

Technical Memo #8: Construction, Renovation and Demolition Waste Reduction Strategies

November 21, 2024



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TO:	Comox Strathcona Waste Management Board of Directors	TO	November 28, 2024
		RSWAC:	
FROM:	Gil Yaron, LLM, LLB, BA.Sc Managing Director, Circular Innovation	TO	November 21, 2024
		BOARD:	
COMPANY:	Light House	FILE:	5360-30 SWMP

Light House was requested to prepare a technical memo regarding the management of Construction, Renovation and Demolition (CRD) materials as part of Comox Strathcona Waste Management's (CSWM) Solid Waste Management Plan (SWMP) renewal. This technical memo summarizes current regional policy, material management infrastructure and practices, demographic trends and key stakeholder views pertaining to CRD material management. Based on the findings, a number of strategic options are presented for consideration in renewing the SWMP.

Comox Strathcona Waste Management

The CSWM Service Area includes the Comox Valley Regional District (CVRD) and the Strathcona Regional District (SRD) which includes the City of Campbell River, City of Courtenay, Town of Comox, Village of Cumberland, Village of Sayward, Village of Gold River, Village of Tahsis and Village of Zeballos, as well as Nootka Sound, Quadra Island, all the Discovery Islands and part of the mainland north of Desolation Sound, and south to Fanny Bay, and including Denman and Hornby Islands.

CSWM operates the regional landfill and waste management centre in Cumberland and contracts out the operation of the remaining landfills and transfer stations. The following services related to CRD waste are offered within the CSWM area:

- Comox Valley Waste Management Centre (CVWMC), diverts drywall, wood waste, rubble and metal
- Campbell River Waste Management Centre (CRWMC), diverts drywall, wood waste, and metal
- Wood waste and metal diversion in Gold River and on Hornby and Cortes Island
- Metal diversion in Sayward, Tahsis, and Zeballos

There are a number of locally operating private companies that also accept CRD or wood waste for processing under various terms and conditions, including the Northwin Environmental Landfill (Campbell River), Pacific Wood Waste (Courtenay and Campbell River) and Al and Sons (Campbell River).

With regard to CVWMC and CRWMC, commercial CRD trucks that are self-tipping are directed to CVWMC. CRWMC does not accept anything larger than a 20-yard bin and dump trucks and trailers cannot dump CRD waste to avoid double handling and improve cost effectiveness of CSWM waste transfer operations. Commercial trucks carrying CRD materials have the option of dumping at the Northwin landfill across the street from the CRWMC, or to drive to the CVWMC.



Solid Waste Management Plan

The CSWM's 2012 Solid Waste Management Plan (CSWM) targeted an increase in the diversion rate for all waste from 51 per cent in 2011 to 70 per cent in 2022 based on a target reduction in the waste sent to CSWM facilities from 0.61 tonnes per capital (2011) to 0.38 tonnes per capita by 2022. With respect to CRD material diversion, it cited the need for collaboration between municipal building and

planning departments, the construction industry, waste haulers and private waste facilities in the development of policy tools to further diversion of CRD materials and achieve the SWMP's 70 per cent diversion target.

In 2021, CVRD directors emphasized the need for the SWMP renewal to advance the work on removing construction and demolition waste from the waste stream, highlighting support for deconstruction over demolition.¹ Engagement with the community demonstrated support for the SWMP renewals goals and guiding principles as part of consultation in 2023. While almost all the guiding principles are applicable to CRD waste management, those most applicable to reduction of CRD materials are to:

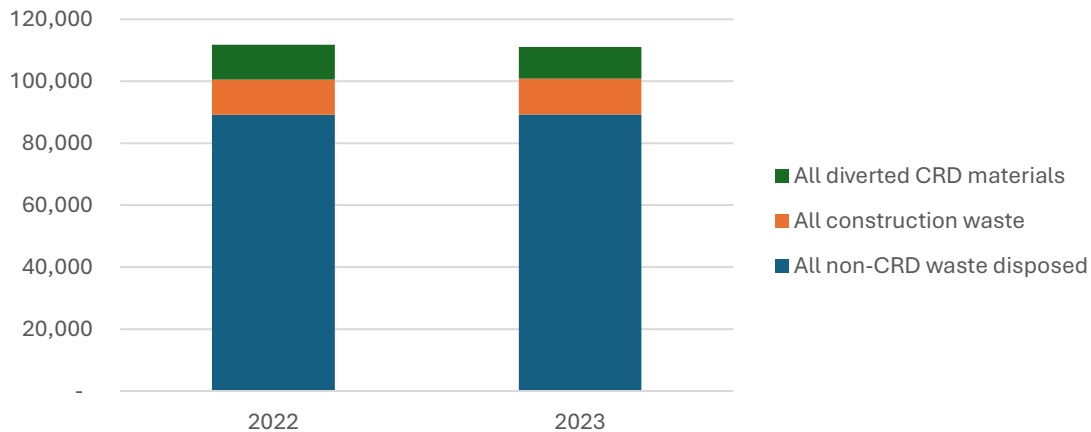
- Maximize beneficial and best use of waste materials and manage residuals appropriately (e.g. clean wood waste).
- Prevent organics and recyclables from going into the garbage.
- Build and support collaborative partnerships to achieve regional targets set in plans.

CRD Material Composition

CRD materials represent the second largest category of materials received at the CVWMC and CRWMC. According to weigh scale tickets at both facilities, the amount of CRD materials diverted as a percentage of all CRD materials received decreased slightly from 49.5 per cent in 2022 to 41.9 per cent in 2023, below the CSWM's 2020 diversion target.

