



## **ZERO WASTE ATHLETICS**

### **Training Manual**

Global Sustainability, Spring 2013

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## **ABSTRACT**

Zero Waste Athletics is a student group at the University of Virginia, which focuses on reducing the landfill waste produced by concessions at athletic events by 90%, diverting the waste into recycling and composting. Zero Waste Athletics strives to reach this goal by introducing a composting waste stream, by introducing compostable or recyclable concession packaging, and through the support of housekeeping staff, concession staff, volunteers and spectators. To receive the support of these groups, Zero Waste Athletics must educate them on the best practices of implementing these new methods. Currently, Zero Waste Athletics is focusing on bringing “zero waste” to the John Paul Jones Basketball Arena at the University of Virginia.

Our team has assisted the Zero Waste Athletics Initiative through the creation of educational materials that will spread awareness and knowledge of the concept of zero waste to student volunteers, John Paul Jones Arena employees, and all spectators at JPJ, including students and Charlottesville residents. These educational materials include:

- 2 Zero-Waste Training “Cheat Sheets”
  - Student Volunteer “Cheat Sheet” Name Tag: this cheat sheet will double as a name tag in front and will aid the student volunteers at JPJ events who are standing near recycling and composting bins and assisting spectators with throwing out trash.
  - JPJ Housekeeping Staff “Cheat Sheet”: this cheat sheet will aid the JPJ staff in carrying out their procedures for the pre-game setup of trash bins and post-game collection of trash. It will also aid the staff in selling concessions during the game.
- Informational Spectator Poster: this poster will serve as an aid to spectators at the game when throwing out their trash, providing information on which items should be thrown into the recycling bin, and which ones should be thrown into the composting bin.

Our Zero Waste manual project will serve as an adaptable resource for the Zero Waste Athletics program and the University of Virginia Athletic facilities, including John Paul Jones Arena, serving the needs of employees, volunteers, spectators, students, and the general public.

## **INTRODUCTION**

Zero Waste Athletics at the University of Virginia seeks to divert 90%, if not all, waste produced at UVa athletic events. As a student-led initiative, Zero Waste Athletics has focused on implementing Zero Waste at John Paul Jones Arena at a series of pilot events.

Our team has developed a series of training manuals and educational materials, while working with the Zero Waste Athletic Leaders, Ashley Badesch and Matt Boegner, which outline the procedures of Zero Waste Athletics at John Paul Jones Arena. In addition to reviewing the UVa Zero Waste Athletics Initiative, we have also researched successful Zero Waste initiatives at other universities around the country and even an international event, the London Olympics, as well as effective ways to display information to others, regarding informational content, aesthetic design, and the sustainability of the design. With this knowledge, we have designed the three “cheat sheets” for staff and volunteers, an informational poster for spectators, which will all be ready for distribution at the next Zero Waste Athletic event at John Paul Jones Arena.

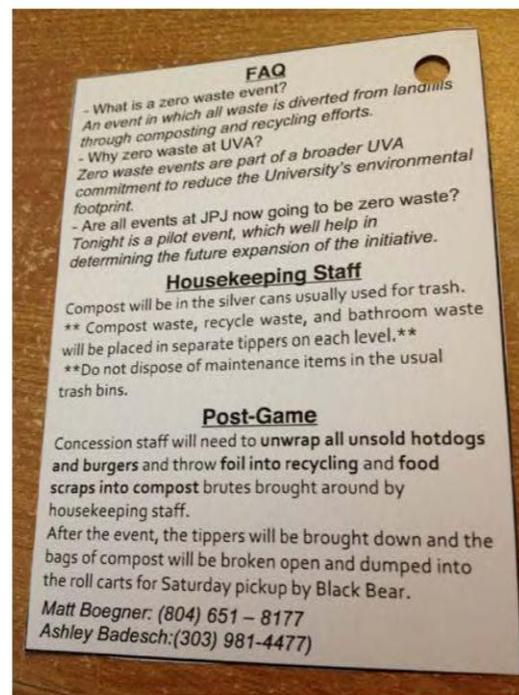
Currently, John Paul Jones Arena has both trash and recycling receptacles. However, many spectators, employees, and volunteers do not always recycle or know how to recycle properly. Our materials seek to reduce this confusion and the potential confusion of the introduction of composting, by educating our audience about these waste streams at John Paul Jones Arena in a simple yet effective manner. Our training materials will be used to inform employees and volunteers at athletic events of what Zero Waste Athletics is and the best practices for implementing Zero Waste. Each manual serves a different purpose, to meet the needs of both the front and back-of-house staff at John Paul Jones Arena.

These manuals and poster will be only a small part of the larger Zero Waste Athletics program. Zero Waste Athletics requires support from various stakeholders from across the University, including John Paul Jones Arena, UVa Recycling, and Black Bear Composting. The employees and student volunteers at John Paul Jones Arena are responsible for not only understanding and following the best practices of Zero Waste, but also for informing spectators about how they can follow Zero Waste practices. Our “Cheat Sheets” will help to elucidate any concerns or questions about Zero Waste and its implementation at JPJ. It is also important to educate spectators because they will ultimately make the decision to properly dispose their waste. An informational poster will give spectators as well as the entire University of Virginia community the ability to learn more about and participate in the Zero Waste Athletics Initiative through recycling and composting at JPJ events. Our Zero Waste manual project will be able to reach, instruct, inform and serve as a resource for employees, volunteers, spectators, and students of the importance and best practices of the Zero Waste Athletics Initiative at John Paul Jones Arena.

## EXPERIENCE

### Harlem Globetrotters Pilot Event Experience

In order to gain insight into the workings of the Zero Waste Initiative and their goals for the future, our team attended the Harlem Globetrotters pilot event planned and sponsored by the Zero Waste Initiative. At the event, stations composed of recycling and compost bins were situated throughout the John Paul Jones Arena. Each station had two student volunteers responsible for ensuring that spectators disposed of their waste into the correct bins, allowing the event to be a sustainable, waste free environment. The student volunteers were given small informational flip cards which instructed them about where certain items should be disposed of and how to handle difficulties with patrons. Signs were also posted throughout the event which explained how items should be disposed.



