

# Understanding Food Waste at Johnson County Community College: A Multi-Method Approach

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# Understanding Food Waste at Johnson County Community College: A Multi-Method Approach

## **Abstract**

Food waste and food insecurity are vastly different, yet inextricably linked, social, economic, and environmental problems which afflict societies throughout the world. This study contributes to the literature on individual awareness, attitudes, and behaviors to these problems through a student-led waste audit centered on food at Johnson County Community College. Pre-surveys indicated nearly 95% of individuals placed at least moderate to extreme importance on the generation of food waste in their dining decisions, while post-surveys found that 84% of respondents were surprised by the type and/or volume of waste found in cafeteria landfill bins on campus. Qualitative interview analysis suggests that events like the waste audit performed, when centered in the context of food, are helpful to students' understanding of food waste and food insecurity as issues. Recommendations going forward suggest continuing to use waste audits structured with curricular development to help bring education and awareness to food waste and insecurity.

## **Cover Page Footnote**

The Faculty Mentor for this paper was Kristy Howell, Sustainability.

## **Abstract**

Food waste and food insecurity are vastly different, yet inextricably linked, social, economic, and environmental problems which afflict societies throughout the world. This study contributes to the literature on individual awareness, attitudes, and behaviors to these problems through a student-led waste audit centered on food at Johnson County Community College. Pre-surveys indicated nearly 95% of individuals placed at least moderate to extreme importance on the generation of food waste in their dining decisions, while post-surveys found that 84% of respondents were surprised by the type and/or volume of waste found in cafeteria landfill bins on campus. Qualitative interview analysis suggests that events like the waste audit performed, when centered in the context of food, are helpful to students' understanding of food waste and food insecurity as issues. Recommendations going further suggest continuing to use waste audits structured with curricular development to help bring education and awareness to food waste and insecurity.

## **Introduction**

In 2016, 12.3% of the United States' population, or 17.5 million Americans, had been reported as food insecure and received some form of government food assistance (USDA, "Key Statistics & Graphics," 2017). Alternately, the United States wastes a reported 31-40% of its food annually, largely at consumer levels (Qi & Roe, 2016). This translates to 63 million tons and \$218 billion worth of food wasted annually in the United States (ReFED, 2017).

In Johnson County Kansas, an estimated 81,204 tons of food are wasted annually at the consumer level while 11.6 percent (64,990 individuals) and (17.0 percent, or 24,520 children) of Johnson County residents were reported as food insecure in 2014 (Johnson County, Kansas Government, 2016).

Based on a report in 2015, 42% of a representative sample of the United States' population self-reported that they were aware of food waste problems in the US (Neff, Spiker, & Truant, 2015). National organizations, both in private and public sectors, have been working to increase awareness of food security and food waste while also reducing these numbers, and in 2015, a national goal was set to reduce food waste by 50% by 2030 (USDA, "U.S. Food Waste Challenge").

The present study utilizes a multi-method approach of analyzing the understanding of food waste at Johnson County Community College, a large, suburban community college serving some 46,000 credit and non-credit students per year. This is accomplished through quantitative and qualitative analysis of a student volunteer-based waste audit conducted on 25 August 2017 of the campus' cafeteria landfill bins. The audit consisted of sorting through collected garbage and diverting the garbage into more suitable categories of compostable food waste and serve-ware, recycling, (as well as remaining garbage) which were then redirected from the landfill waste stream. Raw data, as well as pre-and-post-surveys and observations, were recorded during the audit. In-depth interviews were conducted following the audit to assess perception and behavioral changes in participating volunteers. In addition to the methods described above, this study is situated within the broader literature on food and waste. The resulting findings offer JCCC's campus community a richer understanding of food waste on campus that will augment work to expand composting and hunger-related initiatives. This work indicates that students exposed to a food-waste-centered audit (as opposed to a general audit for recyclables) shift their perception of what they throw "away". It also augments the understanding of the efficacy of passive education regarding waste habits.

