

CATS OPTIMIZING RECYCLING EDUCATION PROJECT REPORT

*Findings and the Future Strategy
for Dorm-Based Recycling Education*

Fall 2023 – Spring 2025



Table Of Contents

• Executive Summary -----	3
• Project Overview -----	4
• Summary -----	4
• Goals -----	4
• Purpose of recycling education plan -----	5
• What this report includes -----	6
• Meet the Core Team -----	7
• Data Summary -----	8
• Quizzes and Surveys -----	8
• Contamination Data -----	10
• Focus Groups -----	11
• 1-on-1 education reach/ outcome -----	12
• Feedback and Lessons -----	13
• What has worked -----	13
• What we have learned -----	14
• Challenges and improvement opportunities -----	15
• Education and Engagement Plan -----	16
• Before move-in -----	16
• Move-in/ Late August -----	17
• September: BI2WI -----	20
• Ongoing (Throughout the Year) -----	22
• Budget Plan -----	24
• Future Steps and Evaluation -----	25
• Acknowledgements -----	26
• Have Questions? -----	27

Executive Summary

The Cats Optimizing Recycling Education (CORE) project was a two-year initiative aimed at reducing recycling contamination in University of Arizona dorms through behavior-targeted education, student engagement, and data-informed interventions. It was conducted from Fall 2023 to Spring 2025 and funded by the Campus Sustainability Fund (CSF). The project identified key barriers to proper recycling, including misinformation, inconsistent messaging, and student apathy, and tested various solutions to address them.

Drawing on focus groups, contamination audits, assessment data, and other interventions, the project developed a replicable recycling education plan centered around staff training, a campus-wide Bin It to Win It (BI2WI) competition, digital signage, and year-round engagement. This report presents the outcomes of the CORE project and outlines a structured education strategy designed to support long-term behavioral change and reduce contamination across University of Arizona dorms.





Project Overview

Summary

The CATS Optimizing Recycling Education (CORE) Project was a two-year recycling initiative aimed at reducing recycling contamination in University of Arizona dorms through research, student engagement, and education. Started in Fall 2023, the project was managed by the sustainability unit of Housing and Residential Life and funded by the Campus Sustainability Fund (CSF).

The goal of the CORE project was to improve recycling outcomes by identifying and correcting improper student recycling behaviors, testing educational strategies, and developing a replicable, research-based education plan.

Goals

- **Explore Dorm Recycling Challenges**

Monitor and document recycling contamination across dorms to identify common issues and their causes.

- **Understand Student Recycling Behaviors**

Use focus groups, surveys, and behavioral data to explore how and why students recycle (or don't).

- **Evaluate Educational Interventions**

Test the effectiveness of various interventions such as 1-on-1 education, the Bin It to Win It (BI2WI) competition, and digital campaigns.

- **Build a Replicable Education Plan**

Use data from the project to create a recycling education plan that can be implemented annually.

Purpose of Recycling Education Plan



Colonia De La Paz Recycling Location



Eco- Reps

The recycling education plan aims to help:

- “Deprogram” new students where needed, especially those from outside Arizona or with incorrect recycling knowledge.
- Increase awareness of what can and cannot be recycled in dorms.
- Ensure consistent and accurate recycling messaging across all dorms each year.
- Reduce contamination in recycling bins through early and sustained education.
- Equip staff with clear, easy-to-use resources for promoting proper recycling.
- Make recycling a visible, accessible, and normalized part of dorm life.



What this report includes

This report is structured to provide both a summary of the CORE Project and a comprehensive recycling education plan that can be implemented annually. It includes:

- **Key Findings:**

Summarized results from quizzes, surveys, focus groups, contamination data, and resident interactions reveal barriers to effective recycling, successes with recycling programming, and trends in student behavior.

- **Intervention Strategies:**

Insights from recycling interventions including the BI2WI competition, RA training, digital messaging, and 1-on-1 recycling education, with an analysis of what worked, what didn't, and why.

- **Education and Engagement Plan:**

A semester-long recycling education strategy designed to be initiated prior to the start of the fall semester. This includes timelines, messaging tactics, RA resources, and program recommendations.

