. https://www.comox.ca/sites/default/files/2024-01/Bylaw 2027 - Solid Waste Management.pdf

[17] City of Courtenay, 2023. Bylaw No. 3113. https://www.courtenay.ca/assets/Business/Documents/Solid%20Waste%20Management%20Bylaw%20No.%203113,%202023.pdf

Both CVRD and Strathcona Regional District (SRD) have vibrant local food networks. There are active seafood and land-based agriculture sectors with many independent producers. In the CVRD, 23% of land is actively farmed (39,100 hectares [ha]), of which 14% (23,800 ha) is in the Agricultural Land Reserve (ALR)[18]. Since SRD has a large land area, farmland is less than 1% of the jurisdictional land area, but there is still 2,314 ha of land that is actively farmed[19]. Furthermore, SRD has over 19,000 ha of land designated as ALR although most is not currently used for agriculture. There are many food-related initiatives in the CVRD and SRD to support local food producers, processing, and food security. There are seasonal farmers markets in most population centres and farm stands dot the rural landscape. A food hub feasibility study was conducted in 2021 for the CVRD to explore the possibility of establishing a food hub to support local food production and processing[20]. Food recovery is done by not-for- profit groups and community volunteers, including the Comox Valley Food Bank, Campbell River Food Bank, Strathcona Food Hub, LUSH Valley Food Action Society, Second Harvest Food Rescue, and Food Mesh.

Interviews and Findings

Approach

A total of 30 interviews were conducted with ICI sector businesses and organizations, and those serving ICI, across the region. Intent was to better understand how CSWM can support private and non-profit sectors operating in the service area to optimize waste minimization and diversion while continuing to provide their existing services. The query addressed material types and quantities generated, what items were diverted and what was disposed as garbage, generator barriers, drivers and goals for waste minimization and diversion (e.g., financial, social, environmental and logistical variables). For those involved in the food supply chain (from post-production through consumer facing businesses), questions were asked about how edible food waste was avoided in the first place and how the highest value for food using the food recovery hierarchy was being pursued (e.g., reduce, rescue for people then animals, recycle/compost).

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[18] Urban Food Strategies, 2021. Food Hub Feasibility Study. https://www.comoxvalleyrd.ca/sites/default/files/docs/Projects-Initiatives/20210917_warren_food_hub_feasibility_final_report.pdf

[19] BC Ministry of Agriculture, 2016. Agriculture in Brief: Regional Districts of Strathcona and Mount Waddington. https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/agriculture-and-seafood/statistics/census/census-2016/aginbrief_2016_strathcona_mount_waddington.pdf

[20] Comox Valley Regional District, 2021. Food Hub Project / Food Hub Feasibility Study. https://www.comoxvalleyrd.ca/projects-initiatives/past-current-projects/food-hub-project

Potential interviewees were identified from Regional District contact lists and web searches for businesses, organizations, and institutions that represented target stakeholders. Interviews followed a semi-structure format as per the interview guide (Appendix A). The total number of interviews completed by stakeholder type is summarized in Table 1.

Table 1: Interviews Completed

Stakeholder Type	Food Waste Reduction (FWR)	Industrial, Commercial, Institutional (ICI)	FWR/ICI	Total
Aquaculture		1		1
Business Association		3		3
Farm	1			1
Food Program	1			1
Food Recovery	3			3
Government		3		3
Grocery			2	2
Institution		2	1	3
Nursery		1		1
Retail		1	1	2
School		1	2	3
Waste Management	1	6		7
Total	**6**	**18**	**6**	**30**

Interview Findings - ICI

Waste Prevention Initiatives

Interviewees offered many specific examples of how waste minimization was pursued in the workplace. Below are examples of waste reduction efforts by material type or initiative.

- Paper. Minimized printing, switched to electronics communications such as tablets for trainings and QR codes for handouts.
- Organics. Ongoing inventory management to inform procurement, food surplus rescue and donation, onsite composting for source reduction, use of a dehydrator to reduce volume before hauling and small-scale collection sent to farm-based vermicomposting operations.
- Shift away from single use items. Encourage bring your own lunch containers; use ceramic coffee cups and dishes and water bottles. Support and adopt provincial

legislation requirements, e.g., develop reusable bag with branding for store use throughout a mall.
- Other reuse. Seek ways to reuse products in business settings, e.g., heat treat wooden pallets to reuse in a food manufacturing context.

Materials Generated

The following materials were generated, and diverted or disposed based on interviewee responses:

- Garbage – was collected in metal containers (often 4 or 6 cubic yard in size); compactors were used for larger generators and frequency of collection generally increased in summer. Garbage was most often collected weekly although for larger generators multiple times in a week occurred. On occasion every other week garbage collection was in place.
- Cardboard – was a standard recycling collection service given its bulk and visibility; container size and type were generally similar to garbage and collection was weekly. Some compactors were in place for larger generators, which decreased frequency of pick up and varied from weekly to bi-weekly. There is now a charge to collect, even though in the past it was considered a revenue source.
- Mixed recycling – was collected by many of the businesses interviewed. Rolling carts ranging from 180 to 240 litres were used most often and collection was often weekly. Mixed recycling programs were often not fully utilized; there was often confusion around what was accepted, and cart-based collection resulted in recycling options being dispersed and not always grouped with other disposal bins. Often, they required effort from the generator to manage the carts, set them out at certain times which meant they were not serviced as easily as garbage containers (i.e., generators directly supported consolidation and set out while custodians handled garbage). Several flagged questions around end destination for recycling.
- Plastics – were regularly disposed of as garbage.
- Glass recycling – was often listed as a recycling gap and not collected. Businesses were able to return beverage containers to depot through charity programs or informally.
- Plastic film – was often flagged as additional divertible material, but one without easy access to commercial recycling. For larger retailers, there were examples of bailing it for backhaul to their distribution centre along with other larger quantity items (e.g., cardboard, scrap metal).

- Soft foam – was identified as recyclable but not readily recyclable for most businesses. One larger soft foam user had a densifier given expanded polystyrene continues to be the best tool for their process. They were open to densifying feedstock from neighbouring businesses at cost; however, that amount was still significantly higher (at about $2.60/kg) compared to disposing of it as garbage. While it's a transition strategy that reduces waste volume, they are still seeking viable product alternatives given they have storage issues that affect end product quality, and they have to work to access local markets for intermittent product sale.
- Food Scraps – some larger generators interviewed had food rescue for people or animals in place and/or had tried onsite composting. Charities often collected the surplus food directly from larger organic generators, primarily grocery stores. There were minimal food service and office-based food scraps collection (outside of early adopters with food scraps collected through Earth Warriors Composting). Given food scraps are significant portion of the waste stream, many were interested to develop programs and gain access to regional processing. Food scraps were generally collected in boxes or buckets that could be moved manually; as collection programs evolve, rolling carts between 80 and 180 L are most common for food scraps collection.
- Electronics and other EPR program products – there was general recognition that electronics and other EPR products were to be diverted from garbage and drop off locations were sought.

Haulers and Collection Methods

Interviewees used a mix of haulers for collection and transport of garbage, cardboard and mixed recycling. As noted in the by material section above, most interviewees knew container types, frequency of collection, the percentage full each time – which was often mostly or completely full in the off season with double the volume in summer, which required an increase in bin size, number of bins, or frequency of collection. They were aware of hauling costs and contract terms, and often had done the direct negotiation and continue to interact with haulers to adjust contracts as needed. Many expressed concerns around rapidly increasing costs for both garbage and diversion.

It was noted that to recycle, a business or organization had to have a collection contract; they were not able to drop off recyclable materials with the processor directly. Businesses interviewed did not mention utilizing the commercial "plastics bin" at $60 per tonne through the two Waste Management Centres (Campbell River and Comox Valley), although facility staff reported that they were well utilized.

Contract adjustments with cost savings from diversion included a grocery example when once the food scraps were removed (through food rescue for people as well as animals), they were able to switch to every other week garbage to mitigate increased fees. Another large retailer noted that mixed recycling was not too much of an additional cost and they supported it.

Corporate Drivers

When Environmental Social and Governance (ESG), corporate sustainability and/or climate action goals were in place, the likelihood of better tracking and more diversion options was higher. Many larger businesses had positive updates about buy in and many suggestions about what they wanted to see re more diversion options (non-residential recycling as well as food scraps). Even those with sustainability or climate goals spoke to specific collection, infrastructure, education, resource needs or other that presented obstacles to overcome. The range of challenges to overcome ranged from support with signage and bin placement through accessing commercial food scraps processing sites. Many smaller businesses without company targets did not have mixed recycling and food scraps collection in place given costs, and lack of access to information and opportunities.