While these were excellent ideas, we noticed was a lack of information and communication among spectators, Zero Waste Initiative volunteers, and John Paul Jones Arena employees. There were very few announcements made about the goal of the Zero Waste event and spectators were poorly informed about the Zero Waste Initiative goals; we often struggled to have spectators comply with the Zero Waste ideals. However, this was not because they were resistant or unreceptive to our suggestions, but spectators simply had no knowledge of the Zero Waste Initiative or the intentions of the specific event. This is understandable as they gathered at JPJ to watch basketball, not to worry about sustainability. Although there was signage posted, many spectators were often much too preoccupied to take note of the instructions and information presented on the posters. Additionally, several John Paul Jones Arena staff members were not well informed of our zero waste intentions. Although more knowledgeable than the attendees of the event, many JPJ staff members approached us, inquiring about our presence and reason for attendance at the game. Furthermore, there was slight confusion following the main event, as the JPJ staff members were uninformed of the distinction between the recycling bins and the compost bins. Several waste bags were

mixed up and the student volunteers had to sort through them to ensure that all compost and recycling remained separate.



Although the event was successful, student volunteers were often forced to pick through the bins, sorting the compost from the recycling ourselves. This is due to the fact that many spectators of the event were often too distracted to take the time to distinguish between the two bins or inquire about our purpose at the event. Without multiple student volunteers manning each station, it is likely that the recycling and compost would have been contaminated and mixed up. Such difficulties made it evident that without proper education and information, it is impossible for people to simply comply with the standards of the event. This pilot event also showed that student volunteer help is essential, as the masses were simply not well versed in the goals of the Zero Waste Initiative.

## Design

Our team has decided that the most effective way to achieve Zero Waste education may not be through a single training manual, but expanded to many different educational materials to appeal to the broader audience of employees, volunteers, spectators and students. By researching precedents of Zero Waste educational materials at other universities and wide-scale events as well as the general formats of training manuals and instructional design, we will be able to develop a package of materials that will be able to reach our audience on multiple levels.

The first step to design our training materials will be to create graphic standards in order to create a consistent look throughout in order to promote the initiative. The graphic standards will include font, color, style of image, and logo to be used. Other considerations will be for all materials to use succinct and easy-to-read language, illustrations, and diagrams as teaching tools. There are several different types of materials that we can create including:

Type of Material	For Use By	Purpose	Sustainable?
Workbook	Employees	To be used in training sessions	Yes
Self-paced guide	Employees, volunteers	To be read on their own	Possible
Reference manual	Employees	To be accessible by employees, containing detailed procedures	Yes
Handouts (tri-fold brochure, postcard, index card on rings)	Volunteers, students	To be used in training sessions, containing general information	Possible
Job aids	Employees, volunteers	To be displayed in workplace, contains step-by-step instructions	Yes
Infographic poster	Students, spectators	To be displayed inside and out of stadium, in suites, online	Yes
Postcard	Volunteers, students, spectators	to be used as a "cheat sheet" that focuses on most common items	Possible
Signage for cans	Students, spectators	To be displayed on compost and recycling cans to instruct patrons about specific items	Yes

The most suitable materials for our training materials would be:

- Self-paced guide for employees, similar to the handout for volunteers, but including back of house information.
- Handout for volunteers that could be laminated or digital in order to allow the manual to be reused for several games.
- Job aid for break rooms and inside the concession booths, a condensed version of the signage for the cans.
- Infographic for inside and outside of stadium, suites, online, eye-catching and informative about the zero waste initiative, with general information about the process

- Signage for compost and recycling cans, simple, quickly understood illustrations informing students and spectators about what belongs in each can
- Postcard “cheat sheets” for students and spectators, this could be an insert in a program or an actual ad in a program

From these options, we combined some and narrowed down our materials to postcard “cheat sheets” for student volunteers and JPJ staff, an infographic poster to be posted inside John Paul Jones for spectators, as well as a reference manual on the entire Zero Waste Athletic project for general use. During our research on various precedents, we saw many extensive manuals that were undesirable to read, like the 50-page one the London Olympics used. To avoid this problem, we will aim to make the manuals as short as possible, being succinct and concise with our words, so as to not lose the interest of our readers, while also providing all relevant information regarding Zero Waste Athletics.

## GRAPHIC STANDARDS

### RECOMMENDATIONS:

PHOTOGRAPHY: CRISP AND CLEAN

GRAPHIC DESIGN: LEGIBLE FROM A DISTANCE

AVOID TOO MUCH READING

SIMPLE AND ORGANIZED

### TYPOGRAPHY:

**BEBAS NEUE**

OSTRICH SANS ROUNDED MEDIUM

### COLORS:



243 R - 113 G - 33 B  
0 C - 69 M - 100 Y - 0 K



23 R - 22 G - 73 B  
100 C - 97 M - 30 Y - 46 K

### LOGO:



## THE MANUALS

The John Paul Jones Staff “Cheat Sheet” will inform UVa concessions and housekeeping employees as well as student volunteers working concessions at John Paul Jones Arena how to sort items into recycling and composting and to minimize the waste that is thrown out. This will include items specific to housekeeping including back-of-house pre-game procedures, setting up receptacles, and post-game clean up. Items specific to concessions will include instructions in dealing with food packaging and leftover food and materials from concessions. At the pilot event, the housekeeping staff was confused with the procedures of dealing with the waste and had placed the composting and recycling bags in the same bin. Volunteers sorted the bags later on. This problem will be alleviated with implementation of the “cheat sheet,” properly instructing staff on the proper disposal methods of the different streams. NC State was able to instruct their concessions staff through a “Dear Vendors” letter in their Sustainability Toolkit.