- **Budget Overview:**

Estimated costs for key program components such as prizes, incentives, printing, and signage to allow for easy replication or scale-up.

- **Timeline for Implementation:**

A suggested schedule spanning from pre-semester planning through move-in, BI2WI execution, and year-round engagement, aligned with campus calendars and student preferences.

Meet Our Team



JILL BURCHELL

PROJECT MANAGER

Jill Burchell, PhD is the Senior Coordinator of Sustainability Operations and Initiatives in Housing and Residential Life. She oversees sustainability education programming for dorm residents as well as supports sustainable operations in Housing. Dr. Burchell was responsible for dreaming up the CORE project, as well as facilitating its completion as Project Manager.



NANA ADWOA AKUFFO AMOH-ASANTE

GRADUATE ASSISTANT

Nana Adwoa is a Master of Public Health student, graduating in May. She led the investigation into recycling behavior and contamination in the dorms. She also organized the data gathered throughout the project which informed the recycling education plan.



KEMPER MCQUAID EGAN

RECYCLING AND FACILITIES SPECIALIST

Kemper is a sophomore and was responsible for managing the Housing Swap Shop in addition to completing contamination checks and creating interventions for the students. She is studying chemical engineering and has been working with the CORE team since Fall 2024.



GIULIA MAYA HERCKES

RECYCLING SPECIALIST

Giulia is a freshman studying chemical engineering and joined the CORE project in the fall of 2024. She was responsible for conducting contamination checks, designing intervention for students, and editing educational videos.

Data Summary

Quizzes and Surveys



RECYCLING CONTAMINATION QUIZ

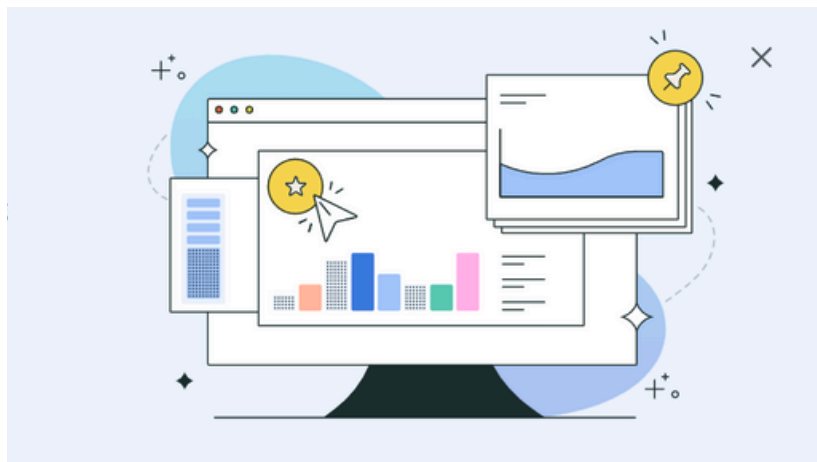
Quiz Report Header

- The [Fall 2023 Quiz](#) was completed by 996 students in September, with an average score of 86%. From the data collected, many students believed non-recyclable materials, mainly soft plastics like plastic bread bags, cereal bags and water bottle packaging should be recycled. Additionally, a substantial number of residents (13%) thought bagged recycling made it easier for recycling collection.
- Questions for the Spring 2024 recycling survey were part of Housing's [End-of -Year survey](#). Two out of the five questions asked were related to recycling. Students reported primarily learning what is recyclable through posters and flyers (56%) as well as information on the bins (41%). A majority of them (61%) also admitted to recycling because it was environmentally conscious. Many students also admitted having challenges with recycling in the dorms, a quarter of the residents admitted to having the desire to recycle more materials than are accepted in Tucson. Unfortunately, Housing has no control over the types of recycling collected, as the rules regarding recyclable materials are made by the City of Tucson, not the university.

