

Recycling at University of Idaho Events:
An Investigation of Gameday Recycling and Jazz Fest

Alexandra Rheault

Darin Saul, Associate Director-Office of Community Partnerships

Adria Mead, Student Director-UI Sustainability Center

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Abstract

The University of Idaho has a minimal recycling program in place, but there is little to no recycling efforts at campus events. The UI recycling program includes recycling centers in the UI Commons Food Court, along walkways on campus, and bins in a few of the main buildings. Events such as sporting events and concerts produce large amounts of waste and by expanding the recycling program to include these events, UI could save on landfill hauling fees and the campus could increase its sustainability efforts.

The ultimate goal of this study is to use Gameday Recycling, a program developed by the University of Idaho Sustainability Center (UISC) in 2009, as a model for recycling at all UI campus events. The program involves UISC employees and volunteers collecting and sorting recycling from patrons attending football tailgating in the Kibbie Dome parking lot. Gameday Recycling is done at all of the UI home football games and the volunteers collect aluminum, glass, plastic, and mixed paper. Two waste characterizations were done in fall 2012 to calculate what percentage of recyclables is still being brought to the landfill. Another waste characterization was done at UI Jazz Fest in spring 2013 in order to compare waste produced at differing events. Waste streams differ at each event so this waste sort was to compare two unique types of UI events, a concert and a sporting event.

The data from the Gameday Recycling waste characterizations showed that 30% of recyclables are still being brought to the landfill. The Jazz Fest characterization showed that 12.8% of recyclable material was deposited in a landfill. In order to capture more recycling, the amount of space available for recycling needs to be increased and the amount of space for waste collection needs to be decreased. Once a concrete system for this program is in place, it can be applied to all other campus events.

Introduction

In 2010, Americans generated 250 million tons of waste and only recycled or composted 85 million tons of material. This results in a dismal 34.1% national recycling rate. The solid waste production is equivalent to 4.43 pounds per person, per day (Municipal 2011). These numbers deserve observation, and improvement should be made upon all recycling efforts in order to decrease the amount of waste produced. Starting in 1990, college universities all over the world began to sign the Talloires Declaration that was created by the organization, Universities for a Sustainable Future. The goal of this document is to hold universities accountable for increasing their sustainable practices and environmental literacy. One of the action plans in the Talloires Declaration is to “Practice Institutional Ecology.” This includes implementing resource conservation, recycling, waste reduction, and environmentally sound operations. One of the 400 universities that have signed this declaration is the University of Idaho (Talloires 2010).

University of Idaho (UI) campus events account for a large amount of waste created on campus but there is no current recycling program for events. The collection of recyclable materials on the UI campus is decentralized. The responsibility is split up between the Facilities department, Residence Halls, Auxiliary Services, UISC and smaller student groups. There are over 300 recycling stations on campus that are maintained by RSSW (Recycling, Surplus, and Solid Waste). This department collects aluminum and plastic from outdoor bins. Recycling inside of Bob’s Dining Hall, the UI Commons, and Student Union Building is the responsibility of the Auxiliary Services office and Campus Dining. Although RSSW conducts over 500 collections of recyclables weekly, and has a collection rate of 12% annually, collecting recycling from campus events does not fall under their duties (University of Idaho, 2009). Reducing the

quantity of wastes that have to be handled, transported and disposed in a landfill could lead to two main results: a reduction of the institutional expenditure dedicated to waste management and an increase of the useful life of the sanitary landfill. A reduction in the amount of waste produced by UI would also have environmental and social benefits (Armijo de Vega S21).

The University of Idaho also has a composting effort in place with the UI Sustainability Center's Food and Far program. This program takes organic material that is disposed of in the UI Commons Food Court and Bob's Dining Hall and deposits it at the UI Dairy. At the dairy, it is processed and turned into bedding for the cows. This program was created in 2008 and is continually being improved. The success of this program shows that composting could be used to decrease waste across the UI campus.

Recycling is an easy and tangible practice for people who want to live sustainably. Everyone produces waste and by recycling, one can decrease the amount of waste they personally contribute to landfills. Recycling has become an integrated part of some Americans' lives. In 1980, only one curbside recycling program existed in the United States and by 2005, over nine thousand of these programs were in place. The benefits of recycling include saving energy, preventing greenhouse gas emissions, conserving natural resources, creating jobs, and providing materials for industry (Suzuki, 2008). Recycling in one's home can be simple but developing a recycling program for a larger institution comes with complications. Universities and community colleges are highly regarded by surrounding communities so they should be setting an example when it comes to environmentally sustainable actions.

Objectives

The three main objectives of this study are:

1. Identify events that produce waste and at which recycling and what commonly used products can be recycled or composted.
2. Conduct waste characterizations to find areas of waste management that can be improved.
3. Provide event coordinators with suggestions on how to decrease waste produced at event by increasing recycling and/or composting.

Recycling and composting are both effective ways to reduce the amount of waste produced on a university campus. Recycling reduces the need for landfills and incineration, prevents pollution caused by the manufacturing of products from virgin materials, saves energy, decreases emissions of greenhouse gases (GHG) that contribute to climate change, and helps sustain the environment for future generations (Municipal 2010). In order for recycling to be profitable, there must be a demand for products made out of recycled materials.