Figure 1: CSWM Annual Material Composition Breakdown

¹ CVRD Staff Report, "September 2021 Solid Waste Management Plan Roundtable Summary" (October 15, 2021), p 3



A waste audit of the two facilities conducted in 2017 revealed the breakdown of the remaining CRD materials received and landfilled. Of the CRD materials landfilled, 18% (2,600 tonnes) were divertable materials, such as drywall, clean wood and metal. In other words, 18 per cent of what was dumped were recyclable materials that could have been diverted but were dumped as mixed waste. Recycling technologies and markets exist to divert an additional 24 per cent (3,600 tonnes), including carpet, shingles, concrete, windows etc. CSWM facilities do not currently have the capacity (staffing, budget) or technologies to segregate these materials. The remaining 58 per cent (8,700 tonnes) of CRD materials, such as treated and painted wood and mixed composition materials, are not divertable and require disposal. Most of these materials can be managed at, and could be redirected to, private landfills in the region, reducing airspace consumption and increasing the life of the CVWMC landfill.

Currently, a number of recyclable materials are diverted and recycled:

- Clean wood waste: Sent to Catalyst Paper Mill, Port Alberni and converted to compost amendment and animal bedding
- Gypsum/Drywall: Shipped to New West Gypsum (New Westminster) and recycled into drywall
- Aggregate (bricks and concrete): Crushed and used as alternative daily cover (some private sites sell it as a product).
- Metal: Segregated and sold to metal recyclers

CSWM is considering expanding its operations in the future to segregate and recycle asphalt shingles.

In contrast, the private landfill operated by Northwin Environmental has seen an exponential increase in CRD material received from 121 tonnes in 2019 to 8,205 in 2023 following the opening of their new landfill in 2021.

Tipping Fees

Tipping fees have increased annually over the past three years to keep up with rising costs of regional waste disposal and inflation, as a driver for behaviour change and to increase diversion of recyclable materials.² The table below sets out the fees at the CVWMC and CRWMC as of January 1, 2024 for CRD-related materials.

Material	Rate (per tonne)
Landfilled Materials	
Construction and Demolition Waste <i>without</i> Recyclable Materials or Prohibited Waste	\$155
Construction and Demolition Waste <i>containing</i> Recyclable Materials or Prohibited Waste	\$365
Asbestos Containing Material	\$310
Roofing Material	\$155
Recyclables	
Clean Wood Waste	\$120
Gypsum - Divertible	\$275
Clean Fill	\$40
Rubble	\$40
Metal	Free

According to regional staff, the \$365/tonne for CRD waste containing recyclable materials or prohibited waste is currently only charged when significant quantities

² Comox Strathcona Waste Management Service Tipping Fee and Solid Waste Disposal Regulation Bylaw No. 720, 2022.

of drywall or metal are found in the loads. Industry participants refer to the additional \$210 per tonne as a penalty rather than a higher fee.

It is important to note that increases in tipping fees and higher fees on mixed loads are having virtually no impact on diversion rates. This is supported by anecdotal statements from landfill operators and haulers that contractors do not want to sort and are paying the increased fee for mixed loads; not even separating out metal in some instances depending on the price for metals and costs to haul them to scrap metal dealers in order to sell them.

The RDFFG has a very accessible online platform branded [“Sort Smart”](#) providing tipping fee rates and diversion strategies for different CRD materials.³

CRD Material Management in Rural Communities

CRD material management across the service area varies from community to community. Waste transfer stations are provided on Hornby Island, Cortes Island and in Gold River. At each of these locations scrap metal is segregated, and there are opportunities for diversion of wood waste and drywall at Hornby Island. Bulky waste in Tahsis and Zeballos are delivered directly to their respective landfills during operating hours. Each are only staffed by one part time contractor and there are limited opportunities for education around diversion. Customers can segregate metal and tires, and some clean wood waste is added to the yard waste pile in Tahsis. Incentive to sort is low in Tahsis as disposal fees are not collected at the landfill. Separated wood is used as land cover, while asphalt and concrete are used as crush for the burying process. Operating staff support the introduction of fees and more education and express concern about space constraints in the future.

Gold River reports that increasing diversion would require more space and resources.

³ Regional District of Fraser-Fort George Foothills Boulevard Regional Landfill tipping fee schedule available at <https://www.rdffg.ca/services/waste-management/landfills-and-transfer-stations/foothills-boulevard-regional-landfill>.

Stakeholder Feedback

As part of this review, 11 key stakeholders were interviewed representing a cross-section of landfill operators, haulers, contractors and house moving companies. A high-level summary of the feedback received is provided here with more detailed responses documented in Appendix A.

All interviewees expressed a general satisfaction with the CSWM's current policies and management of CRD materials and acknowledged the efforts of CSWM staff.

Those interviewed held a range of views regarding tipping fees. Some felt they are way too low while others found them prohibitive. Most stated they were reasonable provided they are applied equally across the industry. Some felt they are effective at changing behaviour while others thought the opposite. There was general consensus, including from Landfill staff, that most contractors are not sorting materials to avoid higher tipping fees. They prefer the convenience of not sorting and are willing to consider it the cost of doing business.

This is supported by reported volumes in 2022 and 2023 that saw an increase in total volumes of CRD materials landfilled and a decrease in diverted volumes (see Table 1 above). One owner/operator hauler noted that they have a vested interest in sorting off-site to realize the reduced fees on sorted loads, passing the sorting charges on to their clients as penalties, while employees of corporate-owned waste management companies are not incentivized to sort materials. One private landfill operator noted that higher fees at CSWM facilities have allowed them to set their fees at a rate that makes it economical for them to sort.

When it comes to hauling, convenience is a common consideration. Driving distances to a facility influence decisions whether to recycle and commercial haulers complained about lineups at the CVWMC.

