



REPORT

To: Solid Waste Committee

Report Number: ENV-SWC-166

From: Environmental Services

Date: July 4, 2024

Subject: Solid Waste Management Best Practices: Pyrolysis Waste Management Study

RECOMMENDATION:

That the Solid Waste Committee receive the reports prepared by Dominic Reiffarth from UNBC titled “Solid Waste Management Best Practices - Cost Effective Options to Sustainably Manage Solid Waste in the PRRD” (July 2022) and “Solid Waste Management Best Practices: Pyrolysis as a Waste Management Approach in the PRRD” (June 2024), which investigated solid waste best practices and the potential use of a pyrolysis unit within the PRRD to manage organic waste as an alternative to landfilling; further that the reports be shared with the Regional Board via the Consent Calendar.

BACKGROUND/RATIONALE:

On March 28, 2019 the Regional Board passed the following resolution:

MOVED, SECONDED, and CARRIED

That a meeting be arranged with the University of Northern BC – Science Department to determine if a PhD or Master’s Degree student could be engaged to prepare a research paper on global leading best practices for solid waste management, focused on finding cost effective options to sustainably manage solid waste in the Regional District.

On January 7, 2020 the Solid Waste Committee passed the following resolution:

MOVED, SECONDED, and CARRIED

That the SWC recommends to the Regional Board that the draft proposal received from the University of British Columbia in response to the Regional District’s request for a research project – focusing on solid waste management best practices: cost effective options for the sustainable management of solid waste be approved, and further that the project cost of \$47,500 be included in the 2020 Solid Waste Management budget (Function 500).

The second draft of the 2020 Solid Waste Budget, inclusive of the increase of \$47,000 to fund the project, was considered and approved by the Solid Waste Committee on February 6, 2020, and subsequently approved as presented by the Regional Board on February 26, 2020.

In 2020, PRRD commissioned a report through the University of Northern BC (UNBC) in conjunction with the Mitacs Accelerate program to investigate best management practices for cost effective options to sustainably manage solid waste in the Peace River Regional District (PRRD). Staff worked with UNBC post-doctoral researcher Dominic Reiffarth to look at on the initial study which focused on:

1. Increasing the recovery of waste generated in the PRRD,
2. Materials Recovery Facility – Plastics Processing, and
3. Anaerobic digesters – Organics Processing.

The first report was presented to the Regional Board during the Committee of the Whole Meeting held April 21, 2022, and completed shortly thereafter in 2022. The first report is available as Attachment 1 to this report.

In follow up to the first report, UNBC approached the PRRD about an opportunity to continue the study using grant funding available through the Mitacs Elevate program. On May 26, 2022 the Regional Board passed the following resolution:

MOVED, SECONDED and CARRIED

That the Regional Board authorize the submission of a grant application through the University of Northern BC (UNBC) to Mitacs Elevate, to secure funding for the continuance of the Solid Waste Management Best Practices Study, for a grant of up to \$160,000 over two years; further that \$40,000 be allocated in 2022 and 2023 totaling \$80,000 as the PRRD's contribution to the project.

This second phase for the study began in the summer of 2022 and focused on the use of a pyrolysis unit within the PRRD to manage organic waste as an alternative to landfilling. The report investigated a regional scale model looking at managing all organics generated in the region as well as a small-scale unit focused in the Chetwynd area. The report has been completed and Dominic Reiffarth presented his findings during the Solid Waste Committee Meeting held July 4, 2024. The completed report is available as Attachment 2 to this report.

ALTERNATIVE OPTIONS:

1. That the Solid Waste Committee provide further direction.

STRATEGIC PLAN RELEVANCE:

- Not Applicable to Strategic Plan

FINANCIAL CONSIDERATION(S):

The PRRD's contribution for the first study was \$47,500.

The PRRD's contribution for the second study was \$80,000.

COMMUNICATIONS CONSIDERATION(S):

None at this time.

OTHER CONSIDERATION(S):

None at this time.

Attachments:

1. Solid Waste Management Best Practices: Cost-effective options to sustainably manage solid waste in the Peace River Regional District.
2. Solid Waste Management Best Practices: Pyrolysis as a Waste Management Approach in the Peace River Regional District.

External Links:

1. [March 3, 2022 Solid Waste Committee Meeting](#) - See Item 9.1 "UNBC Solid Waste Management Study Presentation – ENV-SWC-081"
2. [April 21, 2022 Committee of the Whole Meeting](#) – See Item 4.1 "University of Northern BC – Solid Waste Management Best Practices Study"
3. [May 13, 2022 Solid Waste Committee Meeting](#) – See Item 8.1 "Email from H. Kasemian, UNBC (May 4, 2022) re: Possible Funding Opportunity (Mitacs Elevate)."
4. [May 26, 2022 Regional Board Meeting](#) – See Item 9.2 "May 13, 2022 Solid Waste Committee Recommendations, ENV-BRD-097"