

University Apartments Waste Diversion  
2019 Midterm Report

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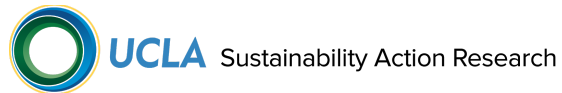
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## **Abstract**

Our project is centered around increasing waste diversion by implementing a compost system in the University Apartments. The two main aspects of our project are to provide the infrastructure for the compost system, and to establish educational outreach to promote more responsible waste disposal practices. By working with Housing and Hospitality staff, maintenance, and University Apartment staff, we will establish an effective compost system that works for everyone. Our research, consisting mainly of waste audits, can inform our educational materials, and let us gain a deeper understanding of the waste diversion potential in the University Apartments. Overall, we hope to foster mindfulness of waste diversion and create awareness among residents of the waste they produce as well as support UCLA's goals of Zero Waste by 2020.

## **Introduction**

There have been two other Sustainability Action Research (SAR) teams in the past dedicated to waste diversion in the University Apartments. These teams have laid important groundwork for our project, and we are building off of what they have already done. The first year's SAR team first decided that implementing a composting system would be the best way to decrease the environmental impact of the University Apartments, and create a more sustainable waste disposal system. They focused on providing infrastructure in the form of compost caddies, bags, and bins, and on educating the residents. After they had established compost infrastructure and provided basic educational materials on proper waste disposal in two buildings, the team had three main methods they used to assess the progress of waste diversion: waste audits, residential

surveys, and communication with an ambassador at the apartments who conducted qualitative audits. The data collected from these methods showed that there were some issues with participation in the compost program, however, a fair amount of waste was successfully diverted from landfill. Overall, the first SAR team set up necessary infrastructure and paved the way for the next year's team to continue with educational efforts and expanding the program.

The second UA waste diversion SAR team's main goals were to improve upon the composting programs at two Hilgard apartments and to establish a plan for expanding the program. They also used waste audits and surveys as the main methods to assess the effectiveness of the program. The waste audits were very useful and provided essential data on the behaviors of the residents. At their first waste audit they found that approximately 52.35 percent of the waste in landfill actually belonged in the compost, signaling a need for better education and outreach. The survey results showed several issues with the composting programs, including leaky bags, and a lack of knowledge surrounding the composting program and waste sorting. The results of the survey were used to improve the program through expanded education on waste sorting and greater accessibility to the program. An audit at the end of the project showed a significant improvement in the waste sorting with less organic waste being misdirected to landfill.

Similar attempts at implementing an effective composting program among college students across other campuses were made outside of our own. For example, Santa Clara University proposed a very similar program to our own that was inspired by Tufts University's attempt. At Tufts, students were encouraged to pick up a compost bin from the residential office. In order to make composting more accessible for residents, the Santa Clara University students

made a compost bin already available for each resident in each unit (Hughes et al.,4). Similar to the project at Tufts, the students of Santa Clara University held a workshop to demonstrate the proper sorting of waste and encouraged students to make a personal investment to manage their compost properly. Their goals include measuring waste diversion through waste audits and conducting surveys to assess the attitude of the residents they are targeting. Our team structured the composting program on our campus similarly, and referenced these projects in creating our own ideas and deciding how to measure our progress as detailed through the remainder of this report.

## **Methodology**

We started this quarter by meeting with our advisor Erin Fabris in order to understand what exactly she would like to see as our long term goal. She explained that she would like us to work on expanding the composting programs currently in some of the university apartments into the remaining buildings. We began to reach out to the various university departments, to see how they could help and what work needed to be done in order to reach this goal.

