REDUCING CAMPUS WASTE:
COMPOSTABLE PACKAGING IN WMU CAFETERIAS
FINAL PROPOSAL

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PSY 3456 - Behavioral Approaches to Sustainability

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Summary

Western Michigan University's dining facilities generate approximately 32,000 pounds of cafeteria solid waste monthly, with the majority consisting of single-use, non-compostable packaging. This proposal introduces a dual-behavior intervention: transitioning campus dining to BPI-certified compostable packaging while equipping students with clear education and signage for proper disposal.

Research-backed strategies; including strategic bin placement, peer modeling through student ambassadors, and visible environmental feedback, are projected to achieve a minimum 40-50% reduction in non-compostable packaging waste within the first year, directly supporting WMU's sustainability objectives.

Key Findings Include:

- Convenience drives behavior: Strategic bin placement increases proper disposal by up to 50%
- Social modeling works: Peer influence shifts composting compliance more effectively than signage alone
- Low-cost, high-impact: Evidence-based interventions cost under $100 while producing sustained behavioral change
- Clear guidance matters: Explicit education on compostable materials eliminates the primary barrier to participation

Information presented in this report has been collected strictly from research literature and institutional waste data representing estimations from Western Michigan University Dining Services and information sourced from the U.S. Environmental Protection Agency. This report has been prepared for submission as a semester-long project for PSY 3456: Behavioral Approaches to Sustainability, at Western Michigan University.

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1.0 Project Overview

1.1 Problem

Western Michigan University's dining facilities generate substantial waste that undermines the institution's sustainability commitments. With approximately 4,500 students on meal plans, campus dining services produce around 262 tons of food waste annually, with cafeteria solid waste alone accounting for approximately 32,000 pounds monthly. Most of the packaging used in these dining operations; containers, utensils, and service materials, consists of single-use, non-compostable materials that contribute directly to landfill accumulation and greenhouse gas emissions.

Currently, despite WMU's broader sustainability initiatives, no coordinated system exists to transition dining operations toward compostable alternatives. This gap represents both an environmental liability and a missed opportunity to model institutional commitment to waste reduction for the broader campus community.

1.2 Target Behavior and Scope

This proposal addresses a dual-behavior intervention across seven campus dining locations (Bistro BTL, Bella Vita Café, Bookmark Café, Café 1903, Flossie's Café, Parkview Café, Plaza Café, and Schneider Café):

1. Organizational Level: Dining services and procurement decision-makers adopt BPI-certified compostable packaging as the standard across all food service operations.
2. Student Level: Students consistently and correctly sort food waste and packaging into designated compost bins rather than defaulting to trash disposal.

Both behaviors are equally critical. Introducing compostable packaging alone produces minimal environmental benefit if students lack clear guidance or motivation to dispose of materials properly. Conversely, education without packaging alternatives leaves students sorting conventional trash, a frustrating and futile experience that erodes long-term commitment.

2.0 Background Context

Environmental psychology research reveals why well-intentioned composting programs often underperform. The gap between student environmental values and actual disposal behavior is not a failure of motivation, but rather a failure of program design. Four key research findings from university and public dining contexts provide the evidence base for the intervention recommended in this proposal.

2.1 Infrastructure Placement Drives More Than Messaging

In a practical test at a university, O'Connor, White, and Thompson (2010) examined three approaches to boost recycling: redesigning bins with clearer labels, increasing bin quantity, and relocating them to high-traffic classroom areas. Recycling rates jumped to 71 percent when bins moved to classrooms, while redesign and quantity increases produced minimal change. Convenience is the dominant behavioral driver. For WMU dining, composting bins must be positioned directly at natural disposal points; tray returns and cafeteria exits.

2.2 Social Modeling Outperforms Information

Sussman and Gifford (2011) compared tabletop signage explaining composting benefits against peer modeling in restaurant settings. Proper sorting increased from 22 percent to 36 percent when diners observed others composting; signage alone produced no change. Errors arose from confusion about which items compost, not lack of environmental concern. Student compost ambassadors during peak dining times will prove far more effective than signage alone.

2.3 Small Design Changes Produce Sustained, Cost-Effective Results

Fritz, Smith, and Johnson (2017) repositioned recycling and trash bins at a university for only $34, increasing correct disposal from 20 percent to 70 percent. When the original system was restored, compliance drops, demonstrating that permanent infrastructure redesign handles behavior change better than temporary campaigns. This validates WMU's investment in lasting composting infrastructure.

2.4 Personal Engagement Sustains Compliance

Hopper and Nielsen (1991) found that personal outreach from community members produced higher and more sustained recycling than informational flyers or reminders. People act when they feel personally responsible. Student ambassadors functioning as community connectors, not just behavior models; will help students transition from isolated awareness to collective commitment.