Many businesses had a mix of waste minimization and diversion practices resulting in part from company-level target setting. One larger company had recently expanded their inventory system to track and better manage their diversion system. Many other interviewees spoke their workplace culture influencing how individuals optimize waste prevention opportunities and what diversion programs were carried out. There was also acknowledgement that what materials were accepted for diversion varied by area which influenced people and business attitudes and behaviours.

Infrastructure and Operations

The CSWM has multiple rural and island transfer stations that accept commercial garbage and charge by volume, using an estimate of 12 bags per cubic yard. The CVRD invoices ICI businesses directly. The Recycle BC contract with the CSWM, which oversees residential packaging and paper recycling, currently uses the separation of household PPP from ICI option, but there is another potential option with an automated deduction for a fixed ICI percentage (up to 25%) to allow for some non-residential packaging and paper products to be collected and tracked by volume.

The two Waste Management Centres, Comox Valley (in Cumberland) and Campbell River, have paid drop for OCC and plastics for smaller generators at $60/tonne. There are some challenges with overflow, and staff aim to manage it by reloading the bin when the hauler comes for collection. They also accommodate commercial businesses that have limited point of generation collection space and have significant amounts to drop at the

site. It is challenging to add more capacity given space limitations, in Campbell River in particular. There is also an intent to encourage larger generators to have bins at point of generation. That said, it can be challenging when those doing recycling self-haul are turned away, due to overflowing bins, and not able to drop off directly at the local recycling processing centre.

The tipping fee differential at the larger facilities has a significant impact on source separation. The drop off fee for MSW / garbage is $155/tonne while MSW and construction and demolition waste containing recyclable materials or prohibited waste is $365/tonne. Operators and site coordinators work together to identify and document cross contamination, and work with haulers reduce it. While it can be frustrating to identify which customers are not source separating, the staff support haulers as they trouble shoot and work through the change management process. They take the extra effort to show they are using a level playing field approach, i.e., not flagging commercial loads from one hauler more than others and the overall effort yields positive results. The larger items such as metal, cardboard, electronics are more easily flagged compared to bagged mixed recyclables, or items in residential loads from home businesses that are less likely to be identified. There are still a smaller percentage of businesses, 20-30% estimated, especially larger companies, that are inclined to pay the surcharge and not source separate. Those interviewed advocated for an increased tipping fee differential to reinforce diversion efforts.

Education Efforts

Some business and institution representatives interviewed spoke to creating signage and promoting their recycling programs. Larger retailers had corporate protocols for training and the importance of norm setting was reinforced overall. CSWM's community engagement contractor had also recently engaged several restaurants and food service businesses related to the Provincial Single-Use and Plastics Waste Prevention Regulation.

School-based efforts included the creation of pilots for green stations for collection of multiple materials (including plastic film and other flexible plastics), pilot onsite compost programs and newer mixed recycling programs. Signage was available and also customized by school as part of a broader suite of online and in person education offerings[21]. The local college recently launched mixed recycling through a sustainability committee and plans to augment and adjust promotion efforts as the program evolves.

[21] Comox Strathcona Waste Management, 2024. Education. https://www.cswm.ca/education

Challenges

There were many barriers identified that prevent or make it challenging for businesses and institutions to implement waste prevention and diversion practices including: collection; infrastructure (e.g., organics processing accepting commercial materials); resources and cost; education and awareness; attitude and lack of commitment.

- For waste prevention, there were gaps around ways to support the overall culture shift, access to information and overall awareness.
- For food packaging, several interviewees noted that farmers who collect food for pigs or composting may not be managing packaging in the most responsible way (i.e., open burning).
- For education efforts, there was some confusion about what goes in mixed recycling and a wide range of signage with various levels of effectiveness.
- There was some concern expressed that the public sector was not sending clear diversion messages to ICI sector. Examples included discontinuing public sector sponsored recycling/garbage collection, not allowing access (yet) for commercial organics processing and turning commercial customers away when waste management centre recycling bins were full.
- For collection, diversion options were not made available for some material streams given cost or lack of change drivers and incentives. There were a few cases where the collection/storage/transport internally was set up to make garbage disposal easier than recycling (e.g., custodial handled primarily garbage and/or recycling bins were handled separately and moved internally by non-custodial staff). In schools, the recycling and organics management initiatives are often volunteer/champion based and need more backing.
- Infrastructure in rural areas in particular addressed building and access gaps. Some larger commercial generators using rural depots don't have recycling access, and larger amounts are disposed as garbage while smaller amounts may be added informally to residential recycling containers by individual residents working at local businesses. There was also the issue of extra household garbage dumped into unlocked commercial dumpsters when less services are in place (e.g., Quadra). There were also challenges with hauling solid waste off island given BC Ferry lines can have long waits, especially in summer, and there is not a priority line option.
- Waste management centres had issues around commercial recycling capacity; some generators are turned away if bins are overflowing but not able to drop directly at the local processor, which requires businesses to work through a collection contract. There were also challenges around keeping recycling out of

garbage loads. It is of note that the tipping fee differential is effective for supporting diversion but not all contaminated loads are identified, and some businesses just pay the higher fee rather than source separating materials.

Opportunities

Primary opportunities for the regional district to support waste minimization and diversion efforts fell into the following categories: advocacy; policy; education and technical assistance; engagement; funding; and operations and infrastructure.

Advocacy

Advocate to senior governments for product design change, EPR updates, better management of non-residential packaging and paper product and support for food hubs that support secondary processing and help reduce food waste. There is also an opportunity to support school districts as they broker a contract with Recycle BC, who is willing to take other flexible plastic for schools. There are also concerns re hauling using BC Ferries - without the option for loading priority.

Policy

Requiring point of generation source separation for recycling and organics was suggested in several interviews. The opportunity to get construction contractors to separate construction and demolition materials was also mentioned multiple times. For those wanting to see more diversion, the option of disposal bans to landfill with education and enforcement arose. The importance of hauler engagement throughout the process was underscored. There was also interest in learning more about deconstruction bylaws and requirements for separating construction and demolition materials, and also how point of generation diversion can be managed at construction sites given the amount of potential material recovery.

Education and Technical Assistance

Many interviewees weighed in on opportunities related to education and behaviour change approach, content and messaging and what tools would be most helpful to support waste reduction and diversion.

- Get ahead of the changes ahead, change minds ahead of changing actions and give lots of lead time.
- Build off residential three stream and support new norms for commercial sector as well.
- Focus on business self-sufficiency, how to handle materials, what bylaws to comply with and what resources available.

- Prioritize waste minimization tips and rationale for businesses. Reinforce how to save money overtime and repurpose materials and products. Advocate for supporting local business, using refillable containers and reinforce youth generation who doesn't use paper.
- Single use Item Reduction. Amplify and reinforce provincial bylaw with education and technical assistance.
- Offer free waste audits for businesses. Support tips around managing costs, bins sizes and pick up frequency. Help businesses to know where to start.
- Be clear on where businesses can go for reuse, recycling and diversion, and provide hauler lists, tips for interaction and location lists. List resources for how to handle harder to recycle items.
- Offer tours and online information about where items are recycled and composted. Provide metrics for tonnage, carbon footprint and other indicators. Align with Basil Network Convention goals.
- Ensure visitors know where to drop off items when passing through, camping etc. and prevent dumping.
- Engage haulers and processors as part of helping to build capacity in the region.
- Share funding and opportunities with local businesses. BC funding opportunities for innovation, handling harder to recycle items such as the Plastics Action Fund.

Engagement

Several interviewees, particularly in the food sector, brought up the idea of supporting building partnerships, host events for networking around the region across various topics related to waste reduction and diversion.

Funding

Funding opportunities for mini-grant programs to support reuse programs and other innovation arose from interviews.

Operations and Infrastructure

Several opportunities related to infrastructure and operations arose during interviews.

- Build off successes to support business recycling capacity building for rural and Island depots.
- Waste management centres – there was feedback from staff that increasing the fee differential is essential to support source separation and increase diversion. There is an opportunity to more clearly list fee types on the web and other locations. Currently the $60/tonne for recycling is not in the main table even

though it's in the bylaw. The surcharge is listed specific to construction and demolition when it applies to MSW as well.