**EMPLOYEES**

<p><b>WHAT IS ZERO WASTE?</b></p>		<p><b>NO TRASH INSTEAD, COMPOSTING + RECYCLING</b></p>	<p><b>HOUSEKEEPING PROCEDURES PREGAME:</b></p> <ul style="list-style-type: none"> <li>- COMPOST WILL BE IN THE SILVER CANS USUALLY USED FOR TRASH</li> <li>- COMPOST WASTE, RECYCLE WASTE, AND BATHROOM WASTE WILL BE PLACED IN SEPARATE TIPPERS ON EACH LEVEL</li> <li>- DO NOT DISPOSE OF MAINTENANCE ITEMS IN THE USUAL TRASH BINS.</li> </ul> <p><b>POST GAME:</b></p> <ul style="list-style-type: none"> <li>- ASSIST CONCESSIONS STAFF WITH UNWRAPPING AND DISPOSAL OF ALL UNSOLD HOT DOGS AND BURGERS; THROW FOIL INTO RECYCLING AND FOOD SCRAPS INTO COMPOST BRUTES</li> <li>- AFTER THE EVENT, BRING THE TIPPERS DOWN AND THE BAGS OF COMPOST TO BE BROKEN OPEN AND DUMPED INTO THE ROLL CARTS FOR PICKUP BY BLACK BEAR.</li> </ul>
<p><b>RECYCLING:</b></p> <ul style="list-style-type: none"> <li>- ALL PLASTIC (CUPS, STRAWS, UTENSILS, PLASTIC PACKAGING, PLASTIC NACHO BOATS, BOTTLES)</li> <li>- TIN FOIL (ALUMINUM FOIL, HOT DOG WRAPPER, NOT THE HOT DOG)</li> <li>- CANDY WRAPPERS</li> <li>- CONDIMENT PACKAGES</li> </ul>	<p><b>COMPOSTING:</b></p> <ul style="list-style-type: none"> <li>- FOOD SCRAPS</li> <li>- PAPER PRODUCTS (NAPKINS, PAPER CUPS, PAPER TOWELS, AND FRY CUPS)</li> <li>- CARDBOARD PIZZA BOXES +</li> <li>- FOOD BOATS</li> <li>- POPCORN TUBS</li> <li>- TOOTHPICKS</li> <li>- SWEETENER PACKETS</li> </ul>		
<p>*IF AN ITEM DOES NOT APPEAR TO FALL INTO EITHER CATEGORY, PLACE IN THE RECYCLING (COMPOST CANNOT BE CONTAMINATED)</p>			
<p><b>IF YOU NEED ASSISTANCE OR HAVE ANY QUESTIONS PLEASE CONTACT: _____</b></p>			

The Student Volunteer “Cheat Sheet”, which also serves as a name tag for students volunteering at John Paul Jones Arena events, will inform student volunteers how to direct trash into the proper recycling or composting bin and answers to potential questions that spectators may ask during a Zero Waste event.

**VOLUNTEER**

<p><b>WHAT IS ZERO WASTE?</b></p>		<p><b>NO TRASH INSTEAD, COMPOSTING + RECYCLING</b></p>	<p><b>VOLUNTEER PROCEDURES:</b></p> <ul style="list-style-type: none"> <li>- TWO VOLUNTEERS PER STATION</li> <li>- ENFORCE DISPOSAL INTO CORRECT BINS</li> <li>- PREVENT AND REMOVE ALL CONTAMINATION POSSIBLE</li> <li>- ALERT HOUSEKEEPING STAFF WHEN BINS ARE NEAR FULL</li> </ul>
<p><b>RECYCLING:</b></p> <ul style="list-style-type: none"> <li>- ALL PLASTIC (CUPS, STRAWS, UTENSILS, PLASTIC PACKAGING, PLASTIC NACHO BOATS, BOTTLES)</li> <li>- TIN FOIL (ALUMINUM FOIL, HOT DOG WRAPPER, NOT THE HOT DOG)</li> <li>- CANDY WRAPPERS</li> <li>- CONDIMENT PACKAGES</li> </ul>	<p><b>COMPOSTING:</b></p> <ul style="list-style-type: none"> <li>- FOOD SCRAPS</li> <li>- PAPER PRODUCTS (NAPKINS, PAPER CUPS, PAPER TOWELS, AND FRY CUPS)</li> <li>- CARDBOARD PIZZA BOXES +</li> <li>- FOOD BOATS</li> <li>- POPCORN TUBS</li> <li>- TOOTHPICKS</li> <li>- SWEETENER PACKETS</li> </ul>		
<p>*IF AN ITEM DOES NOT APPEAR TO FALL INTO EITHER CATEGORY, PLACE IN THE RECYCLING (COMPOST CANNOT BE CONTAMINATED)</p>			<p><b>FREQUENTLY ASKED QUESTIONS:</b></p> <p><b>WHAT IF THE ITEM GOES INTO THE WRONG BIN?</b></p> <p><b>THIS CAN CAUSE CROSS CONTAMINATION SO REMOVE ANY ITEMS IMMEDIATELY</b></p> <p><b>WHY IS THE ARENA GOING ZERO WASTE?</b></p> <p><b>ZERO WASTE EVENTS ARE PART OF A BROADER UVA COMMITMENT TO REDUCE THE UNIVERSITY'S ENVIRONMENTAL FOOTPRINT.</b></p>
<p><b>IF YOU NEED ASSISTANCE OR HAVE ANY QUESTIONS PLEASE CONTACT: _____</b></p>			



The

*Informational Spectator Poster* will serve as a guide to spectators when throwing out their trash, indicating which trash items should be placed in the recycling bin and which items should be placed in the composting bin. This poster will complement and eventually replace the student volunteers who are stationed next to recycling and composting bins, serving as an instructional resource on Zero Waste at John Paul Jones Arena. The London Olympics Zero Waste Vision Manual was able to educate spectators about Zero Waste through a waste hierarchy graphic. The inclusion of a similar graphic in our informational spectator poster at John Paul Jones Area will further aid the public's understanding of Zero Waste and how it fits into the existing waste structure

# WHICH BIN DOES IT GO IN?



## COMPOSTING

-  **FOOD SCRAPS**
-  **PAPER PRODUCTS**
-  **CARDBOARD BOXES**
-  **POPCORN TUBS**

+ TOOTHPICKS  
+ SWEETNER PACKETS

## RECYCLING

-  **ALL PLASTIC**
-  **PLASTIC UTENSILS**
-  **TIN FOIL**
-  **CANDY WRAPPER**

+ CONDIMENT PACKAGES

## **MOVING FORWARD**

If our volunteer and JPJ Staff “cheat sheets” as well as spectator poster are implemented at future Zero-Waste Athletics pilot events, then there will be larger cohesion between the various stakeholders who play a role during such events. Once this is achieved, then future work will need to be done to educate and raise awareness in the UVA community at large.

