

**DATE:** April 21, 2021

**FILE:** 5360-01

**TO:** Chair and Directors  
Comox Strathcona Waste Management Board

**FROM:** Russell Dyson  
Chief Administrative Officer

Supported by Russell Dyson  
Chief Administrative Officer

*R. Dyson*

**RE: Construction and Demolition Waste Management**

### **Purpose**

To provide the Comox Strathcona Waste Management (CSWM) Board with information related to the current management of construction and demolition (C&D) debris, and highlight relevant policy tools to be explored as a follow-up from the April 8 Solid Waste Advanced Technology (SWAT) Select Committee meeting. The intent of this report is to provide the CSWM Board directors with the pertinent background in advance of the June roundtable discussions surrounding the future of C&D waste management.

### **Recommendation from the Chief Administrative Officer:**

This report is for information only.

### **Executive Summary**

Next to organics, construction and demolition waste is one of the largest contributors to buried waste in the CSWM landfills, most of which is reusable or recyclable, averaging 11,000 tonnes per year. This material stream is comprised of treated and painted wood, clean wood, concrete, asphalt shingles, metal, drywall and other material streams. The current tipping fee structure and local industry partners are supporting the diversion of clean wood, recyclables and metal from landfilling by reduced fees for sorted waste brought to facilities. However, there is a segment of this C&D waste stream that remains unsorted and contain recyclables, which presents an opportunity to encourage waste diversion.

The 2012 Solid Waste Management Plan (SWMP) identified actions to be undertaken to support diversion from the landfill including policy approaches to reduce C&D waste.

- Following organics, C&D waste represent the most significant component of divertible waste entering the CSWM landfills after compostable organics;
- Collaboration with municipal building and planning departments, the construction industry, waste haulers and private waste facilities is essential to success in development of policy tools for this material stream; and
- Further diversion of C&D materials is necessary to achieve our SWMP target of 75 per cent diversion from landfill.

As part of the June roundtable discussion, CSWM staff is preparing a panel of speakers, a mix of innovators and local industry and contractors from the C&D industry to provide directors with background on the complexity of this waste stream in effort to explore the feasibility of policy tools

and identify a suitable approach to divert C&D waste from the CSWM landfills. The outcome of this discussion will be summarized in a follow up staff report which will lay out the options and recommendations to advance the waste diversion goals outlined in the 2012 SWMP.

As the CSWM service embark on the next SWMP update, C&D waste diversion will be critical to the overall waste diversion strategy. Building on the successes of the solid waste management programs to date, a C&D waste diversion policy will complement the existing CSWM solid waste management framework to increase recycling and waste diversion.

Prepared by:

Concurrence:

Concurrence:

***V. Schau***

***M. Rutten***

---

Sarah Willie, EIT  
Solid Waste Analyst

---

Vivian Schau  
Senior Manager of CSWM  
Services

---

Marc Rutten, P.Eng.  
General Manager of  
Engineering Services

### Background/Current Situation

C&D waste streams were identified within the 2012 SWMP as having considerable potential for increased diversion from the Comox Strathcona Waste Management landfills. Action items to be considered in the 10 year plan included initiatives to encourage the private and non-profit sectors to develop C&D waste recycling services locally, and options for a reporting methodology for quantities of materials managed by business that are recycling and managing C&D waste.

Based on the available information at that time, it was estimated that an additional 11,500 tonnes were available to divert from what was being landfilled. Subsequently, a waste composition audit was commissioned in 2017, and facilities continue to track disposal of construction and demolition waste separately as it comes into the Campbell River (CRMWC) and Comox Valley Waste Management Centres (CVWMC) through our scale software. This additional information provides greater granularity and also highlights areas of improved data collection.

