

ANALYZING CAL POLY'S WASTE STREAM: MOVING TOWARDS ZERO WASTE

TABLE OF CONTENTS

INTRODUCTION	3
<i>Purpose:</i>	3
<i>Description of project:</i>	3
STEPS COMPLETED	3
<i>Brainstorming</i>	3
<i>Collaboration</i>	3
<i>Inventory</i>	4
<i>Prezi</i>	4
<i>Presentation</i>	5
MOVING FORWARD	5
<i>Challenges:</i>	5
<i>Opportunities:</i>	5
<i>Passing the baton:</i>	5
<i>Contacts & Resources</i>	6
SOURCES	6
APPENDIX A: INVENTORY	7

INTRODUCTION

Purpose:

The purpose of this project is to promote and aid the development of a more sustainable and waste aware campus culture. This project focused on developing educational and informative materials that will guide students, staff, and faculty towards proper waste disposal, waste minimization, and overall sustainability.

Description of project:

The goal of this project is to aid in the attainment Cal Poly's waste diversion goal by creating a unique educational program, including a user-friendly interactive interface and life-cycle posters that illustrate various elements of the waste stream.

After delving further into the various waste streams here on campus and the disposal routes available within the greater San Luis Obispo, CA area our group developed an overall comprehension of the complexity of the waste issue here on campus. Lack of education plays a key role in Cal Poly's low waste diversion rates, therefore increasing education became the main goal of this project. This project aimed to develop an up-to-date inventory of campus dining waste products and to create educational structure to illustrate the inventory composition and raise awareness of Cal Poly's waste stream.

STEPS COMPLETED

Brainstorming

Before we chose to analyze the waste stream at Cal Poly we were exposed to a number of good ideas from previous classes. We were inspired from a project called Scrap-i. Scrap-i was a wooden sorting device that was placed above trash can in architecture studios. The idea was for people to put recyclable items in the Scrap-i rather than throw them away. This led us to our first idea which was to create a sort of recycled materials library for architecture students. Basically building on Scrap-i to make a dedicated library for materials that architecture students could either pay a small fee or use for free. However, we thought it may be cool to have a project that extended beyond just one major. We decided that a recycled materials library for multiple majors or colleges was too much work for our time frame. The idea then morphed into thinking about how all of these materials that architecture students use came to be at Cal Poly, what they are used for, and how they are disposed of. This was the beginning of analyzing a waste stream, just not the waste stream of Campus Dining. After seeing the compost, recycle and trash bins with labels for what goes into each bin at different food places on campus we decided to analyze the waste stream of campus dining at Cal Poly. We first thought about making detailed posters for different restaurants on campus with each food waste item and which receptacle it should be placed in. It was only after talking with our professors that our final idea of just compiling all of our data into an inventory came about.

Collaboration

Collaborating with the Cal Poly Zero Waste Club, we analyzed the possible waste stream future for Cal Poly. In presenting our ideas and our concerns to the Club President, we discovered many new routes for our current and future waste stream. For instance, our first idea of pursuing the campus' shift to using compost-friendly food and drink receptacles, proved to be ineffective due to the lack of composting infrastructure in San Luis Obispo County.

In fact, this misunderstanding of what is and what is not compostable in San Luis Obispo County leads directly to another waste stream issue: compost contamination. This discovery made us rethink our approach from solving the waste stream problem, to focusing on collecting and conveying all the moving parts of the problem, lit(t)erally and figuratively. Another conclusion we came to involved the actual presentation and delivery of our data. The club in the past had issues with gaining permission to post up displays in a timely matter due to the 'red tape' involved in contacting campus facilities. Our focuses shifted from physical posters and signs to digital interactive media that could be used as a resource for the administration and students in deciding Cal Poly's waste stream future.

Inventory

In order to understand the waste stream we needed to have a complete inventory of all waste products that were present at Cal Poly dining options. We set out to document each individual item that was used at each establishment whether it was a napkin, sugar packet or utensils. We split up the dining options and went to take pictures of every item used to consume or package food. We compiled this information into one inventory displaying the dining option, every item, and which receptacle each item should go into. The inventory was used to produce our Prezi presentation. The inventory is located in Appendix A.

Prezi

The purpose of developing the Prezi interface, is to create an interactive and easy to use tool for locating and tracing all waste products per campus location. In the future, if Cal Poly decides to streamline its food and drink receptacles to uniform products across campus, this tool could be used to assess the current products and their impacts on the campus' waste stream. Additionally, students could use this as an educational resource now for how to properly dispose of waste and manage their consumption habits.