**Full reports of all quizzes and surveys have been hyperlinked in this document (UA NetID required).*

Data Summary

Quizzes and Surveys



Qualtrics Dashboard

- The Fall 2024 Quiz was completed by only 493 students. Competing school activities like homecoming and family weekend may have contributed to poor quiz completion rates. The data showed improvement in the understanding of recycling soft plastics among students when compared to the previous year. Many students (67.9%) thought that plastic cups should be recycled. Misconceptions about bagged recycling and paper recycling continued to persist.
- In February 2025, 609 dorm residents completed a recycling survey. Responses indicated significant confusion about recyclable items on campus, with one-third (33%) of residents uncertain about what can be recycled. Over 60% of write-in responses listed non-recyclable items, highlighting widespread misinformation and confusion in the dorms. With nearly a quarter (23%) of students learning recycling practices from peers rather than official sources, misinformation appears to be circulating in dorms. Despite infrastructural challenges like bin overflow (29%), most residents (60%) continue recycling for environmental reasons.

**Full reports of all quizzes and surveys have been hyperlinked in this document (UA NetID required).*

Contamination Data



Golf Cart



Recycling Bins

Assessment of recycling contamination data was conducted in two ways. The primary method of assessment was through our bi-weekly recycling audits performed by the recycling specialists, and the second was through recycling/contamination bag counts recorded by Facilities Management staff. The data sets were frequently compared to ensure similarity in contamination rates.

During BI2WI in the first year of the project, contamination rates reduced by 27%, while in the second year, contaminants reduced by 23%. After comparing contamination data from the first year to the second year, we noticed a decline in contamination rates. Even though we expected lower contamination rates earlier in the first year of the project, the expected outcome occurred slowly and became evident towards the end of the project in the second year, indicating that the recycling education and interventions had yielded suitable outcomes.

Focus Groups

In the first year (2023/2024 academic year) of the project, five focus group discussions were conducted.

These focus groups sought to evaluate the Bin It to Win It (BI2WI) recycling competition and gather insights on recycling behaviors, attitudes, and education as well as other sustainability initiatives among University of Arizona dorm residents.

The findings from the focus groups informed new interventions such as special RA training during the summer, a change in the timing of the BI2WI competition, as well as standardization of recycling signage.

The four focus group discussions organized in the second year (2024/2025 academic year) focused on gathering evidence on the effectiveness of the various interventions that had been implemented during the project.

There was also feedback on ways to improve current recycling programming in the dorms in a bid to understand recycling behaviors, attitudes, and engagement with sustainability programming in the dorms.

These suggestions, combined with our program's successes and failures, informed our final recycling education plan.