### **Form a Larger, Zero Waste Committee**

Looking forward, we would like to see a committee created to work on Zero Waste Athletics, as currently it seems to only be run by Matt Boegner and Ashley Badesch. This is a huge project that needs a lot more hands-on work and brain power. Given this new committee, we would like to implement a stronger education and marketing push. In the NC State Manual, they emphasize their desire to change people’s perception of trash. This goes along with our overall objective of educating the University of Virginia population about sustainability. The following are initiatives for this Zero Waste Committee to work on:

### **Marketing Recycling and Compost Bins**

One of the best, but also most costly, improvements to be made to promote zero waste would be to replace the current waste bins. Currently, there are no standard bins used for composting and recycling bins have small openings, which make it difficult to place many items in the bin. The introduction of new bins specifically made for multiple waste streams would allow composting and recycling to be easily identified by spectators and students and easily accessible by volunteers and employees. An example of a successful implementation of composting and recycling bins would be Ohio State University’s Zero Waste Initiative, which employs two oil barrels, one in each of the school colors: red for recycling, grey for compost. These colors identified each of these waste streams through the school’s campus and athletic facilities, branding the Zero Waste Initiative and allowing students and spectators to be able to easily identify the proper bin.



Another consideration to the improvements of the bins would be to improve signage on the bins. This is listed in the NC State Manual as one of the three ways to target attendees at Zero Waste Events. The improved signage would explain the waste streams in simple illustrations and terms and educate students and spectators. These simple figures would help assist students and spectators make quick decisions as they are disposing of waste and learn about the proper waste streams for future decisions. NC State also suggests placing the same signage in the suites at stadiums as well as on the season ticket holder websites. Once UVA Athletics is on board with this project, we would like to incorporate our marketing into these areas.

### **Jumbotron**

The jumbotron is a great, central source to disseminate information to fans as it is centrally located in the stadium and people pay attention to the graphics displayed on it. In the future, we would like to create a video that teaches fans how to compost and recycle at the stadium. Included in this brief video would be showing what types of materials go into the recycling bins and what types of materials go into the compost bins. We found a video from GreenopolisTV that we would like to incorporate into our athletic events in the future. Their video is a mock-news anchor who give 5 tips to be green at a sporting event,

while adding humor into each tip. We think this would be the best type of video to create because it gets people's visual attention, auditory attention, and keeps them watching due to the humor.

## **Facebook Page**

One idea we came up with to enhance the marketing of the Zero Waste Athletics initiative was to create an effective Facebook page. Creating a page with the Zero Waste logo and a brief description of the goals of the initiative would be informative to numerous people. We would update the page once or twice a month to inform Facebook users of any past or upcoming Zero Waste Events. Also, based off of the sections in the Olympics and NC State manuals that measure the progress of their programs, we would want to use the Facebook page to give periodic updates about the success of our zero-waste program. By liking the Facebook page, users would receive these occasional updates in their news feed. This would be a simple way to remind many students and fans of the goals and progress being made by Zero Waste Athletics.

In order to advertise this informational Facebook page, we could set up a promotional stand at a UVA sporting event. At this stand, fans could earn raffle tickets by liking the Zero Waste Facebook page on their cell phone. Perhaps the winner of the raffle could win some sort of final prize, whether it be money or a UVA tailgating flag. By providing a simple incentive to like the page, we would spread knowledge about the Zero Waste Initiative here at UVA. This could promote general awareness for fans and could encourage other students to get involved in the Zero Waste program.

## **Better Use of the Zero Waste Initiative Logo**

Another very important aspect of the Zero Waste Initiative's marketing strategy that could be greatly improved to promote awareness of its ideals and goals is a better use and implementation of the Initiative's logo. Currently, the Zero Waste Initiative logo is not well known or recognized by members of the University community, as most students, faculty, and employees of UVA have never even heard of the Zero Waste Initiative. In order to promote awareness and educate the community about the goals, vision, and ideals of the Zero Waste Initiative, the logo must be implemented more effectively. First of all, this simply entails a more frequent use of the logo, as the only time it has ever been implemented, to our knowledge, was on the volunteer T-shirts for the Harlem Globetrotters pilot event. An increased frequency of logo usage should also entail the usage of the logo on all signage, the proposed Facebook page, and on visual announcements on jumbotrons. If the logo were to be used more effectively, people would soon associate it with the vision and intentions of the Zero Waste Initiative. Ideally, if this logo is presented to the public in a comprehensive manner, people should soon become more aware of the presence of the Zero Waste Initiative in the University community. Ideally, this logo, once used with more frequency, should essentially serve as a reminder to act sustainably, consider the environment, and spread the word about the benefits of composting and recycling. Furthermore, the Zero Waste logo could join forces and partner with UVA Athletics, a very powerful entity at our University. Such a partnership could allow the Zero Waste Initiative to gain further publicity so that the public can become even better informed about the intentions of the movement. A more efficient use of the Zero Waste Initiative logo could better inform the public of the intentions, goals, and vision of such a movement, leading to greater understanding and cooperation with these ideals.



## **Comprehensive Zero Waste Athletics Manual**

Once Zero-Waste Athletics is fully integrated into UVA Athletics, a comprehensive UVA Zero-Waste Athletics Manual would be very useful. This extensive manual will act as a guide to Zero Waste Athletics for all interested parties, including other schools and universities who are starting to implement Zero-Waste. This manual will provide a background of Zero Waste Athletics, including definition, long-term goals, and past efforts. It will also provide readers with future plans, regarding John Paul Jones and how to get involved with Zero-Waste and sustainability in general.

For example, within the London Olympics Zero-Waste Vision Manual, past Olympic work in sustainability and zero waste is mentioned, which we will also include in this manual, focusing on the past efforts at Scott Stadium and John Paul Jones Arena. These past works are important to mention so that readers can fully understand the history of Zero Waste at UVA and further recognize what works and what doesn't work, from the viewpoint of past projects. The London Olympics manual also includes "success factors," such as management systems, resource management tools, waste receptacles, and icon and color-based communications, which are critical to the implementation of zero-waste events. These success factors are listed in a table format, which provides an easy and organized way for readers to understand exactly what is being done regarding each factor to further Zero Waste at the Olympics. Such a table of success factors would be beneficial to include in our manual, so that readers can easily understand what needs to be done in order to host successful zero-waste events. Furthermore, the London Olympic Games manual also includes a subsection that briefly states the overall impact desired from their project. This is a nice way to put a futuristic, long-term perspective on the project, which we will incorporate into our informational manual.

Additionally, the NC State manual has a section encouraging people to reuse or donate leftover items; this is an important and simple sustainable act that often gets overlooked. This is applicable to UVA Athletics from both the spectator's and stadiums' point of view, and thus would be beneficial to include in the comprehensive manual. Spectators at UVA games can take home leftover plastic soda cups and reuse them at home. Additionally, with the mass production of food for concessions at UVA games, there is likely a large amount of food that is not used. Instead of throwing this unused food out, or even composting it, UVA Athletics can donate this food to soup kitchens, as Campus Kitchen does.

