Enhancing UCLA Athletic Event Sustainability Through Development of Comprehensive Green Templates

2019 Final Report

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Introduction

With the vast amount of resources and opportunities that UCLA provides, there is massive potential for large-scale movements towards a more sustainable institution that fosters sustainable practices and sustainable lifestyles. One of UCLA’s most notable aspects as a university, its storied athletics program, is an intuitive medium through which we could exemplify how much we can do to positively impact the attitude and performance of sustainability. While the focus of the Green Games team has evolved over these past two quarters, our motives have remained the same: to enhance sustainability at UCLA athletic events. Using results from surveys and waste audits, we began to target the methods and infrastructure of athletics events. Audits of athletic facilities and events around the UCLA campus gave the team insight into just how to properly facilitate, organize and manage a zero waste event for all the unique athletic facilities. Eventually our research was compiled into a document that is best described as data for discourse. The team also created templates for the major athletics facilities utilized by UCLA providing specifics on how to run a green game with consideration of the unique nature of each facility. This data hopefully will provide the needed impetus to change upstream sources of event waste. Working within a very limited time frame, the Green Games team was able to establish the building blocks to achieving future sustainability at events. We would like to acknowledge the importance of our stakeholders, Kayla Shirey and Derek Doolittle, in helping our team achieve what we did. They were crucial in the collection of data and provided valuable input to further our projects. While we did not accomplish all of the lofty
goals we set for ourselves, we hope that the templates and data we collected with the help of our stakeholders is a step in the right direction.

**Background**

With masses of people, large venues, and team equipment, athletic events provide both unique challenges and opportunities to sustainability efforts. As the issue of sustainability has gained increasing prevalence and weight, other university campuses and sporting events have attempted to tackle this challenge. A SAR team from last year, Zero Waste Events, spent much of their time roadmapping the zero-waste network at UCLA. Their findings include issues of incentives and general lack of knowledge on where and how to dispose of items. The platform created by this team streamlined much of the frequently asked questions by event planners and the green events guide they revamped provided a great starting point for our team to work off of.

UCLA is not the first to tackle the problem of athletic event-related sustainability. Many other colleges and sporting venues have implemented sustainable practices, from which we drew inspiration and knowledge. Ohio State has a comprehensive program available for all students to use that promotes zero-waste at events, even those not related to sports. This has stemmed from a push for a more eco-friendly framework inside of their athletics department with programs such as Soles for Souls, where student athletes encourages students attending games to donate old shoes to those that are in need. The university’s new “green” facility built with sustainable materials, water-saving technologies, and energy efficient operations has set just one example of the possibilities that we as an institution and we as a community are capable of.
Methodology and Projects

PAC-12 Zero Waste Challenge and UCLA Men’s Basketball Waste Audit

On February 6, 2019, our team participated in the Zero Waste Men’s Basketball Game. This event, part of the Pac-12 Zero Waste Challenge, gave us the opportunity to conduct research on the waste produced at Pauley Pavilion during a UCLA basketball game. Our team developed a plan and a set of objectives for the game in line with our stakeholder’s goals. The overall goal of this event was to divert as much waste as possible, ideally having only 10% or less of the waste produced sent to the landfill. In addition to upholding this target diversion rate, we also wanted to use this game as a starting point in our team’s data collection.

After collaborating with our stakeholders and holding several team meetings, we decided to implement a system of manned and unmanned waste stations at the game so we could analyze the effectiveness of having volunteers at waste bins to help with sorting. We would then, after the game, determine the percentage of contamination in trash cans with volunteers and compare it to the contamination percentage in trash cans that were left alone, with no volunteers at the stations. We believed this data collection would, along with helping us determine the efficiency of having volunteers, give us insight into consumers’ knowledge of and regard for trash sorting. Additionally, we planned a waste audit at the end of the game to both achieve higher rates of diversion and analyze the nature of the waste that athletic events in Pauley Pavilion typically produce.

