

**DATE:** November 3, 2021

**FILE:** 5340-04

**TO:** Chair and Directors  
Electoral Areas Services Committee

**FROM:** Russell Dyson  
Chief Administrative Officer

Supported by Russell Dyson  
Chief Administrative Officer

*R. Dyson*

**RE: Hornby Island – Composting Toilet Study Follow-up**

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**Purpose**

To provide an update on the initiative to support the use of composting toilets on Hornby Island.

**Recommendation from the Chief Administrative Officer:**

THAT staff continue to collaborate with the Hornby Island Residents' and Ratepayers' Association on development of a composting toilet residuals management program for Hornby Island.

**Executive Summary**

Hornby Island's limited groundwater resources are a long-standing concern in the community, and initiatives to limit impacts on groundwater quality and quantity are of significant importance. Supporting the use of composting toilets is one option of interest to the community, and in 2020 the Comox Valley Regional District (CVRD) completed a study to consider available options.

- The long-term vision is development of an on-island facility to process residual organic matter from composting toilets into compost material compliant with the *Organic Matter Recycling Regulation* (OMRR) for use in residential yards and gardens.
- The location of this facility is envisioned to be the Hornby Island Waste Management Centre (HIWMC); this would require a rezoning application to the Islands Trust.
- As an interim measure to confirm interest and material volumes that would be managed at a future on-island facility, a residuals collection service including transport to the Comox Valley Sewerage Service's (CVSS) biosolids composting plant for processing is of interest to the Hornby Island Residents' and Ratepayers' Association (HIRRA).
- Based on a 50/50 user fee/property tax funding model, annual user fees are estimated to be about \$55, and tax impact on a \$500,000 property would be about \$3, assuming participation by 120 households. If 100 per cent of program costs were covered by user fees, the cost would be approximately \$110.
- CVRD staff propose continued collaboration with HIRRA on development of this concept, including assisting with a request to the CVSS for acceptance of residual organic matter at the biosolids composting plant in Cumberland.

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**Government Partners and Stakeholder Distribution (Upon Agenda Publication)**

Hornby Island Residents' and Ratepayers' Association	✓
Islands Trust – Planning Staff	✓

**Background/Current Situation**

In September 2020, the Electoral Areas Services Committee received a report detailing the results of an investigation of options for managing composting toilet residuals on Hornby Island. Included in the study was a community survey, results of which suggest that providing a residuals management service could increase the usage of composting toilets on Hornby Island. The benefits of increased composting toilet usage on Hornby Island could include reduced indoor water use, thus reducing demand on Hornby Island's limited groundwater resources, and diverting nutrients and pathogens in human waste away from sites with marginal septic systems, thus helping protect groundwater quality.

The study investigated two potential options for composting toilet residuals management—establishing a small-scale local facility to process these residuals into OMRR-compliant compost that can be distributed to island residents for use in gardening and landscaping projects, or collection of these residuals for transport to the existing CVSS biosolids composting plant to incorporate them into the SkyRocket product. The study recommended the second option due to its limited start-up costs, and the ability of this option to verify program uptake and material volumes prior to construction of an on-island facility. This option has been under further investigation by staff, with updates as outlined below.

*Engagement with Hornby Island Residents' and Ratepayers' Association representatives*

In a June 2021 meeting with CVRD staff, HIRRA representatives and Ed Hoeppner, a local on-site wastewater practitioner, the study results were presented and the proposed option of collection of residuals at HIWMC for transport to the CVSS biosolids facility was discussed. A suggestion was brought forward for a monthly pickup service for residuals, which would see a qualified contractor collect residuals from 8-10 residences once per month (i.e. providing a once-per-year pickup from approximately 100 homes), and deliver this material directly to the CVSS biosolids composting facility. Preliminary analysis by staff has indicated that this option would be similar in cost to the bin collection and transfer option; further details are provided in the financial factors section of this report. This option would also negate concerns expressed by HIWMC staff around monitoring the quality of residuals being dropped off by residents. Further analysis of this option would be required to verify costs and availability of a Hornby Island based qualified contractor to carry out this service.

HIRRA representatives also expressed an interest in investigating some level of tax subsidy for the proposed service, thus resulting in a blended tax requisition/user fee cost recovery strategy for the service. There is some rationale for tax support for the service as increased composting toilet usage would provide benefits to the greater Hornby Island community (i.e. reduced water consumption and reduced impacts to groundwater quality); however, it should also be noted there was some opposition expressed in the community survey to increased taxation to support residuals management.