We arranged a walk through with the apartment custodial supervisor Laura Lopez of two university apartment buildings; one with a compost program already in place, 510 Landfair Avenue, and one without a composting system, 558 Glenrock Avenue. We used this time to discuss possible options for adding composting programs into the remaining apartment buildings and to address the problems they have had with the compost programs already in place. Ms. Lopez advised us that many residents were dumping compostable food items into the compost waste bin without bagging them. The unsealed food leads to an increase in insects and unpleasant

odors filling the waste room, causing more work and an unpleasant work environment for her staff. She also informed us that if we were interested in implementing a composting program in the Glenrock apartments, we would have to place trash cans on every floor in the waste rooms where the residents currently go to use the trash chutes. She confirmed that the rooms had enough space for the bins and that her staff would be able to empty them.

During the ninth week of the quarter we held a waste audit of the university apartments Landfair Vista and Glenrock. The Glenrock undergraduate university apartment is divided into North and South towers, each having their own trash and recycle chutes with separate trash rooms in the first floor garage. Due to time constraints we decided to only audit one of the towers and then multiply the data by two to account for the second towers waste. The residents did a fairly good job of knowing what waste items could be put in the recycle bin. A little over 75% of the waste in the recycle bin was recyclable. However, the landfill dumpster was much more disheartening, almost 60% of the items inside could have been diverted with 17% of it being recyclable materials and 42% of it being compostable matter. The Glenrock apartment building has trash chutes for both recycle and landfill destined waste, but no compost system. Due to the large size of the trash rooms housing the chutes on each floor, the best method for adding a composting program to Glenrock is by putting large compost trash cans on each floor. Since the residents will not have to leave their floor to dispose of the compost, this will hopefully increase the convenience of composting enough to convince the residents to begin participating. Based off the results of our audit, if all residents correctly sort their waste only 35% of their waste would be going to the landfill and while that seems like a lot, it's a lot less than the current 82% currently being sent there.

The Landfair Vista apartments had a compost system set in place by a previous SAR Waste Diversion team, and our waste audit of this building served as a useful baseline for how well the residents are utilizing the current system. It also gave us a wealth of information on how to update our educational outreach based on common mistakes and sorting practices. We began by auditing the compost dumpster, which had only a few bags of compostable waste in it, 8.7 kg by weight total. However, despite the relatively small amount, everything disposed of in the compost was properly sorted except a single plastic bag mistakenly used to bag food matter, instead of a compostable bag. The main issue in increasing waste diversion for Landfair Vista is accessibility and ease for residents; this building has a trash chute on each floor, but compost and recycling must be walked down to the trash room. This added difficulty likely contributes greatly to the relatively small amount of compostables properly sorted.

When auditing the recycling dumpster of Landfair Vista, the total waste by weight was found to be 11.5 kg recyclables, 8.42 kg landfill waste, and 1.78 kg compostables. This relatively large proportion of landfill waste, 53%, was influenced greatly by soiled recyclables. Many of the items sorted into the recycling that our team designated as landfill waste were potentially recyclable, but were either too soiled by food or other materials to be recycled, and additionally not made of compostable materials. Some food-soiled paper recyclables could be resorted to compostables, but anything disposed of in the recycling that is not clean, empty, and dry poses a risk to contaminating other materials in the dumpster and rendering them non-recyclable as well. During our next waste audit, it would be beneficial to divide the categories even more to include soiled recyclables to determine just how prevailing this issue is.

Lastly, our team sorted through the landfill dumpsters of Landfair Vista, but for lack of time we only sorted through approximately half of the landfill waste. With the assumption that the waste we sorted through was representative of the entire waste stream, we multiplied our weight findings by a factor of two. Therefore, the landfill dumpsters contained an approximated 30.64 kg landfill waste, 26.82 kg compostables, and 8.42 kg recyclables. Unfortunately, compostables made up 40.71% of the landfill dumpsters by weight, approximately 3 times the weight of compost properly sorted into the compost dumpster. Overall, Landfair Vista's waste was composed of 59.4% divertable waste, including compost and recycling, and 40.6% landfill waste. This gives us much room for improvement among resident sorting practices, because even with a compost system in place only 21% of divertable waste would have been diverted from landfill.