On the day of the game, our team arrived two hours early to set up for our data collection. We designated two random waste stations on the eastern side of the stadium, where we believed most fans would be seated, to be unmanned, marking the trash bags in these bins to help us
distinguish them from the other bags at the end of the game. Then, we randomly selected two other stations on the eastern side to be always manned with volunteers, and proceeded to mark these bags. After marking the stations, we then had the job of training the volunteers on how to sort the trash. We gave each volunteer a “cheat sheet” we created the night before that illustrated what bins to throw various trash items into, and then explained what our expectations were for the volunteers at the “always manned” waste stations.

Despite the effort we put into setting up this system of data collection, we found out at the end of the game that our data would be skewed because some of the volunteers at the “always manned” stations would leave for large spans of time without telling us. Unfortunately, we were therefore unable to use the data we collected. While this was discouraging, we still were able to run a successful waste audit of Pauley Pavilion. At the end of the first quarter of the game, we started sorting through the trash bags of waste from the game, collecting the single-use beverage cups for us to weigh and analyze later. The sorting was a long process, lasting long into the night. Though most of our team had to leave around 11:00 pm because of midterms, our stakeholder Kayla Shirley, Associate Athletic Director Derek Doolittle, and a few other helpers continued sorting until 3:00 am.

At the Zero Waste Men’s Basketball Game, we ended up diverting 94.7% of Pauley Pavilion’s waste from the landfill, winning the PAC-12’s “Most Improved” award. Over 1,500 pounds of waste was generated at the game, meaning that only 80 pounds of this waste could not be composted or recycled. Though the waste diversion efforts was a success, we were still discouraged by the amount of food waste and single-use ware that we found in the trash. We ended up collecting roughly 40 pounds of single-use coke cups, along with a large amount of
food such as hot pretzels, hot dogs, and pre-baked pizza shells, from concessions. Our research findings were eye-opening and gave us insight on the amount and type of waste produced at UCLA athletic events. This event provided a foundation of research for us to build upon throughout the rest of the quarter and next quarter, giving us clear objectives to focus on throughout the rest of the year.

UCLA Athletic Event Sustainability Survey

In order to evaluate student interest in athletic event sustainability, our team also created and distributed a survey. The survey was meant to gain a deeper understanding of students’ current attitude towards sustainability and athletic events in addition to future paths and changes. It contained the following five questions:

1. How many sporting events do you attend (as an audience member) per year?
2. How concerned are you about the environmental impact of sporting events on a scale of 1-5 (1 = not at all, 5 = extremely)?
3. How interested are you in seeing the implementation of more “green” initiatives/sustainable practices at UCLA athletic events?
4. How much extra would you be willing to pay per concession item to have environmentally-friendly packaging?
5. Which of the following waste-reduction strategies interest you?

The survey was distributed at the UCLA vs. USC basketball game on February 28, 2019, before various classes, on UCLA-affiliated Facebook groups, and to different organizations that our
team members are also a part of (e.g. T.E.A.C.H., UCLA Residential Halls, UCLA Men’s Rowing, Club Tennis, etc.). As of March 22, 2019, we have received over 200 responses to the survey have been collected and preliminary results have been drawn.

