

DATE: May 31, 2018

FILE: 5380-03

TO: Chair and Directors
Comox Valley Regional District
(Comox Strathcona Waste Management) Board

Supported by Russell Dyson
Chief Administrative Officer

FROM: Russell Dyson
Chief Administrative Officer

R. Dyson

RE: Regional Organics Compost Project Update

Purpose

The purpose of this report is to provide an update regarding the Comox Strathcona Waste management (CSWM) Regional Organics Compost (Organics) project.

Recommendation from the Chief Administrative Officer:

For information purposes.

Executive Summary

- The removal of organics from CSWM regional landfills will reduce airspace requirements and greenhouse gas generation and is a key objective within the solid waste management plan.
- The Organics project is funded by a combination of grant funding from the New Building Canada Fund (\$5,541,744) and capital works reserves.
- The projects main components include a new transfer station at the Comox Valley Waste Management Centre (CVWMC) and a large regional composting facility at the Norm Wood Environmental Centre (NVEC).
- The viability of a regional composting facility relies on the long term commitment and participation from member municipalities, to separate food and yard-waste at the curb and deliver it to the composting facility or transfer station.
- The composting facility will initially be sized to accommodate single family residential organics as well as a portion of the institutional/commercial/industrial sector from the four member municipalities.
- A regional co-mingled food and yard waste composting program for single family residential users and a portion of the industrial, commercial, and institutional (ICI) sector provides the lowest overall costs (to the end taxpayer) from the options analyzed.
- The cost of implementing a regional composting facility will be funded by a separate tipping fee for food and yard waste (comingled). The tipping fee is currently estimated to range between \$94 and \$122 per tonne.
- Using the most cost effective model, it is currently estimated that capital costs have increased by \$3,595,000 over the approved Financial Plan due to increased capacity, additional site preparation, building type, biofilters, specialized equipment, contract management, escalation and contingency.
- The key next steps for the regional organics project are:
 - Final commitments from participating municipalities to provide including comingled food and yard waste to the regional organics program.

- Development of an agreement with the City of Campbell River (CoCR) for the NVEC.
- Finalize design of transfer station and regional organics facility.
- Prepare the design – build – operate procurement package.

Prepared by:

Concurrence:

Concurrence:

A. McGifford

M. Rutten

Gabriel Bau, P.Eng.
Manager of CSWM Projects

Andrew McGifford, CPA, CGA,
Senior Manager of CSWM
Services

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

Stakeholder Distribution (Upon Agenda Publication)

City of Campbell River	✓
City of Courtenay	✓
Town of Comox	✓
Village of Cumberland	✓

Background/Current Situation

The 2012 CSWM Solid Waste Management Plan (SWMP) includes the removal of organics from the waste stream as a key objective to increasing diversion, reducing greenhouse gas (GHG) emissions and meeting a 70 per cent diversion target. The Organics project is designed to deliver these objectives and is funded through a combination of grant funds from the ‘New Building Canada Fund’ and existing capital reserves. The project consists of a new food and yard-waste transfer station at the CVWMC, and a regional organics compost facility at the NVEC in Campbell River.

The project is currently in the planning and preliminary design phase with work completed by CH2M Hill (the Comox Valley Regional District’s (CVRD) engineering consultant) in combination with a working group made up of technical staff from the four participating municipalities. The project is slightly behind schedule however the effort undertaken by the working group has been productive and thorough and resulted in an excellent decision making process. The following highlights some of the key tasks completed and underway:

- Feedstock quantities and characteristics review - complete
- Collection program review - complete
- Processing technology review – in progress, pending final decision on facility capacity
- Participating municipalities’ commitment of feedstock – in progress, letters requesting feedstock commitment issued May 4, 2018
- Transfer station review - complete
- Siting analysis - in progress
- Compost facility - Indicative design and cost estimate - complete
- Memorandum of understanding with participating municipalities - in progress
- Siting requirements of the regional organics facility at the NVEC – in progress, letter provided to the CoCR April 19, 2018
- Backhauling feasibility analysis – in progress, preliminary analysis completed, relies on final commitment to feed stock

- Transfer Station - indicative design and cost estimate – in progress, preliminary costs determined, further refinement of costs to be completed pending final decision on facility capacity and confirmation of feedstock
- Preliminary permit application - not started, awaiting siting confirmation

In order to continue to move the project forward and to finalize the design capacity of the transfer station and facility a long term commitment from participating municipalities regarding how food and yard waste will be delivered to the Organics compost facility is required.