A persistent issue that became obvious when sorting through the landfill was the amount of unbagged waste. Not only did this make the sorting more difficult for us, but it is something that the actual maintenance workers have to deal with every day. There was also an unusual issue of bagged waste getting torn or split open by some unknown cause. The combination of unbagged waste and improper sorting of compostables into the landfill creates an environment that attracts pests and is an unpleasant hassle for maintenance workers. We want to make our waste diversion efforts as collaborative with all parties involved as possible, so promoting a more pleasant work environment for those who deal with the waste on a day to day basis is especially conducive to future maintenance cooperation and morale.

Waste bagging will be a more difficult issue to tackle in our outreach, because trash chutes already have signage on the opening itself calling for bagged waste only. One idea for

improvement is making sure the residents have sufficient access to bags for their landfill, so it is easier for them to bag it than for them to simply dump it down the chute on its own.

We will use the Glenrock and Landfair Vista waste audit results as a baseline for progress after we implement a composting system in our target buildings. This information will also be useful as we implement and improve signage and educational outreach in all buildings.

### **Challenges and Difficulties**

Throughout the quarter, our team had to overcome obstacles and operate in a short time frame. The first few weeks of this quarter consisted of primarily research planning and defining research question and goals. While our project this year is somewhat an extension of previous SAR waste diversion projects, we devoted multiple team meetings to articulating and finalizing our specific research question for our waste diversion project this year. Will education and convenience of infrastructure increase participation in waste diversion in university apartments? We aim to present significant results with qualitative and quantitative data to interpret this question.

After we solidified a project plan, we next began to decipher the complex networks within UCLA administration and working with inter-departmental actors. Our stakeholder was able to connect us with vital contacts we needed for special projects. For example, it took much longer to organize our baseline waste audit because many more stakeholders were involved than previously considered, and each needed an introduction to our project, why we deserved their help, and a discussion of when we would be able to solicit their help. Conducting two waste audits at two distinct university apartments required direct communication with our own



stakeholder, custodial staff, the zero waste coordinator, an Athens contact, and visiting the university apartments office on Weyburn Avenue in Westwood. Breaching these bureaucratic obstacles taught our team how to better prepare for specific projects that require the involvement of UCLA administrations.

Another issue we discovered this quarter, one that we did not predict, was the lack of accurate waste sorting in university apartments that already have a composting system in place. When we conducted the winter quarter waste audit in 510 Landfair, we found that 40% of landfill was compostable and 8% of recycling was compostable. Therefore, this information adds another obstacle to address next quarter, which will focus on education of residents within the 510 Landfair building. This study showed us that the implementation of compost bins and caddies are not completely efficient alone. Education and outreach is of equal importance to the success of diverting waste in our target university apartments.

### **Plans for Spring**

Planning for Spring consists of moving forward with implementing compost systems in three target university apartments, as well as addressing the aforementioned challenges. Our first assignment will be to order the correct number of bins and caddies for each building. This task should not present too many difficulties or obstacles, as we only need to be in coordination with our stakeholder to send in the materials order. Housing and Hospitality and custodial teams will provide us with structural elements such as compost bins, caddies, sleeves, and signage. We will be in contact with our stakeholder to obtain UCLA approved signage and posters for each floor of our target buildings.

The other portion of our project will take a significant amount of energy and time. Education, awareness, and outreach will be the main focus of our Spring quarter projects. To thoroughly educate residents of multiple university apartment buildings, we will need to establish good relations with specific coordinators from Housing and Hospitality and Residential Life.