Significant diversion efforts are already underway with opportunities for metal, drywall, clean wood and commercial cardboard recycling available to customers at both sites, as well as local private facilities. Segregation, handling and offsite recycling of these four material streams diverted 8,900-11,300 tonnes from landfilling at the CVWMC and CRWMC. The quantity of diverted materials from private facilities is not currently being tracked by the CSWM, as there is no requirement for facilities to do so. Construction waste continues to comprise a significant portion of disposed waste, and was 17 per cent of the disposed waste in 2019 and 2020, which was approximately 10,500-11,000 tonnes.

**Table 1: Quantities of Construction and Demolition Waste 2019-2020 Averages**

Material Stream and Weight in Tonnes	Comox Average	CR Average	Total 2019	Total 2020
Construction Waste	8045	2677	10992	10452
Commercial Cardboard & Recycling	23.5	6.5	27	33
Scrap Metal	898	831	1643	1815
Clean Wood Waste	450	226.5	794	559
Drywall	1058.5	603	1660	1663
<i>Diverted Subtotal</i>	<i>2430</i>	<i>1667</i>	<i>4124</i>	<i>4070</i>
Total Disposed Waste	36473.5	26795	63786	62751

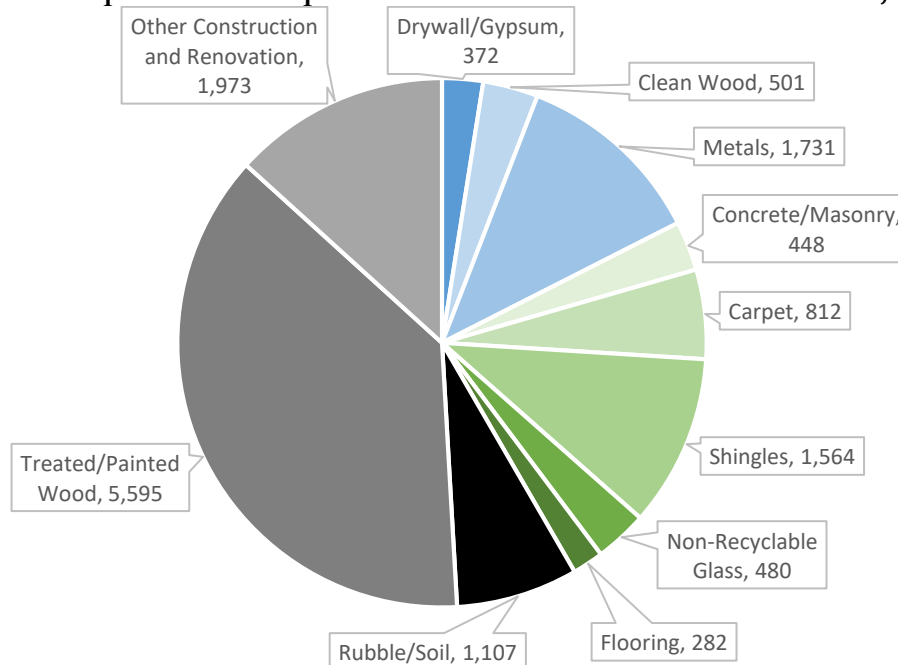
Total Diverted Materials	7277	2831	8897	11319
C&D as % of Disposed	22%	10%	17%	17%
C&D as % of Diverted	34%	62%	46%	36%

However, not all of the disposed C&D is available for diversion; the break-down of the C&D waste currently disposed is approximated from the 2017 waste composition audit. Material streams like drywall, clean wood and metal are readily available for diversion and account for about 18 per cent of the total C&D waste stream, or 2,600 tonnes.

The second group of materials: carpet, shingles, concrete, windows etc. have demonstrated diversion opportunities in some markets, but are not currently segregated and handled at our facilities, these account for approximately 3,600 tonnes. These emerging market materials have not historically been diverted because they are not hazardous materials like drywall, and their diversion does not result in revenue generation or reduced disposal like metal and clean wood. To create more cost effective means of diverting these material streams, industry partnerships and policy tools can to be used to incentivize a behaviour change.