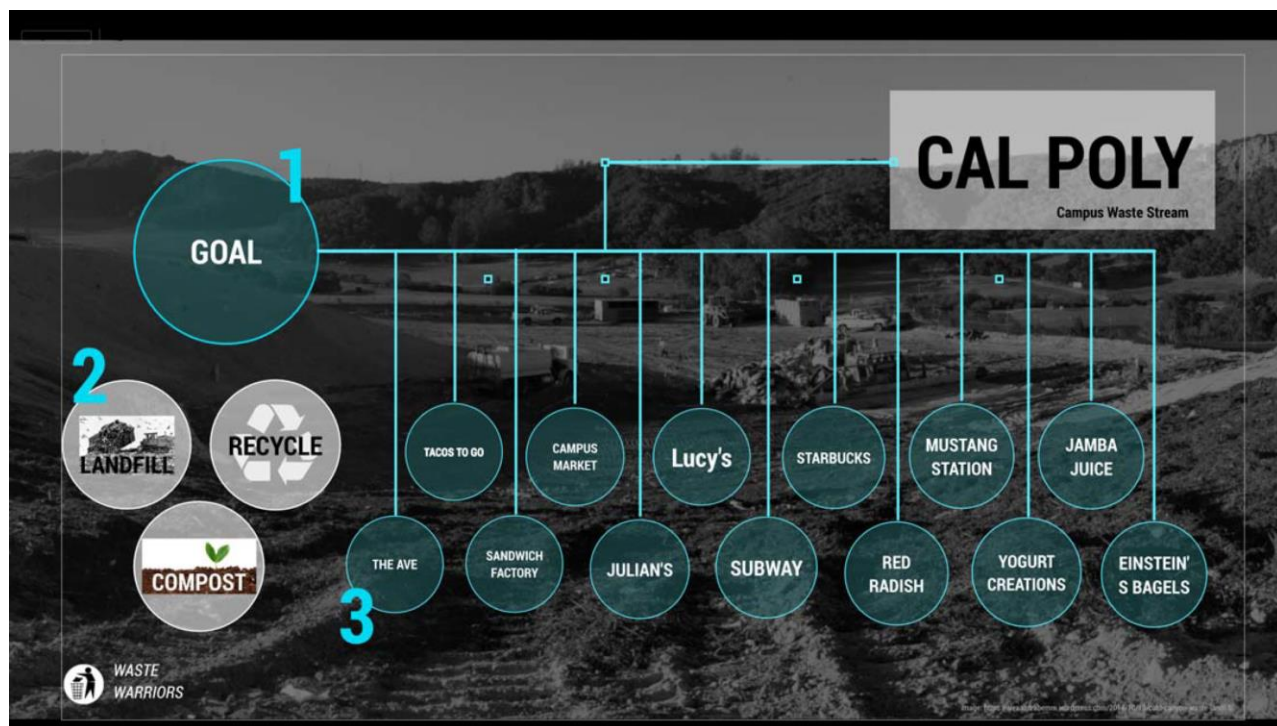


Figure 1: Snapshot of Prezi Interface

Presentation

Our final presentation of the project was June 7, 2017 with both professors and various members of the Zero Waste Club. We went over our process and path towards our final project and quick run-through of how everything works. After the presentation we had a long discussion of the project of all the things and possible ideas for helping the project go on to the next level and get into the hands of Cal Poly. We also discussed the future of the Cal Poly waste stream and the obstacles they still face in going towards zero waste. Finally, we had our inventory and Prezi verified by the president of the Zero Waste Club, Amara Cairns, and other members of the club to check for any errors or inconsistencies in the data we gathered. The verification from the Zero Waste Club members actually made us realize that even more products go to the landfill than we previously thought. Overall, we made sure that this project would get to the Zero Waste Club so they can use it further as a tool for the clubs and campus's goals. The professors also made sure that we set up an easy way to hand off the project possibly to future EDES 408 students since all of us are graduating at the end of this quarter. There was a very positive reaction to the problem and everyone has hopes that it can be utilized as a tool for more ambitious goals for Cal Poly in the future.

MOVING FORWARD

Challenges:

We faced some challenges in this project simply because of the scope and complexity of the problem at hand. After we had finished our research we were honestly somewhat overwhelmed and lost track. We were especially frustrated at the fact that we were not able to actually “solve” the problems. Simply knowing that Cal Poly and the San Luis Obispo area don't have the infrastructure to compost items that are not food (compostable papers and plastics) would essentially hinder the university's ambitions to zero waste. It was difficult for all of us to accept this but we shifted our project towards a more open ended solution rather than a definitive answer. Another challenge was actually knowing where items actually go. This is especially an issue when figuring out where slightly soiled products go. Everyone's intuition is different especially since we all come from different cities which all have different standards. It becomes confusing to know wherever a pizza box goes in the recycling, compost, or even landfill. Finally, we actually had a small issue with the Cal Poly dining when one of our group member was taking pictures of items for the inventory. They were directed to get permission from the corporation to continue on with the project. We all carried on with the project anyway despite the “warning” we received from the corporation.