We will be in contact with Residential Life coordinators to get in touch with Apartment Resident Assistants (ARAs) . We will approach these ARAs with a detailed plan for events focused on waste diversion and composting. The goal of connecting with ARAs is to get in direct contact with residents and increase effective education and awareness. We also have plans to perform a small-scale, incentivized waste audit with residents so they can better understand where their personal waste ends up. In addition to working directly with ARAs and residents, we will be utilizing signage and posters with creative and clear designs of waste assortment. Through hands on events, directive communication, and effective signage, we hope to better educate residents about how to properly sort waste, utilize a new compost system, and why being mindful about waste diversion is an essential part of environmental health.

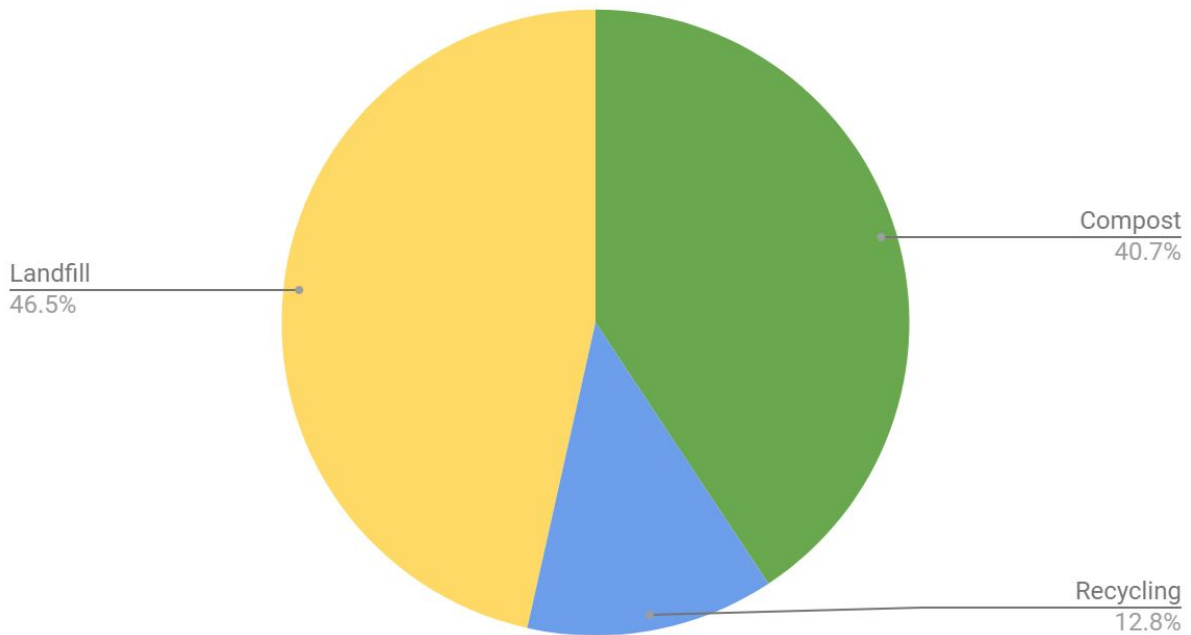
We will be conducting various research methods in Spring quarter which corresponds to the effectiveness of the implemented compost systems. By organizing focus groups and sending out surveys, we aim to gauge the overall attitude of the compost systems in each building as well as acquire feedback we can use to improve the project. This outreach portion of the project will help not only our team, but also future teams by providing qualitative data produced from the project. A comparative waste audit will be conducted at the target buildings as well as 510 Landfair (compost implemented last year) so that we can collect quantitative data.

Looking into the future, we hope to provide a detailed template for prospective waste diversion projects. We hope to provide a comprehensive guidebook for implementing compost systems in university apartments. This guide should include results supported by quantitative and qualitative data, as well as contacts for all stakeholders involved in the process. Finally, the guide will outline the strengths and weaknesses of the project.

