

Programming and Budget Proposal

Agricultural Plastics Recycling

Pilot programs in Peace River Regional District, British Columbia

Prepared for the Solid Waste Committee of Peace River Regional District

January 2021

Overview

Cleanfarms has enclosed budgets for running pilot projects for agricultural plastics including grain bags, twine, and bale wrap and silage plastic over the next 3 years. These materials have been identified as challenging materials for farmers in the Peace River Regional District to manage. Additionally, there is opportunity to keep these materials out of landfills and the environment by recirculating them in the economy through recycling or energy recovery through incineration.

There are two detailed options presented in appendices: Budget A outlines potential costs for the collection of only grain bags and twine. This is the least expensive option due to strong, revenue neutral/positive end markets. Budget B outlines the potential costs for the collection of grain bags, twine, and bale and silage film. Option B is more expensive due primarily to the current challenge with end markets and the lower value of the material.

Summary total: program options	3-year total	PRRD 50%	PRRD av. \$/yr
Budget A – Twine and Grain Bags	\$86,832	\$43,416	\$14,472
Budget B – Silage plastics addition	\$384,338	\$192,169	\$64,056

We have elaborated on collection methods, material collection rates, transportation and baling costs, end markets, and reporting recommendations below to provide further context to the enclosed budgets. Cleanfarms is seeking a 50% cost-sharing commitment to move forward with pilot projects in PRRD. Such a commitment will provide a good foundation to involve more farmers, collect more material, and find cost-efficiencies and economies of scale in program operations. Upon approval, we would anticipate a start date in early 2021. A successful program model will allow for eventual replication and implementation in other BC regions that express interest.

Reporting and Invoicing

It is recommended that short quarterly updates, corresponding with a proposed quarterly invoicing schedule, be provided so that both parties remain aware of program successes, challenges and costs. Reports would include the tonnage of materials collected and on-going costs estimates so that adjustments can be made. For example, it may become apparent that we are under or over budget due to lower or higher than anticipated collection volumes and adjustments to the collection site locations may be required, or that a targeted communication strategy may be needed to address material contamination issues. These are some examples of pivots we have seen at the outset of other pilot programs. The first year of any pilot program always provides important data for making adjustments.

Collection methods

Both budgets factor in collection methods that include collection bags and a grain bag roller as part of programming. Different material streams will have different collection methods. Twine, bale wrap and silage film will use collection bags, and grain bags will use the grain bag roller. To start, collection will take place at the 6 sites proposed by the committee. The methods proposed are the most well tested across our programs in Canada at the moment. These methods help with on-farm material management and better maintain material cleanliness for recycling markets.

Twine, bale wrap and silage plastic: Collection bags

- Cleanfarms will provide collection bags and communications material to participating collection sites
- Farmers will be able to obtain collection bags from participating sites free of charge
- Using the bags to keep plastics separate, the participating farmers will bring the separated plastic (bale wrap, twine, silage film) to the collection sites
- A contracted collection truck will collect the material when sites have accumulated sufficient material (no specialized handling equipment needed)
- The plastic will be baled and sent for recycling.

Grain Bags: Grain bag roller

- PRRD could purchase a grain bag roller, noted as \$10k in both budgets for year one (Cleanfarms would provide 50% supporting funds and communications material as per cost-sharing agreement)**
- The roller would be housed at a central location for farmers using grain bags to borrow/rent and roll their material
- Properly rolled material can be sent directly for recycling, which reduces program costs (no extra consolidation and baling required)

**If PRRD does not purchase the grain bag roller, we will look to find a contractor that can make one available. Note that this would add additional contractor costs. Grain bag rollers are essential to a grain bag collection program as they significantly reduce the burden on farmer participation, and make the material acceptable for recycling markets.

Material Collection Rates

Based on the waste characterization study commissioned for the region we have updated the collection rate expectations for materials. Typically, we want to phase up anticipated collection rates to remain within budget considerations. These rates can be adjusted throughout the pilot phase as desired and based on feedback data from the program.

Transportation and baling costs

Transportation costs in the proposed budgets are based on cost per tonne estimates as well as anticipated freight charges for transportation to end markets. The figures used in the budget currently are best estimates based on discussions with contractors and our experience with developing pilot projects in other western provinces. Cleanfarms is currently in discussion with two service providers to determine on-going cost estimates for PRRD. Based on the service provider decision, a material consolidation point will be established. Cleanfarms will manage the logistics and adjust toward efficiencies.

As mentioned, the pilot phase allows for testing and adjustments. This includes adjustments to working expectations with service providers and contractors so that we arrive at reasonable and efficient costs for working with ag materials and maintaining a program. Transportation and consolidation cost updates and changes will be provided in the proposed quarterly reports.

End Markets

Twine collected from the program will be sent to a facility for recycling in Minnesota.

There are three possible end markets for grain bag recycling, with one location in the US, and two in Alberta.

Currently one North American market (Quebec) is being tested for bale wrap. Until markets develop, bale wrap may need to be sent for energy recovery through incineration in Elie, Manitoba. It is a priority for Cleanfarms to transition from energy from waste incineration to recycling when markets (and relevant transportation costs) make recycling feasible.

Conclusion

In summary, two program options and corresponding budgets have been prepared for PRRD based on material estimates from the regional waste characterization study. The quantity of material available for recovery is significant enough to run collection programs for twine, grain bags and bale and silage film. The addition of bale and silage film adds a significant cost at this time, though the material has been emphasized as particularly problematic for farmers and landfills – it is anticipated that the costs to collect and manage bale and silage wrap will decrease over time as demand for recycled plastic increases and new markets for recycling these materials emerge. Cleanfarms has proposed a quarterly reporting and invoicing schedule that allows for changes to be made as new information becomes available. Cleanfarms will adapt to the programmatic desires of the committee.