COLORADO STATE UNIVERSITY EXTENSION

CARCASS AND WOOD WASTE MANAGEMENT IN PARK COUNTY, COLORADO

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PROJECT INTRODUCTION

Park County, Colorado is a rural, high-elevation area facing dual waste management challenges: disposing of livestock and wildlife carcasses, and large volumes of beetle-killed wood.

Chronic Wasting Disease (CWD), affecting deer and elk, is endemic in the region. Existing state and federal regulatory frameworks are designed for large-scale operations and do not translate perfectly to a rural county needs.

This project reviews the scientific literature, regulatory guidance, and local stakeholder input to identify sustainable, cost-effective management strategies tailored to Park County's constraints.

Characteristic	Park County	Relevance to Waste Management Project
Land area	2,193.5 sq. mi.	Large geographic area increases transportation distances and favors decentralized or locally accessible management options.
Population	18,314 (2025 est.)	Small, dispersed population limits economies of scale for specialized waste infrastructure.
Population density	7.9 people/sq. mi.	Highly rural; distance between producers, communities, and disposal facilities is an important cost factor.
Average elevation	>9,000 ft.	High elevation affects climate, decomposition rates, growing conditions, and feasibility of technologies such as BSFL composting.
Elevation range	~7,000 to >14,000 ft.	Terrain and climate variation can affect site selection, transportation, and seasonal operations.
South Park	~900 sq. mi.; ~9,000 ft. average elevation	Central geographic region with extensive open rangeland and wildlife populations; relevant to carcass and agricultural waste management.
Population age 65+	25.9%	Relevant to community capacity, volunteer-based programs, and public health/resilience considerations.

Table 1. Park County, Colorado: Community and Physical Context

INTERNSHIP GOALS

The goal is to provide framework for both carcass and wood waste management.

Develop a technical report evaluating eight carcass and wood waste management methods through SWOT analysis and a Multi-Criteria Decision Analysis (MCDA) during Summer 2026.

Translate technical findings into a condensed REDI policy brief.

HOW DOES THIS APPLY TO YOUR EDUCATION

This internship gave me experience in extension outreach and policy-making, engaging directly with ranchers, county officials, and agency partners to help shape actionable recommendations.

This work is directly relevant to my future in environmental and resource economics, where research only creates value when it reaches the people who can act on it.

WHAT WE DID

Conducted a review of literatures, regulatory guidance on eight carcass and wood waste management methods (composting, alkaline hydrolysis, incineration, rendering, land burial, landfilling, black soldier fly larvae composting, and biochar)

Conducted FGD, and visited waste management sites and drafted report on cost compliance and regulatory framework for waste management

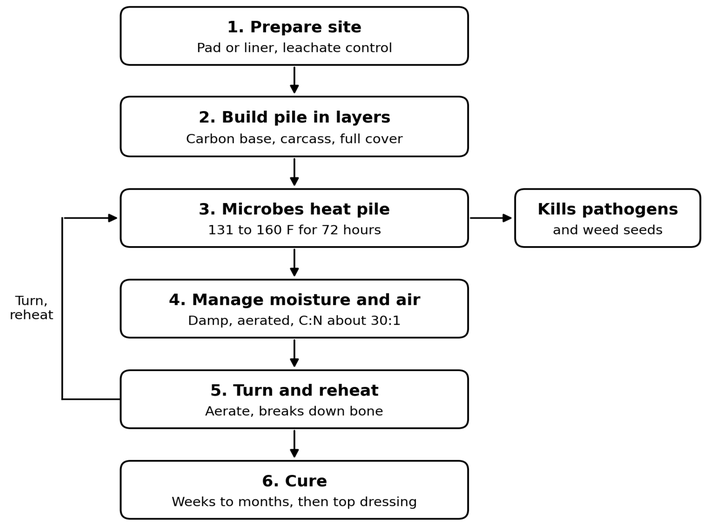
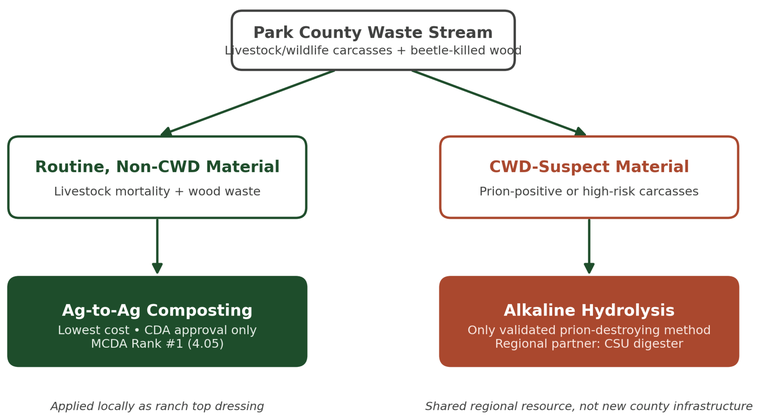


Figure 1.Two-tire waste management strategy for Park County



WHAT I LEARNED

No single disposal method performs well on every dimension that matters to a rural county; the right choice depends on cost, disease risk, and regulatory complexity.

Ag-to-ag composting is the most cost-effective and stakeholder-preferred method for routine, non-CWD carcasses and wood waste, requiring only Colorado Department of Agriculture registration.

Alkaline hydrolysis and incineration are the only methods proven to reliably destroy CWD prions, making a regional partnership, rather than new county infrastructure.

Effective stakeholder engagement, through the focus group and facility interviews, filled data gaps the literature alone could not resolve.

Table 1. Waste Management Methods by MCDA

Method	Weighted Score	Rank
Composting (ag-to-ag)	4.05	1
Biochar	2.85	2
Incineration	2.35	3

Top-ranked methods from the Multi-Criteria Decision Analysis, out of eight alternatives evaluated.

Composting ranked highest overall on cost, regulatory simplicity, and stakeholder preference.

Mobile incineration could be a potential alternative to high-cost alkaline hydrolysis and on-site incineration.

NEXT STEPS

Finalize and distribute a REDI report.

Explore the potential of regional partnership for the mobile incineration