

NID Case Study – Farm to Fertile Team and Project Overview

Individual responsibilities

Brooke Garcher

- Having meetings with Sue Vang, Alain Javier, and Remedios (custodial)
- Send emails to stakeholders and powerful connections regarding our project
- Brainstorm ideas for waste management and project design to make an idea into a tangible project
- Conduct weekly meetings regarding tasks to complete with team members

Stephanie Tsai

- Brainstorming ideas for waste education
- Compiling data and surveys
- Contacting housing managers

Sabena Lodhi

- Education implementation
- Education outreach
- Education components
- Communication skills for pitch fest presentation

Introduction

1. Problem Statement:

Landfills contain 72 billion pounds of organic waste that can be diverted and utilized for compost, yet we lack the education and infrastructure to divert it and so it remains in the landfill forever. UC Davis is the most sustainable university in the world, yet it lacks compost bins in most areas of campus. Education regarding waste management is not mainstream and is therefore not effective.

2. Solution Statement:

We must expand the presence of compost bins on the UC Davis campus and offer more visible waste sorting and compost education for the typical student.

3. Project Design:

We wanted to bring our solution to the largest possible population, so we decided to take a passive approach: compost bins available in high traffic locations. Pairing the compost

bins with waste education bridged passive and active participation with composting. We chose the tangible approach to create A-Frame signs placed in high traffic areas to have compost and waste education in order to reach students, faculty, and visitors. Our innovation component is to create a mobile application specific to UC Davis that will provide information for what items are compostable, recyclable, or trash; this will solve the contamination problem looming on campus. Our project requires the collaboration of custodial services to incorporate compost in their daily waste pickup and finding resources and grants to seek funding for compostable trash liners. We had meetings with Sue Vang (Waste Reduction and Recycling Manager of Environmental Stewardship and Sustainability), Alain Javier (Operations Manager of Shields Library), and Remedios Sarabia (Operations Manager of Custodial Services) for more information on implementing the project. We decided to start this project at the building scale by implementing compost bins at Shields Library before moving to other buildings on campus.

Background

1. How do you define/measure success?

We define success by having a higher campus diversion rate and a lower contamination rate in the landfill. We also would define success by having upwards of 1,000 active members using our mobile application that will be developed over the coming year.

2. Relevant facts:

- The U.S. diversion rate according to the EPA is 34%, meaning 66% of all waste in the U.S. goes into the landfill rather than recycling or compost.
- Feed America and ReFED (2017) states “Of the waste in the landfill bin, 73% can be composted”
- In the Winter 2017 Coffee House Waste Audit, we learned that off the waste in recycling bin, 40% can be composted. 78% of the waste in the landfill bin could have been composted as well. Compostable containers don’t ‘look’ like compost anymore due to industrial processes involved for making highly mechanized one time use containers that are also compostable.
- Broadly speaking: 40% of total University landfill stream can be composted (2327 tons)
 - 21% of the volume in the landfill is food waste
 - This is 72 billion pounds of food wasted per year
- Only items universally known as compost are banana peels and eggshells

3. Important issues:

- Education- How to incentivize proper waste sorting/composting; how do we make composting knowledge easily accessible and easy to understand; how to introduce composting habits in people who have never heard about composting before

- Contamination in the compost bins- how to guarantee 0% contamination rates OR sort out waste so that it can be processed at minimal costs
- How to lower cost of custodial labor/trash bins/bio-bags
- What do we need to consider to best utilize locations of compost bins

4. Your story: Achieving zero waste as a campus is very important to our team, so we wanted to get others as involved as ourselves. We wanted to find a solution that would increase the campus diversion rate and bring more awareness to others on campus. We've experienced many ups and downs for finding a project that stuck from adding a compost education lesson to incoming orientation, having trouble meeting the right people to help us with our projects, student aptitude waste surveys, and so on. We knew a few things at the end of this process: improving the waste management at UC Davis should happen now and people must be aware of where their waste goes to curb their behaviors towards a more sustainable future. We have the passion to make this project work for the campus and make a positive impact for UC Davis through their waste management and education.

Possible Solutions:

1. Your path: what did you consider while approaching this problem?
 - a. We wanted to find a problem that would reach the largest number of people while requiring the least effort to participate in our project. We knew that education is vital for the success of expanding compost and proper waste sorting. We know that there are limited compost bins available on campus resulting in contamination of compostable waste in the landfill bins.
2. Why did you reject alternative solutions/what setbacks did you face (eliminate redundancies for future groups)
 - a. Wash stations for dirty dishes/ Tupperware: [discontinued] Not part of the scope of our project because there are too few resources to utilize so far. This would require complete reset of plumbing and maintenance systems.
 - b. Orientation presentation [rejected by orientation team]: Not approved due to time constraints that did not allow for a compost presentation. They allowed for flyers, but it costs more than the potential benefits. We plan to try again next year with a more concise request that will promote the quickness of the presentation and the benefits.
 - c. A-frames [Delayed]: We need to implement the expansion of compost before setting up increased signage.
3. Constraints of the solution-searching process
 - a. Money- Compost bins require a large initial investment into materials that are needed to jumpstart expansion of composting activities. There is currently a limited supply of funding even though we need money for both physical bins and

the educational components.

- b. Time- It takes a significant amount of time to research and compile data on composting in order to best serve the student population.
- c. Other resources- The connections we have made with other professionals on campus have been our greatest resource for making our project legitimate.
- d. Implementation- Week 10 and Finals Week for Spring 2017, we will be conducting a waste audit and compost bin implementation at shields library in the most high traffic locations (24 hour room, reading room, basement, and entrance). We will be using our funding from the 2016-2017 school year and the library will cover the overflow costs (around \$50). During this period, we will be collecting data to determine if access to compost bins will decrease the contamination rate in the landfill and recycling bin. We will also have informational signage above waste bins to guide the students' behavior towards waste. We will eventually add signage with fun facts about composting and real facts about the US diversion rate and the landfills. It will add immediacy to the problem for those on campus to increase action for making compost bins more widespread.