Coronado Staff Meeting



Student Focus Group Fall 2024

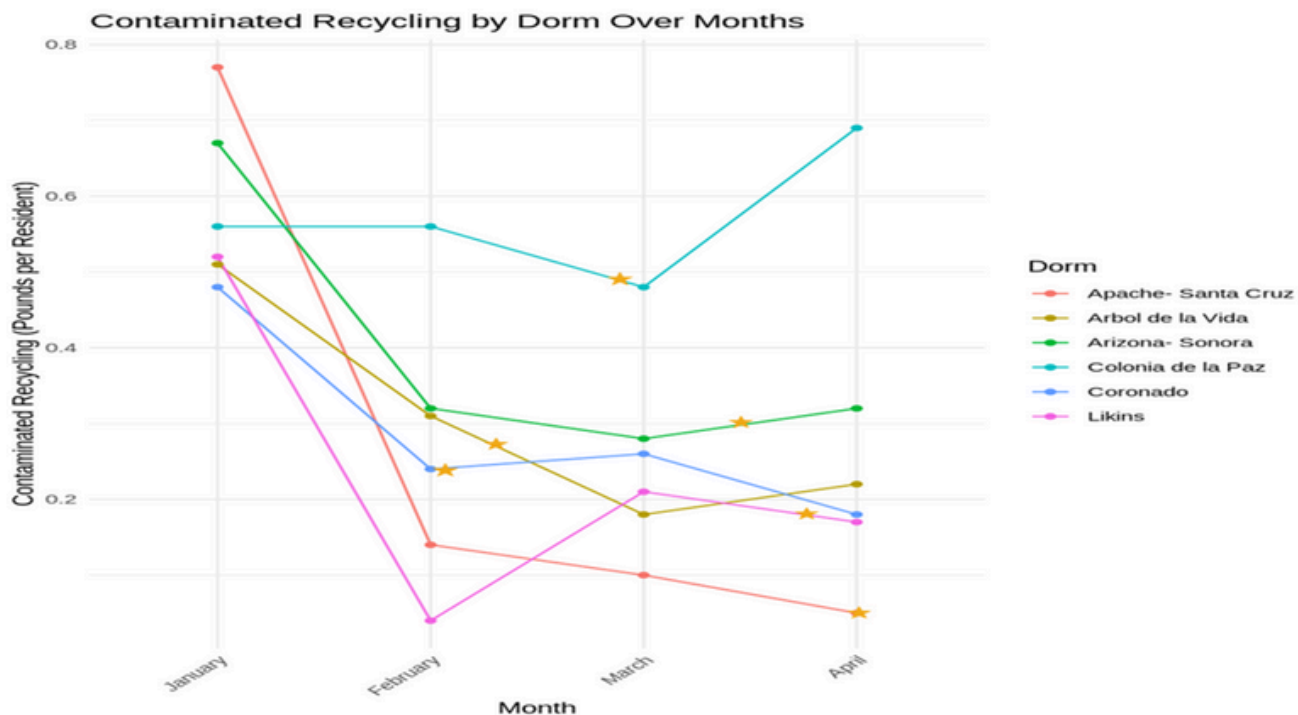


Student Focus Group Spring 2024

1-on-1 education reach/ outcome

Over the 2-year period, the CORE team reached 1,174 students during the 1-on-1 recycling coaching sessions. During these sessions, the recycling specialists went to the various dorms and knocked on the doors of students. They respectfully asked to inspect student's recycling and answered any questions students had about recycling. At the end of the short interaction, the student was given a sticker as an incentive, and their recycling was taken away for them.

Unfortunately, despite the expectation that there would be a direct correlation between our 1-on-1 coaching and a reduction in recycling contamination, our data suggested that in some dorms, there was an unexpected increase in contamination rates.



★ Stars Indicate start dates of 1-on-1 education
Note: Reduction in contamination rates not directly consistent with education start dates. (Image from Year 1 of Project)

Additionally, some students expressed discomfort with the recycling specialists coming into their personal space, even though CORE staff did not enter the students' rooms but only met them at their doors.

Feedback and Lessons

What has worked



BI2WI Yard Signs



Floor Stickers

- BI2WI remains the biggest driver of recycling education, motivating students to recycle through competition.
- Floor stickers helped students more easily locate recycling and trash areas, supporting better recycling habits.
- Bin decals and signage at recycling areas provided clearer recycling instructions and reduced confusion, although there is more room for improvement with regards to signage design.
- Lobby programs organized by some dorms during BI2WI offered a casual and effective way to educate students about recycling and were preferred over formal 1-on-1 recycling coaching.



What we have learned

- Personal values influence student recycling behavior.
- Misconceptions about recycling are common in the dorms.
- Students' recycling habits are sometimes driven by convenience.
- Timing of educational programming is very crucial.
- Continuous education and reinforcement of recycling education is necessary.
- A clear understanding of recycling programs by Housing staff impacts the recycling knowledge of students in the dorms.
- Long, lecture-style RA training on recycling was seen as boring and ineffective; an interactive training style is preferred.
- Visibility of signage is important for honing recycling education.
- Student's dislike "strangers" in their personal space and tend to be poorly receptive, making 1-on-1 recycling education a failed intervention.
- Organizing BI2WI on a district level where more prizes can be won will increase student engagement.

Challenges and Improvement Opportunities



Card Board Sorting During Move-in

- Changes in cardboard recycling locations at the start of the year continue to be a source of confusion for students from year to year.
- Student apathy and laziness toward recycling remains a chronic barrier, despite increased efforts with education, signage, and competition incentives.
- Recycling information added to already lengthy opening wing meetings may overwhelm students and reduce the effectiveness of recycling messaging.
- Recycling and sustainability information is not always prioritized by Community Directors (CDs) due to other competing dorm issues, leading to inconsistent communication to RAs and residents.

