2025 Climate Action Grant Application

https://www.kamloops.ca/form/kamloops-climate-action-grant

Project Title:

Anticipated Start Date:

Anticipated Completion Date:

Summarize Project Objectives, Deliverables, Activities, and How Success will be Measured

The objective of this project is to identify bacterial species found in Kamloops municipal food waste capable of degrading microplastics that have accumulated in the landfill. Our goal is to isolate and test the bacteria's capabilities to degrade microplastics polymers like polyethylene and polypropylene using extracellular enzymes that the bacteria produces. Microplastic contamination is a growing area of concern for ecosystems and human health. Microplastics have been found to disrupt the function and structure of an ecosystem and cause harm to the plants and animals that live there. In addition, microplastics have been associated with human health issues like increased inflammation, respiratory and heart disease as well as cancer.

Identify the CCAP Big Move(s) your project supports (check all that apply)

Big Move 5
Big Move 7
Big Move 8

This project supports CCAP Big Moves 5, 7 and 8. This project focuses on waste reduction through the new residential waste collection program. Municipal waste that is brought to composting facilities have a large amount of plastic contamination which can make the composting process very time consuming. This project aims to eliminate plastics contamination by using bacteria to break down the specific polymers that make up the different types of plastic. Removing plastic contaminants will also improve the quality of the compost and the soil health when that compost is put into agricultural use. The idea behind this project could be a potential investment in improving the composting facility in Kamloops and surrounding communities.

Project Partners/Community Support

- Grassland Organics will provide compost samples for the research and potentially space to set up and on-site trial (confirmed- none)

- TRU will provide the in-kind expertise, research space, tools and mentors for the project (confirmed- yes)

Financial Information:

Item	Value
Reagents for polymer identification	
DNA extraction kits, PCR agents and DNA sequencing fee	3000
Nutrient agar	35
Microplastic polymers	

Part 2: Other Contributions

Donation	Source	Value
Lab equipment and safety supplies	TRU	1000
Conference and presentation	TRU SU	1000

Total Project Value:

Total Grant Request:

If actual expenses exceed approved funding, how will you address the difference?

If actual expenses exceed approved funding, additional funding will be sought after through Thompson Rivers University science labs for additional laboratory research grants.

Exit Survey:

- Was all the money used?
- Spending breakdown
- Promotional material
- Photos