## **Literature Review**

### *Food Insecurity*

Hunger and food insecurity have been broadly defined as the uncertain or inadequate access to nutritional foods (Bloom, 2010). Inadequate access to food affects individuals and populations in many ways. William Schanbacher, author of *The Politics of Food*, identifies in his work that hunger distracts individuals from learning, it contributes to a slower economy as incomes are disproportionately spent on food rather than expendable consumer goods and services, and it leads to malnutrition and health complications (2010). Most notably, hunger requires compromises from the affected individual, usually of other basic necessities, like education or living expenses.

Unequal access to food also creates global crises of food sovereignty, as nations around the world grapple with keeping their domestic markets affordable (Schanbacher, 2010). As reported above, hunger and food insecurity issues significantly affect the United States and Johnson County: 12.3% of the US population and 11.6% of the Johnson County, Kansas population experience hunger (USDA, “Key Statistics and Graphics,” 2017; Johnson County, Kansas Government, 2016). The issues of food insecurity afflict the United States on a domestic level as well as internationally, because the nation is a world leader (which ironically also contributes to the food sovereignty conflicts of other nations by dumping food surplus into their market systems, driving up the prices) and thus international affairs of food insecurity are issues the United States seeks to solve alongside the United Nations and organizations like the World Bank (Schanbacher, 2010).

Though there are limited resources on the problem of hunger at the community college level, students like those at JCCC are particularly vulnerable. In a recent report, researchers

found the national rate of food insecure households with students attending two-year colleges was 13.5% in 2015—not far from the 11.6% of Johnson County’s population which is food insecure, as reported above. (Blagg, Whitmore-Schanzenbach, Gundersen, & Ziliak, 2017). The present study contributes to the limited literature on this problem. Food insecurity is a matter of human rights, and thus a philanthropic conversation about these issues and how they relate to students at an institution of higher education, particularly at a college campus dedicated to sustainability, is a conversation worth having, especially in relation to the amount of food waste generated in the nation as well as on campus.

### *Waste in the United States*

Alternately, the United States is also widely affected by waste. The US ranks number one in the world for garbage generation, producing 30% of the planet’s waste while only recycling and composting 30% of the 254 million tons of trash annually produced (Rogers, 2006; EPA, 2016).

In *Garbology*, Edward Humes investigates the rise of the waste system in the United States—breaking down waste statistics, analyzing what is being thrown away, and researching how the waste stream affects communities. His research findings concluded that the majority of waste in the landfill are products which could be recycled or repurposed in some way, like carpet, plastic packaging, and aluminum metals. When waste such as paper, plastics, metals, textiles, wood, glass, and food and yard waste are recycled and composted, food scraps still make up 19.5% of landfill by weight, while packaging takes up 25% and durable and non-durable items take up 45.7% collectively (2013). With nearly a quarter of landfill waste being comprised of food, this translates to about 63 million tons of food wasted, based on the total landfill data the EPA reported above (2016). In food waste alone, this costs the United States’

economy around \$218 billion dollars annually in losses alone, not to mention the cost of hauling and maintaining the landfills (ReFED, 2017). Based on the findings in Humes' work, 4 million Americans a year could be fed with just 5% of the annual food waste generated in the US (2013). In current years, this number is even higher. While the nation begins to drown in the pits of its own waste, and the environmental degradation associated with it, the nation needs to examine what should not be in the landfill to begin with and how to avoid items with no path of diversion (Rogers, 2006). Humes highlights in his work two such avenues, both of which were implemented on Johnson County Community College's campus through the waste audit.

