

DATE: January 28, 2019**FILE:** 5360-60**TO:** Chair and Directors
Solid Waste Advanced Technology Select CommitteeSupported by Russell Dyson
Chief Administrative Officer**FROM:** Russell Dyson
Chief Administrative Officer*R. Dyson***RE: Performance Monitoring of Waste Management Technology – Chester, Nova Scotia****Purpose**

To present the proposed methodology for performance monitoring of Sustane Technologies' (Sustane) waste management system currently under construction in Chester, Nova Scotia in order that the Solid Waste Advanced Technology (SWAT) Select Committee provide a recommendation to the Comox Strathcona Waste Management Board (Board).

Recommendation from the Chief Administrative Officer:

THAT the Comox Valley Regional District (Comox Strathcona Waste Management) Board endorse the performance monitoring program as presented in the report titled "Performance Monitoring of Waste Management Technology – Chester, Nova Scotia," dated January 28, 2019, for a period of one year after successful start-up.

AND FURTHER THAT the Board approach the Cowichan Valley Regional District and the Nanaimo Regional District to request sharing of the costs and information related to performance monitoring.

Executive Summary

The Comox Valley Regional District (Comox Strathcona Waste Management) Board (Board) has an interest in reducing waste disposal volumes and providing cost effective alternatives to landfilling. In support of these objectives, the Board posted a Request for Information (RFI) for Waste to Energy, now SWAT in the summer of 2017. The intent of the RFI process was educational in nature and not a competitive selection process.

Six submissions were received and evaluated based on high level criteria (innovation, technology, environmental/social and economic). Three technologies were selected for further detailed analysis and the final version of the report was provided to the SWAT Select Committee on April 5, 2018.

The highest ranked technology in the RFI process was Sustane, which converts waste into biomass fuel pellets and synthetic diesel, and recovers metals. Sustane's technology offers estimated lower costs than the other shortlisted technologies (although still higher than the status quo of landfilling); however, they attract greater risk for the Comox Strathcona Waste Management (CSWM) service due to a lack of installed infrastructure and untested technology. In consideration of this risk and the Board's continued interest in Sustane, the following resolution was approved on April 19, 2018:

THAT the Comox Strathcona Waste Management Board direct staff to monitor waste management technology proposed by Sustane Technologies Inc. in Nova Scotia, for up to one year of full operations;

AND FURTHER THAT a report on its effectiveness and efficiencies be presented to the CSWM Board following the monitoring period.

In order to act on the above CSWM Board direction, it is proposed that staff undertake the following key performance monitoring activities subsequent to the completion and commissioning of Sustane’s facility in Chester, Nova Scotia (which is currently scheduled for start-up in April 2019).

- The performance monitoring will include a set of detailed performance monitoring criteria and a performance monitoring timeline that will incorporate the following draft criteria (at a minimum):
 - Plant efficiency, plant uptime, fuel pellet production efficiency, synthetic oil production efficiency (actual vs design)
 - Operating costs, maintenance costs (pre and post full operation)
 - Fuel pellet quality, synthetic oil quality, residuals quality
 - Greenhouse gas implications for the life cycle of the process
 - Other important performance parameters identified by the monitor once retained
- Visit Sustane’s facility in Chester, Nova Scotia to witness and observe the facility in operation, to interview operators and maintainers, to interview Chester Solid Waste employees and to meet with Nova Scotia Environment
- Review all agreements between Chester and Sustane to confirm costs, risks and benefits to the community
- Identify other financial costs or benefits outside of the contract
- Review regulatory requirements of the Province of British Columbia
- Assess local market demand for by-products
- Identify potential unintended consequences, benefits and risks
- Use of qualified professionals will aid staff with legal opinions and performance monitoring. A modest budget accounts for this.

The following table summarizes the expected costs and resources required to complete the performance monitoring. This work can be accomplished within the current proposed 2019-2023 financial plan, which will cover expenses, incidentals, travel, legal and third party expertise as required. Also, other regional districts on Vancouver Island may be interested in alternative disposal options for their regions and in better understanding how Sustane’s technology performs in Chester. It is proposed to approach these other regions and request sharing of the costs and information related to performance monitoring.

Performance Monitoring Activity	Cost
Third party consultants to undertake legal reviews and development of draft performance monitoring criteria	20,400
Site Visit (4 representatives)	9,600
Total	\$30,000

It is expected that performance monitoring would be required over approximately one year following the full start-up and commissioning of Sustane’s facility in Chester. This period of time is recommended to help ensure consistent, continuous operation for measurement of all performance criteria and costs.

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