The analysis completed to date has evaluated two options for residential region organics processing as follows:

1. Food waste only – in a food waste only system the new transfer station and organics facility would be sized for the separate collection of food waste only. In this concept the new facilities could be optimized for a smaller amount of material resulting in lower capital costs, however an additional separate collection task would be required each week at each household significantly affecting collection costs.
2. Comingled food and yard waste – in a comingled system the new capital infrastructure would be sized for the comingled stream which would require a larger transfer station and organics facility (when compared to food waste only) however the collection task could be combined with the existing weekly curbside yard waste program keeping collection costs similar to what they are now.

For each of the above scenarios two additional sub-scenarios were analyzed that looked to include multifamily and ICI food and yard waste.

Based on the analysis completed comingled food and yard waste is the most cost effective option. This is due to the fact that costs are more sensitive to the additional separate collection stream than to the additional capital costs for the larger composting facility. The comingled concept is supported by the technical working group and a letter has been provided to each participating municipality asking for confirmation that comingled food and yard waste will be provided to the program.

Partially based on the above conclusion and on the most recent design work, the amount of organic feedstock to be processed has increased over the amount initially anticipated. The initial amount of organic waste included in the grant application was 12,875 tonnes/year, while the current amount is now 14,500 tonnes/year. There are two main reasons for this:

- Organic feedstock estimates are based on diversion data from existing collection programs in other jurisdictions (City of Nanaimo, BC and Ontario) combined with population statistics from participating municipalities. Currently these estimates are the best reference for establishing the capacity of the facilities and are higher than those used during concept development.
- The amount of commercial waste diverted has been increased to match the capacity carried in the 2012 SWMP from 2,500 tonnes/year to 3,360 tonnes/year. This increases the amount of available organics by 860 tonnes/year.

The required increase in total capacity will increase capital costs over those previously estimated during concept development and as part of the grant application. In addition other project costs have also increased. The following table shows the total impact of increases and the table notes explain the increase in greater detail.

Table #1. Capital Cost Increase:

Description	Amount
Regional compost facility for commingled food and yard waste at the NVEC	\$9,604,800
Regional transfer facility at the CVWMC	\$2,570,300
Total	\$12,175,100
Budget	\$8,580,000
Shortfall	(\$3,595,100)
CSWM tipping fees (estimated)	\$100/tonne

Table Notes:

1. Increased capacity required to treat organic waste (from 12,875 to 14,500 tonnes/year).
2. Additional site preparation and building space to accommodate the additional processing capacity. The estimated cost increased \$750,500 for this component.
3. Composting buildings (3) – Initial estimates for buildings were based on an agricultural building standard while current estimates are based on an industrial building standard. Also, there was no consideration for electrical in the original cost model.
4. Biofilters (odour concern mitigation) are now included. The estimated cost increased \$527,000 for this component.
5. Stationary and Specialized Equipment – Changes in type of equipment to make the processing facility more reliable. Trommel screen and mixer cost increased to reflect the correct equipment based on needs of facility and reflect current market costs. The estimated cost increased \$408,000 for this component.
6. Contingency – additional contingency on increases account for \$250,000.
7. Contract management – account for \$291,000.
8. Cost escalation – 22 per cent from the year 2015 to 2018, the estimated cost increased \$1,370,000 all components.

In order to avoid a further increase in the amount of organic feedstock to be processed and consequently the size of the facilities it is recommended that the following yard waste streams not be included in the program:

- Yard waste collected at the three existing drop-off depots (i.e. CVWMC, Campbell River Waste Management Center (CRWMC) and CoCR). This stream will continue to be managed through existing contracts. If included, this would represent an increase of organics by 4,490 tonnes/year, and it would require additional capital funding to construct a larger facility.
- Food and yard waste from multi-family dwellings. This stream will not initially be included as part of the regional organics compost program but could be added at a later date.

Based on the above capital costs and the operation cost developed by CH2M Hill, an organics tipping fee has been developed to fund the operation maintenance and capital repayment of the project over a 20 year time period. The tipping fee estimate ranges from \$94 to \$122.

It can be seen that project costs have increased over those anticipated within the Financial Plan. In addition, following the last project workshop a desire was expressed by some participating municipalities to include curbside carts as part of the expenditures associated with the project. This could further increase the capital costs and will be discussed in greater detail during the next project workshop, with updates provided at the Board meeting.