Interviewees shared a range of views on how to prevent contamination of loads. CSWM's landfill staff noted that nothing short of material bans will reduce mixed loads. Another hauler noted that commercial haulers are avoiding penalties on mixed loads by using tipping trailers because they are not checked at the tipping face. Another issue identified the need for more consistent and streamlined handling of drywall loads by CSWM staff. Generally, it was observed that any policies that disincentivize dumping, including material bans and higher fees, also foster interest in home relocation as a solution.

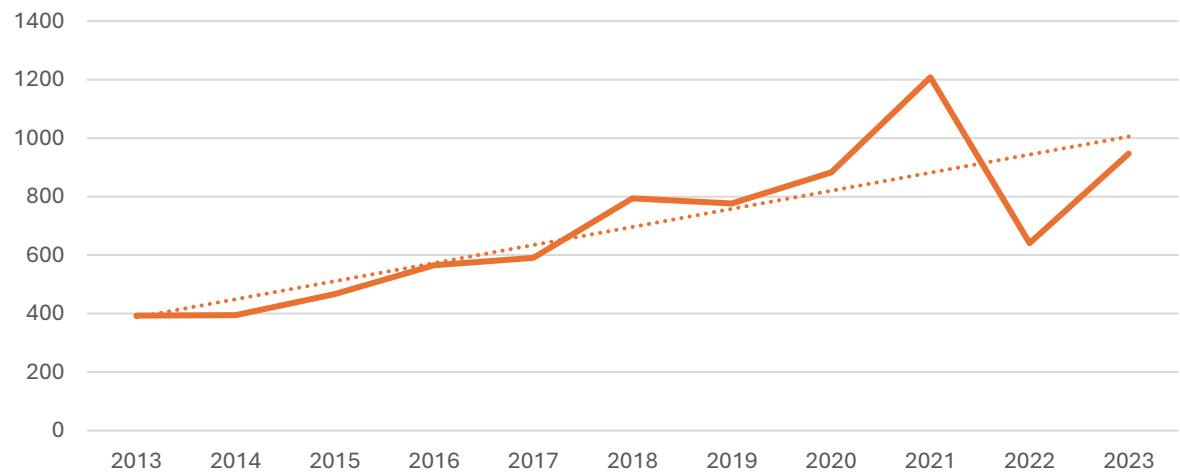
Stakeholders also commented on the need for economical end markets for materials and more disincentives for illegal dumping. One hauler complained that he was getting charged penalties for mixed loads resulting from third parties illegally dumping materials in his bins.

Finally, there were mixed views on the CSWM’s efforts at engaging and educating the construction sector. There was general recognition that more educational support is required about what can be recycled, what is being recycled, zero cost options, etc.

Current Demographics & Anticipated Trends

Options for addressing CRD material diversion must also take into consideration current demographics and future trends regarding population and housing in the region. Courtenay, Comox, Cumberland and Campbell River have all experienced strong population growth between 2016 and 2021 (10.8 per cent, 5.5 per cent, 18.5 per cent, and 7.6 per cent respectively). Within the CSWM's service area, the number of housing starts has increased approximately 250 per cent over the past decade. While it is difficult to make predictions based on past performance, the recent relaxation of residential zoning restrictions by the province, lower interest rates and unabated population growth suggest that housing starts and the resulting amounts of construction waste will only increase in the future.

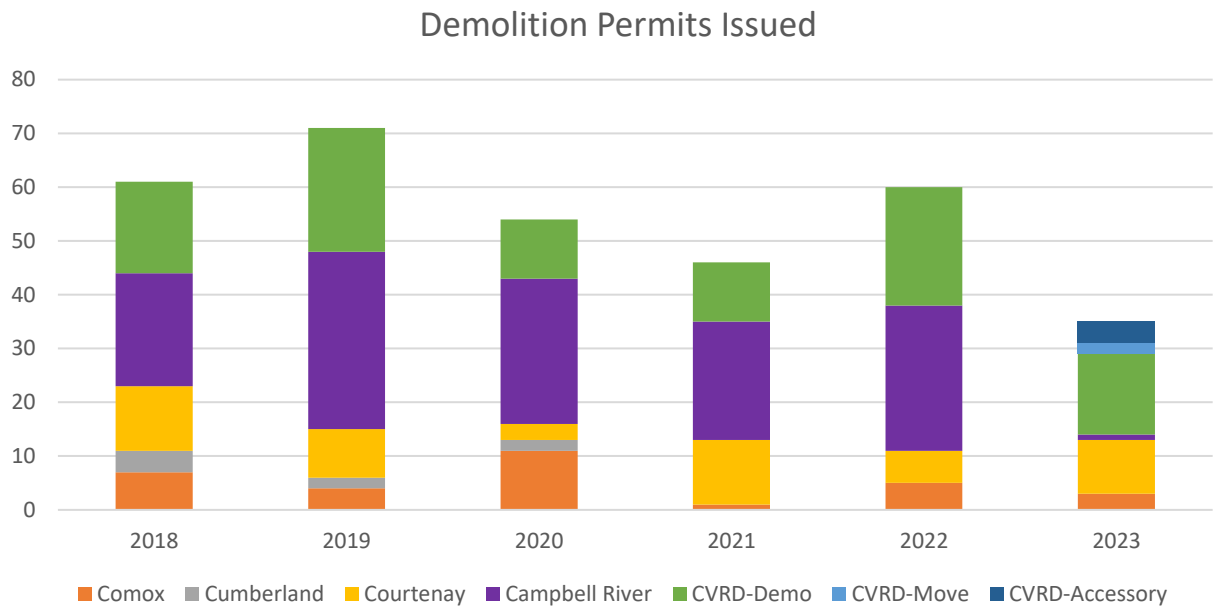
Figure 2: Housing Starts in CSWM Service Area 2013-2023



Source: [*CHMC Housing Market Information Portal*](#)

The picture for demolitions is less clear due, in part, to inconsistent tracking of data. Available demolition permit data suggests no correlation between demolitions and housing starts. However, approximately 42 per cent of existing housing stock (20,600 units) in the CSWM's catchment area was built prior to 1980 making them candidates for extensive retrofitting or removal over the next 20 years. This coupled with densification in urban areas necessitating the replacement of existing structures points to an increase in renovation and demolition materials.

