

DATE: August 8, 2018

FILE: 5360-20/CVWMC

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: Cell 1 Airspace Update

Purpose

To provide an update of the available airspace in Cell 1 at the Comox Valley Waste Management Centre (CVWMC) and estimated years of capacity based on varying disposal rates.

Recommendation from the Chief Administrative Officer:

This report is for information purposes only.

Executive Summary

Landfill expansion Cells 1-3 were approved in the amended CVWMC Operational Certificate issued by the Ministry of Environment (MoE), and originally provided an estimated airspace capacity until 2039.

- Cell 1 was constructed in 2017; filling began with select waste to form the base protection layer of the landfill.
- Based on overfilling of the historical landfill, the life span and available airspace was re-analyzed since the 2017 CVWMC Master Plan report.
- This has extended the estimated earliest fill date of Cell 1 from 2022, as predicted in the Master Plan, to 2024.
- Cell 1 is now estimated to reach capacity between years 2024-2027 depending on the actual disposal rates achieved.
- The following disposal rates have been analyzed to create this range:
 - The current five year average
 - 380 kg/capita (70 per cent diversion rate – 2012 Solid Waste Management Plan)
 - Updated (proposed) provincial target of 350kg/capita by 2020.
- Analysis includes the transfer of waste from the Campbell River Waste Management Centre (CRWMC) beginning in 2023, some types of waste may be shipped earlier if required.

This report will be updated in future years to compare the actual fill rate of Cell 1 with this projected rate.

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Stakeholder Distribution (Upon Agenda Publication)

Waste to Energy Select Committee	✓
CSWM Advisory Committee	✓

Background/Current Situation

The phased closure of the current (historical) unlined landfill began in 2015, with final closure scheduled for 2019. Construction of a new engineered landfill and leachate treatment facility began in 2016/2017. The amended operation certificate, which permits construction of landfill Cells 1-3 and the leachate treatment facility, includes an original estimated airspace capacity until 2039.

Construction of the first engineered landfill cell at the CVWMC was completed in 2017 with placement of select waste beginning in late August 2017.

In Figure 1 below, the profile of Cell 1 can be seen highlighted. Future landfill cells are designed to “piggy-back” onto Cell 1 which will provide additional available airspace for Cells 2-3 seen in Table 1.