Opportunities:

In the future, other EDES 408 groups could work to update and publicize the Prezi for Cal Poly students' easy access. Even further, students could use this inventory and Prezi to make the case for the campus switching to more uniform and environmentally friendly food and drink receptacles. Consulting Campus Dining and Sustainability coordinators and working with the Zero Waste Club could lead to the reduction of Cal Poly's consumption and landfill contribution. Best case scenario, if the opportunity presents itself, this tool could also be used to support the push for improving composting infrastructure for all of San Luis Obispo County.

Passing the baton:

This project was developed to aid waste stream education on Cal Poly's Campus. Throughout the scope of the quarter we developed educational tools such as an updated inventory, an interactive interface, and life-cycle

posters. However, this project has the potential to be carried further and the information compiled this quarter to be developed into a campus wide program.

We have provided both the zero-waste club and Jonathan Reich with our materials, in the hopes that either zero waste club or future EDES 408 groups will continue to develop and implement this project. Future goals for other legs of this project include:

- Accessibility to the prez interface via Cal Poly's website, the Cal Poly app, and the sustainability website.
- Routine updating of the inventory list by campus-dining managers.
- Utilizing interface to promote waste stream reduction and evaluate alternative materials.

Contacts & Resources

Kennedy Whalen - Environmental Engineering Major

Kewhalen@calpoly.edu

Justin Sauder - City and Regional Planning Major

Jsauder4@gmail.com

Julia Cannata – City and Regional Planning Major

Juliacannata1@gmail.com

Camille La Cour - Architecture Major

9clacour4@gmail.com

Andrew Valles – Architecture Major

valles.andrew@yahoo.com

Amara Cairns – Cal Poly Zero Waste Club

Amcairns@calpoly.edu

Michael Kusaba – Cal Poly Zero Waste Club

Mkusaba94@gmail.com

Jonathon Reich – Cal Poly Architecture Professor

jreich@calpoly.edu

SOURCES

Prezi EDES 408 Wastes Stream Link (contact Jonathon Reich to update/edit Prezi):

<https://prezi.com/view/FHu4vwqdGaFc5Un1kOYD/>

Cal Poly Waste Management (check the excel sheet on this page)

https://afd.calpoly.edu/sustainability/campus_resources/waste







2016 Cal Poly Sustainability Report



https://afd.calpoly.edu/sustainability/docs/sustainability_reports/2016_sustainabilityreport.pdf

Why Cal Poly waste can't be composted








<http://mustangnews.net/compostingv2/>








APPENDIX A: INVENTORY

Location	Product	Photo	Facility Receptacle
Starbucks	Napkins		Landfill
	Hot Drink Cup		Landfill
	Cold Drink Cup		Recycle
	Hot Drink Lid		Recycle
	Food Bag		Recycle
	Straw		Landfill








	Drink Stopper		Landfill
	Drink Sleeve		Recycle
	Equal Packets		Recycle
	Suger Packets		Recycle
	SweetPlus Packets		Recycle
	Whole Earth Packets		Landfill
Red Radish	Plastic Dressing Lid		Recycle







	Dressing Container		Recycle
	Plastic Fork		Landfill
	Plastic Knife		Landfill
	Plastic Spoon		Landfill
	Salad Container		Recycle
	Salad Lid		Recycle
Mustang Station	Plastic Fork		Landfill

	Plastic Knife		Landfill
	Plastic Spoon		Landfill
	Paper Pizza Holder		Landfill
	Aluminum Tin		Recycle
	Plastic Soda Lid		Recycle
	Soda Cup		Landfill
	Straw		Landfill






Yogurt Creations	Cups		Landfill
	White Napkins		Landfill
	Plastic Spoons		Landfill
Chick-fil-A	Sandwich wrapper		Landfill
	Nuggets Box		Landfill
	Fries Container		Landfill
	Drink Cup		Landfill



	Plastic Soda Lid		Recycle
	Dipping Sauces		Landfill
	Sandwich box		Landfill
The Ave (general)	Soda Cup		Landfill
	Straw		Landfill
	Tea Bags		Landfill
	Condiment Packets		Landfill

	Dressing Container		Recycle
	Sugar Packets		Recycle
	Plastic Dressing Lid		Recycle
	Wooden Stir Sticks		Landfill
	White Napkins		Landfill
	Plastic Stirrers		Landfill
	Cardboard Sleeves		Recycle








	Chip bags		Landfill
	Plastic Bottles		Recycle
Picos	Foil/Yellow Paper		Landfill
	Foil		Recycle
Salad Bar at the Ave	Paper Bowl		Landfill
	Plastic Bowl		Recycle
	Paper Food Containers		Landfill