The first question was created to obtain an understanding of the relative carbon footprint impact of our respondents. According to research conducted at the 2014 FIFA World Cup in Brazil, an individual’s carbon footprint can be up to 7x higher when attending a sporting event. Although students for the majority seem to attend somewhere between 0-4 sporting events per year, when considered in this statistical context, these numbers spark greater concern for the environmental impact of athletic events. The second question was added in order to survey student awareness regarding this FIFA statistic as well. As noted by a median value of 4 (somewhat concerned) and a mean value of 3.75, it is clear that students are mildly concerned about the environmental impact of athletic events but still lack a deeper understanding of the amount of waste produced. The third question examined the main purpose of this survey on a five-point Likert scale: according to the current results, 91.9% of students are interested or extremely interested in seeing increased sustainability in UCLA Athletic events. Perhaps most importantly, the fourth question was added in order to address underpinning economic interests to change the concessions supply chain -- by asking how much extra ($0 to $4) students would be willing to pay per item at concessions in order to have environmentally-friendly packaging. Our team found that 91.9% of students would be willing to pay at least $1 extra. The final question was added in order to determine student interest in potential spring quarter goals for our team. We provided three predetermined responses to the question (reusable concession items [e.g. souvenir cups], biodegradable concession packaging, and composting) but also provided a
write-in option. Students were the most interested in biodegradable concessions packaging and reusable items; furthermore, a good number of respondents wrote in asking to change the policy preventing them from bringing in clear, reusable water bottles.

These findings were important because different contributors to UCLA Athletic events claim that student fans are uninterested in sustainable practices as a rationalization for inaction. This survey, though still in its incipient stages, illustrates that this is not the consensus amongst students.

Easton Stadium Softball Audit

On the evening of Friday May 10, 2019, following a softball game at Easton Stadium, the SAR Green Games team put their gloves back on and began sifting through trash bags. Due to the smaller size of the softball stadium, the team conducted a more controlled waste audit that involved different types of signage for waste disposal streams. The first category included signage that had both written labels and graphics denoting compost, recycling, and landfill. The second category consisted of signage with only written labels to denote these waste streams. As a control, trash receptacles not separated into three streams and with no signage or graphics were used. The purpose of this setup was to determine which set of signage (none, labels, or labels with pictures) was the most effective at helping people properly sort their waste. Sampled data projected a 72.3% diversion rate if all the waste had been properly sorted, depicting the need for proper signage. This audit emphasized how it is important to make both structural upstream improvements in the athletic department while also educating fans on proper waste disposal.
Recommendations and Deliverables

Policy Recommendation

After conducting two waste audits at UCLA Athletic facilities, it became clear that achieving zero waste within athletics could only be achieved by addressing the underlying single-use problem within the supply chain and enforced by UCLA Athletic facility regulations. Single-use chip bags and a ban on bringing in reusable water bottles to certain athletic events is contributing to a large amount of the waste produced at sporting events. Attendees can only be informed to an extent about how to properly sort their waste into three streams and even those who actively attempt to do so may mistakenly throw items in the wrong container. Thus, we created a memorandum to provide alternative options that focus on upstream policy changes for ASUCLA.

The memorandum contained four recommendations for ASUCLA and UCLA Athletics: to require vendors to provide exclusively compostable or recyclable products at concession stands, to sell souvenir cups to reduce demand for single use cups and encourage direct audience participation in sustainability by discounting refills for souvenir cups, to compost and/or donate leftover food from concessions stand to food banks in nearby areas and/or utilize existing on-campus compost sites or off-site composting services to repurpose food waste, and to create a plan of action to estimate expected audience turnout to prepare the minimum amount of food to limit leftover food waste. Due to conflicts in scheduling, the SAR Green Games team was never presented with the opportunity to present our findings and data directly to ASUCLA. However, it desired for the new sustainability proponents within the Athletic department and any future
UCLA athletics-focused SAR team will continue to advocate for these changes in the upcoming years.

The Templates

Outside of tackling green sporting events through upstream policy changes, we established facility-specific templates to be distributed to all relevant sports coaches and directors to be used during events and practices. These templates provided guidelines for respective sporting venues before, during, and after use that were tailored to the infrastructure and demographic of those sites. This included locating and classifying all waste receptacles within the facility, encouraging green transportation, promoting appropriate relevant, sustainable practices, accommodating for different crowds, etc. Each template assessed the tendencies of the population that frequents the facilities and how to best mitigate their waste, carbon emissions, and educate them for future use of that facility. The guidelines that can be found on any one template are organized into practices to follow before, during, and after an event is held at the facility. They serve to influence UCLA varsity coaches, their athletes, and members of the community to be consciously mindful of the amount of waste they are generating and educate them on how to control it. These templates can be found below in the appendix.