*Garbology* first gives an account of the US Army's food supply during World War II, where too much food was being wasted. Studies were conducted to analyze the trash in mess hall tents to gain understanding of what soldiers did and did not want to eat. After the study, the mess halls adapted their menus to better serve the soldiers' wants, and the Army reportedly started saving 2.5 million pounds of food on average per day. A second account of the Garbage Project at the University of Arizona concluded with a former graduate, Sheli Smith, implementing garbology into neighboring public schools' syllabi through interdisciplinary class projects. Part of this work included a study on cafeteria food waste, where students learned that their small-scale cafeteria would need twenty household composting sites just to offset the amount of food wasted per day. Students involved in the class work identified the hands-on approach to dealing with garbage as illuminating a facet of their daily lives which they had not considered. The account also noted successes in behavioral change, as students involved with the study personally wasted less food going forward and called for the school to make institutional changes to also curb wasteful habits (2013, p. 147, 165-166). JCCC's waste audit is also a practical

application of understanding food waste to gain insight on the best path to institutional changes while also creating agents of change through the process.

### *The Intersection of Food Waste and Food Insecurity*

Food waste and insecurity are inextricably linked, as both exist in the world, at all levels and in all nations, today. Part of the solution to this seemingly insurmountable problem in any society is to examine consumer behavior, attitude, awareness, and perception of food waste and food insecurity. In the study, “Wasted Food: U.S. Consumers’ Reported Awareness, Attitudes, and Behaviors,” researchers conducted a survey which reported on “awareness of wasted food as an issue, efforts to reduce it, and knowledge about how to do so” (Neff, Spiker, & Truant, 2015). Within the study, 42% of survey respondents reported an awareness of food waste within the past year; however, only 16% reported taking action to research solutions to the problem. Respondents were also asked to report their waste in relation to others, with 73% indicating they threw out less and 3% indicating they threw out more (2015). Overall, this study gives evidence that even a moderate awareness of food waste as an issue can be generalized to half of the US population. Yet, levels of personal agency are still low even with moderate levels of positive attitudes.

Similarly, Qi and Roe (2016) focused their work on the opinions and motivating factors of wasting food as well as actions taken to reduce this waste. The study, “Household Food Waste: Multivariate Regression and Principal Components Analyses of Awareness and Attitudes among U.S. Consumers,” surveyed households on three principle components on which food is wasted: “one that represents perceived practical benefits households may lose if food waste were reduced, one that represents the guilt associated with food waste, and one that represents whether households feel they could be doing more to reduce food waste” (Qi & Roe, 2016). Their work



found that over half of respondents toss food most often to ensure freshness and safeness of food eaten, nearly 70% of respondents identify packaging dates and foodborne illness as a factor for throwing away food, and 59.3% link quality and freshness as their motivating factor. This survey also included an awareness component; 53% of respondents report they have been made aware of the issue of food waste within the past year. Over 75% of the respondents strongly linked guilt to throwing away food. In gauging behavioral changes, 51.2% of respondents indicated that there would be difficulties in reducing household food waste further from their reported measures (2016). Both of these studies provide data similar to the results seen in the surveys conducted at JCCC's waste audit.

Most often, stories of food waste and hunger are told simultaneously from the perspective of those who have experienced hunger and have also seen the severity of food waste. Their perspective can sometimes create an emotional component as a motivating factor for social change. In Bloom's *American Wasteland*, stories of American prisoners of war as well as the homeless population expose how their personal experiences shaped their own attitudes and behaviors of food and then the behaviors of those closest to them as well (2010). Similarly, Michael Mikulak's work, *The Politics of the Pantry*, analyzes food movements and their narratives. Compared to the history of food politics, this creates a dialogue for social change. These narratives can help build movements by developing communities of people who connect to the same story. Once food movements take off, they can alleviate problems of poverty, starvation, and environmental degradation. For example, both in local food sourcing, and the international organization Slow Food, which focuses on clean, fair food traditional to local regions across the world, an emphasis has been placed on in-season regional food sourcing rather than relying staple groceries which may not be available year-round and require further transport

distances. Once consumer demand shifted to these ideals, grocers, as a result, began to stock local producers and de-emphasized ordering out-of-season produce. As is also the case with rising awareness in broken food systems through prominent speakers, writers, and documenters, all using a form of narrative to influence personal agency (2014).