Figure 3: Demolition Permits Issued 2018-2023



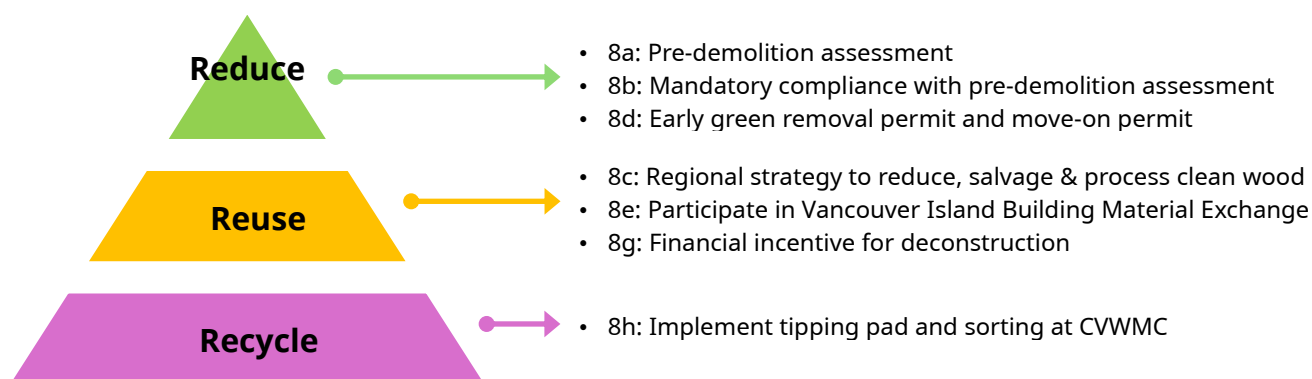
Strategic Options for Consideration

The strategic options set out in this memo are not only prioritized to maximize diversion of CRD materials from landfill, but to move solid waste management practices up the pollution prevention hierarchy and to align with circular economic principles through the reduction of CRD material generated and the increase in the reuse of excess and salvaged CRD materials. They also align with the community supported goals and guiding principles that were developed as Part 2 of the SWMP

renewal in 2023. All recommendations are grounded in the specific context in which the CSWM operates and recognizes the perspectives of key stakeholders.

The following figure groups the strategic options according to where they fall on the pollution prevention hierarchy. Education (Strategy 8f) will impact all of the levels of the hierarchy, and thus does not appear in the figure below.

Figure 4: Strategic option placement in the pollution prevention hierarchy



Strategic 8a: Pre-Demolition Assessment

Present policy recommendations to local governments introducing a requirement for all structures slated for removal to undergo an assessment to determine whether they can be relocated or deconstructed (fully or partially). Ideally, the assessment would be conducted by a municipal representative or a qualified third-party assessor to ensure transparency and accountability. The assessment would use a set of objective criteria based on existing assessment frameworks to determine whether a structure is suitable to be relocated, or to identify the materials and estimated quantities that could be salvaged through deconstruction. The estimated financial impact on the applicant would be in the realm of \$200 to cover the cost of the assessment.

Diversion Impact: High

The average 2,000 square foot home contains 100,000 kg of building materials, including 44,300 kg of wood, 3,000 kg of metal, 2,000 kg of drywall and 25,200 kg

of concrete.⁴ Relocating a home preserves the entire home minus the foundation. Deconstruction can reclaim 85 per cent to 90 per cent of all materials.

Many homes are being demolished before the end of their useful life. It is estimated that 20 per cent of all homes slated for removal are good quality homes that could continue to provide housing if relocated and repurposed. Another 40 per cent to 60 per cent have good bones that merit deconstruction.⁵

It is critical that if contractors are required to comply with pre-demolition assessment findings that end markets are identified for salvaged materials to avoid them being significantly downcycled or landfilled.

Precedent: Assessment requirements already exist in the region for other purposes. Courtenay requires that a hazardous material survey be completed on homes older than 1990. In Cumberland, a heritage alteration permit is required where necessary prior to receiving a demolition permit.

Operational/Staffing Impact: Medium

This initiative would require time to draft and consult on the recommended policy framework and present it to local governments for consideration.

(Based on an average 40 demolition permits currently issued annually in the CSWM's catchment area, an anticipated increase in demolitions resulting from housing density policies, and an assessment taking approximately 0.5 days to complete and document, local permitting departments would collectively require a qualified assessor for approximately 25 days per year which could be treated as a shared resource with the costs allocated proportionately based on percentage of demolition permits issued by each municipality.)

Financial Implications: Medium

Staff time required to develop the recommended policy and consult with local municipal governments.

Regulatory Authority Required: No

⁴ Metro Vancouver, [Demolition Waste Generation Rates Calculator](#).

⁵ Light House, [A Blueprint for Change: Preventing Demolition Waste Through Home Relocation & Deconstruction](#) (April 2023).

No regulatory authority is required to put forward the policy recommendations. Building permit requirements (or demolition permit requirements where they exist) at the regional and/or municipal level would need to be extended to include a pre-demolition assessment.

Strategic Option 8b: Mandatory compliance with pre-demolition assessment

Present policy recommendations to local governments requiring that the findings from pre-demolition assessments be followed. In the alternative, align policy recommendations with best practice in other jurisdictions and require that all structures be deconstructed subject to safety considerations (hazardous materials, fire, etc.). In either case, policy recommendations should require contractors to pay a refundable deposit which is returned upon the contractor evidencing they have salvaged and reused a prescribed amount of materials.