The most significant portion of the C&D material identified during the waste audit, 8,700 tonnes, was non-divertible, with material streams like treated and painted wood and mixed composition materials still requiring disposal. These wood products are not accepted for combustion at the Catalyst Paper Mill in Port Alberni, nor can they be used as a compost amendment. These accounted for just over half of the C&D waste during the audit. These materials are however well suited for disposal at other licensed construction, demolition and land clearing landfills in our region, which would reduce our airspace consumption and increase the life of the CVWMC landfill which is permitted to accept putrescible municipal solid waste. Relationship building with private landfill owners, strategic fee setting, increased transparency in disposal and diversion reporting from these facilities and policy tools can to be used to incentivize a behaviour change for this waste stream. These three different streams of C&D waste are shown in Figure 1 below, grouped by colour.

**Figure 1: Composition of Disposed Construction and Demolition Waste, 2017 Waste Audit**



Progress to Date

Our current tipping fee structure and local industry partners are supporting the diversion of clean wood, recyclables and metal from landfilling by reduced fees for sorted waste brought to facilities. Staff are actively engaging customers at the scales, the bin wall and at the active face to encourage source separation and also pull materials out for diversion when time and resources allow. Staff also report C&D loads that come in unsorted and contain recyclables such as metal and drywall, and the customer is then charged a higher rate for disposal to encourage future compliance.

**Table 2: Tipping Fees for Construction and Demolition Material Streams**

2021 CSWM Rates Material Stream	Tipping Fee \$/tonne
C&D Waste (no metal, no drywall)	\$ 140.00
Drywall / Gypsum	\$ 225.00
Clean Wood Waste	\$ 120.00
Commercial Recycling	\$ 60.00
Scrap Metal	Free
Higher Rate Applied for Unsorted C&D	
C&D (containing metal or drywall)	\$ 330.00

The economic benefits of sorting waste were just beginning to be highlighted by our contract educators in 2019, with the development of preliminary tools to educate the public on construction waste diversion to be used for community event booths. These initiatives were impacted by the onset of the COVID-19 pandemic and the elimination of community events and gatherings.

Additionally, in [September 2019](#) a report was brought to the SWAT Select Committee with information related to how C&D debris was managed both locally and within other parts of British Columbia. This report was to provide context to a delegation from Transition Energy Inc. (Northwest Organics 2 Biogas Inc.) that were looking for 40,000 tonnes of biomass for a biogas project. CSWM staff received the presentation and provided Northwest Organics contacts with local wood waste processors who have access to the significantly higher tonnages of feedstock necessary for their proposed technology.

Policy Tools for Change

Reducing C&D waste continues to be a priority for many local governments and there are many examples of bylaws, incentives, policy change and education tools that can be referred to when developing our path forward.

**Renovating?**

**SEPARATE YOUR WASTE & \$AVE**

Compare fees for disposing a mixed construction and demolition (C&D) load with a total weight of 1,000 kg (1 tonne):

300 kg of metal	100 kg of divertible wood waste	400 kg of concrete (clean fill)	100 kg of drywall	100 kg of garbage
-----------------	---------------------------------	---------------------------------	-------------------	-------------------

Mixed refuse containing metal, wood, concrete, drywall and garbage

Unsorted Municipal Solid Waste (MSW) containing recyclables **\$304.00**

No sorting or separating = 0 SAVINGS. The entire load is charged the disposal fee for unsorted MSW containing recyclables, and may include additional handling fees.

Load completely sorted and diverted **\$57.50**

Save over 5x the cost by separating the load.

Comox Strathcona Waste Management

**City of Victoria** – Changes to building permits to reuse and recycle materials from building demolitions through Zero Waste Victoria program prioritizing deconstruction and house moving.

**Regional District of Nanaimo (RDN)** - Information campaign, Solid Waste Facilities bylaw, C&D disposal bans and adjusted tipping fees to ensure full cost recovery and encourage use of alternate facilities.