Bloom gives more institutional measures for food waste reduction, with recovery programs implemented in groceries, a call for an overhaul on food labeling so that food expiry dates are more uniform and less susceptible to unnecessary tossing, and an emphasis on gleaning after the harvest, so no food goes to waste in the field. Domestically, Bloom offers households guidelines to reduce food waste before it starts, like reducing the amount of food stored in refrigerators, freezers, and pantries, so that all food can be seen and subsequently used before it expires. He also suggests strategic grocery shopping so that all food is accounted for quickly and its purpose fulfilled before waste. Bloom also gives several accounts of case studies where food demand tracking in cafeterias and other food providing areas has led to the elimination of trays in food courts, which make individuals less likely to take more than they can eat, and better tailored menus, so that food is less likely to be left out uneaten (Bloom, 2010). In the context of JCCC's waste audit, the narrative component of Mikulak's work, and Bloom's case studies offer guidance to institutional changes likely to reduce waste. Further, they offer insight and positive reinforcement of the efficacy of conducting student led waste audits on campus as educational components for behavioral changes.

## **Methods**

Multiple methods enable better understanding of waste at JCCC. First, waste itself was audited and analyzed in an event open to the public. Before participating, students completed brief training and a survey on their perception of food waste and how it relates to their actions.

After the audit most, students followed up their initial survey with a post-survey which addressed a reaction to the waste audit and if it caused a behavior change. Students were also able to commit to participating in follow up interviews for more in-depth qualitative analysis on their perceptions. Interview responses were transcribed, open coded, and subjected to qualitative analysis.

The waste audit ran for three hours and assessed the landfill bins only sourced from the cafeteria. Once the waste was collected, it was emptied onto a table where students could sort the refuse into four categories: compostable food waste, compostable serve-ware, trash, and recycling. Each of these labeled bins were then weighed and recorded and hauled away to their respective waste receptacles. The pre-and post-surveys inquired about students' perceptions of food waste and reactions to participation in the audit. In self-selected interviews, participants responded to questions concerning home waste habits, understanding of food waste as a larger component of waste, and decision-making processes where waste is concerned (Appendices).