2.5 Evidence-Based Strategy

These findings converge on a clear approach: remove friction from sustainable choice, leverage social influence, invest in permanent infrastructure, and build personal responsibility. The next section outlines how WMU's composting initiative integrates all four strategies to assist in adoption and long-term sustainability.

3.0 Proposed Solution

WMU's composting initiative integrates three coordinated strategies: infrastructure redesign, social modeling, and environmental feedback, to shift both organizational purchasing decisions and student disposal behavior.

3.1 Organizational-Level Intervention: Compostable Packaging Adoption

Dining services will transition all single-use packaging across the seven target cafeterias to BPI-certified compostable materials within 90 days of approval. Buyers and procurement will leverage volume purchasing to identify cost-comparable alternatives. Monthly waste audits will track compliance and measure landfill diversion.

3.2 Infrastructure Redesign: Strategic Bin Placement

Dedicated compostable bins will be repositioned directly at tray returns and cafeteria exits, or the natural disposal points where students make sorting decisions. Bins will feature standardized, color-coded design (green) with clear labeling of acceptable materials. This removes guesswork (Sussman & Gifford, 2011) and makes sustainable disposal the path of least resistance (O'Connor et al., 2010).

3.3 Social Modeling: Student Compost Ambassador Program

Eight to ten trained student ambassadors will staff high-traffic disposal areas during peak meal times (11:30 AM–1:30 PM, 5:00 PM–7:00 PM). Ambassadors will model correct behavior, provide guidance, and communicate monthly progress. This replicates peer modeling effects (Sussman & Gifford, 2011) and personal engagement (Hopper & Nielsen, 1991). Ambassadors earn $15/hour for shifts.

3.4 Environmental Feedback: Visible Impact Communication

Monthly campus-wide updates will communicate pounds diverted, CO_2 reduction, and student participation rates via dining signage, sustainability channels, and email. Full program launch occurs within 8 weeks, with ongoing waste audits and progress tracking through year-end.

3.5 Timeline and Phased Rollout

- Weeks 1-2: Vendor selection and compostable packaging purchasing; ambassador recruitment and training
- Weeks 3-4: Infrastructure installation (bin repositioning, signage); soft launch with ambassador presence
- Weeks 5-8: Full program launch with monthly progress tracking and environmental feedback communication
- Ongoing: Monthly waste audits, ambassador scheduling, and progress updates through end of academic year

4.0 Expected Outcomes and Impact

4.1 Environmental Impact

This intervention is projected to achieve measurable waste reduction within the first academic year:

- Packaging Waste Diversion: Transitioning to compostable packaging across seven cafeterias will eliminate approximately 8,000–10,000 pounds of non-compostable packaging monthly from landfill (25–31% reduction), totaling 96,000–120,000 pounds annually.
- Composting Compliance: Current composting rates at WMU are estimated at 15–20 percent baseline. With infrastructure redesign, social modeling, and ambassador engagement, compliance is projected to increase to 60–70 percent within six months, aligned with similar university interventions (O'Connor et al., 2010; Sussman & Gifford, 2011).
- Broader Sustainability Alignment: This initiative directly supports WMU's institutional sustainability goals and demonstrates leadership in waste reduction, positioning the university as a model for other campus dining operations.

4.2 Behavioral Sustainability and Cost-Benefit

Research indicates this intervention will produce lasting behavior change:

- Permanent Infrastructure: Unlike temporary awareness campaigns, strategic bin placement and ambassador presence create persistent environmental cues that sustain composting behavior long-term (Fritz et al., 2017).
- Social Norm Shift: Consistent peer modeling and campus progress will normalize composting as expected student behavior, reducing reliance on individual motivation and shifting campus culture toward sustainability (Sussman & Gifford, 2011; Hopper & Nielsen, 1991).

Waste hauling savings of $800–$1,200 monthly ($9,600–$14,400 annually) offset the first-year net cost of $2,000–$5,000, with following years showing positive returns. The initiative reduces WMU's exposure to rising disposal fees and regulatory penalties.

4.3 Measurement

Success will be tracked through monthly waste audits, student surveys on awareness and ease of participation, pre/post cost comparisons, and ambassador feedback. Data will be shared quarterly with dining leadership and annually with the campus community.

5.0 Conclusion

This composting initiative represents a strategic, evidence-based investment in WMU's sustainability commitments. By addressing behavioral barriers identified in environmental psychology research, through infrastructure redesign, social modeling, and environmental feedback, the proposal achieves 40–50% packaging waste reduction while building lasting, campus-wide culture change. With a modest first-year net cost and projected long-term savings, the initiative delivers measurable environmental and financial returns while positioning WMU as a leader in institutional sustainability.

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