**Regional District of Fraser-Fort George (RDFFG)** – Seven step prioritized work plan focused on C&D waste. Have completed a tool-kit, altered bylaws, upgraded scale software and adjusted fees.

**District of Squamish** – Diversion tracking with demolition permits including a financial deposit, and returned fees for achieving diversion targets. Focused on volumes not tonnes.

**Regional District of Okanagan-Similkameen (RDOS)** – Updated tipping fees and bylaws, opened up a demolition material sort facility on their site run by a contractor and staffed by a non-profit that helps people recovering from mental illness ease back into the workforce.

In addition, staff at the CSWM are currently participating in C&D working group sessions that are being hosted by the Coast Waste Management Association and the City of Victoria. These sessions are bringing together representatives from across all sectors of the industry to share successes, highlight barriers and promote solutions.

#### Next Steps

To further the conversation and provide directors with additional background on the complexity of this material, stream CSWM staff are preparing a panel of speakers from a cross section of stakeholders from within this field to present at the June board roundtable discussion session. A mixture of innovators and local perspectives will be brought forward, including industry and contractors.

A supplementary staff report identifying a proposed prioritized approach for CSWM to divert C&D waste including an implementation timeline will be brought forward following the June 2021 board roundtable discussion.

#### **Policy Analysis**

The CSWM service has the authority under the *Environmental Management Act* to regulate the disposal of construction and demolition materials. Comox Valley Regional District Bylaw No. 170 being “Solid Waste Fees and Charges Bylaw No. 170, 2011” currently charges \$330/tonne for unsorted construction and demolition debris compared to sorted construction and demolition debris at \$140/tonne. It is important to note, the \$330/tonne is currently only charged when significant quantities of drywall or metal are found in the loads. As an incentive to source separation and divert materials, there are a variety of policy tools that can affect behavioural change, including but not limited to financial incentives and or implementation of full disposal bans with a potential imposition of a fine.

#### **Options**

This report is presented for information only.

#### **Financial Factors**

A review of the impact of variable rates on tipping fee revenues and adjustment of the Financial Plan would be required. There are a number of considerations in determining the appropriate rate

for construction and demolition waste, chief among them, the direct handling cost for the management of the material, the reduction in landfill airspace consumption and its impact on associated capital project expenditures.

Advertising and public education efforts specific to this issue were not budgeted for in 2021, but \$15,000 in resources for general education advertising are available within the CSWM budget. Spending on education and communication for this initiative could be planned for within the 2021 budget.

A regional waste composition audit will be completed after the regional organics facility is operational in 2022/23. By including construction and demolition specific categories, it will be a useful tool to inform and evaluate the effectiveness of the proposed reduction effort. This can be included within the budgeted amount for the next waste composition audit.

### **Legal Factors**

Bylaw No. 1822 being “Regional Solid Waste Plan Local Service Area Establishment Bylaw, 1996” grants the CSWM Board authority over solid waste including the collection, removal and disposal of waste and noxious, offensive or unwholesome substances.

While there no identified legal risk, political and community acceptability is of utmost priority. As such, it is the intention of CSWM staff to conduct extensive consultation with the member municipalities and industry stakeholders in the development of the proposed bylaw to increase participation and understanding of the proposed

### **Intergovernmental Factors**

Collaboration with other local governments, specifically their building and planning departments, will be important for some policy approaches related to this material stream. Consideration will be given to connecting with municipal and First Nations staff beyond just those involved with waste management as this initiative progresses.

### **Interdepartmental Involvement**

Research on this issue is being led by the engineering services branch of the CSWM service. Project support is provided by a number of branches as required, including but not limited to Financial Services and Corporate Services.

### **Citizen/Public Relations**

If the board gives direction to move ahead with this initiative upon completion of a refined approach, Corporate Services will be engaged to assist in developing a detailed communications plan for 2021/2022.