Precedent: The City of Victoria requires all homes older than 1940 be deconstructed. A \$19,500 refundable deposit is taken and returned once the contractor provides evidence that 3.5 kg of wood has been salvaged per square foot of liveable floor space. The City of Burnaby requires that all structures be deconstructed with a similar refundable deposit model.

Diversion Impact: High

Based on the experience of the cities of Burnaby and Victoria, the amounts of salvaged materials can be significant depending on thresholds set. Burnaby's C&D Waste Diversion Bylaw requires that all buildings be deconstructed. A refundable deposit of up to \$50,000 based on the square footage of the structure is required in order to receive a Waste Diversion Permit. Between October 2022 and March 2024, 192 Waste Diversion Permits were issued, 29 demolitions completed and 28 waste diversion compliance reports submitted resulting in 9,448 tonnes of materials being diverted from landfill (average 86.8 per cent diversion rate).⁶

However, deposits must be sufficient to prevent contractors from foregoing the deposit and demolishing the structure. It is also critical that in order to achieve diversion, the bylaw must define "recycling" as "salvaging" in a way that prevents

⁶ City of Burnaby Committee Report, "Construction and Demolition (C&D) Waste Diversion Bylaw Implementation Update", June 19, 2024.

“green demolition” (i.e., demolishing the home and using the materials as cover) or the downcycling of materials (e.g. converting wood to chips or pulp for hog fuel.)

Operational/Staffing Impact: High

This initiative would ideally be undertaken in conjunction with strategic option 8a, requiring time to draft and consult on the recommended policy framework and present it to local governments.

For local governments, implementing a refundable deposit program requires setting diversion requirements, tracking and accountability frameworks, working with contractors to support documenting salvage, auditing contractor reports and administering the deposit funds. Assuming 40 to 60 homes are taken down each year, it is estimated that a qualified half-time staff person would be required to administer and oversee the program for the entire CSWM service area, which could be split proportionately across local governments.

Financial Implications: Low

Staff time required to develop the recommended policy and consult with local municipal governments.

The experience in other jurisdictions has been that the cost of administering and overseeing the policy can be covered by foregone deposits.

Regulatory Authority Required: No

No regulatory authority is required to put forward the policy recommendations.

For local administrations, amendments would be required to bylaws governing demolition, as well as form templates to support the documenting and reporting of salvaged materials.

Precedents: [City of Burnaby](#), [City of Victoria](#), [District of Squamish](#), [District of North Vancouver](#)

Strategic Option 8c: Implement a comprehensive regional strategy to salvage and process clean wood.

Clean wood represents one of the largest material categories within CRD waste. Based on 2017 waste audit results, we conservatively estimate that at least 1,000 tonnes continue to be landfilled each year at the two primary CSWM facilities alone. This strategic initiative would build on the existing diversion program for clean wood by banning clean wood from all public and private facilities and

establish and expand pathways to salvage and process clean wood for resale. This would entail pulling out high value wood by hand and removing nails and contaminants to allow the wood to be re-used rather than chipped. This approach would preserve the private market for clean wood, while ensuring no options to landfill. Ideally, fees would be adjusted further to strongly incentivize sorting and diversion by both contractors and haulers.

Precedent: The [Capital Regional District has banned clean wood](#) from landfill as of January 2, 2024 and established an on-site processing facility where clean wood is received and processed into refuse derived fuel (RDF) that is then sold as an alternative fuel source. Fees for clean wood at the Hartland Landfill are \$80/tonne.

Diversion Impact: Medium

Based on 2017 waste audit results, more than 1,000 tonnes of clean wood continue to be landfilled each year at the CVWMC and another estimated 2,000+ tonnes at the Northwin Environmental landfill. Under this policy, this volume of materials would be diverted and repurposed. The benefits would include reducing landfill volumes, modest extension of the life of the landfill and support the CSWM's Solid Waste GHG Emissions Reduction Strategy by eliminating a primary source of organic material from the landfill.

Operational/Staffing Impact: High

Establishing a diversion program for clean wood would have an impact on operations and staffing at all waste facilities. Separate areas would need to be established at each facility to receive the material. CSWM could manage the operations themselves or contract them out. If the CSWM chose to manage the materials themselves, additional staff would be required to manage incoming material and oversee salvage and processing. Equipment would need to be procured to process the wood. Staff would require training to understand and implement new procedures and additional time would be required to inspect mixed loads to ensure they do not contain clean wood.

Financial Implications: High

Depending on the approach taken, capital cost requirements would include expanding the existing receiving area for clean wood, additional site preparation and the leasing of handling and processing equipment to manage salvaged wood. Additional end markets would also need to be identified to receive the wood.

Additional staff would be required to monitor mixed loads at the tipping face and to salvage and process the clean wood depending on how the operations are set up.

To incentivize compliance with the new policy, it is recommended that tipping fees for clean wood be significantly reduced to \$80 per tonne (similar to City of Victoria). This would result in up to \$100,000 in foregone revenue (\$70,000 reduction in revenues for the CSWM based on current estimates of clean wood in mixed loads, plus an additional \$30,000 from the application of the reduced fee to clean wood that is already received sorted), representing less than 1 per cent of total tipping fee revenue in 2024.⁷ Additional revenues realized by charging heavier penalties on mixed loads containing clean wood could partially offset this loss in revenues. Some revenue could also be expected over time from the salvage and sale of higher value wood to established and emerging industries on Vancouver Island.

Regulatory Authority Required: Yes

Implementation of the diversion strategy would require budget approval and possible amendments to Bylaw 720 (CSWM Tipping Fees and Charges). Operational certificates for private facilities might also require amendment.