*Hornby Island Waste Management Centre land use designation*

An important consideration in establishing an OMRR-compliant composting facility is ensuring the facility is sited on a property with an appropriate land use designation. Staff have had discussions with planning staff at the Islands Trust to follow up on the initial feedback included in the study. While construction of an on-island facility at the HIWMC would require a rezoning in order to include a composting facility as a permitted use, Islands Trust planning staff have advised that the

proposed interim measure of collection of material in a sealed bin at HIWMC for transport and processing off-island would be a fit within the site's "recycling depot" designation.

#### *Service delivery options*

The HIWMC is operated under Hornby Island garbage disposal service, function 360, which was established under Bylaw No. 87 being the "Hornby Island Garbage Disposal and Sundry Services Specified Area Establishment Bylaw, 1972." Two of the purposes of the bylaw are "the collection and disposal of garbage and waste" and "providing additional sundry services to community property." Given the broad scope in stated purposes of the bylaw, the proposed composting toilet residuals management options discussed in this report could be considered a fit within the existing service. This would therefore negate the need for the CVRD to contemplate the creation of a new service in order to proceed with this initiative. Taxation and user fee impacts to the Hornby Island garbage disposal service would require further consideration prior to implementation.

#### *Comox Valley Sewerage Service considerations*

The CVSS operates the biosolids composting facility in Cumberland, the purpose of which is to convert biosolids originating from the service's wastewater treatment plant into OMRR-compliant Class A compost. The CVSS service area includes the City of Courtenay and Town of Comox, with service also provided to K'ómoks First Nation and CFB Comox by contract. The service has a precedent for accepting biosolids from outside of this service area on a temporary basis, charging a tipping fee of \$100/tonne. Another consideration is the requirement to provide testing results for the incoming material to confirm its quality is within proper OMRR parameters, and that it is stabilized enough for processing.

In order to meet these requirements, several items come into consideration prior to making a request to the CVSS. Firstly, a time limit on an agreement to accept residuals would likely be required. At end of the initial term, there would be two options available:

1. If participation in the program meets expectations such that a long-term program would be viable, move forward with next steps in program development, including design of an on-island facility, rezoning application to Islands Trust and associated public engagement process, and pursuing grant funding to support construction of an on-island facility.
2. Cancel the program due to insufficient community interest, with a transition period to wind the program down and communicate alternate options to participants.

Secondly, material testing will be required to confirm stability and quality of the residual materials, and these results will have to be provided alongside the request to accept materials. In order to achieve this, collection of material for sampling should be undertaken.

#### *Next steps*

Next steps required to continue development of the Hornby Island composting toilet management program concept include the following:

- Confirmation of costs and contractor availability for monthly collection option;
- Collection of residuals material from Hornby Island composting toilet users for testing;
- Presentation of composting toilet residuals management program concept and costs to Hornby Island community; and
- Submission of a written request to the Comox Valley Sewage Commission for acceptance of Hornby Island composting toilet residuals for processing at the biosolids composting facility in Cumberland

Staff will work to support HIRRA in advancing these next steps between now and mid-2022.

### Policy Analysis

At the September 29, 2020 meeting of the CVRD Board, the following resolutions were passed:

1. THAT the option of collecting composting toilet residuals at the Hornby Island Waste Management Centre for transport to and processing at the Comox Valley Sewerage Service's biosolids composting facility be further investigated, including the following:
  - a. Present study results to Hornby Island Residents' and Ratepayers' Association to discuss operational impacts at the Hornby Island Waste Management Centre;
  - b. Confirm if central collection and transport can fit within scope of existing 360 function;
  - c. Confirm appropriate land-use with Islands Trust;
  - d. Seek approval from the Comox Valley Sewerage Service for processing residuals at biosolids composting facility in Cumberland; and
  - e. Present study results to Hornby Island community.

AND FURTHER THAT a follow up report on the results of this further investigation be brought to the Electoral Areas Services Committee in early 2021, with a recommendation on whether to proceed or not proceed with implementation.

2. THAT composting toilet residuals management information be developed for inclusion in the Comox Valley Regional District's septic education program, targeted to residents on Hornby and Denman islands, and other areas where composting toilet usage is identified.

The service establishment bylaw for the Hornby Island garbage disposal service, Bylaw No. 87, includes the following purposes:

1. The acquisition, maintenance, operation and regulation of grounds for the disposal of garbage and waste;
2. The collection and disposal of garbage and waste; and
3. The provision of sundry services to community property.