Permanently established regulations such as these can have a major effect on the consistent percentage of diverted waste at UCLA. To use these templates effectively would require sports faculty, janitorial teams, and concessionaires to refer to the template when disposing waste, holding spectator events, and identifying areas of improvement within each particular establishment. As UCLA Athletics embodies such a significant portion of what our
school represents, we can only expect it to also capture the values and principles that we do as a school in playing our part in living more sustainably.

**Conclusion**

Using data from our waste audits and survey from these past two quarters, we have identified possible areas of improvement in sustainability at UCLA athletic events. After two successful quarters of research, the team has developed comprehensive templates for each of the major stadiums utilized by UCLA Athletics. We hope that, through collaboration and commitment, we can make tangible change for the better for UCLA Athletics. The Green Games team’s plans have evolved considerably since the beginning of winter quarter. Initially, our sole goal was to create sport-specific templates for different UCLA athletic events; however, after conducting our waste audit, our plans also expanded to include other elements of the PAC 12 Zero Waste Challenge including waste diversion, fan and athletic involvement, and sustainable partnerships. Looking to the future, working with ASUCLA to initiate a change in their concessions supply chain, partnering with UCLA student athletes to expand our scope of influence and awareness, and establishing avenues to manage leftover food are all viable next steps to take, among others. Due to the short-term nature of our team, it is of utmost importance that sustainable efforts in UCLA Athletics are institutionalized in some way to achieve long-term success. Future SAR teams, a student athlete sustainability panel, and a sustainability position within the athletics department are all options to ensure continued progress on this issue. While the Green Games team may have taken the first couple steps towards achieving sustainability at athletic events, there is still much work to be done.
Appendices:

Below are the facility-specific templates that we compiled. Each template contains information on how to run a sustainable event at each particular facility.
Drake Stadium

Before Event:
- Encourage attendees to use green transportation
- Ensure waste management staff are familiar with proper disposal of three different types of waste: landfill, recycle, and compost.
- Ensure vendors are equipped with the appropriate waste liners and informed about proper disposal techniques.
- Make sure waste receptacles are properly labeled with the correct corresponding colored liners.
- Plan ahead of time and require vendors to prepare food based upon a reliable, expected audience turnout to limit leftover food waste.
- Use electronic advertising and mobile ticketing instead of flyers and ticket stubs to cut down on paper waste.

During Event:
- Remind attendees throughout the game (via monitors, announcements, etc.) of the proper disposal of their waste and how their event is going green.
- Ensure that waste management distinguishes between different types of waste when removing and replacing trash bags.
- Instead of using paper Powerade cups for student-athletes, encourage the use of larger plastic Powerade water bottles to lower the amount of paper waste generated by the athletes.

After Event:
- Supervise the transportation of excess concessions to be donated to food banks.
- Collect all items that can be reused later and store them for future events.

Compost, Recycling and Landfill Receptacles Signage Review:

Easton Stadium

Before Event:
- Use electronic tickets if possible. If you are printing flyers or handing out anything printed, try to print double-sided.
- Use social media as a platform to advertise.
- Encourage event attendees to use green transportation such as public transit, bike, hybrid rental vehicles, etc. by posting transit information and schedules/parking services.
- Ensure an adequate number of appropriate waste receptacles (compost, recycling, landfill) are present in addition to organizing pick-up sorting of waste and staff is informed of proper disposal techniques.
- Plan ahead of time and prepare food based upon a reliable, expected audience turnout to limit leftover food waste.

During Event:
- Instead of using paper Powerade cups for student-athletes, encourage the use of larger plastic Powerade water bottles to lower the amount of paper waste generated by the athletes.
- Include a few announcements about what you did to go green for this event. A reminder throughout the game (via monitors, announcements, etc.) of the proper disposal of waste.
- Ensure that waste management distinguishes between different types of waste when removing and replacing trash bags.