Education and Engagement Plan

This recycling education plan outlines the standard activities and engagement strategy to be used from the beginning of each academic year across University of Arizona dorms.

It is designed to reduce recycling contamination rates through education and engagement strategies and has been informed by prior program evaluations, focus group feedback, and sustainability behavior research.

Before move-in

Goal: Activities organized during this period will prepare CDs and RAs to accurately and confidently deliver recycling education from the beginning of the academic year.

Activities:

- Dorm staff will complete short recycling training refresher modules during summer staff training to refresh their recycling knowledge before the academic year begins.
- During summer staff training, Kahoot quizzes and partner role-playing exercises will be used to practice answering resident questions and delivering key recycling messages during wing meetings and other student interactions.
- A recorded version of the role-play exercises for addressing residents' recycling questions will be made available to staff as a resource they can refer to.



Summer Staff Training

Education and Engagement Plan

Before move-in

Materials Provided:

- Updated pre-made bulletin boards for BI2WI.
- Updated list of recyclable and non-recyclable materials in the dorms.
- Quick-answer recycling guides and other educational resources for staff.

Timing: Pre-move in training will be done 3 to 4 weeks before the arrival of new students.

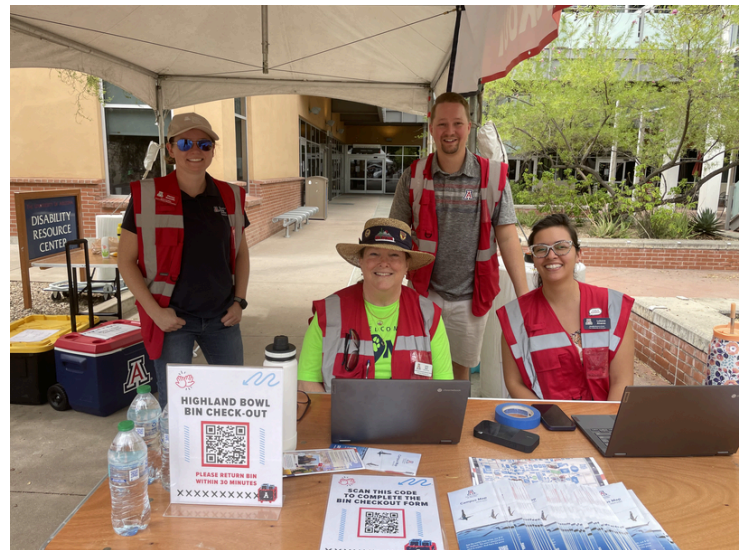
Move-in/ Late August

Goal: Establish clear recycling expectations for all new residents upon arrival in the dorms, ensuring that University of Arizona recycling rules are communicated clearly, and that myths and misconceptions are addressed early.

Activities:

Opening wing meetings:

- RAs will give new students a tour of the recycling and trash areas in each building and explain the importance of recycling. While opening wing meetings may be long, prioritizing the tour of recycling bin locations is essential to helping students immediately integrate correct recycling habits into their routines. While the tours are not mandatory, all RAs will be encouraged to add this piece during training.



Move-in 2024

Education and Engagement Plan



Move-in/ Late August

Activities:

Digital screen displays:

- Content addressing top recycling contaminants, such as bagged recycling, plastic cups, soft plastics, and wrappers, will be displayed on digital screens in the lobbies of all dorms.
- Screens will also display reminders about how recycling rules at the University of Arizona differ from other places.
- One recycling message will be added to the screen rotation each week for the first six weeks of the semester to reinforce key behaviors during the critical adjustment period.
- This initiative is designed to "deprogram" new students from incorrect recycling practices learned elsewhere and reinforce campus-specific guidelines.