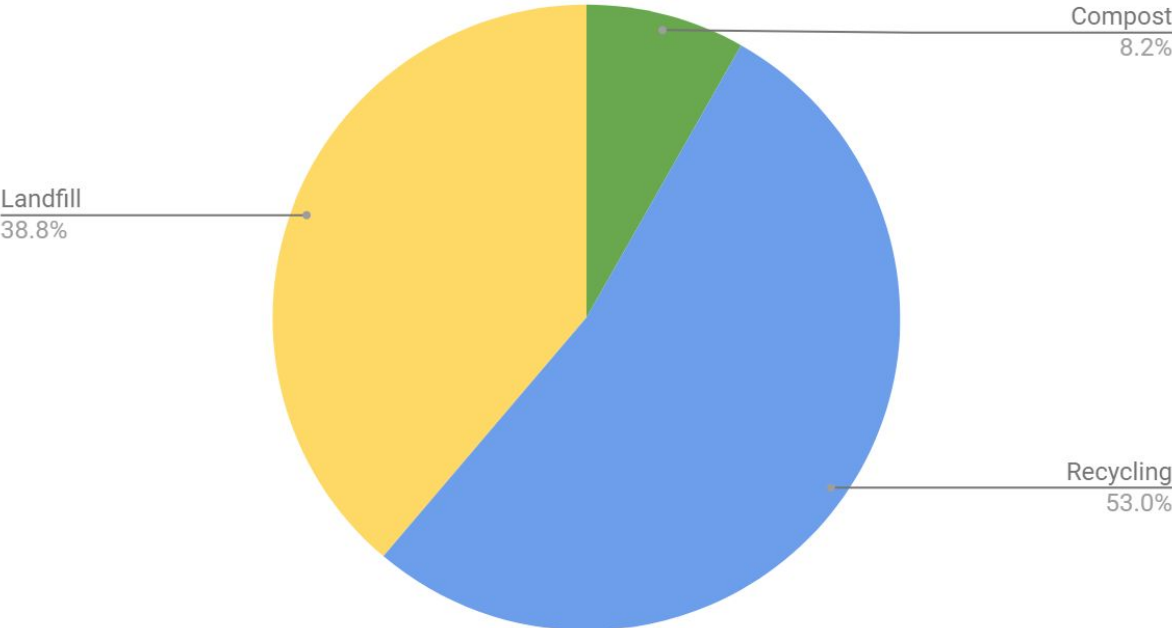
### **Appendix**

Below are the percent breakdowns for the individual waste streams of Landfair Vista and Glenrock. (Note: Landfair compost not included because it contained all compost except one plastic bag.)