After Event:
- Discuss with vendors the possibility of recycling excess materials after the event rather than disposing them.
- Collect all items that can be reused later and store them for future events.

Compost, Recycling and Landfill Receptacles Signage Review:

Receptacles Map:

Accessibility & Demographics:

Drake Stadium Specific Notes: There are some concessions sold at events, but attendees can also bring food from outside the stadium. There is only a compost dumpster and no landfill in the arena. To reduce the waste diversion during events at Drake Stadium, it is important to place landfill and compost dumpsters, as well as making sure that all trash receptacles, compost, recycling, and landfill, are at every waste station.

Access Notes: Attendees can enter and leave as they please.

For more information:
- Khee Wong
  - Event Waste Coordinator
  - Phone: (518)-275-400

Easton Stadium Specific Notes: There is only one landfill dumpster that all waste is ultimately diverted to the stadium. It is of utmost importance that recycling and compost dumpsters are also installed to prevent recyclable and compostable items from going to landfill. Due to the length of the game, waste generated in dugouts from athletes is notable. Replacing Powerade cups with reusable bottles in dugouts is one change that can be made. The trash cans located in the bleachers receive the heaviest traffic, yet only have a landfill option. Installation of recycling and compost cans in bleachers is highly recommended.

Access Notes: Attendees can enter and leave as they please.

For more information:
- Khee Wong
  - Event Waste Coordinator
  - Phone: (518)-275-400

- Kayla Shiny
  - Associate Director of Operations
  - UCLA Department of Intercollegiate Athletics
  - Office: (518)-275-400
  - Cell: (518)-275-400
Marina Aquatic Center

Before Event:
- Encourage attendees to use green transportation
- Make sure waste management staffs are familiar with proper disposal of the three different types of waste: landfill, recycle, and compost.
- Ensure vendors are equipped with the appropriate waste liners and informed about proper disposal techniques
- Make sure waste receptacles are properly labeled with the correct corresponding colored liners
- Plan ahead of time and notify vendors to prepare food based upon a reliable, expected audience turnout to limit leftover food waste
- Use electronic advertising and mobile tickets instead of flyers and ticket stubs to cut down on paper waste.

During Event:
- Remind attendees throughout the game (via monitors, announcements, etc.) of the proper disposal of their waste and how your event is going green
- Ensure that waste management distinguishes between the different types of waste when removing and replacing trash bags.
- Instead of using paper Powerade cups for student-athletes, encourage the use of larger, plastic Powerade water bottles to lower the amount of paper waste generated by the athletes.

After Event:
- Supervise the transportation of excess concessions to be donated to food banks
- Collect all items that can be reused later and store them for future events

Compost, Recycling and Landfill Receptacles Signage Review:

Pauley Pavilion

Before Event:
- Promote the event using electronic methods to reduce waste produced from flyers
- Make sure that waste receptacles are clearly labeled (ideally with names as well as graphics)
- Make sure waste receptacles are lined with bags that correspond with the correct stream of waste (brown bags for landfill, green bags for compost, blue bags for recycling)
- Encourage attendees to prepare food in compostable wrappers and buy items in bulk
- Plan ahead of time and notify vendors to prepare food based upon a reliable, expected audience turnout to limit leftover food waste
- Encourage electronic ticketing to reduce paper waste.

During Event:
- Keep superfuzz electronic billboards off to reduce electricity usage.
- Host fan competitions that promote proper waste disposal during halftime.
- Show videos of the artists promoting sustainability/discussing what sustainability means to them on the teleprompter.
- Distribute sustainable giveaways to the fans (e.g., items that are not single-use or plastic)
- Replace filled waste receptacles with the correct liners.

After Event:
- Donate leftover concessions to prevent excess food from going to landfill
- Deliver waste to appropriate Athena bins.