### Options

Based on the additional information provided in this report, the following options are presented for consideration:

1. Continue to collaborate with the Hornby Island Residents' and Ratepayers' Association on advancing the Hornby Island composting toilet residuals management initiative.
2. To not continue with work to support the use of composting toilets on Hornby Island.

As water quality and quantity is a long-standing concern on Hornby Island, initiatives that can help reduce impacts to local water resources, such as the use of composting toilets, are important to the health and sustainability of the Hornby Island community. Option 1 is therefore recommended.

### Financial Factors

High level capital and operating cost estimates are summarized in Table 1. These estimates are based on an assumption of 175 composting toilets currently in use on Hornby Island, with up to 70 per cent of these users participating in the service.

Table 1 – Capital and operating cost summary

Option	Capital cost	Annual operating cost	Total annual cost
On-island composting facility	\$75,000 - \$145,000	\$14,000 - \$21,000	\$17,750 - \$28,250
On-island collection and transport off-island for processing	\$5,000	\$12,000	\$13,000
Monthly collection service and transport off-island for processing	N/A	\$13,000	\$13,000

For the purposes of estimating approximate user fees for the monthly collection service and transport option, Table 2 below includes a range of composting toilet usage scenarios for comparison. Also included for comparison is a blended cost recovery scenario (50 per cent taxation/ 50 per cent user fee).

Table 2 – User fee and property tax estimates for monthly collection service option

# of composting toilets in use	100% user pay – annual fee	50% user fee / 50% property tax	
		Annual user fee	Approximate annual tax increase (per property assessed at \$500,000)
90	\$144	\$72	\$3.05
175	\$110	\$55	\$4.65
500	\$100	\$50	\$12.00

The approximate annual cost per household is based on an assumption of 70 per cent of composting toilet users choosing to have their residuals picked up and transported off-island. For some context on these costs in relation to septic system costs, an informal poll conducted at the septic education workshop on Hornby Island in June 2019 indicated that most residents pay at least \$500 to have their septic tanks pumped, which would be required at least every five years.

### Legal Factors

A facility to process composting toilet residuals would have to meet the requirements of BC's OMRR. The facility would have to be located on land with a land-use designation that identifies composting as a permitted use.

The HIWMC is operated by the Hornby Island Residents' and Ratepayers' Association, and is funded by the CVRD through the Hornby Island garbage disposal service, function 360. Follow-up discussions with Corporate Services staff have indicated that the composting toilet residuals collection and processing options presented in this report could fall within the scope of this service.

Should on-island collection of residuals with transport off-island proceed, an agreement with the Comox Valley Sewerage Service would be required prior to accepting composting toilet residuals for processing at the existing biosolids composting plant in Cumberland. This would include payment of a tipping fee for these residuals.

### Regional Growth Strategy Implications

Hornby Island is not covered by the Comox Valley Regional Growth Strategy (RGS) as land use planning on the island is a responsibility of the Islands Trust. However, the onsite wastewater management initiatives described in this report will be developed to align with the goals and objectives of the RGS to "provide affordable, effective and efficient services and infrastructure that conserves land, water and energy resources."

**Intergovernmental Factors**

Staff sought input from Islands Trust planning staff regarding the existing land-use designation of the HIWMC site, and if a composting facility would be considered an appropriate use. Guidance from Islands Trust planning staff indicates that “recycling depot” is considered a permitted use, and that collection of residuals for transport to an off-island location for processing could be compatible with this designation.

Conversely, prior to developing a local facility to process residuals from composting toilets, a rezoning application would be required. Islands Trust staff also referred to a clause in the Hornby Island official community plan, suggesting that a processing facility for composting toilet residuals be investigated through a comprehensive planning process, such as a liquid waste management plan.

**Interdepartmental Involvement**

This report has been prepared by the Liquid Waste Planning staff of the Engineering Services branch, with input from Corporate Services staff and Comox Valley Sewerage Service staff.

**Citizen/Public Relations**

As part of the study, public outreach activities included an online/paper survey, written articles in local media and in-person presence at an information table at the Hornby Island Co-op on two separate occasions.

Outreach activity revealed general support for the use of composting toilets, though there are concerns regarding potential groundwater contamination and odour associated with development of a community processing facility for composting toilet residuals.

Future outreach with the community will be required to assess support for this initiative, and through a rezoning application to enable the construction of an on-island processing facility at the HIWMC.

General information on composting toilets has been added to the CVRD’s septic education program, including a webpage ([link](#)) hosted on the CVRD’s main septic education page.