- There are specific materials that need local capacity for ICI sector recycling.
    - Textiles. There needs to be a way to reuse, divert textiles; the free store isn't enough. Advocate to get the Return-It textiles pilot collection program back.
    - Glass. While it is inert, it was often mentioned as an item that businesses would like to recycle more easily.
- Allow commercial access to organics processing. Several interviewees wanted to collect food scraps and food soiled paper. There was a mention of dehydrator use and the need to transport that material to a composting process after reducing organic material volume by 70%. Another larger institution had already costed it out and was ready to add the service as soon as there was a place to process it.
- Have adequate residential collection, or they will sneak household garbage into dumpsters or onsite.
- Consider streetscape recycling in natural areas and towns, especially where visitors go. Norms are shifting and it is more expected.

Interview Findings – Food Waste Reduction

Sources of Food Waste

Interviewees identified food waste from production (farms and aquaculture), retail (grocery stores, farmers markets), food service (restaurants), and non-profits (food banks, food programs). When it came to food surplus that is recoverable, interviews focused primarily on grocery stores and restaurants. Interviewees noted that large amounts of edible food are being disposed by these businesses.

Managing Food Surplus and Reducing Food Waste

Businesses and non-profit organizations generally prioritized the "highest use" for food so it could be eaten fresh and/or sold before it was processed and/or donated. For fresh foods, this included distribution in food boxes, discounting products ahead of time, or using produce in prepared deli items. When fresh foods were past their peak freshness, processing included redirecting produce to other farmers' markets, chopping and freezing for later sale, juice pressing or incorporation into hot meals. Some fresh foods were still distributed when past their best before dates (e.g., dairy), since these dates are only guidelines, and the foods were still suitable for consumption. One meal program mentioned using smaller portion sizes for children, to avoid wasting food. Another program bought gluts during harvest season for a discount to distribute in food boxes, which provides a win-win for farmers and consumers.

Most of the interviews focused on food recovery for managing food surplus. Gleaning at local farms, fruit tree picking from private residences, and end-of-day farmers' markets pick-ups are done by a non-profit organization. Food banks and other food non-profit organizations pick up food donations from grocery stores, which include both fresh and packaged foods.

Interviewees mentioned seeing aggregators or food hubs in other regions which support local producers in linking their products to markets and having processing capacity during harvest times to prevent fresh foods from being wasted. However, a challenge in the SRD and CVRD is that purchasers may be further located further away (e.g., Tofino or South Island) where there is more tourism and high-end restaurants. Examples of such initiatives are described in the Jurisdiction Scan.

Animal Feed and Composting

All interviewees had some means to divert food waste that was inedible or unrecoverable through animal feed or composting. Larger businesses and organizations have connections with pig farmers, who pick up food waste on a regular basis. Farms and smaller organizations can compost produce trimmings on-site or at community gardens. Dehydrators were another on-site management option used when composting is not possible, but still need to be transported to a compost processing facility. Collection services were also used by some interviewees for cooked food and other items that cannot be managed easily, like fish waste. The collection services took food waste to farms or private processing facilities. Other destinations for food waste included a bird sanctuary for meat and a drop-off point at a depot on Hornby Island, which has its own compost pile. If on-site management or collection services were not available, then food waste was disposed as garbage.

Metrics

Quantities of recovered surplus food and diverted food waste was tracked by weight, value, or as estimates. Surplus food generally had better tracking than diverted food waste and is recorded as a weight or the value of the food. Diverted food waste is usually estimated, such as the number of boxes per week, approximate percentage diverted, or sometimes as an approximate weight.

A high-level order of magnitude estimate for food rescue-related organics management, shows that close to 600 tonnes per year are recovered from farms, groceries, food service, and other retailers instead of going to compost or landfill. Of the food surplus rescued, just under 5% of the total was considered not suitable for humans and went to animal feed. Those receiving the donations generally collected it from the source of generation.

Challenges

Key challenges are the capacity to handle food surplus, being able to recover surplus food from generators, and infrastructure or services to divert food waste.

For farmers and non-profit organizations working with locally grown produce, seasonality and unpredictability are major challenges. It can be difficult to match supply with demand, since farmers do not want to sell out too early or be left with surplus that cannot be salvaged. There is limited storage and processing capacity for the large amounts of food that need to be handled during harvest season. While there has been funding for food hubs through the Ministry of Agriculture, their focus is not on local food, so the benefits cannot be realized.

Non-profit organizations have limited capacity to collect food surplus, since they rely on volunteer labour for fruit tree picking and gleaning. This also applies to collecting and sorting donations of fresh and packaged foods. While they receive the food as a donation, it is not enough to cover the cost of the services and there is a lack of perceived value for their services. They need to be more selective about where they will pick or glean and the donations that they are willing to receive.

While some food recovery is taking place between larger organizations and businesses, there is still a lot of surplus food that is not being recovered. There is a lack of incentive for businesses to donate their surplus. Furthermore, smaller non-profit organizations do not have connections or information on which businesses have surplus food that could be donated.

Depackaging is a key challenge for diverting food waste. Currently, the task of depackaging is downloaded to the receiver of the food waste (e.g., pig farmers). This is a labour-intensive process that could be a barrier to diverting food waste from the landfill. Another challenge for diversion is the ability to compost on-site, due to issues such as pest problems. Where on-site management is not possible, there may not be collection services, or the collection services are expensive (e.g., $50/week per cart).

Opportunities

Existing and future efforts that promote the highest and best use for food can be supported through advocacy, policy, education, engagement and funding.

Advocacy: The Ministry of Agriculture has supported the development of food processing hubs, so the Regional District can advocate for this support to be expanded to local food storage and processing. Policies that mandate food recovery are likely within the jurisdiction of the provincial and federal government, so advocacy needs to be directed to the relevant department at those levels to increase food recovery.

Policy: Regulations are needed to reduce food waste and promote diversion. This can be in the form of disposal bans and source separation requirements.

Education: Both residents and businesses need to see the value of recovering surplus food and local composting. The Regional District could have an educational role to promote their value and equip people with the necessary skills.

Engagement: The Regional District can act as a convenor (e.g., a roundtable) for stakeholders involved with surplus food and food waste. This can help connect farmers, food businesses, and non-profit organizations in the local food system to improve distribution of surplus food and diversion of food waste.

Funding: Many of the local farms are small producers. They need to put a lot of effort into finding buyers for their products. They also may not produce enough to sell to larger businesses. Funding for a coordinator and infrastructure for aggregation can help match these farmers to more local buyers. For food waste diversion, there is a need for funding to support food scraps collection for schools or on-site composting.

Jurisdiction Scan

Based on queries posed during interviews and industry best practices, a jurisdiction scan was developed to cover a range of topic categories including: advocacy; policy, education and technical assistance; engagement; infrastructure and operations; civic waste minimization and diversion; and grant funding.

Advocacy

There can be value to advocating to senior government and other partners for policy and program support. This option applies to the Ministry of Environment and Climate Change Strategy policy landscape provided in the Strategy Description. An additional advocacy option related Ministry of Agriculture initiatives is outlined below.

Ministry of Agriculture - Food Hubs

BC has a Food Hub Network, sponsored by the Ministry of Agriculture, which currently has 13 regional food processing and innovation hubs[22]. While CVRD completed a food hub feasibility study in 2021, it does not appear to have moved forward to develop a food hub. While organizations such as LUSH Valley and Strathcona Food Hub have some storage and processing capacity for local food recovery, their scale is still quite small compared to the demand across both the CVRD and SRD.

[22] Government of British Columbia, 2024. Food hubs in BC. https://www2.gov.bc.ca/gov/content/industry/agriculture-seafood/growbc-feedbc-buybc/bc-food-hub-network/food-hubs-in-bc

There is a food hub being developed in Cowichan Valley Regional District with expanded facilities[23]. The Cowichan Farm & Food Hub currently has a market and teaching farm, nursery, seed library, and community gardens. They are constructing a 4,800 square foot warehouse with a shared-use kitchen, training room, office, cold storage facilities, and distribution centre. Major fundings for this project include the Government of BC, Cowichan Valley Regional District, Municipality of North Cowichan, and Island Coastal Economic Trust.

Another example of a regional initiative to support local producers with processing capacity is the Similkameen Okanagan Society Food Hubs[24]. They were established in 2022 and have secured funding to build the Okanagan Food and Innovation Hub. This project is being supported by the Government of BC, which is contributing $800,000, in partnership with the District of Summerland and Community Futures Okanagan Similkameen[25].

On a smaller scale, the Tofino & Ucluelet Culinary Guild is a self-organized group of chefs that hired a Community Food Co-ordinator to buy fresh products from local and BC-based producers for restaurants in the region[26]. While this model does not have the processing element of food hubs, it still contributes to supporting local producers by allowing them to reach markets which they otherwise may not be able to access. Securing funding from the Government of BC through partnerships between not-for-profit organizations and local governments have been crucial for the development of these food hubs.