Strategic Option 8d: Early Green Removal Permits, Move-On Permits, Expedited Electrical Disconnects and Improved Data Management

Present policy recommendations to local governments establishing separate expedited permits for the relocation/deconstruction of homes (early green removal permit) and resituating of moved homes (move-on permit) to disincentivize demolition. Homes that are relocated or deconstructed would be issued an early green removal permit giving them additional time to relocate/deconstruct the home prior to a building permit being issued. The Early Green Removal Permit is best structured as a separate and stand-alone removal permit application and not available to homes being demolished. Early Green Removal Permits provide a strong incentive for the responsible removal of existing buildings, saving the developer or homeowner time and money.

⁷ CSWM Staff Report from James Warren (January 5, 2024) "2024-2028 CSWM Financial Plan" at 8.

Similarly, a move-on permit would allow a home slated for removal to be moved to its new location prior to the issuance of the building permit supported by a sizeable bond held until the building permit is issued. This would help avoid the need to store the home at a temporary location pending issuance of the building permit. Allowing developers/contractors to clear a development site early would be a significant incentive to relocate a house over demolishing it, provided a new location was identified to receive the structure.

For both home relocation and deconstruction projects, working with local utilities to offer expedited disconnection of electrical services would provide an added incentive by further reducing the timeline for moving or deconstructing a home.

Finally, CSWM should facilitate discussions with local governments to standardize and streamline data on demolitions. Currently, there is a great degree of disparity in what is tracked and how data is managed, making it difficult to evaluate the extent and impact of demolitions in the CSWM service area. There is little incentive for municipalities to track this information because there is no significant financial benefit to them as there is with building permits.

Precedent: The District of North Vancouver offers an expedited permit process for its [green demolition permit](#). The Town of Comox has a move-on permit. Seattle's electricity provider, Seattle City Lights, has agreed to [fast track deconstruction projects](#) for electrical disconnects.

Diversion Impact: Medium

While few homes are currently moved within the CSWM, each preserved home keeps more than 75,000 kg of building materials out of landfill (approximately 25,000 kg is associated with the concrete foundation which is not relocated.) In combination with strategic options 1 and 2 above, this could result in a significant amount of CRD material avoided or diverted.

Providing expedited electrical disconnects removes one more barrier – time – from the process. If only a fraction of homes currently demolished were deconstructed as a result of this incentive, this could amount to thousands of tonnes of building materials diverted from landfill.

Operational/Staffing Impact: Low

Similar to the strategic options 1 and 2 above, this initiative would require time to draft and consult on the recommended policy framework and present it to local governments for consideration.

For local governments, there would be some modest impacts on staff and operations. For jurisdictions with no such permits, staff would need to verify the intention to relocate or deconstruct the structure and prioritize those permit applications to ensure the time incentive was provided to the applicant. For jurisdictions with such permits, building permit department staff would need to manage additional permit application processes and expedite those applications. Given the number of homes removed each year, it is anticipated that the additional staff resources required to facilitate these permits would be nominal.

If utility companies were to offer expedited electrical disconnections then local governments would need to establish a process with the utility for developers to follow in obtaining the expedited service and a commitment on the part of the service provider to follow through quickly on requests.

Financial Implications: Low

Staff time required to develop the recommended policy and consult with local municipal governments and utilities.

Regulatory Authority Required: No

There is no regulatory authority required for the CSWM to implement this option.

For local governments adopting the recommendation, amendments to their building bylaw and fee bylaw would be required. If a communities demolition permit is currently issued at the same time as the building permit, the two processes would need to be decoupled to provide the advance timing incentive to the developer/contractor.

Strategic Option 8e: Engage with other jurisdictions on cross-regional solutions.

Following on the recommendation of staff to SWAT in 2021, CSWM should initiate conversations with other local governments, First Nations and organizations to identify and support cross-regional initiatives that would allow consolidation of material streams with other regions and allow for solutions at scale.

“Collaboration with other local governments, specifically their building and

planning departments, will be important for some policy approaches related to this material stream connecting with municipal and First Nations staff beyond just those involved with waste management as this initiative progresses.” Examples include a clean wood processing facility to denail and clean wood and the introduction of technology to recycle asphalt shingles.

One initiative already underway is the Vancouver Island Building Material Exchange (BMEx). BMEx is a circular economic initiative initiated in 2024 that connects construction and manufacturing businesses in South and Central Vancouver Island to facilitate the movement of unwanted excess and salvaged building materials from one company to another company that can use the materials as feedstock for their manufacturing processes or construction projects.

The project is run by Light House, a non-profit organization whose mission is to advance circular and regenerative practices in the built environment. In 2024, BMEx was financial supported by the RDN Zero Waste Recycling Fund, Cowichan Valley Regional District, Capital Regional District, City of Nanaimo and private sponsors.

The initiative has a number of program pillars to support the diversion of construction, renovation and demolition materials from landfill:

- Match support services: BMEx staff liaise with more than 750 companies on Vancouver Island associated with the building material value chain to establish matches.
- BMEx Online Marketplace: An industry-dedicated online marketplace where companies can exchange building materials.
- BMEx/HfH Building Materials Hub: BMEx is working in partnership with Habitat for Humanity Nanaimo to establish a hub where contractors can bring excess and salvaged building materials for resale.
- Education & Awareness: BMEx will be hosting in-person events and webinars throughout the year to engage specific sectors and explore opportunities for building material reuse.

More than 750 companies in the building material value chain have been engaged thus far and 100+ companies have registered to date. Participation is free for businesses.

Diversion Impact: Low

The potential diversion impact from cross-regional initiatives could be significant (e.g. clean wood processing facility, asphalt shingle recycling facility). The BMEx program is just becoming established in the community with volumes diverted expected to increase in successive years.