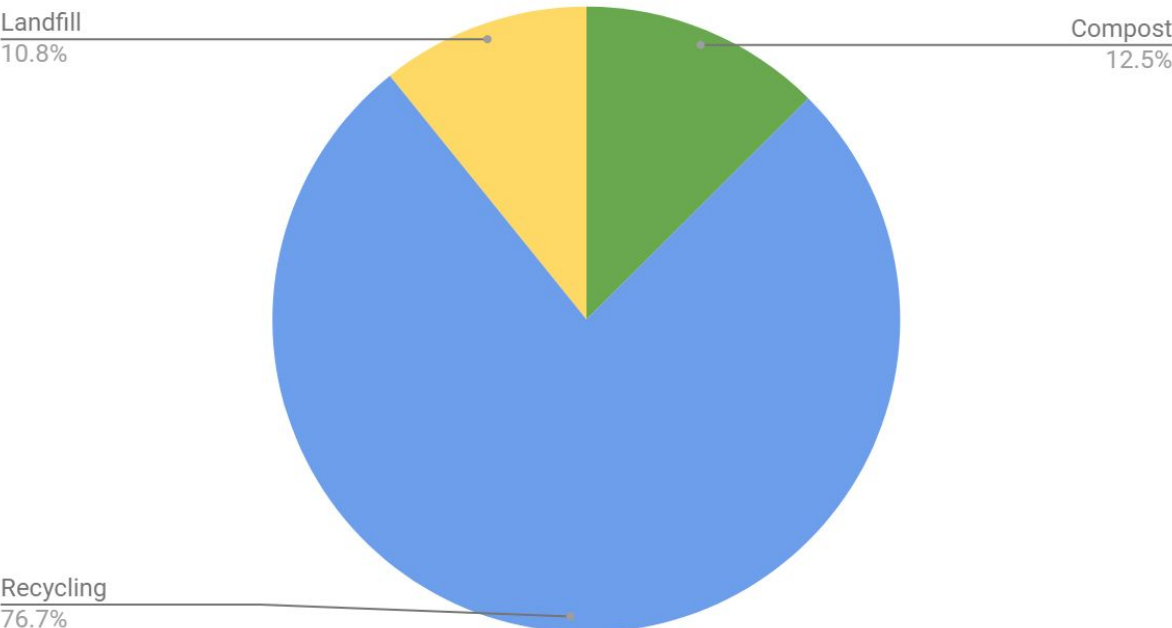
#### Landfair Landfill



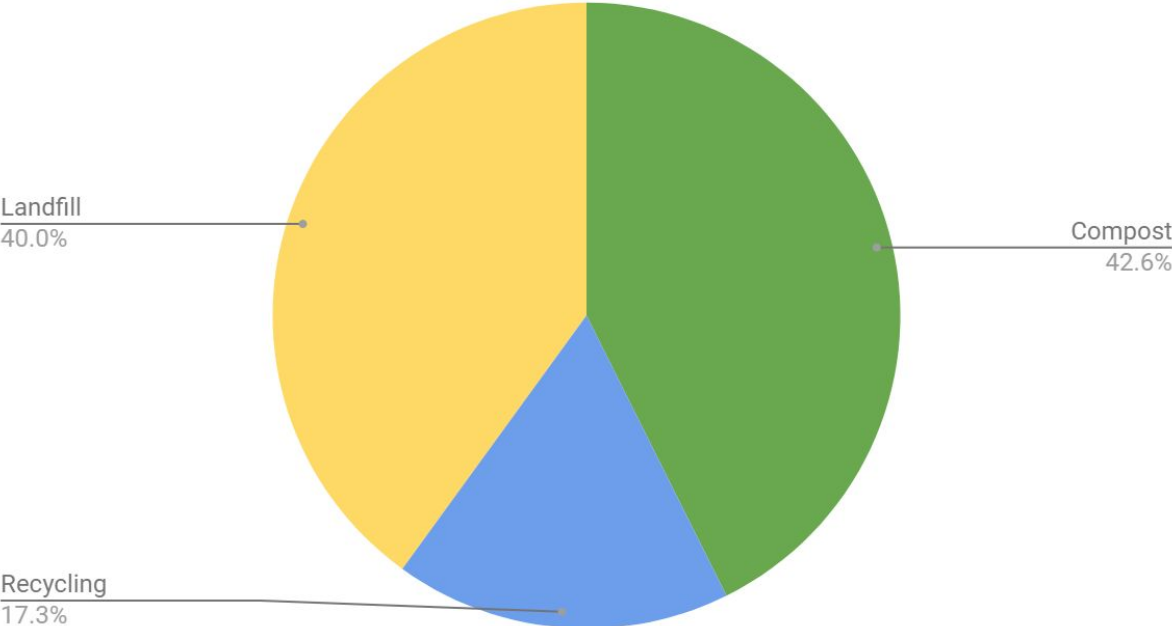
# Landfair Recycling



# Glenrock Recycling



# Glenrock Landfill



Hughes, Stephanie, et al. "Implementing a Compost System in the Villa Apartment Complex; A CSIF Proposal." *SCU Edu*, 2016, [www.scu.edu/media/offices/sustainability/programs/investment-fund-csif/CSIFProposal-\(1\).pdf](http://www.scu.edu/media/offices/sustainability/programs/investment-fund-csif/CSIFProposal-(1).pdf).