Policy

There are multiple policy tools that can add incentive to ICI waste minimization and diversion initiatives to optimize the use of infrastructure and programs.

Disposal bans to landfill. CSWM can build on current disposal ban initiatives. Disposal bans to landfill are regulatory measures designed to keep specific materials out of landfills while promoting recycling and composting and not relying solely on variable

[23] Cowichan Farm & Food Hub, 2024. https://www.cowichanfarmandfood.ca

[24] Similkameen Okanagan Society Food Hubs. http://sosfoodhubs.ca

[25] Ministry of Agriculture and Food, 2023. New food hub brings opportunities for farms, businesses. https://archive.news.gov.bc.ca/releases/news_releases_2020-2024/2023AF0003-000193.htm

[26] Wolf in the Fog, 2016. Tofino & Ucluelet Culinary Guild. https://wolfinthefog.com/tofino-ucluelet-culinary-guild/?v=7516fd43adaa

tipping fees[27]. A best management practices review from Canada Council for Ministers of the Environment (CCME) speaks to key challenges and solutions for regulation design including ensuring convenient recycling and composting programs should be in place for banned materials, implementing the regulation region-wide and considering use of clear bags to help support enforcement[28].

Disposal bans are often implemented at disposal facilities using phased in surcharges (increased fees) based on steadily decreasing thresholds (percentage of cross contamination); see Figure 2 for an example of the Metro Vancouver disposal ban to landfill implementation timeline[29]. Banned items are added to an ongoing list as collection or drop off locations are made available across the region. To be implemented successfully and become the new norm, it is essential to:

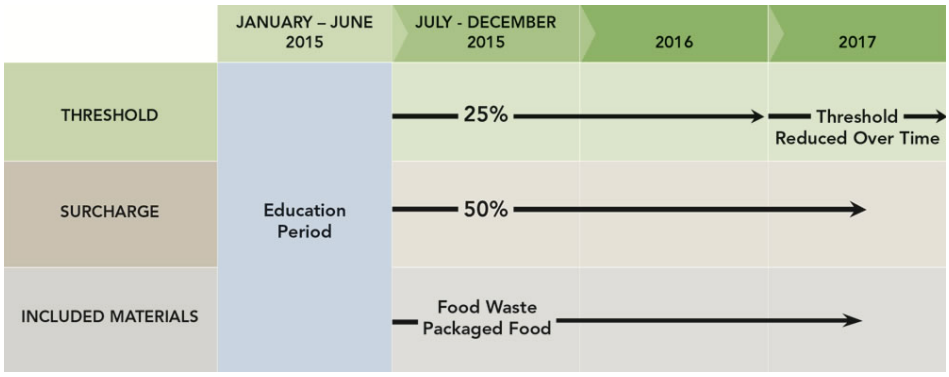


Figure 2: Metro Vancouver's phased implementation for organics disposal ban (Biocycle, 2016)

- Regulate / decide to ban a material or product.
- Collaborate with the affected key groups to hear out challenges and potential solutions, determine implementation timing, ramp up behaviour change-oriented technical assistance and enforcement measures
- Educate to ensure haulers and generators are aware of the disposal ban phase in steps.
- Enforce the ban at the point of disposal with compliance-monitoring protocols including prescreening and inspection during unloading and option to reload material and issuing surcharges[30].

[27] Canadian Council of Ministers of the Environment, 2021. Best management practices for disposal bans, levies and incentives for end-of-life plastics. https://ccme.ca/en/res/finaldisposalbansbmps-ensecured.pdf

[28] Ibid

[29] Biocycle, 2016. Organics Management in Western Canada. https://www.biocycle.net/organics-management-western-canada/

[30] Metro Vancouver, 2024. Metro Vancouver Disposal Ban Program Manual. https://metrovancouver.org/services/solid-waste/Documents/disposal-ban-program-manual.pdf

Nova Scotia has had almost 30 disposal bans since the late 1990s and has a provincial garbage disposal of 400 kg/person/year. To get closer to their target of 300 kg/person/year they are considering implementing targets for banned materials going to landfill (from 40% to 30% of the banned material disposed as garbage)[31]. Disposal bans specific to ICI organics diversion requirements and practices are also reviewed and recommended in a 2021 Environment and Climate Change Canada report[32].

Mandatory source separation. Several municipalities in BC have implemented mandatory source separation policies to promote diversion of recyclable and compostable items. The District of Squamish, the Resort Municipality of Whistler and the City of Abbotsford have updated solid waste bylaws that require point of generation source separation for recycling and compostable items at non-residential sites.

The City of Vancouver also requires source separation for non-residential properties for recyclable and organics[33]. They also adapted their business license bylaw to require every holder of a license issued to have a food waste diversion plan for the licensed business[34]. The business license renewal process is used to check mandatory separation bylaw compliance via an added check list, warning letters are sent for those not in compliance, follow up with a technical assistance site visit is available and enforcement is used as a last resort.

Other Emerging Policies. The Regional District of Nanaimo has a facility licensing bylaw to establish operating conditions that help protect communities and the environment from impacts related to their operations[35]. RDN also has proposed hauler licensing and region-wide source separation bylaws intended to build the business of diversion in ICI sectors and ensure that recycling and composting are the norm across sectors[36].

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[31] Government of Nova Scotia, 2023. Discussion Paper: Encouraging the Circular Economy in Nova Scotia. https://novascotia.ca/circular-economy-and-waste-engagement/docs/discussion-paper-encouraging-circular-economy-en.pdf

[32] AET Group, 2021. Overview of Organics Diversion Requirements and Practices for the Canadian Industrial, Commercial and Institutional Sector. Prepared for Environment and Climate Change Canada. https://partnersinprojectgreen.com/wp-content/uploads/2023/03/Consultant-Report_Overview-Canadian-ICI-Organic-Waste-Practices_Spring-2021.pdf

[33] City of Vancouver, 2023. Solid Waste By-Law No. 8417. https://bylaws.vancouver.ca/8417c.pdf

[34] City of Vancouver, 2014. By-Law No 11091. https://vancouver.ca/files/cov/bylaw-11091.PDF

[35] Regional District of Nanaimo, 2024. Waste Facility Licensing. https://www.rdn.bc.ca/waste-facility-licensing

[36] Regional District of Nanaimo. Mandatory Waste Source Separation and Waste Hauler Licensing Bylaws. https://www.getinvolved.rdn.ca/solid-waste-bylaws

Education and Technical Assistance

Education Materials and Campaigns

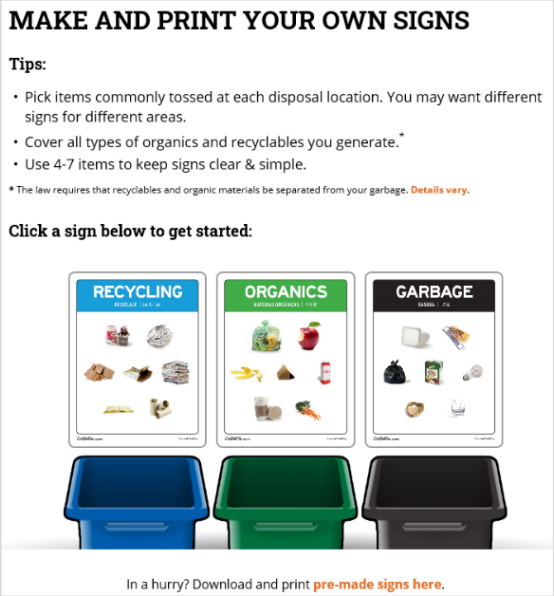


Figure 3: Signmaker (Alameda Recycling Rules, 2024)

ICI sector generators typically experience greater compliance when changes are supported with a well-executed education and outreach program. Outreach through the public sector and/or haulers can help generators to understand why practices are changing, how adjustments are to be implemented effectively, how to manage potential business impacts, and to seek ways to actively prevent waste and reduce material generation to mitigate potential cost increases and foster environmental and social benefits. Available educational and outreach materials can also be used with internal staff and clientele for how to use the three-stream system front and back of house, and why waste reduction and diversion goals are being established. Ongoing communications and ample outreach at each stage of program development and implementation can actively support ongoing ICI sector buy-in.



Figure 4: SLRD Signage Branding (Squamish Lillooet Regional District, 2024)

Image-based, colour-coded written materials offer consistent messaging and branding that can be complemented with direct engagement to shift from awareness raising and early adopter compliance to more active behaviour change and program adoption. Various signage examples, including image and icon-based, are listed below.