## LESSONS LEARNED

### Barriers and Solutions

- *Spectator Ignorance* - A major barrier to the Zero-Waste Athletics Initiative is the general ignorance of recycling and composting. Many spectators at UVA games do not care to divert their trash from landfills, because they simply do not know the benefits of composting and recycling.
  - *Solution* - This project serves to eliminate this spectator ignorance, through our informational poster on composting and recycling. At the Zero-Waste Pilot Event at JPJ, spectators were open to the idea of Zero-Waste and were highly complacent to recycle and compost their trash, once they learned that they could do so and were directed by the student volunteers. Thus, the creation of our informational posters will remove this barrier of spectator ignorance and further the progress of Zero-Waste Athletics.
- *Communication and Project Structure*- There were some communication difficulties with the leaders of the Zero Waste Project from a past Global Sustainability Class. It was beneficial that they were able to define specific projects to the two Zero Waste Athletics groups in our class because of their experience with the Zero Waste Athletics initiative. However, because of conflicting schedules, it was hard to keep in touch with them, making it difficult to follow through with their initial desires for the project. In the end, this allowed us to be more creative with our project, shaping it into what we envisioned. Our team was also not able to speak with the John Paul Jones Arena staff who could have given us valuable information about their event procedures.
  - *Solution* - If we could re-do this project, it would have been beneficial to set up bi-weekly meetings in advance with the Zero Waste Athletic Leaders in order to eliminate the disconnect in communication with them. However, our team was able to handle this lack of communication well, creating and implementing our own directives. Additionally, we would have set up a meeting with the JPJ employees, in order to receive feedback on the Zero-Waste Pilot event, further adding to the value of our employee “cheat sheets.”
- *Pilot Event* - Because the pilot event was so early in the semester, we were unable to implement and measure the effectiveness of our training materials and informational posters. The pilot at the Harlem Globetrotter event was held one week after the introduction to the project at large. Due to the limited time period before the pilot event, we did not have the knowledge base to create and finalize our training manuals.
  - *Solution* - To measure the effectiveness of our training manual, we will need to implement our “cheat sheets” and spectator poster at another Zero-Waste John Paul Jones Arena event. Our team will speak to the Zero Waste Athletic leaders to ensure that at the next Zero Waste event at John Paul Jones Arena, our “cheat sheets” and informational poster will be used.
- *Athletic Department* - Our team did not have the opportunity to interact with the Athletic Department directly, as this initiative is currently only focusing on the John Paul Jones Arena. This is a great start to introducing Zero Waste Events at the University of Virginia, however, our team would have liked to implement educational aspects to the Zero Waste campaign, such as a Facebook page and access to season ticket holders, but was unable to because UVa Athletics has not yet had the opportunity to adopt the Zero Waste Athletics initiative.
  - *Solution* - The next pilot event, with the addition of the new training materials, will hopefully validate the success of Zero Waste Athletics at the University of Virginia in the future as well as garner support from UVa Athletics. Although UVa Athletics has not fully integrated the Zero Waste Athletics initiative into its program yet, this project will show the success of Zero-Waste programs, at UVA and as well as at other universities.

## **Difficulty to Create Change**

Throughout our project, we ran into some difficulty in creating change to the extent that we had hoped. We attribute some of this difficulty to the fact that our project was very defined. We were instructed to create a training manual for workers and volunteers at sporting events regarding how to compost and recycle properly. However, this initially restricted us from pursuing several ideas we thought of throughout our research process. We were somewhat constricted by the specificity of the manual.

Furthermore, it was difficult to create change because of the lack of communication. Although all members of our group communicated well, we sometimes had difficulty getting in touch with the Zero Waste Athletics leaders or others involved in UVA athletic programs. Due to the fact that we were not able to regularly meet with the leaders of the initiative to discuss our personal project, it is uncertain if our changes to the manual will meet the needs of the Zero Waste Athletics initiative.

## **CONCLUSION**

Our team has compiled research for our Zero Waste Athletics materials primarily through the examination of Sustainable Athletic Programs at other universities and the London Olympics Zero Waste Vision manual. By attending and evaluating the pilot event held at John Paul Jones Arena, our team was able to conclude that volunteers did not read the “flipcards” given to them and that Housekeeping Staff were not made aware of the sustainability efforts by the students. This has led to our creation of various manuals for each of our main stakeholders: spectators, John Paul Jones Arena staff, and student volunteers. Each “manual” is tailored to the needs of each group. Instead of composing a massive manual, which many people don’t take the time to read, we have been able to design effective training materials based on the research we have done. Our Zero Waste Athletic materials will be streamlined, concise and visually appealing in order to captivate and educate the reader about the Zero Waste initiative.

There are many questions that still remain, as our manuals have not been implemented yet. Will the use of our manuals eliminate the communication barriers that existed between the Zero Waste effort and the JPJ staff? Will there be future Zero Waste Athletics pilots? Who will distribute the manuals? How will we be able to measure the effectiveness of the manuals? Is a formal manual necessary for technicality’s sake?

Our project has many theoretical and marketing aspects, so there weren’t any concrete aspects to measure, assess, or document. We did compile a series of documents, including Zero Waste manuals, from other universities into a Google Drive Folder and our team analyzed and assessed the effectiveness of each program. An assessment on the effectiveness of our training materials can be done at the next pilot Zero Waste Athletics event. This could be done through a formal survey or through simple conversations with spectators, staff, and volunteers, in order to improve upon our manuals and contribute to the progress of the Zero Waste Athletics Initiative.

## **APPENDICES**

Bibliography	
Precedents	
Acknowledgements	

## PRECEDENTS

Before creating a training manual, we looked at similar documents created by other schools and organizations with successful sustainable programs. While much of the material and forms of dissemination were predicted by our group, it was a good way to see what overlapping points are emphasized in each manual. Moreover, these precedents inspired us to take our original ideas farther and make them better.