Tabling at "Bash at the Rec" event:

- Representatives from the sustainability unit of Housing and Residential life will join welcome activities at "Bash at the Rec". Roll up banners with information on recycling and BI2WI will be mounted at the event to highlight campus recycling rules as well as BI2WI competition.
- Quarter page flyers highlighting common recycling misconceptions will be distributed to students.
- Stickers and candy will be given out as incentives to students who visit and engage with the recycling education materials at the event.

Education and Engagement Plan

Move-in/ Late August

Putting up signage and posters:

- Posters and signage outlining what is and isn't recyclable in the dorms (Do's and Don'ts combined on a large 18x24 poster) will be put up in the various dorms.



Poster



Do's and Don'ts Signage

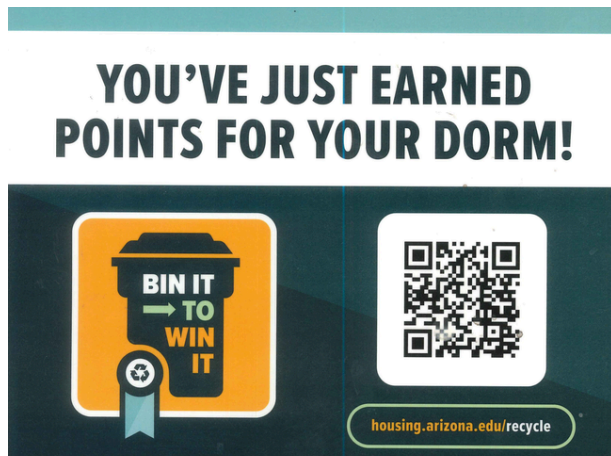
Floor stickers:

- Pilot installation of directional floor stickers in Highland dorms to guide students to recycling and trash locations. (VDP, PSP and Cienega). If pilot project successful, this initiative will be expanded to include other dorms.

Timing: These activities will begin on move-in day, with some continuing after the start of classes (e.g., digital screen displays and use of bulletin boards).

Education and Engagement Plan

September: BI2WI



BI2WI Poster



Manzi-Mo Bulletin Board

Goal: Leverage the motivation and excitement generated by the BI2WI competition to teach, reinforce, and normalize proper recycling behaviors among dorm residents.

Competition structure-[Click for more details](#)

- The competition will be held over a four-week period, i.e. throughout the month of September.
- Dorms will be competing at the district level (Highland District, Park District, and Historic District (+ North District)), with each district having 3 winners.
- Top three dorms from each district will be selected based on the number of points gathered from recycling, engagement, video challenges and pledges (new requirement).
- The dorm with the highest number of points among the three districts will emerge as the grand prize winner.

Education and Engagement Plan

September: BI2WI

Prizes:

- The dorm with the highest number of points across all districts will be awarded a food truck event as the grand prize.
- The first-place winners from the other districts will receive \$250, while the second-place winners receive \$100 to buy meals for residents or make a sustainable purchase for the dorm.
- Nine \$100 gift cards will be raffled to individuals who signed the pledge, one in each winning building.

Activities:

Four-week competition:

- Weekly recycling audits will be conducted to calculate contamination rates.
- District leaderboards will be updated every two weeks and shared via Housing Instagram accounts, dorm digital screens, and GroupMe chats.
- Digital screens will also feature rotating content, including memes, short myth-busting videos, digital posters, and infographics.

Lobby programs:

- RAs will host sustainability-themed lobby events that include short recycling coaching sessions and interactive games such as “Sort that Recycling!”

Putting up pre-made bulletin boards:

- Bulletin boards with recycling material will be put up, reinforcing student’s knowledge on recycling.

Education and Engagement Plan

September: BI2WI

Recycling Pledge (New Addition):

- To increase engagement, a Recycling Pledge will be incorporated into BI2WI.
- Residents will be encouraged to sign an online pledge committing to proper recycling behavior.
- Dorms will earn one engagement point for every 5% of residents who sign the pledge.
- These pledge forms will double as mini-educational tools, outlining key recycling behaviors and common contamination issues.

Timing: All activities will take place throughout the month of September.

Ongoing (Throughout the Year)

Goal: Maintain recycling education visibility and continue reinforcing proper recycling behaviors beyond the BI2WI competition.