- Squamish Lillooet Regional District – includes branding 'Love this place, reduce your waste' and offers download and make your own icon-based mode (Figure 4)[37].
- Fraser Valley Regional District offers a range of icon-based signs and customized how to guides for businesses and institutions[38].

[37] Squamish Lillooet Regional District, 2024. Composting, waste landfill, recycling signage colour scheme. https://www.slrd.bc.ca/services/recycling-composting-waste-landfill/recycling/recycling-signage-colour-scheme

[38] Fraser Valley Regional District, 2024. Be Waste Wise - Business and Institutions. https://bewastewise.com/sector/businesses-institutions/

- Alameda County Recycling Rules (StopWaste.Org) includes a range of how to videos and support materials including multiple types of image-based signage to download (Figure 3) or order pre-made with a make your own sign option[39,40].
- San Francisco partners with their hauler to offer a range of image-based signage[41].

Education materials including signage and how-to kits provide a basis for understanding new programs and how to use them. There can be value to integrating a community-based social marketing (CBSM) approach for education and direct engagement efforts, as developed by environmental psychologist Doug McKenzie Mohr. CBSM offers a framework for how to most effectively target specific behaviour changes by overcoming barriers and reinforcing benefits of a behaviour and then applying specific behaviour change tools[42].

Technical Assistance

On-site assistance and training offer important tools to help ICI sector establishments participate in waste minimization and diversion programs. Visual audits and interactive trainings can be dovetailed with on-site visits. This can be provided by staff members, contractors or hauler partners. The City of Calgary backs up its recycling bylaw for commercial waste with a presentation by request along with a suite of information guides including how to find a hauler and right size your bins, signage, a DIY waste audit kit and business success stories[43]. There is also a 'Report a business' tab to flag if a business or organization does not have a waste diversion program[44]

There are several other place-based zero waste coaching programs that offer direct interaction and support to businesses and organizations.

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[39] Alameda County, 2024. Business and Institutions Support Materials. https://www.recyclingrulesac.org/businesses-and-institutions-support-materials/

[40] Alameda County, 2024. Signmaker. https://www.recyclingrulesac.org/sign-maker/

[41] Recology, 2024. Signmaker. https://www.recology.com/recology-san-francisco/sorting-guides-signage/

[42] McKenzie-Mohr, Doug, 2024. Quick Reference: Community-based Social Marketing. https://www3.uwsp.edu/cnr-ap/UWEXLakes/Documents/resources/CapacityCorner/CBSM_quickreference.pdf or cbsm.com

[43] City of Calgary Business Waste Diversion Tools. https://www.calgary.ca/for-business/operations/waste-diversion-tools.html

[44] City of Calgary, 2024. Report a business. https://www.calgary.ca/for-business/operations/waste-diversion.html

- Ocean Ambassadors Canada Coaching Programs for City of North Vancouver and Metro Vancouver[45].
- Surfrider Ocean Friendly Business Campaign supports businesses to eliminate unnecessary plastics, divert waste from landfill and adopt regenerative practices through site visits and a certification program using a business toolkit[46,47]. They also offer an Ocean Friendly Vacation Rental Toolkit[48]
- Synergy Foundation's Circular Economy Accelerator Program provides hands-on support to businesses who seek to adopt circular economy principles, reduce waste and emissions, increase revenue and develop innovative practices. They offer a Business' Guide to the Circular Economy and access to a recent webinar series by business subsector[49]
- Banff offers free consultation and waste assessment as part of its Zero Waste Trail program to help restaurants, hotels and other organizations reduce the amount of waste going to landfill. In addition to their three-step approach (stop waste, set up signage and bins, empower staff), they publicize their Trailblazer Heroes and offer an extensive suite of downloadable posters and training information[50]
- The District of Squamish has a business Circular Economy Trailblazer Program with a series of technical assistance sessions and a mini-grant opportunity[51].

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[45] Ocean Ambassadors Canada, 2024. Zero Waste Coaching. https://oceanambassadorscanada.org/single-use-reduction-initiatives/

[46] Surfrider Foundation, 2024. Ocean Friendly Business. https://pacificrim.surfrider.ca/ocean-friendly-busines

[47] Surfrider Foundation, 2024. Ocean Friendly Business Toolkit. https://static1.squarespace.com/static/5e6f9f4c2db929125d4c6612/t/5fbd3fa4a288af664cd78198/1606238147736/Ocean+Friendly+Business+Toolkit+-+FRIENDS+OF+SURFRIDER.pdf

[48] Surfrider Foundation, 2024. Ocean Friendly Vacation Rental Toolkit. https://static1.squarespace.com/static/5e6f9f4c2db929125d4c6612/t/5ed6c3fb3d2db0328d3a9daf/1591133234778/OCEAN+FRIENDLY+VACATION+RENTAL+TOOLKIT.pdf

[49] Synergy Foundation, 2024. Project-Zero – Circular Economy Accelerator. https://www.project-zero.ca/accelerator

[50] Banff, 2024. Banff Businesses can Eliminate Landfill Garbage by 2050. https://www.banffzerowastetrail.ca/commercial

[51] District of Squamish, 2024. Squamish's Circular Economy Trailblazer Program. https://letstalksquamish.ca/cetp_landing_page

- StopWaste.Org in Alameda County offers business assistance, waste prevention grants and free green containers for setting up organics collection[52,53,54.]

School districts and other institutions often have in-house support to provide waste reduction support, as done in CSWM. A recent federal study tracks waste generation trends and best practices for increasing school waste diversion[55]. The Vancouver School District also recently published a Waste Reduction Toolkit[56]

There are also initiatives underway to engage visitors to support waste reduction efforts, including a Don't Love it to Death Campaign launched by Sea-to-Sky communities spanning North Vancouver through Lillooet[57].

Engagement

Local governments have been convenors for cross-sector collaboration in waste reduction and diversion. In the food sector, a lab and social innovation approach was used by the City of Vancouver. The City of Vancouver had a Circular Food Innovation Lab (CFIL) in collaboration with Vancouver Economic Commission and Emily Carr University[58]. Over this 10-month research and design project, CFIL convened 18 businesses and organizations in the food sector such as commissary kitchens, restaurants, grocery stores, and microbreweries to design and test a range of strategies to prevent surplus and finding new uses for products that would otherwise be wasted. By connecting different stakeholders together such as those who have surplus and those looking for

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[52] StopWaste.Org, 2024. Preventing Waste for Businesses and Institutions. https://www.stopwaste.org/preventing-waste-for-businesses-and-institutions

[53] StopWaste.Org, 2024. Business Assistance and Case Studies. https://www.stopwaste.org/at-work/business-assistance

[54] StopWaste.Org, 2024. Free Containers. https://www.recyclingrulesac.org/containers/

[55] EcoSchools Canada, 2022. Waste Generation Trends and Management Practices Across Canada's K-12 Public Sector Education Facilities. Prepared for Environment and Climate Change Canada. https://ecoschools.ca/wp-content/uploads/2022/05/Waste-Generation-Trends-and-Management-Practices-Across-Canadas-K-12-Public-Sector-Education-Facilities-1.pdf

[56] Vancouver School Board, 2022. Waste Reduction Toolkit. https://media.vsb.bc.ca/media/Default/fgg/5/Waste Reduction Toolkit-1.pdf

[57] Don't Love it to Death, 2024. Know Your Impact. Respect and Protect Our Communities. https://dontloveittodeath.com

[58] Emily Carr University of Art and Design, 2023. Circular Food Innovation Lab Explores How to Eliminate Wasted Food in Vancouver Food System. https://www.ecuad.ca/news/2023/circular-food-innovation-lab-explores-how-to-eliminate-wasted-food-in-vancouver-food-system

surplus, they were able to find ways to collaboratively close the loop on the food system in Vancouver.

Awards and case studies are another form of engagement that could encourage businesses to strive for better practices in reducing and diverting their waste. StopWaste.Org (Alameda County) recognizes businesses and organizations for leadership and innovation in advancing environmental sustainability through their Environmental Leadership Awards[59]. They also feature businesses that have shifted their operations towards less waste in case studies focused on reduce and reuse[60], and recycling[61]. The Vancouver Airport (YVR) hosts a Waste War and gives out Green Excellence Awards to encourage terminal businesses to divert waste from going to landfill[62].