Operational/Staffing Impact: Low

Impacts on operations and staffing are project specific, however the work is primarily done by BMEx employees.

Financial Implications: Medium

Financial implications are project specific. Participation in the BMEx program is \$25,000 per year with funds going to fund the online marketplace in its first year, support matchmaking efforts and educational & awareness activities. As the program becomes more established, it is looking to monetize some of the services to reduce the need for municipal sponsorship.

Regulatory Authority Required: No

No regulatory authority is required to participate in BMEx.

Strategic Option 8f: Educational Tools & Resources to Support On-Site Material Management⁸

Develop a portfolio of materials and resources to educate and support circular best practices amongst the construction sector:

- Material management best practice guides targeting various sectors in the construction industry to reduce use of virgin materials, reduce waste on construction projects, encourage home relocation and deconstruction, and provide instruction on material sorting.
- Directory of home relocation and deconstruction services
- Local case studies about home moving and deconstruction
- An on-site material sorting kit (signs, bins, magnet) to assist residential contractors set up an on-site sorting centre in accordance with recyclable material types
- Right-sized containers to assist with sorting

⁸ Aligns with recommendations from Lindsay Eason, *Construction Waste Diversion Pilot* (Sep 17, 2024).

Consider developing these resources in partnership with other regional governments and waste management organizations. Educational materials and resources could be distributed directly to contractors and sub-contractors through the Building Material Exchange program.

On a related note, amend terminology and reframe discussion in all tools and resources away from “waste” to “resource” and from “recycling” to “material reuse”. This should extend into all policy documents as well.

Diversion Impact: Low

Education and awareness about options for diverting CRD materials are the first steps to action. Providing resources removes one of the barriers to implementing sorting on job sites. Together, these initiatives can engage the majority of contractors who are supportive of sorting and diversion but just don’t have the time to implement these practices.

Operational/Staffing Impact: Medium

Communications staff will need to be engaged to develop and disseminate materials. Most materials already exist and are likely acquirable from the original creator (e.g. Metro Vancouver and RDN construction resource management guides.) Materials will need to be modified to align with the specifics of the CSWM.

Financial Implications: Medium

This option will require significant staff time, as well as costs to prepare various materials. Depending on the range of materials offered and assuming they are available for free, it is estimated this option would cost the CSWM approximately \$50,000 - \$60,000 in staff time and resources to implement.

Regulatory Authority Required: No

Strategic Option 8g: Financial Incentive for Deconstruction

Offer a financial incentive (\$5,000) to contractors that select deconstruction over demolition to help offset the cost differential between the two approaches.

It is currently costs approximately 30 per cent to 40 per cent more to deconstruct a home rather than to demolish it. Homeowners can receive a tax credit for the fair market value of the materials salvaged, which can amount to a tax credit value of \$15,000 on an average sized pre-1960s home, offsetting the cost differential

between demolition and deconstruction. The \$5,000 would contribute about one third of the cost differential of deconstruction vs demolition, or if the full tax credit value is achieved, would level the playing field for deconstruction. As a result of limited project cost data available when demolition permits are submitted, local costs are not well known.

Precedent: [The City of Seattle](#) offers a \$4,000 incentive for deconstruction.

Diversion Impact: High

For each home deconstructed, there is the potential to divert 85 per cent to 90 per cent of all materials, equivalent to 85,000 to 90,000 kg for a 2,000 square foot house. If 20 homes are deconstructed rather than demolished each year over 1,500 tonnes of waste could be avoided.

Operational/Staffing Impact: Medium

Staff would need to implement and administer a system for contractors to evidence deconstruction was done and the materials diverted from landfill for alternate uses.

Financial Implications: Medium

In addition to staff time to implement and administer the incentive program, there would be an estimated \$100,000 to \$125,000 in incentives annually assuming 20-25 homes were deconstructed each year. For budget purposes a fixed amount could be set and offered on a first come first served basis, like grants for water reduction or energy reduction initiatives.

Regulatory Authority Required: No

Strategic Option 8h: Implement tipping pad and sorting at CVWMC

Following on recommendations from landfill operators, haulers and contractors, implement a staging area at the CVWMC with a tipping pad where trucks dump their loads of mixed CRD and a contracted operation or regional staff sort and divert recyclable materials.

Precedent: Regional District of Okanagan-Similkameen (RDOS) 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.

Diversion Impact: Medium

Based on the 2017 waste audit, sorting at the landfill could divert as much as 18% of the mixed CRD materials currently being landfilled.

Operational/Staffing Impact: High

If implemented as a contracted operation this would not require additional CSWM staff. If done by CSWM staff it is estimated that it would require two dedicated staff at the landfill to receive loads, oversee tipping at the tipping pad, work heavy equipment to separate materials and take non-recyclable materials to the landfill's active face. Additional effort would be required to track volumes of recyclable materials diverted.

Financial Implications: High

If a contracted operation conducted the sorting on a leased portion of the site, financial implications would be limited to the subsidy provided for the service, which could be supported by enforcement of the mixed load tipping fee for any unsorted CRD loads brought to site. Salaries for two full-time site staff with at least one having a [heavy equipment operator's licence](#) or equivalent contracted service operator.

Regulatory Authority Required: Yes

Implementation of the diversion strategy would require budget approval and possible amendments to Bylaw 720 (CSWM Tipping Fees and Charges). Operational certificates for private facilities might also require amendment to enforce the diversion of clean wood waste as recyclable.