Lobby programs:

- The lobby programs will replace 1-on-1 recycling education which received very poor feedback during focus group discussions and will be held twice a week. The recycling specialist will have a late afternoon or evening (4-7) shift to better reach students after classes. Cookies and stickers will be offered to encourage participation in recycling games, coaching, or trivia.



Residents making dirt cakes during BI2WI



Manzi-Mo Bulletin Board



ECO-Reps Lobby Program



Education and Engagement Plan

Ongoing (Throughout the Year)

Social Media & Storytelling:

- The Housing Recycling and Facilities Specialist, who will be carrying on with the duties of the CORE undergraduate staff will partner with the Eco-Reps to produce short videos and graphics that highlight the impact of proper recycling behaviors and show what happens to materials after collection (e.g., “Where does it go?” segments). These stories aim to address student skepticism about whether recycling is truly effective.
- Instagram takeovers may be used to walk students through the recycling process and showcase student efforts in a relatable, visual way.

Digital Messaging:

- Short monthly recycling reminders and tips will be shared through dorm-specific GroupMe chats and Housing communication channels. Messaging will reinforce proper recycling behaviors, promote upcoming lobby events, and respond to common recycling misconceptions observed throughout the semester.

Incentivized Quizzes and Surveys:

- Quizzes and surveys will continue to be sent out during the Fall and Spring semesters respectively. These quizzes and surveys will be incentivized with Amazon gift cards and scheduled to avoid potential low-participation periods such as Family weekend. Hall council members and RAs of various dorms will be involved in the marketing process, sharing links to these assessments via dorm Instagram accounts and Group me chats.

Timing: These activities will run from October through May, with regular lobby programs in the dorms. Events and communications will be timed flexibly based on staff capacity and resident engagement and will pause during academic breaks and vacation periods.

Budget Plan

Item	Estimated Cost	Notes
Food truck prize (BI2WI)	\$1,000	Food and service charges
Parking Permit	$\$45 + (\$12 \times 2) = \approx \$70$	Depends on location of winning dorm and number of blocked off parking spaces. Includes set-up fee for signage and space fees
Weekly snack(cookies) incentives for lobby programs	$(\$23 \times 2) \times 22 = \$1,012$	Given out two times a week during lobby programs. (Estimated 11 weeks for two semesters)
Cash prizes/Gift cards	$(\$250 \times 2) + (\$100 \times 3) + (\$100 \times 9) = \1700	Monetary incentive for winning dorms in each district. Two other 1st place positions for remaining districts- \$250 each. 2nd place positions- \$100 each Nine \$100 gift cards
Sticker incentives	\$700	Given out during lobby programs and other tabling events
Floor stickers	\$500	Pilot stickers in select Highland district dorms (VDP, PSP, CIEN)
Roll up banners	\$500	Multipurpose, to be used for tabling events and during BI2WI
Total	\$5,482	<i>Final cost may vary by vendor price at the time of purchase (Figures were rounded up to the nearest dollar value)</i>

Future Steps and Evaluation



U of A Student

- Continue conducting annual quizzes, and surveys to gather student feedback on recycling education.
- Continue comparing student-generated contamination data with Facilities Management (FM) records to monitor trends and improvements.
- Revise recycling signage and educational materials every two to three years based on student and staff feedback.
- Partner with ResEd to integrate sustainable living more deeply into Wildcat Living and make recycling education a top priority for residential staff.

Acknowledgements



CORE Team

We are grateful to the CSF for generously funding the CORE project and making this work possible. We would also like to thank all Housing and Residential Life staff, dorm residents, and contributors who supported this project through their participation and feedback. Your efforts made this project a great success.

Special thanks to our previous student workers:

- Courtney Kim
- Chloe Stenmark
- Tyler Johnson

Their contributions built the foundation for those who followed, helping the CORE team grow stronger and more effective over time.



Have Questions?



520-626-9179



jillb1@arizona.edu



sustainability_unit

Kindly contact **Jill Burchell** using the contact information above if you have any questions or would like to chat more about recycling programming and initiatives in the University of Arizona dorms.