### Precedent 1: Ohio State Training Manual

One precedent we found to be incredibly helpful was the Ohio State University training manual. This manual was designed in a way to be both eye-catching and informative for workers and volunteers. Through the implementation of Ohio State colors, this manual specified what items should be recycled versus what items should be composted. It listed items that were relevant to a sporting event, such as aluminum cans, programs, and condiment wrappers under the recycling category. This aspect of the manual is hugely important because it teaches workers what materials should be disposed of in what bins. By color-coding and stating information in bullet points, the designers of this manual made it easy to read and comprehend.

Furthermore, the Ohio State manual was a good precedent based on some of the information they provided for their workers and volunteers. They wrote some popular questions workers and volunteers might come across regarding the Zero Waste initiative and then followed the questions with brief answers. For example, one question in the Ohio State manual was, "What should I do if some trash goes into the wrong bin by mistake?" This was then followed with a brief description of how the worker or volunteer should fix this problem by removing it from the wrong bin to avoid contamination. There is also a sentence explaining why it is important to avoid contamination in the effort to recycle and compost materials. This is an easy way to address common concerns or questions regarding zero waste and we incorporated questions like these in our education materials.

**ZERO WASTE TEAM TRAINING**

**What is Zero Waste?**  
Zero Waste is defined as diverting 90% of trash from landfills by recycling and composting. Ohio State has taken bold steps to make Ohio Stadium the largest stadium in the country to attempt Zero Waste. Changes have been made to the products in the stadium to ensure they can be recycled or composted. Containers for recycling and composting will be available throughout the stadium.

**Why is Ohio State making the Stadium Zero Waste?**  
Ohio State has made significant commitments to sustainability. Ohio State seeks to reduce its carbon footprint by 50% by 2030, reduce potable water consumption by 30% by 2030, and divert 90% of all campus materials from the landfill by 2030. This initiative will help reduce the carbon footprint of campus and lead campus forward in diverting materials from the landfill.

**What is my role?**  
The success of the zero waste program relies on all of us to be committed to the goals and active participants. We are all responsible for assisting fans in placing their items in the correct container. As fans approach the zero waste stations with their nacho trays, empty water bottles, cans, and food scraps, we are all responsible for helping them dispose of the items correctly.

**RECYCLING**

- Plastic Bottles
- Aluminum Cans
- Coffee Cup Lid
- Utensils
- Plates / Bowls
- Plastic Cups
- Creamers
- Programs
- Condiment Packets

**COMPOSTING**

- Food
- Napkins/paper towels
- Coffee Cup
- Coffee Stirrers
- Tooth picks
- Sweetener Packets

**Where are the trash bins? What if a fan has an item that is not recyclable or compostable?**  
There will be no trash bins in the stadium. Ohio State has worked with its partners to eliminate as much trash as possible. If there are items that cannot be recycled or composted please place them in the recycling. The trash will be removed from the recycling at the recycling facility.

**What do I do if a container is getting full and needs to be emptied?**

1. Compact your trash with the compaction device.
2. Swap your nearly full barrel with a nearly empty one at a nearby station.
3. Pull the bag and empty into the 4-Wheel cart stationed on the level (replace liner).
4. Pull the bag and leave behind your station (replace liner).

**What should I do if a fan is opposed to the Zero Waste concept and is not cooperating?**

1. Offer to handle the separation of the waste yourself and thank them for their feedback, then move on to someone else who needs help.
2. Ask if they would like to speak to your supervisor.

**Where can I find out more information on the Ohio Stadium and Zero Waste?**  
Advise fans to go to <http://go.osu.edu/zerowaste>.

**What should I do if some trash goes in the wrong bin by mistake?**  
It is our responsibility to make sure as little contamination as possible occurs in the containers. If you see someone throw an item in the incorrect bin, please correct it and place it in the right one. Some contamination is inevitable, but the goal is to have as little as possible. It is more important to ensure that the compost containers are as clean as possible – contamination is unacceptable because sorting methods cannot remove contamination.

**WHAT CAN I RECYCLE?**

**RECYCLE**

- Plastic Bottles
- Aluminum Cans
- Coffee Cup Lid
- Utensils
- Plates / Bowls
- Plastic Cups
- Creamers
- Programs
- Condiment Packets

**COMPOST**

- Food
- Napkins/paper towels
- Coffee Cup
- Coffee Stirrers
- Tooth picks
- Sweetener Packets

**PLASTIC CUPS  
CREAMERS  
GAME PROGRAMS  
CONDIMENT PACKETS**

**COFFEE STIRRERS  
TOOTH PICKS  
SWEETENER PACKETS**

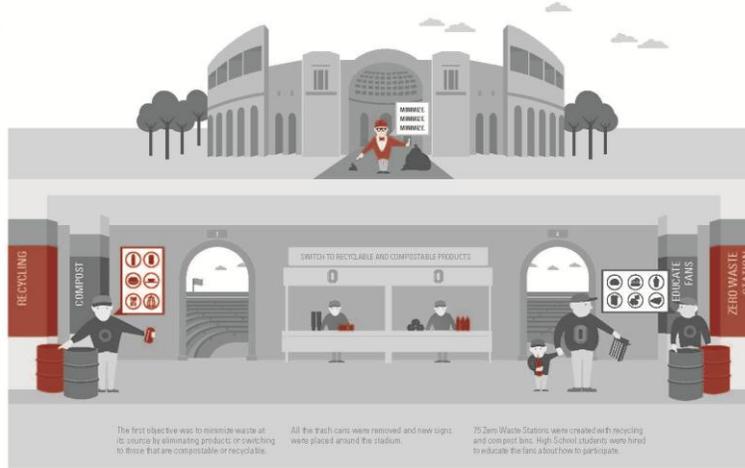
Thanks for recycling!  
visit [go.osu.edu/zerowaste](http://go.osu.edu/zerowaste)

Ohio State  
Scarlet  
Crim &  
Green  
Recycling



# OHIO STADIUM GOES ZERO WASTE

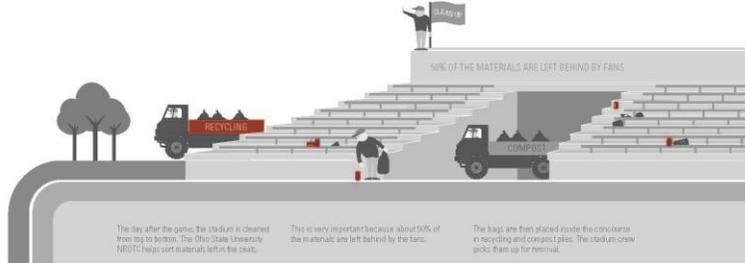
In Autumn 2011, Ohio State took bold steps to move Ohio Stadium towards Zero Waste. Zero Waste refers to diverting 90% or more of game day materials from the landfill by recycling and composting.