	Paper Wrapper		Recycle
Bishops Burgers	Paper Wrapper		Recycle
	Paper Box		Recycle
Zen Bowl	Plastic Lid		Recycle
	Plastic Bowl		Recycle
Julian's	Plastic Containers		Recycle
	Plastic Bottles		Recycle








	Cardboard Container		Landfill
	Pastry Wrapping		Recycle
	Hot Drink Cup		Landfill
	Clear Plastic Cups		Recycle
	Hot Drink Lid		Recycle
	Straw		Landfill
	Cardboard sleeves		Recycle

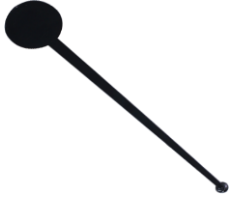






	White Napkins		Landfill
	Wooden Stir Sticks		Landfill
	Condiment Packets		Landfill
	Sugar Packets		Recycle
	Plastic utensils		Landfill
	Yogurt Cups		Recycle

	Pastry Papers		Landfill
Lucy's	White Napkins		Landfill
	Clear Plastic Cups		Recycle
	Plastic Lid		Recycle
	Straw		Landfill
Sandwich Factory	Straw		Landfill
	Plastic cookie bags		Landfill

	Chip bags		Landfill
	Plastic Bottles		Recycle
	Paper Food Containers		Landfill
	Paper Drink Containers		Landfill
	Can drinks		Recycle
	Tea Bag Wrappers		Recycle
	Tea Bag		Landfill








	Paper Bowl		Landfill
	Bowl Lid		Recycle
	Plastic utensils		Landfill
	White Napkins		Landfill
	Jam Container		Landfill
	Butter Wrapper		Landfill

	Condiment Packets		Landfill
	Odwalla Bar Wrapper		Landfill
	Uncrustable Wrappers		Landfill
	Plastic Containers		Recycle
	Aluminum Tin		Recycle
	Peanut Butter Containers		Landfill
	Wooden Stir Sticks		Landfill








	Plastic Stirrers		Landfill
	Sugar Packets		Recycle
	Hot Drink Cup		Lanfill
	Hot Drink Lid		Recycle
	Drink Sleeve		Recycle
	Soda Cup		Landfill
	Plastic Soda Lid		Recycle





Jamba Juice	Straw		Landfill
	Plastic Cups		Recycle
	White Napkins		Landfill
	Plastic Spoons		Landfill
Einstein Bros Bagels	Straw		Landfill
	Mayonnaise Packet		Landfill
	Mustard packet		Landfill






	Ketchup packet		Landfill
	Plastic Fork		Landfill
	Plastic Knife		Landfill
	Plastic Spoon		Landfill
	White Napkins		Landfill
	Straw		Landfill
	Wooden Stir Sticks		Landfill








	Sugar Packets		Recycle
	Cardboard sleeves		Recycle
	Hot Drink Lid		Recycle
	Plastic Soda Lid		Recycle
	Paper Box		Recycle
	Cups		Landfill
	Chip bags		Landfill







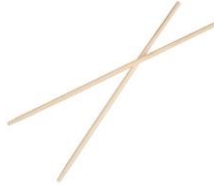
	Clear Plastic Cups		Recycle
	Plastic Bottles		Recycle
Tacos to Go	Plastic Containers		Recycle
	Foil		Recycle
	Aluminum Tin		Recycle
	Foil/Paper Wrapper		Landfill
	White Napkins		Landfill

	Plastic containers		Recycle
	Condiment Packet		Landfill
	White Paper Plate		Landfill/Recycle
	Soda Cup		Landfill
	Straw		Landfill
	Plastic Lid		Recycle
	Clear Plastic Cups		Recycle

Subway	Plastic Utensils		Landfill
	Paper Wrapping (Ext.)		Recycle
	Paper Wrapping (Int.)		Landfill
	Coated Paper Cup		Landfill
	Straw		Landfill
	Straw Wrapper		Recycle
	Plastic Soda Lid		Recycle

	White Napkin		Landfill
	Plastic containers		Recycle
	Paper Bowl		Landfill
Campus Market	Chip bags		Landfill
	Glass Bottle		Recycle
	Plastic Bottles		Recycle

	Aluminum Can		Recycle
	Plastic Containers		Recycle
	Plastic utensils		Landfill
	White Napkin		Landfill
	Straw		Landfill
	Straw Wrapper		Recycle
	Plastic Soda Lid		Recycle

	Cardboard Container		Landfill
	Paper Wrapper		Recycle
	Plastic Wrapping		Landfill
	Dressing Container		Recycle
	Plastic Dressing Lid		Recycle
	Salt/Pepper Packet		Recycle
	Chopsticks		Landfill

	Soda Cup		Landfill
	Condiment Packets		Landfill