Funding

Grant programs

A few regional districts in BC have grant programs to support waste reduction and diversion initiatives. The Capital Regional District has the Rethink Waste Community Grant that accepts applications from individuals, groups, and non-profit organizations for community-based projects that promote keeping materials at their highest and best next use[63]. They have a budget of $50,000 annually, with up to $3,000 per grant. The Regional District of Nanaimo has a Zero Waste Grant which awarded $300,000 to local organizations in 2024 for education programs, repurposing waste products, creating resources local businesses can use to be more sustainable, and connect organizations to share and develop zero-waste ideas[64]. This grant has been extended for another three

[59] StopWaste. StopWaste Environmental Leadership Awards. https://www.stopwaste.org/at-work/business-assistance/business-recognition/stopwaste-environmental-leadership-awards

[60] StopWaste. Business Reduce & Reuse Case Studies. https://www.stopwaste.org/at-work/business-assistance/recycling-resources-case-studies/business-reduce-reuse-case-studies

[61] StopWaste. Business Recycling Case Studies. https://www.stopwaste.org/at-work/business-assistance/business-recycling-success-stories

[62] YVR, 2022. Congratulations to the 2022 Waste War Winners and YVR Green Excellence Award Recipients. https://www.yvr.ca/en/blog/2022/congratulations-to-the-2022-waste-wars-winners-and-yvr-green-excellence-award-recipients

[63] Capital Regional District. Rethink Waste Community Grant, 2024. https://www.crd.bc.ca/education/rethink-waste/waste-reduction-grant

[64] Regional District of Nanaimo, 2023. RDN Approves Grants for Innovative Zero Waste Projects. https://www.rdn.bc.ca/sites/default/files/2023-12/RDN%20News%20Release%20-%202024%20Zero%20Waste%20Funding%20Grants%20Awarded_0.pdf

years. The Fraser Valley Regional District has a waste reduction initiative for two years, which awards $20,000 per year, up to $5,000 per project for non-profit organizations[65].

Operations and Infrastructure

Tipping fee differential. CSWM Waste Management Centres offer a $60/tonne rate for commercial recycling, $155/tonne for garbage and $365 for garbage with more than 10% recycling and/or regulated materials. This operational policy supports diversion efforts, is also used by other regional districts and could continue to be augmented. The Peace River Regional District charges $60/tonne for sorted garbage, $200/tonne for unsorted garbage and $450/tonne if cardboard is in the garbage[66].

Clear Bags. The use of clear bags as an operations tool for commercial garbage disposal is emerging as a new norm in communities that are seeking improved compliance, increased recycling rates, reduced contamination and enhanced public awareness. Clear garbage bags can reduce municipal waste by 27%[67]. These policies build off successful residential programs in eastern Canada and resulted in a Clear Bag (Garbage) Implementation Toolkit[68]. They are now being applied to businesses and institutions in Regional Municipality of

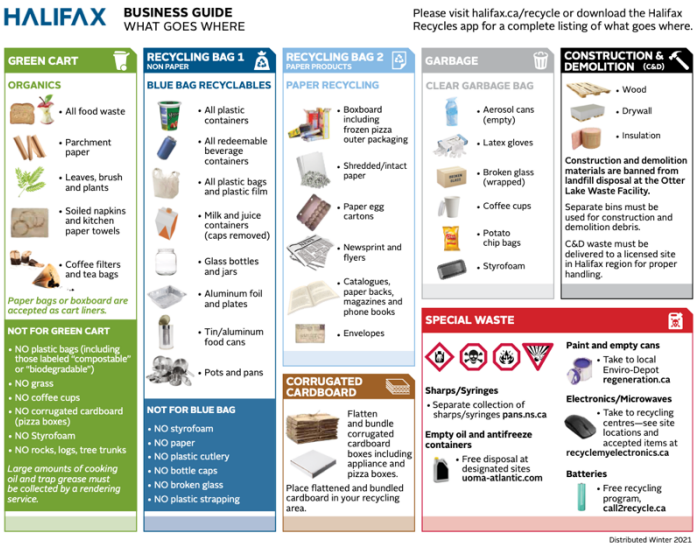


Figure 5: Business Guide What Goes In - with Clear Garbage Bag (Halifax, 2021)

[65] Fraser Valley Regional District. Waste Reduction Initiative. https://www.fvrd.ca/EN/main/services/garbage-recycling/waste-reduction-initiative.html#:~:text=The%20FVRD's%20Waste%20Reduction%20Initiative,FVRD's%20Solid%20Waste%20Management%20Plan

[66] Peace River Regional District, 2024. Commercial Waste: Improving waste diversion, sorting saves you money. https://prrd.bc.ca/wp-content/uploads/page/garbage-and-recycling/PRRD_ImprovingDiversion-W.pdf

[67] The Decision Lab, 2024. How clear garbage bags reduce municipal waste by 27%. https://thedecisionlab.com/intervention/how-clear-garbage-bags-reduce-municipal-waste-by-27

[68] Continual Improvement Fund, 2015. Clear Bag (Garbage) Implementation Toolkit. https://thecif.ca/projects/documents/748-Clear-Bag-Toolkit.pdf

Halifax, Nova Scotia (Figure 5)[69,70]; province-wide in Prince Edward Island[71, 72]; and some Newfoundland jurisdictions[73,74]. In many programs, there is an option to place a smaller opaque bag with hygiene and health related items for up to 10% of the garbage. The District of Squamish set a clear bag policy for ICI garbage and plans to move towards implementation in future[75].

Reloadable Eco-Card. For jurisdictions seeking a cash-less user pay option in remote areas and beyond, re-loadable eco-cards can be an option. In the Thompson-Nicole Regional District (TNRD), eco-cards replaced an older punch card system. Businesses and residents can register for an eco-card in-person, online or by phone[76]. There is an option to maintain the card without a credit card or an email address[77]. It is software based and requires some setup and then ongoing maintenance through a software platform such as Strong Data[78]. Switching to an eco-card system offers some check and balance in the system. It requires lead time and a phase in that offers trouble shooting. It can work offline where there are varying degrees of internet signal, and then get backed up periodically.

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[69] Halifax, 2024. Business Guide What Goes Where. https://cdn.halifax.ca/sites/default/files/documents/business/garbage-recycling-businesses/Business%20-%20English%20Feb2021%20%28web%20version%29.pdf

[70] Halifax, 2021. Halifax Regional Municipality Solid Waste Resource Collection and Disposal Bylaw No. S-600. https://cdn.halifax.ca/sites/default/files/documents/city-hall/legislation-by-laws/By-lawS-600.pdf

[71] Island Waste Management Corporation, 2024. Commercial Waste Management. https://iwmc.pe.ca/commercial/

[72] Island Waste Management Corporation, 2019. Acceptable Bags for Waste Watch. https://iwmc.pe.ca/wp-content/uploads/2019/11/AcceptableBags2019.pdf

[73] Central Newfoundland Waste Management Centre, 2024. Sort It Businesses. https://www.cnwmc.com/services/sort-it-businesses/

[74] Eastern Region Solid Waste Management, 2024. Clear Bag for Garbage. https://www.erswm.ca/clear-bag-program/

[75] District of Squamish, 2024. Industrial, Commercial, Institutional. https://squamish.ca/our-services/garbage-and-waste-diversion/industrial-commercial-institutional/#:~:text=Under%20the%20solid%20waste%20bylaw,without%20contamination%2C%20prior%20to%20disposal

[76] Thompson-Nicola Regional District, 2022. Reloadable Eco-Cards Available for TNRD Solid Waste Facilities. https://www.tnrd.ca/reloadable-eco-cards-available-throughout-tnrd/

[77] Thompson-Nicola Regional District, 2024. Re-Loadable Eco-Cards. https://www.tnrd.ca/services/garbage-recycling/payments-and-accounts/ecocard/

[78] Strong, 2024. Strong Data Automation. https://www.strongdata.ca

Food Waste Depackaging. Depackagers can play a helpful role to separate out non-organic materials from organic materials prior to composting or other organic processing through a mechanical process involving applied force and horizontal or vertical pressure[79]. There are currently no depackagers being used on Vancouver Island. There are a couple depackagers being used in the lower mainland in high volume settings. West Coast Reduction's Redux Nutrition division operates a depackager at its Chilliwack animal feed facility[80] and Fraser Valley Renewables, an anaerobic digestion facility[81].

While depackagers can reduce contamination, increase diversion and optimize higher quality compost there are also challenges to overcome related to operational challenges and technical issues, energy consumption, microplastics contamination (even with 99% recovery), cost and overall economic feasibility – especially for smaller operations. In one cost benefit analysis, depackaging equipment was not recommended for a food rescue group given the smaller quantity, the cost and return over time, the risk that food recovery best practices would not be followed as rigorously, the fact that the sharing the existing food space could increase the risk of cross contamination and trigger food safety concerns and that there were other ways to add incentive to collect the small volume of packaged waste needing to be managed[82]. This could be done through manual separation.