The first objective was to minimize waste at its source by eliminating products or switching to those that are compostable or recyclable.

All the trash cans were removed and new signs were placed around the stadium.

75 Zero Waste Stations were created with recycling and compost bins. High School students were hired to educate the fans about how to participate.



50% OF THE MATERIALS ARE LEFT BEHIND BY FANS

The day after the game, the stadium is cleaned from top to bottom. The Ohio State University ROTC helps sort materials left in the seats.

This is very important because about 50% of the materials are left behind by the fans.

The bags are then placed inside the concourse in recycling and compost piles. The stadium crew picks them up for removal.



PRICE FARMS ORGANICS

After the game, any food that is able to be donated is given to the Mid Ohio Foodbank.

The day after the game, the remaining compost is taken to Price Farms Organics where Ohio State students remove contamination from the compost.

The compost is covered with coffee grounds and manure. The pile is then turned 4-5 times to introduce oxygen. Temperatures will reach up to 140 degrees.



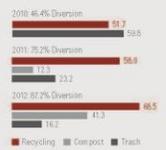
At the same time, recycling materials are taken to the Southeastern Correctional Institution where inmates sort the materials.

SCI offered to sort the recycling as part of an initiative supporting sustainability programs at SCI.

They separate materials into piles of metal, plastics, cardboard, wrappers, liners, compost, and landfill. Materials are then all weighed individually and then reused or sent to the recycling market.

## CELEBRATING A GREAT SUCCESS

Season Totals (in tons) & Diversion Rate



Achievements 2012



In just its second year, Ohio State was able to achieve its goal. Since 2010 there has been a 71.9% reduction in materials sent to the landfill.

In 2012, Ohio State won the Game Day Challenge, a national stadium recycling competition, by diverting 98.2% of game day materials from the landfill.

For more information please visit our website: <http://go.osu.edu/zerowaste>

## Precedent 2: London Olympics Zero Waste Vision

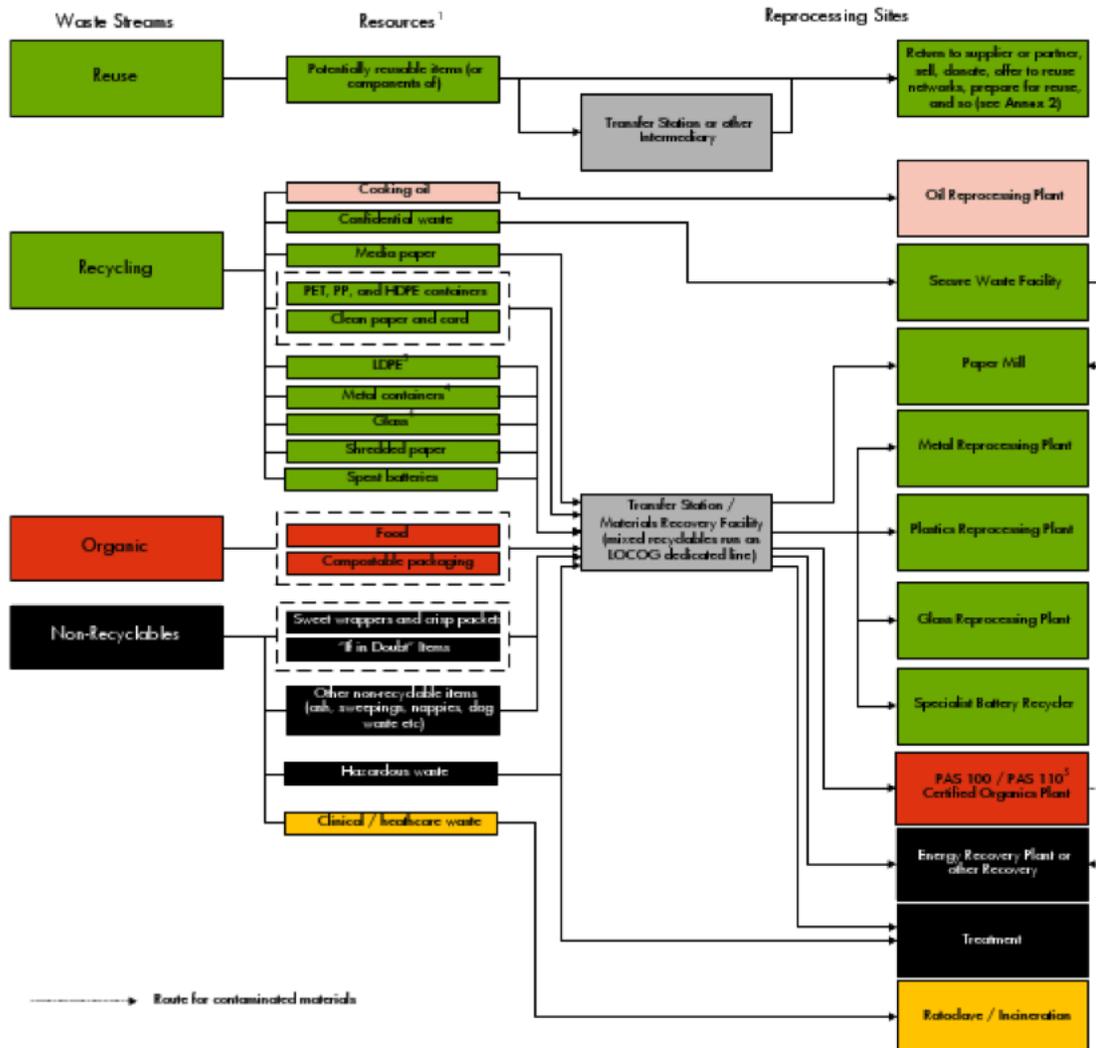
The London Organizing Committee of the Olympic Games and Paralympic Games Limited released a manual on the London 2012 Zero Waste Vision. Although the London Olympics is not directly comparable to our smaller, university-wide Zero Waste Athletics project, it serves as a model for our informational manual for general use and highlights several important ideas when considering larger scale events, which may be useful as Zero Waste Athletics at UVA expands. Below are points of analysis for the London Olympics manual.