This is the first in a series of project staff reports that will be provided to the CSWM Board for information and consideration. As decisions are required from the Board, a recommendation report will be presented.

Policy Analysis

The 2012 Comox Strathcona Solid Waste Management Plan recommends development of regional composting capacity as the primary Organics program diversion strategy, towards a target of 70 per cent diversion by 2022.

At its April 12, 2016 meeting the CVRD, CSWM Board, passed the following motions:

THAT the Comox Valley Regional District (Comox Strathcona waste management) service submit a grant application for the construction of a regional organics facility hosted in Campbell River, under the New Building Canada Fund – Small Communities Fund (NBCF).

THAT a letter be sent to the Town of Comox, the City of Courtenay, the Village of Cumberland and the City of Campbell River requesting support for the development of a multi-municipal organic collection and disposal program that meets the service needs of the communities and request a commitment of organic and yard waste feedstock to support program viability, subject to a successful grant funding application.

At its November 9, 2017 meeting the CVRD, CSWM Board passed the following motion:

THAT as a result of a competitive process, a contract be awarded to CH2M Hill for Engineering Services for the Comox Strathcona Regional Organics Management facility in Campbell River in an amount not to exceed \$264,055 plus applicable taxes;

AND FURTHER THAT the Chair and Corporate Legislative Officer be authorized to execute the contract

Options

This report is presented for information only.

Financial Factors

As discussed above the most current capital cost estimates for the project exceed the 2018-2022 approved Financial Plan amount. The project shortfall is currently estimated at \$3,595,100. Several options exist to address this shortfall:

1. Reduce capital costs – the project team will look to optimize (and minimize) capital costs as the project scope is further refined and clarified over the coming months.
2. Increase funding from capital reserves – the 2018-2022 approved Financial Plan currently shows the project funded by \$5,528,690 of grants and \$3,031,310 of reserves. Reserve funding could be increased to address this shortfall however this will impact funding for other projects and future reserve fund balances.
3. Fund from debt – rather than increasing the funding from reserves, the shortfall could be addressed by borrowing the funds required. Funding for the project would then be from a combination of grant funds, capital works reserves and debt. Incurring debt would impact the tipping fee slightly due to interest charges.

Further financial analysis will be completed and presented once the project scope is finalized. Prior to proceeding with procurement staff will provide the Board with funding options and recommend a path forward. A Financial Plan amendment will likely be required.

Legal Factors

The use of the NWECA in Campbell River will require an agreement between the CVRD (CSWM) and CoCR. The agreement (contract) will set in place those terms relevant to the siting, construction, operation, maintenance and improvement of the regional organics facility. The CVRD and the CoCR will negotiate the terms of this agreement over the next several months.

The single largest risk to the Organics project is ensuring a long-term guaranteed supply of future comingled food and yard waste for the process. The facility will be sized, the process designed and the operating contract structured around a set amount of feedstock. It will be critical that all municipalities commit to providing feedstock to the process and to optimizing collection of that feedstock at the curbside.

Regional Growth Strategy Implications

The Organics facility supports the Regional Growth Strategy (RGS) Objective 5-E: “reduce regional solid waste and improve landfill performance,” and also will aid in achieving the 70 per cent diversion rate target set out in the current SWMP and referenced in the RGS.

Increased organics diversion will also support RGS Object 8-C: “Reduce GHG emissions in the solid waste sector.” As food waste decomposes in a landfill anaerobically, it will produce methane (landfill gas a GHG), which is estimated to be 25 times more heat absorptive than carbon dioxide. Diverting organics and composting aerobically eliminates the methane production.

Intergovernmental Factors

Throughout this project, the CVRD will work together with municipalities (City of Courtenay, Town of Comox, Village of Cumberland, and CoCR) for the commitment of feedstock to the facility and for assisting in the implementation of organics diversion at the curbside. The consulting engineer will host several workshops with participating municipalities to provide guidance on future collection solutions and project implementation.

As part of the scope of work for this contract, the engineer will develop cost estimates prior to establishing an agreement for the commitment of feedstock. This estimate will be used to inform the tipping fee for organics.

The Ministry of Environment and Climate Change Strategy will also be involved to ensure that the facility will meet the required Organic Matter Recycling Regulation.

Interdepartmental Involvement

The Organics facility project is led by Engineering Services with project support provided by Financial Services for project tendering and contract review, and Corporate Services for future project communications.

Citizen/Public Relations

Working with Corporate Services and the consulting engineer, a communication plan will be developed.