Civic Waste Minimization and Diversion

Procurement

Social procurement is one mechanism that has been used by local government to demonstrate commitment to SWMP goals by including sustainability criteria in their procurement policies. Social procurement is already being implemented by the City of Campbell River, CVRD, and Village of Cumberland, and planned as a pilot by the City of

[79] Biocycle, 2021. Food Depackaging: The Systems. https://www.biocycle.net/food-depackaging-the-systems/

[80] Ecoverse, 2021. Redux Nutrition: A Success Story in Pre-Consumer Food Waste Recycling. https://www.ecoverse.net/case-studies/redux-nutrition-a-success-story-in-pre-consumer-food-waste-recycling/

[81] Fraser Valley Renewables, 2024. Recycling, Compost & Waste Management Solutions. https://www.fvrenewables.ca

[82] MacDonald, A, Hartt, C., 2019. Food Waste and Depackaging Opportunities in Nova Scotia. https://divertns.ca/sites/default/files/researchreportsfiles/2021-09/FoodWasteDepackagingInNS_MacDonald.pdf

Courtenay[83]. One example specific to solid waste is the Regional District of Nanaimo's procurement process for a mattress recycling program[84]. They selected Recycle Matters, a training and employment social enterprise that provides employment opportunities to people facing barriers to traditional employment to pilot and later implement the mattress recycling program. This program has allowed mattresses not only to be recycled but enable upcycling some of the recycled materials from the mattresses and box springs to create new products.

Zero Waste Stations

Local governments have installed zero waste stations in their offices, civic facilities, and streets to serve as best practices models for businesses. Metro Vancouver has iterated on designs of zero waste stations in partnership with the University of British Columbia, Emily Carr University of Art and Design, and Recycle BC by testing different designs in different areas[85].

Many public, institutional and business settings – including Vancouver, Toronto, University of BC, Tetra Tech Canada Inc. – have changed to deskside recycling where individuals manage their materials and take them to central zero waste stations. It encourages waste diversion and yields high diversion rates[86].

Zero Waste Events

Local governments host and promote zero waste events as a way to reduce materials going to landfill and raise awareness. It is understood that CSWM supports some zero waste events, and the opportunity exists to augment the program (see separate Tech Memo: Community Education, Communications and Outreach within the CSWM). The District of Squamish has a zero waste event guide for event organizers to plan and

[83] Island Coastal Trust, 2022. Coastal Communities Social Procurement Initiative (CCSPI) 2019-2021. https://islandcoastaltrust.ca/wp-content/uploads/2022/02/CCSPI_Phase_1_Report_Final.pdf

[84] BCSPI, 2023. Direct Award for Sustainability & Impact. https://bcspi.ca/ns/wp-content/uploads/2023/02/BCSPI-Case-Study-RD-Nanaimo-Direct-Award.pdf

[85] Recycle BC, 2017. Streetscape Recycling Consultation Workshop. https://recyclebc.ca/wp-content/uploads/2017/11/Streetscape_Consultation_Presentation_POST.pdf

[86] University of British Columbia, 2024. Deskside Recycling. https://buildingoperations.ubc.ca/accountability/sustainability/zero-waste/recycling-programs/#:~:text=The%20Wastefree%20program%20consists%20of,paper%20and%2015%25%20landfill%20waste.&text=There%20are%20now%20over%205%2C000%20WasteFree%20units%20at%20workstations%20across%20campus!

implement events in accordance with their solid waste bylaws[87]. North Vancouver (City and District) also offers a longstanding zero waste event guide[88]. Key actions include working with vendors on procuring supplies and services that support the 5R Hierarchy such as reducing swag, setting up a dish wash station or reusables service, in addition to setting up staffed zero waste stations.

Reusables

Refillable and returnable food service ware is being used by businesses and institutions such as Reusables and ShareWares. Governments are partnering with not-for-profits and other partners to support pilot programs for refillables and returnables in business districts. One example is in Banff where initiatives for returnables and refillable mugs and containers are included along with a full suite of business zero waste tools (Figure 6)[89,90,91]. This type of pilot could be applied to CSWM town and city business centres.



Figure 6: Banff Refillable Promotion (Banff, 2024)

Strategy Options for Implementation

A total of seven strategies were derived from interview outcomes and the jurisdiction scan of best practices. Each strategy is described below with recommended actions. Subheadings speak to operational and staffing impacts anticipated, diversion impact, financial implications and a review of regulatory authority required. A summary of strategic actions rounds out the section.

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[87] District of Squamish. Zero Waste Events Guide. https://squamish.ca/assets/solid-waste/Organics-Guides/Zero-Waste-Events-Guide.pdf

[88] North Vancouver, 2016. A Guide to Creating a Zero Waste Event. https://www.nvrc.ca/sites/default/files/docs/Facilities-Fields/zero_waste_event_oct_2016.pdf

[89] Banff, 2024. Banff Zero Waste Trail - Businesses. https://www.banffzerowastetrail.ca/commercial

[90] Banff and Lake Louise Tourism, 2024. Choose to Reuse. https://www.banfflakelouise.com/members/news/banff-borrow-reusable-cup

[91] Banff, 2024. Get your fill (refillable program promotion). https://static1.squarespace.com/static/6036a643433e2f05afe966f2/t/6435879e2736df73a0688b2b/1681229727744/BZWT+Single+Use+Poster_Get+Your+Fill.pdf

Strategy 1. Advocacy

Advocate for senior government and other partners for policy and program support. Efforts include tracking and weighing in on the development and implementation of ICI-related Ministry of Environment and Climate Change Strategy (MOECCS) policy including but not limited to how non-residential packaging and paper products, single use item reduction and plastics management and updates to existing and new extended producer responsibility. Another example is to support food systems and security policies such as Ministry of Agriculture efforts to support food hub creation. There are ongoing opportunities to engage product stewards directly to support ongoing program access and improvements, e.g., working with the school district to collect plastic film and other flexible plastics. Another issue identified was around waste management hauling and the amount of time spent in BC Ferry lines.

Estimated Diversion Impact

Medium / High. While the initial diversion impact will take time to actualize, it is anticipated that the cumulative impact of policy changes over time will have a significant and positive impact on waste reduction and diversion across the ICI sector.

Operational and Staffing Impacts Anticipated

Low. Staffing impacts are expected to be low for this strategy.

Financial Implications

N/A.

Regulatory Authority Required

No additional regulatory authority is required to implement this strategy.

Diversion Potential	Operational Impacts	Financial Implications
Medium / High	Low	Not Applicable
No estimate available	*Some time to maintain*	

Strategy 2. Policy

The intent of this strategy is to phase in policy to add incentive for reducing and diverting waste from landfill.

Disposal to Landfill Bans. Build on tipping fee differential success and existing bans to establish and actively enforce disposal bans for recyclable, compostable and regulated materials that have suitable alternate disposal options across the region. Develop an implementation plan that includes key collaborator engagement, graduated threshold and surcharge fees, a robust education launch plan and inspector and other resources for ongoing monitoring and continual improvement.

Mandatory Source Separation. Support municipalities to implement and enforce mandatory source separation, including on construction sites. Integrate requirements into annual business license renewal with a checklist of what materials have regular collection and are diverted. Require business waste reduction plans as part of business license approval. Support municipal demolition bylaw development as a specific tactic to manage demolition materials.

Other Emerging Policies. Consider facility and hauler licensing and region-wide mandatory source separation bylaws based on legislative developments and RDN approvals and outcomes. (see separate Technical Memos #4, 5 and 6).

Estimated Diversion Impact

Disposal bans to landfill and mandatory source separation bylaws have shown to have significant diversion impacts in jurisdictions with those policy tools to back their diversion infrastructure, operations and programs. Newer facility and hauler licensing bylaws are anticipated to also impact diversion.

Operational and Staffing Impacts Anticipated

Medium. Planning resources from staff will be required to develop and implement new policies over time. For disposal ban to landfill implementation, new staffing (1 FTE) for inspection and bylaw support will be key for monitoring and enforcement.

Financial Implications

N/A.

Regulatory Authority Required

Banning materials from disposal and harmonizing waste collection bylaws to effectively encourage waste diversion are options under Local Service Regulatory Bylaws.

Options currently under the Environmental Management Act, but that can be used with approval, include waste stream management licensing and waste hauler licensing. The Regional District of Nanaimo is also seeking approval to enact mandatory source separation at the regional district level; the province has approved an Order of Council, and they are currently working with Municipal Affairs to determine how to create an establishing bylaw.