Compost, Recycling and Landfill Receptacles Signage Review:

Receptacles Map:
- This is an aerial view of the immediately accessible receptacles that are located at the Marina Aquatic Center
  - Large brown dot = landfill dispenser
  - Small brown dots = landfill receptacles
  - Small blue dots = recycling receptacles
- There are no compost receptacles at Marina Aquatic Center and there are no recycling or compost dumpsters.

Accessibility & Demographics:
- Demographic Notes: Most event attendees are family, alumni or close friends to the athletes. Regattas are usually small in attendance.

Marina Aquatic Center Specific Notes: The food and waste is generated from parent or team-purchased foods varying in source from the home to the vending teams. It is easiest to approach this by including information on how to purchase compostable and recyclable materials in event planning organization prior to events.

Access Notes: Attendees can enter and leave as they please.

For more information:
- KiHa Wolfg
  - Event Media Coordinator
  - kiha@nau.edu
  - (928) 526-3686

- Kayla D노
  - Associate Director of Operations
  - UCAL Department of Intercollegiate Athletics
  - (310) 206-3941 (L) (310) 206-3945 (C)

Receptacles Map:
- This is an aerial view of the immediately accessible receptacles that are located in Pauley Pavilion
  - Stars = unmarked waste receptacles
  - Boxes = 2:1 combination of compost and recycling receptacles
  - Circles = 1 compost and 1 recycling receptacle

Accessibility & Demographics:
- Demographic Notes: Events held at Pauley include basketball, volleyball, and gymnastics. Basketball games tend to be comprised of the majority by students with a smaller percentage of visiting family members/teams. Volleyball games attract a more equal distribution of students and visiting family members/teams. Gymnastics has been growing in student attendance as popularity has been growing. Individuals are not allowed to bring in food nor reusable water bottles. Waste produced from the event will stem primarily from concessions.

Pauley Specific Notes: The facility does have containers that separate waste into three streams and three-stream large receptacles provided by Athena to divert waste as well. When inside the stadium, landfill receptacles are not as easily accessible nor as well marked as compost or recycling receptacles. While not all people know the difference between compost and landfill, this accessibility difficulty could potentially lead attendees to improperly dispose of their waste into compost or recycling bins.

Access Notes: Pauley operates under a single-entry system. Individuals are not allowed to bring in food nor reusable water bottles. Waste produced from the event will stem primarily from concessions.

For more information:
- Akira Wolfg
  - Event Media Coordinator
  - akira@nau.edu
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  - (310) 206-3941 (L) (310) 206-3945 (C)
Below are some of the most important preliminary results from our survey:

How much extra would you be willing to pay per concession item to have environmentally-friendly packaging?

136 responses

- 30.1%愿意支付0美元
- 8.1%愿意支付1美元
- 44.9%愿意支付2美元
- 8.1%愿意支付3美元
- 8.1%愿意支付4美元
How interested are you in seeing the implementation of more “green” initiatives/sustainable practices at UCLA athletic events?

136 responses

- Extremely disinterested: 52.9%
- Disinterested: 39%
- Neither interested nor disinterested: 1.2%
- Interested: 5.8%
- Extremely interested: 0.5%

Which of the following waste-reduction strategies interest you (select all that apply):

136 responses

- Reusable concession items (e.g. souvenirs): 99 (72.8%)
- Composting: 116 (85.3%)
- Sustainability oriented events: 1 (0.7%)
- Zero waste everything policy: 1 (0.7%)
- Encouraging/Implementing: 1 (0.7%)
- Electronic ticketing: 1 (0.7%)
- Fewer wasteful freebies and giveaways: 1 (0.7%)
- Recycling bins: 1 (0.7%)
- Sporting events not giving away free stuff: 1 (0.7%)
- Using less power if possible, consider green options: 1 (0.7%)
- Maybe less waste with the free stuff the audience or members to bring up: 1 (0.7%)