Composting can divert organic material from the landfill, reduce the need for chemical fertilizers, help avoid methane and leachate formulation in landfills, and provide cost savings (Composting 2013). Recycling and composting must be closed “cycle” systems. The first step is to collect and process the materials. Then there is manufacturing of recycled products and compost. In order to complete the cycle, consumers must purchase recycled products and compost (Recycling 2012). For these two processes to be considered profitable there must be a demand for products made out of recycled and composted materials. In order for a university to implement an effective recycling and composting program, multiple evaluations of the waste stream need to occur.

The purpose of this study is to investigate the Gameday Recycling program and use it as a model to implement a program for recycling at all UI events. A waste characterization of UI Jazz Fest was also completed in order to compare how waste streams differ at varied events. The results of these waste characterizations will be used to assess the waste stream at these two events. Once suggestions are made to the coordinators of these events, it will be their responsibility to reduce the waste produced at each individual event by increasing recycling and composting.

Methods

There are many approaches to evaluating the characteristics of a university or campus waste stream including: reviewing waste management records, visual waste assessments, interviewing waste management staff and extrapolating data from other institutions. Although all this information is important to understand the system as a whole, the most effective method is to conduct an experimental waste characterization of the waste stream. Waste characterization studies at colleges and universities identify campus specific and regionally relevant opportunities for waste reduction and recycling. (Smyth 1007). There are three research questions that can be answered by conducting waste characterizations:

1. What is the amount and composition of waste generated within key campus operational areas of UI?
2. Which campus operational areas and material types should be targeted for waste reduction and enhanced diversion (recycling and composting) efforts?
3. What technically, financially, and administratively feasible waste management improvements and strategies should be adopted to advance the sustainability of the current system?

Research should begin with an evaluation of internal policies and procedures related to campus sustainability and waste management, external documents including government regulations and guidelines and various municipal and campus waste composition studies (Smyth 1008). The Facilities Department controls the main UI waste stream and so they were interviewed about their policies and procedures. Research was also conducted on other efforts at UI to collect data on waste produced by the university.

A waste characterization was done for the entire UI campus in 2009 by Tom Nagawiecki and UISC. This study found that the waste in the UI dumpsters is comprised of more recyclables and compostable material than landfill waste. Only 37% of the material they sorted through was actually non-recyclable and non-compostable. Nagawiecki suggested that increased communication and education of students, faculty and staff could increase the amount of recycling captured from the waste stream. His results also showed that there is a need for more, or better placed recycling stations. This study also stated “analyzing the relationship between the presence and abundance of recycling facilities and the prevalence of recyclable materials found in dumpsters will provide useful data as UI reconsiders its recycling program” (Nagawiecki 2009).

Three universities that have prominent recycling programs are University of Tennessee, Georgia Tech and Francis Marion University. University of Tennessee has a recycling rate of 15% at their football stadium and they save their university \$3,500 per season. They have found that they can also use their recycling bins for other events, as well as tailgating and putting bins near the entrance gates has been very successful (University of Tennessee). The Green Tailgating Guide from Georgia Tech could be a possible model for literature about UI event recycling. The guide gives statistics that fans can relate to such as amount of money saved and amount of trash

reduced. It gives information about how people need to buy recycled materials to complete the cycle. UI could publish similar literature to educate tailgating patrons about our recycling procedures (Green Tailgating Guide 2010). Students at Francis Marion University have the option to enroll in a course dedicated to learning about recycling. It was used to access the recycling situation on their campus and the resulting data of the class showed that students would significantly reduce their waste stream when given recycling bins and education about recycling (Pike 2003). These publications show why it is important for universities to be at the forefront of the sustainability movement in order to reduce their ecological footprint, save money, decrease the waste stream, and serve as a model for other universities and institutions.

The main method of primary data collection was developing a waste characterization that was specialized for Gameday Recycling. Two waste characterizations occurred in fall 2012 (See Figure 1). The first was done after the October 6th home game. This game was during Homecoming weekend and so the attendance at tailgating was very high. From this study, it was found that we are collecting 8% of the waste stream as recyclables. The total amount of recycling we could be capturing is 38.6% of the waste stream. If all of this recycling was captured, we could reduce the waste stream by 23 cubic yards, or the equivalent to 12 small dumpsters of waste. The second waste characterization was done after the November 17th game. This game was during the weekend before Fall Recess and because attendance was so low, the amount of waste was inconclusive (Rheault 2012).

A third waste characterization was conducted during UI Jazz Fest in February 2013 (See Figure 2). Over two days of events, UISC volunteers diverted 16 pounds of plastic and 2 pounds of aluminum from the waste stream. 14 pounds of compost was also collected. Compost was not collected at Gameday Recycling but the coordinators of Jazz Fest wanted to see if composting

was a possibility at their event. Composting would be an important aspect of reducing the waste at Jazz Fest because the majority of the waste stream is composed of food. From the waste characterization, it was found that only 25.4% of the waste thrown away was actually landfill trash. 61.8% of the Jazz Fest waste stream was made of compostable material. 7.3% of the waste was recyclable plastic and 5.5% was recyclable aluminum for a total of 12.8% recyclable material (Rheault 2013).