Diversion Potential	Operational Impacts	Financial Implications
Medium	Medium	N/A
Significant diversion	*Inspection officer*	*No capital*

Strategy 3. Education for Policy Implementation

To ensure policy implementation (i.e., disposal ban to landfill initially) is well executed, well received, and effective, it is key to run education and engagement activities. Vibrant and informative educational materials, a clear explanation of the change and how it affects those involved, effective information distribution across media types and timely information sessions are foundational for successful policy implementation. Early engagement with key collaborator is critical; for example, speaking with haulers and processors as well as various ICI subsector groupings early supports critical change management opportunities while engaging getting feedback.

Estimated Diversion Impact

Low. Education efforts back up the policy intended to adjust the system and change behaviour.

Operational and Staffing Impacts Anticipated

Low. Some staff oversight will be needed through the launch.

Financial Implications

Medium. It is expected that there would be a one-time communications / engagement contract to support planning and implementation related to the policy. The contract is estimated to be $40,000 to $100,000 based on 6 months to 1 year contract.

Regulatory Authority Required

No additional regulatory authority is required to implement this strategy.

Diversion Potential	Operational Impacts	Financial Implications
Low	Low	Medium
Education is integral	*Staff to oversee*	*One-time contractor*

Strategy 4. Educational Materials, Business Recognition and Engagement

Support businesses and institutions by providing turnkey education signage and how-to toolkits by subsector (e.g., food service, retail, hospitality, education, health). Showcase success online, consider an annual awards event. Convene and engage key collaborators periodically for local food procurement, waste reduction, and diversion initiatives, including but not limited to buying from local food producers, food surplus management, waste prevention information sharing, etc.

Estimated Diversion Impact

Low / Medium. Education materials and engagement are the foundational building blocks for changing attitudes and beginning to change behaviour.

Operational and Staffing Impacts Anticipated

Low. Some initial oversight is needed for materials development, with support over time for periodic events.

Financial Implications

Low. One time contractor support is needed for materials development and publishing.

Regulatory Authority Required

No additional regulatory authority is required to implement this strategy.

Diversion Potential	Operational Impacts	Financial Implications
Low / Medium	Low	Low
Core education	*Staff oversight is needed*	*One-time contractor*

Strategy 5. Technical Assistance to Businesses and Organizations

Offer site visits for audits, system setup, and periodic monitoring at business and institution point of generation. Measure impact over time.

Estimated Diversion Impact

Medium / High. Direct support specific to overcoming challenges and providing customized solutions more actively supports system and behaviour change.

Operational and Staffing Impacts Anticipated

Low. Some initial staff oversight is needed of ongoing hired contractors.

Financial Implications

High / Medium. Often this service is contracted out to a nonprofit or other community group. More effort is needed initially, then program can adjust to maintenance level.

Regulatory Authority Required

No additional regulatory authority is required to implement this strategy.



Strategy 6. Waste Reduction and Diversion Innovation Grants

Set up a small grants program for organizations to create initiatives that focus on the upper tiers of the 7R Hierarchy. The regional SWMP monitor committee would review application submissions and receive reports.

Estimated Diversion Impact

Low. Initiative scale indicates that diversion potential may be low, but ultimately it will depend on the initiative and its ability to be maintained, replicated and/ or scaled.

Operational and Staffing Impacts Anticipated

Low. Minimal oversight by staff is required.

Financial Implications

Low. Grant funding can be in the $50,000 range (based on $5,000 grants with approximately 10 recipients. Grants can support reuse (including see money for a returnables program), repair, and other upstream initiatives.

Regulatory Authority Required

No additional regulatory authority is required to implement this strategy.

Diversion Potential	Operational Impacts	Financial Implications
Low	Low	Low
Operational adjustments	*Staff to oversee*	Grant funding

Strategy 7. Operations Improvements

Continue to support tipping fee differential increases to promote source separation at the Waste Management Centres. Continue to monitor rural depot commercial material management and offer recycling where viable. Implement a clear bag policy for ICI garbage and oversee the associated change management and communications.

Estimated Diversion Impact

Medium. Continue building on the tipping fee differential to promote a user pay system.

Operational and Staffing Impacts Anticipated

Low. Continues to utilize waste management centre staff to operate the facility with tipping fee differential. Some staff oversight needed for clear bag policy implementation.

Financial Implications

A one-time contractor will be needed to support engagement and communications for the clear bag policy implementation, estimated at $15,000-25,000 depending on engagement tactics.

Regulatory Authority Required

No new regulatory authority is required for this strategy; tipping fees can be adjusted through Local Service Regulatory Bylaws.

Diversion Potential	Operational Impacts	Financial Implications
Medium	Low	Low
Operational adjustments	*Staff to oversee*	One-time contractor

Strategy 8. Civic Site Waste Minimization and Diversion

Optimize systems to minimize waste and promote diversion across regional district departments using: procurement practice adjustments; promoting reusables; use of centralized zero waste stations (remove desk garbage) and collection infrastructure by facility type. Lead by example and coordinate with municipalities and First Nations to showcase best practices.

Estimated Diversion Impact

Low. Effort is small scale but intended to showcase best practices.

Operational and Staffing Impacts Anticipated

Medium / Low. Level of effort depends on actions selected for implementation, timeframe and collaboration efforts across jurisdictions.

Financial Implications

Low. There are start-up costs related to collection containers, reusable items. See Tech Memo #2 (Community Outreach). for collection container estimates, which are excluded from this memo to avoid duplication. Seed money to build a reusables program with partners could be allocated directly (estimated $10,000-$15,000).

Regulatory Authority Required

No additional regulatory authority is required to implement this strategy.



Summary of Strategic Actions

The Strategy Actions Summary Table provides an overview of proposed strategies and actions with anticipated diversion potential, operations, staffing and financial implications. For diversion potential, both shorter- and longer-term impacts are noted where relevant. Note operational and financial impacts balance additional labour requirements across existing and contract staff. For education and behaviour change initiatives (3-6), a new staff position (1 FTE) could be another way to manage some of the new responsibilities.

Table 2. Strategy Actions Summary Table

Strategy	**Description/Actions**	**Diversion Potential**	**Operational Impacts**	**Financial Impacts**
1.Advocate for Senior Government and Partner Policy and Program Support	Advocate for senior government and other partner support for policy development across provincial Ministries, the federal government and product stewards.	Medium / High	Low	N/A
2.Use Policy to Build Incentive for Waste Minimization and Diversion	Phase in policy to build on tipping fee differential success with regional disposal to landfill bans, support municipal-based mandatory source separation bylaws and integrating waste reduction and diversion into business license requirements. Consider additional policy integration based on policy development and approval across levels of government.	Medium / High	Medium Inspection officer	N/A
3. Integrate Education into Policy Implementation	Use education and engagement activities across sectors concurrently	Low	Low	Medium

Strategy	**Description/Actions**	**Diversion Potential**	**Operational Impacts**	**Financial Impacts**
	with policy implementation to support transitions.			One-time communications contract $40,000-$100,000 based on 6 months to 1 year
4. Provide Education Materials, Business Recognition and Engagement (core)	Support businesses and organizations by providing turnkey education signage and how-to toolkits by subsector (e.g., food service, retail, hospitality, education, health). Showcase success online, consider an annual awards event. Convene and engage key collaborators periodically for local food procurement, waste reduction, and diversion initiatives, including but not limited to buying from local food producers, food surplus management, waste prevention information sharing, etc.	Low / Medium	Low Medium during initial development	Low One-time contractor support
5. Ongoing Technical Assistance to Businesses and Organizations (enhanced)	Offer site visits for waste audits, system setup, and periodic monitoring at business and institution point of generation. Measure impact over time.	Medium / High	Low	High / Medium Contractor ongoing

Strategy	**Description/Actions**	**Diversion Potential**	**Operational Impacts**	**Financial Impacts**
6. Provide grants for waste reduction and diversion leadership and innovation	Set up a small grants program for organizations to create initiatives that focus on the upper tiers of the 5R Hierarchy.	Low	Low	Low/Medium $50,000 per year
7. Enhance Operations to Promote Diversion and Cost Recovery	a. Continue to support tipping fee differential increases and enforcement to promote source separation at the Waste Management Centres. b. Offer organics processing access to businesses and institutions. c. Require clear bags use across sectors to support monitoring and enforcement.	Medium	Low	Low One-time contractor $15,000-$25,000 depending on tactics selected
8. Use Civic Site Waste Minimization and Diversion Initiatives to Lead by Example	Optimize systems to minimize waste and promote diversion across regional district departments – with ongoing measurement against targets.	Low	Medium Depends on phase in and collaborations	Low One time collection containers (via Tech Memo #2) and/or reusables seed money ($10,000-$15,000)