Summary of Strategic Options

Strategic Option	Diversion Impact	Operational/ Staffing Impact	Financial Implications	Regulatory Authority Req'd
8a. Pre-demolition Assessment	High	Medium	Medium	No
8b. Mandatory compliance with pre-demolition assessment	High	High	Low	No

8c. Implement a comprehensive regional strategy to salvage and process clean wood.	Medium	High	High	Yes
8d. Early green removal permits, move-on permits and expedited electrical disconnects	Medium	Low	Low	No
8e. Engage with other jurisdictions on cross-regional solutions (BMEx)	Low	Low	Medium	No
8f. Educational tools and resources to support on-site material management	Low	Medium	Medium	No
8g. Financial incentive for deconstruction	High	Medium	Medium	No
8h. Implement tipping pad and sorting at CVWMC	Medium	High	High	Yes

Appendix A: Summary of Stakeholder Interviews

Stakeholder Feedback

As part of this review of CRD material management, 11 key stakeholders were interviewed between September 23 to 27, 2024, representing landfill operators, haulers, contractors and house moving companies.

All interviewees expressed a general satisfaction with the CSWM's current policies and management of CRD materials and acknowledged the efforts of CSWM staff.

The following is a summary of feedback received during the interviews:

Fees

- Cost and simplicity are key drivers.
- There is a wide range of views on fees. Some feel they are way too low while others find them prohibitive. Most stated they were reasonable provided

they are applied equally across the industry. Some feel they are effective at changing behaviour while others don't.

- Despite the observation that increases in fees and penalties have not changed diversion rates overall, many interviewees indicated that material pricing impacts material management choices.
 - Low price for metal made it uneconomical to haul to private metal recycler.
 - One hauler has educated roofing contractors to separate out metal on roofing projects to capture the value and reduce risk of mixed loads.
 - In another instance, a contractor noted they take concrete to a private facility because fees are lower there.
 - Contractors do not want to sort materials on-site and respond unfavourably to the higher cost for mixed loads. Haulers charge a premium for sorting.
 - People will dump illegally as tipping fees increase. One hauler has been involved in cleanups.
 - Increased fees drive consideration of home relocation as an option to avoid dumping.
- One private landfill operator noted that higher fees at CSWM facilities have allowed them to set their fees at a rate that makes it economical for them to sort.
- CSWM should charge less for materials where they are making products for resale (e.g., mix of sewage and woodchips for agricultural purposes).
- Junior staff at the landfill are being paid too much.
- One respondent acknowledged that diverting materials incurs additional costs and felt there would be significant backlash if CSWM were to raise tipping fees to accommodate.

Transportation and Hauling

- The added distance for commercial haulers to take loads to Cumberland makes recycling more difficult.
- Policing of loads varies across haulers. Some haulers have very stringent practices and work to educate their clients to reduce contamination and mixed loads, while others do not. One owner/operator hauler opined that haulers that are not owner-operated have hired employees that don't care about sorting and diversion of materials. Whereas, owner/operators have a

vested interest in sorting materials and pass those costs on to their customers while also realizing the reduced fees for dumping sorted loads.

- Several respondents noted huge lineups at the Cumberland landfill in the summer. Suggest creating a commercial line or charging different rates for residential loads if they visit off hours.

Contamination

- One key interviewee called for an outright ban on certain materials from landfill observing that penalties do not work.
- One hauler stated they thought the CSWM was sometimes too rigid with their assessments of contaminated loads. While another hauler noted tipping trailers are not checked for contamination at the landfill and are never penalized for mixed loads creating an unlevel playing field for those who are trying to do the right thing. Haulers are purchasing tipping trailers as a result. Suggestion is to have an excavator on site to sort loads (like they do at Northwin) and to set fees for mixed loads high enough to cover the cost of the excavator, but no higher to minimize such deceptive practices. Similarly, the Cumberland landfill operator suggests the creation of a tipping pad where landfill staff can separate materials as the only way to maximize diversion.
- Treatment of drywall at CSWM facilities is inconsistent. One contractor stated that CSWM staff accepted paperwork sometime and sometimes not even if it is stamped. The contractor noted they go to great lengths to keep the drywall contiguous (i.e., same walls together, etc.), but the landfill manages them differently each time. Suggestion to streamline the process or pre-certify contractors.

Sorting

- There are mixed reviews on whether the construction sector is doing a good job at sorting.
- Some contractors are sorting, salvaging and giving away materials which saves money for recipients and reduces waste disposal costs for the contractor. However, landfill operators and haulers state that no one is sorting.
- Good site management, not environmental concerns, motivate contractors to manage materials responsibly.
- Haulers need to provide split bins for sorting and better pricing on sorted bins.

- Contractors can't be expected to put multiple bins on site and incur additional hauling fees.
- One hauler commented that the volumes on residential projects were too small to merit sorting. Similarly, one contractor who sorts indicated that given the \$35 spread in the disposal fee for clean and treated wood, it was not economical to sort wood.
- One contractor who sorts noted the challenge in remembering different categories of wood (e.g., treated, painted, clean, etc.) and space constraints for managing the different categories. Suggested simpler classification system for wood.
- One landfill operator opined that the job of contractors is to build homes as cheaply as possible, not to separate waste. They should not be expected to bear the cost of diverting materials.
- Several respondents commented on the need for more disciplined enforcement for mixed loads.
- Material bans and separation requirements drive home relocation.

End Markets

- It was stressed that end markets need to be developed to support diversion. Only through alternative end markets can additional revenue streams be realized to offset reductions in tipping fees. Currently, it is way cheaper to landfill than to access existing any existing markets for materials.

Illegal Dumping

- Haulers are getting charged penalties for mixed loads resulting from third parties illegally dumping materials in bins.
- There needs to be more disincentive for illegal dumping.

Outreach and Education

- Opinions vary regarding the CSWM's efforts at engaging and educating the construction sector. One contractor noted there is good outreach and information sharing, while another stated they had never been contacted by the region or waste management companies about waste management practices and called for more education (e.g. bulletins) about what can be recycled, what is being recycled, zero cost options, etc.