- *Our Zero Waste Games Vision*: This section of the manual briefly describes Zero Waste as well as the context of the Olympic Games in regard to past Olympic work for Zero Waste. In explaining Zero Waste, this manual did an excellent job in showing how Zero Waste fits into the broader waste hierarchy through the image included below.



This self-explanatory, interesting, graphic incorporates Zero Waste through the “Recycling” level, while also calling to attention other alternatives regarding waste, from more favored options such as the avoidance and prevention of waste, to less favored options such as disposal into landfills. Additionally, the “Our Zero Waste Games Vision” also includes a subsection that briefly states the overall impact desired from their project.

- *Our Challenges*: This section is a detailed explanation of the current state of each arena, field, and court within the London Olympics and the limitations in terms of recycling and composting for each. While this section outlines specifically what needs to be done at each Olympic sporting area, it would not translate well to our manual, as our project only includes the John Paul Jones Arena. Should Zero Athletics expand to all university athletic games, a section similar to this one can be added for each field, court, or arena.
- *Our Areas of Action*: In terms of executing Zero Waste at the Olympics, the manual provided ten “success factors” crucial for Zero Waste, including management systems, resource management tools, waste receptacles, and icon and color-based communications. These success factors are presented in table format, explaining why each one is included, and what specific actions will be taken. Similar to the waste hierarchy shown in the “Our Zero Waste Games Vision” section, this section also includes a waste stream of the entire Olympic games shown below and later explains how Zero Waste at the Olympics plans to utilize and improve the waste streams:



Again, like the waste hierarchy, this diagram clearly demonstrates how Zero Waste Olympics fits into existing structures. While these are important graphics in understanding the comprehensive process of "zero waste," we feel that spectators wouldn't take the time to read or understand a large graphic as such.

- *Our Approach to Assurance and Evaluation:* this section highlights how details regarding Zero Waste at the Olympics will be recorded as well as provides information on the sources of sustainability assurance. This adds more legitimacy to the manual, in stating a standard way to measure and evaluate in this Olympics project.
- *General Comments:* The only concern with the London Olympics manual is its length. It is over 50 pages long and while it serves as a highly comprehensive manual, it is easy for readers to get lost in the wordiness of the manual. Since our project is not as large as the Olympic games, our informational manual will not be as long.

### Precedent 3: NC State Manual

NC State's Waste Reduction and Recycling Office has created an 8 page Guidebook for any organization to make their event a Zero Waste Event. Here are the parts that their Guidebook is broken up into and our analysis:

- *Benefits of Zero Waste:* There is a definition of zero waste, and a broad benefit section that emphasizes not only the reduction of harmful chemicals, but also Moreover, they give specific data about the change their program has made; if we have this kind of data available.
- *Communication:* NC State identified the same 3 essential stakeholders as we did: Attendees, Vendors, and Volunteers. Their manual gives ideas of how to reach these various groups. For Attendees, they suggest press releases, advertising on a website, and good signage. As for Vendors, they emphasize the need to the staff to be aware of our efforts. NC State's Guidebook says that volunteers should be informed, but they don't give a way for that information to be disseminated.
- *Materials:* This page breaks down what materials are reusable and which are not. We clearly identify on all our print material which items are compostable and which are recyclable.
- *Setting up & Breaking Down -* This is essentially the same information as *Materials* and therefore is unnecessary to repeat.
- *After the Event:* They give specific directions on what to do after an event. This is harder to translate into Virginia because recycling and composting doesn't happen at every event; it must be coordinated ahead of time and the details would most likely vary from venue to venue.
- *Checklist:* A checklist is a great idea that we did not think of originally. It would be a way to ease the housekeeping staff and volunteers at Zero-Waste Athletics Events.

**A CHECKLIST**

**FOR YOUR EVENT**

- Contact Waste Reduction and Recycling and fill out our event request form. Agree on location for drop off of your bins and posters.
- Communicate to vendors. See Page 3.
- Recruit and communicate to volunteers. See Page 3.
- Communicate to attendees. See Page 3.
- Purchase reusable, compostable and recyclable materials or create sustainable decorations. See Pages 4 and 5.
- Arrive at your event location to find bins & posters.
- Set up stations with the bins: compost, recycle, landfill. See page 5.
- Set up posters next to the stations.
- Enjoy your event! Change bags as needed, bags are provided with bins.
- Breakdown your event. See page 6.

Please contact Waste Reduction & Recycling if you have further questions, we are here to help you! ♻️ 919.515.9421

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## **BIBLIOGRAPHY**

"Designing a Training Manual." Wikibooks. 23 Apr. 2012. Wikibooks. 02 Apr. 2013 <[http://en.wikibooks.org/wiki/Designing\\_a\\_Training\\_Manual](http://en.wikibooks.org/wiki/Designing_a_Training_Manual)>.

"How To Create Manuals That Get Attention." AArt Design. 20 Mar. 2013. AArt Design. 02 Apr. 2013 <<http://www.aart.us.com/manual-explained.html>>.

Kelly, Matt. "Zero-Waste Project at U.Va's John Paul Jones Arena is Successful." UVA Today. 12 Mar. 2013. University of Virginia. 2 Apr. 2013 <Zero-Waste Project at U.Va's John Paul Jones Arena is Successful>.

"Sustainable 2nd Century." UC Davis Environmental Stewardship and Sustainability. 2013. UC Davis. 02 Apr. 2013 <[http://sustainability.ucdavis.edu/news/2011/january/waste\\_reduction.html](http://sustainability.ucdavis.edu/news/2011/january/waste_reduction.html)>.

"Waste Reduction and Recycling." Sustainability at Wake Forest. 2013. Wake Forest University. 02 Apr. 2013 <<http://sustainability.wfu.edu/programs/waste-reduction-and-recycling/>>.

"Zero Waste at Ohio Stadium - Sustainability - The Ohio State University." Zero Waste at Ohio Stadium - Sustainability - The Ohio State University. 2013. Ohio State University. 02 Apr. 2013 <<http://sustainability.osu.edu/>>.

"ZERO WASTE (a goal for your event)." NC State Recycles: Waste Reduction and Recycling. 2013. NC State. 02 Apr. 2013 <<http://recycling.ncsu.edu/services/zerowasteeventtoolkit.php>>.

London Organising Committee of the Olympic Games and Paralympic Games Limited. *London 2012 Zero Waste Games Vision*. London: London Organising Committee of the Olympic Games and Paralympic Games Limited, 2012. Print.

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