Figure 1:

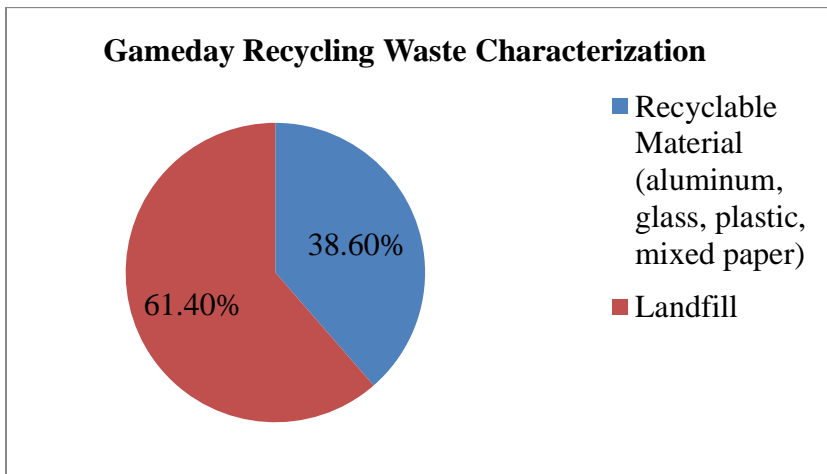
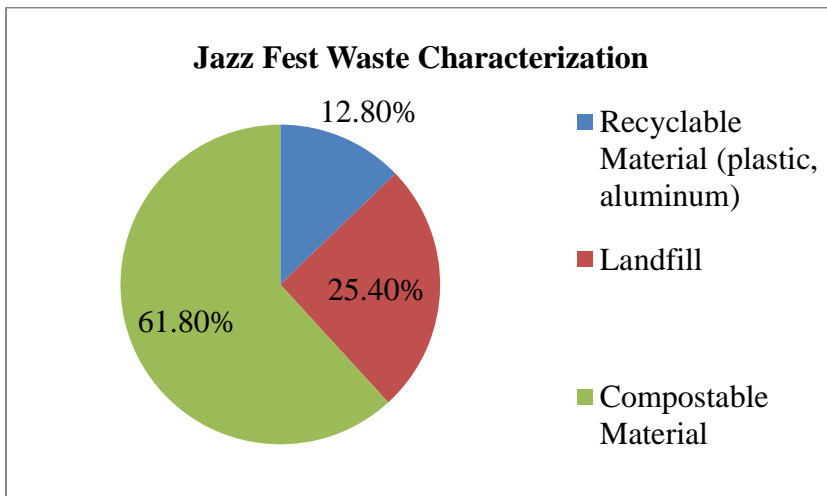


Figure 2:



Results

Using Football Tailgating and Jazz Fest as a sample of typical UI events, it seems very probable that there is room for improvement with recycling and composting at all UI events. This study has created an accurate representation of the waste production at University of Idaho events and Figure 1 and Figure 2 illustrate the room for improvement in recycling and composting. Since universities serve as an example for their surrounding communities and the entire nation, it is important that UI is in the lead when it comes to environmental practices. It is also important that UI be a leader because they have chosen to sign the Tallories agreement and should hold themselves accountable to such agreements.

Because colleges and universities have the moral and ethical obligation to act responsibly toward the environment, they would be expected to be leaders in the movement for environmental protection. Specifically it would be expected that universities would drive the efforts towards responsible waste management, but, above all, it would set an example to the students and the community (Armijo de Vega S22). More attention must be paid to solid waste characterization studies and solid waste management (SWM) on campuses since higher education institutions are a special case of study because not much has been reported on this issue. It is also important because a community surrounding a university is likely to adapt their recycling and composting practices if they are effective (Armijo de Vega S25).

Until the funding and support can be found to put permanent recycling and composting bins in every building on the UI campus, removable bins should be purchased. Although UISC would like to see recycling across campus, they have a very limited budget and limited time among their employees to manage the program. Seven recycling bins were purchased for use at Gameday Recycling but with 20 dumpsters provided for trash by Facilities; these recycling bins

are not capturing all of the recycling potential. The total dumpster space is 59.83 cubic yards, compared to only 9.98 cubic yards available for recycling (Rheault 2012).

The outcome of this research is that the more space available for recycling, the more recycling will be captured. It is recommended that UI event coordinators work to provide equal space for garbage and recycling. They should be available to patrons on a 1:1 ratio. The bins should be next to each other and recycling advertised well. For best results, the amount of recycling space should equal the amount of waste space available. Recycling at events should be adapted into the responsibilities of the Facilities office. Waste characterizations should be done for each individual event on the UI campus, since each event creates a unique waste stream. This is the best way to decide what aspect of the waste stream could most easily be decreased. As each event is accessed, it can be determined if recycling, composting, or both should be increased.

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