Fraser Valley Regional District

CORPORATE REPORT

To: Electoral Area Services Committee
From: Sterling Chan, Manager of Engineering and Infrastructure

Date: 2020-07-14
File No: 5340-01

Subject: FVRD Electoral Area Biosolids Management Plan

RECOMMENDATION

THAT the Fraser Valley Regional District Board endorse the recommendations of the FVRD Biosolids Management Options Assessment.

STRATEGIC AREA(S) OF FOCUS
Support Environmental Stewardship
Support Healthy & Sustainable Community
Provide Responsive & Effective Public Services

PRIORITIES
Priority #1 Waste Management

BACKGROUND

The FVRD currently operates six sewer systems within its electoral areas: North Bend Sewer in Electoral Area A, Morris Valley Sewer in Electoral Area C, Popkum Sewer in Electoral Area D, Baker Trails Sewer in Electoral Area E, and North and South Cultus Sewer in Electoral Area H. Currently, these six systems generate liquid sludge that is transported offsite to an alternate wastewater treatment plant (WWTP) for further treatment and management through beneficial use under the respective municipality's biosolids program. The future North Cultus WWTP is anticipated to generate up to 120 wet tonnes of dewatered biosolids per year. The need to evaluate the biosolids management within the electoral areas was a necessary step in planning for this future facility.

The FVRD engaged Sylvis Environmental to characterize the liquid sludges generated by the FVRD's systems and conduct an assessment of potential management options for the liquid sludges as well as the dewatered biosolids that would be created at the future North Cultus WWTP.

DISCUSSION

The liquid sludge generated at the FVRD's WWTPs is removed one to three times per year. Currently, it is pumped and hauled offsite to Metro Vancouver's Annacis Island WWTP. As part of their initial work, Sylvis sampled and characterized the liquid sludge produced by these WWTPs. They then conducted an

assessment to identify all available options and evaluated each option individually against environmental, social, technical, and economic criteria.

It was found that many of the liquid sludges sampled could not be beneficially managed as biosolids without first undergoing further treatment. Continuing to transport offsite for treatment at an alternative WWTP is the only viable option for these liquid sludges. For those that did not require further treatment, the local land application to agricultural or fallow fields as a fertilizer was compared against the status quo. Ultimately, it was determined that the current volumes did not justify the level of effort required to implement a local land application program and that the recommendation is to maintain the status quo of hauling liquid sludge offsite to the Annacis Island WWTP or alternatively the JAMES WWTP.

For the future North Cultus WWTP, Sylvis worked with the plant's design engineers to determine the volume and classification of dewatered biosolids it will produce once online. In total, five options for the management of these dewatered biosolids were assessed:

- Amalgamation with the City of Chilliwack biosolids management program
- Remote agricultural land application at the OK Ranch
- Offsite composting by a third party
- Local Agricultural Land Application of Dewatered Biosolids
- Containerized Compositing onsite of the new Cultus Lake North WWTP

Similar to the liquid sludge, each of these options for dewatered biosolids was evaluated against environmental, social, technical, and economic criteria.

Ultimately, amalgamation with the City of Chilliwack's biosolids management program was the recommended option. The benefit to this option is that it would have the lowest capital and operation cost, would be least likely to be objected by stakeholders, would have fewest regulatory challenges, could be easily implemented, would have high reliability and would not have to be adjusted seasonally. FVRD staff have engaged with City of Chilliwack staff and have confirmed this option's viability.

Three additional options for dewatered biosolids management were identified, however, were not advanced to a detailed assessment because of the small production volume or prohibitive costs:

- Quarry Reclamation
- Biosolids Growing Medium
- Landfill Disposal

The plan for managing biosolids is meant to be a living document. In the future, as neighbourhoods are built out and new service areas come on line, the volumes and characteristics of biosolids produced across the region's electoral areas will inevitably change. For those reasons, it will be necessary to periodically review the way biosolids are being managed.

COST

The biosolids management options recommended in this report will be borne from each system's corresponding service area budget. As there are no recommended changes to the management of liquid sludge from systems currently in operation, there are no anticipated changes in operation costs for these systems. The cost to manage dewatered biosolids produced by the future North Cultus WWTP will be incorporated into that system's service area budget once the new plant is brought online.

COMMENTS BY:

Tareq Islam, Director of Engineering & Community Services

Reviewed and supported.

Kelly Lownsbrough, Chief Financial Officer/ Director of Financial Services

Reviewed and supported.

Jennifer Kinneman, Chief Administrative Officer

Reviewed and supported.