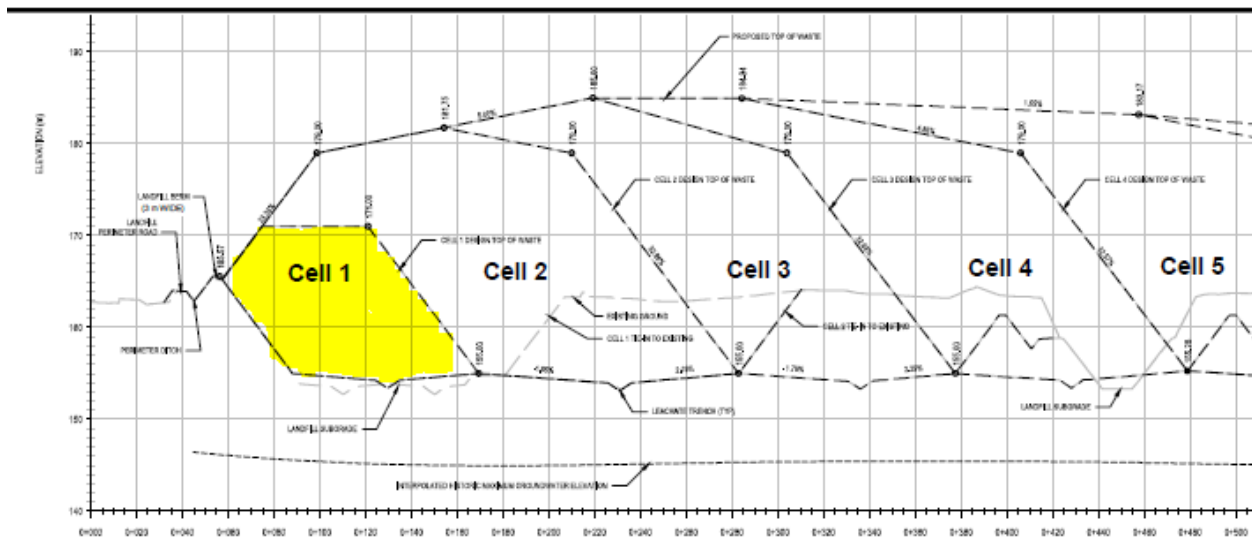


Figure 1 - Landfill Cell Profiles from Master Plan

Table 1 - Landfill Cell Available Airspace

Landfill Cell Number	Available Airspace
Cell 1	470,945 m ³
Cell 2	1,046,472 m ³
Cell 3	1,040,890 m ³

Currently, waste at the CVWMC is being landfilled in both Cell 1 (select waste) and the historic landfill. The historic landfill is estimated to reach final capacity in late 2018 at which time all waste at the CVWMC will be directed to Cell 1.

The estimated cell life remains the same as was predicted in the 2017 CVWMC Master Plan. However, due to the overfilling of the historic landfill, all CVWMC waste will not be placed in Cell 1 until the end of 2018 (previously assumed early 2017 in the Master Plan). This has extended the estimated earliest fill date of Cell 1 from 2022, as predicted in the Master Plan, to 2024 seen in Table 2.

To calculate the year capacity is reached in Cell 1, different disposal rates were analyzed, varying from the current five year average down to the updated provincial target of 350kg/capita. Other assumptions included the transfer of waste from the CRWMC in 2023.

Table 2 - Potential Timeframes to Reach Filling Capacity

Waste Generation Scenario	Year Over Capacity is Reached in Cell 1
Cell 1 year of capacity as per Masterplan (AECOM) report 2017 – remaining at current diversion	2022
Current four year average increase in waste disposal (4.6% CR and 3.69% CV)	2024
Status Quo factoring 1% population increase	2024
500 kg/capita	2025
450 kg/capita	2025
400 kg/capita	2026
380 kg/capita (70% diversion as per the Solid Waste Management Plan)	2026
350 kg/capita (Provincial disposal goal)	2027

Policy Analysis

Funding for the current landfill expansion for Cell 1 and leachate treatment facility at the CVWMC was approved Bylaw No. 351 being the “Comox Strathcona Waste Management Service (Capital Projects) Loan Authorization Bylaw No. 351 2014” – adopted November 20, 2014.

Further expansion of landfill Cells should be identified in future updates to the SWMP. A future loan authorization bylaw will be required, or capital funds set aside for future expansion costs.

Options

This report is presented for information only.

Financial Factors

Taken from the CVWMC Master Plan, provided to the Board in March 2018, Table 3 below outlines capital cost estimates for future Cells 1 through 3. Increasing diversion, to reduce the airspace used in the landfill, will prolong the site life and defer capital expenditures to a later date.

Table 3 - Class D Conceptual Cost Estimates from CVWMC Master Plan

Landfill Cell Number	Expansion Costs	Closure Costs
Cell 1	Constructed	\$1,330,633
Cell 2	\$8,838,000	\$2,852,830
Cell 3	\$7,774,000	\$3,006,584

Legal Factors

Landfill Cells 1 through 3 are currently approved in the Operational Certificate for the CVWMC. Further expansion past Cell 3 would require approval from the MoE.

Regional Growth Strategy Implications

Closely monitoring the landfill performance and improving the airspace usage/diversion activities at the landfill are supported by the following objectives in the Comox Valley Regional Growth Strategy:

- Objective 5-E: Reduce regional solid waste and improve landfill performance.
- Objective 8-C: Reduce GHG emissions in the solid waste sector.

Intergovernmental Factors

All reports are presented to the CSWM Advisory Committee for review and input, which includes staff representatives from all participating municipalities.

Interdepartmental Involvement

At this time there are no interdepartmental involvement concerns generated by this report.

Citizen/Public Relations

At this time there are no public relations concerns generated by this report.