## **Findings**

### *Quantitative*

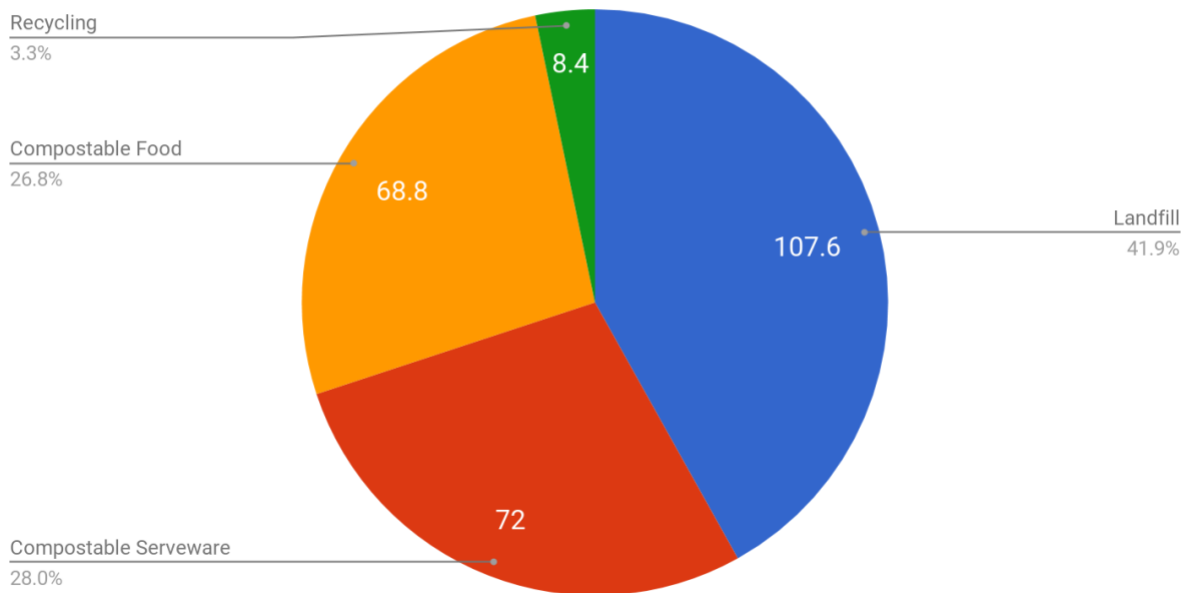
#### **Waste Audit:**

Of the 257 pounds of waste collected from the cafeteria landfill bins within three hours on 25 August 2017, 108 pounds of the waste was trash destined for landfill while 149 pounds (58.1%) of waste could have been diverted into other forms of waste management. As described above, the process included saving waste sorted by volunteers and properly disposing of it after recording data.

<b>Post-Consumer Waste Audit - Cafeteria - 8/25/2017</b>	
	Totals (lbs)
Landfill	107.6
Compostable Serveware	72
Compostable Food	68.8
Recycling	8.4
<b>Net Weight</b>	<b>256.8</b>

### Post-Consumer Waste Audit Totals (lbs)

Net Weight 256.8



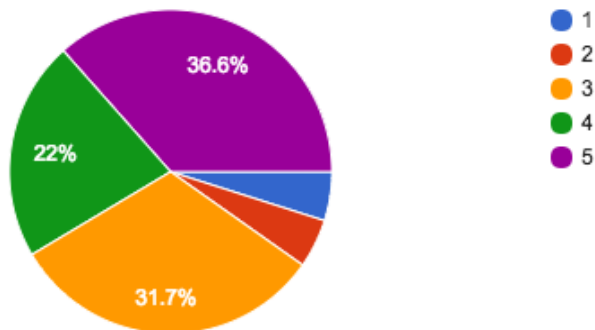
### Pre-Survey:

Of respondents, nearly 95% indicated the creation of food waste was at least moderately to extremely important to their dining decisions, while only about 5% indicated it was not

important. Of the same respondents, 7.3% reported that factors which influenced their decisions of throwing food away were not applicable, 58.5% reported guilt as a factor, 58.5% reported saving money, and 22% reported food insecurity. Seventy-eight percent of respondents reported that they threw away less food than their peers, while 22% reported they threw away an equivalent amount and 0% indicated that they threw away more than their peers.

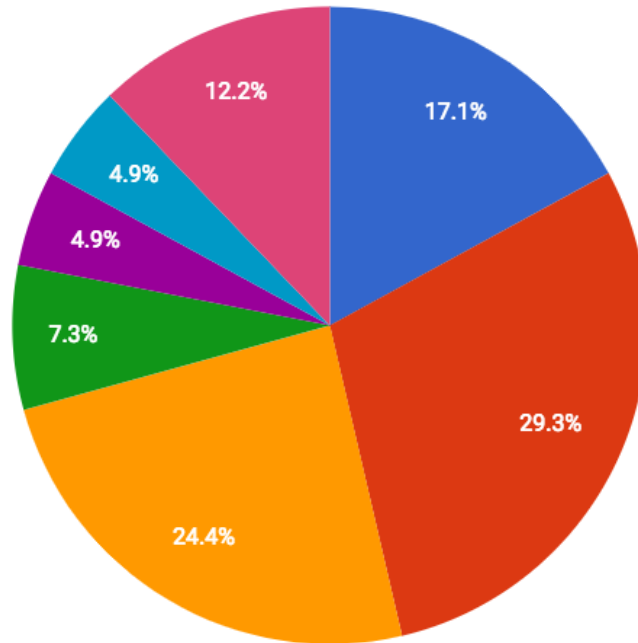
**On a scale of 1-5 [one being not at all and five being extremely], how important is the creation of food waste in your dining decisions?**

41 responses



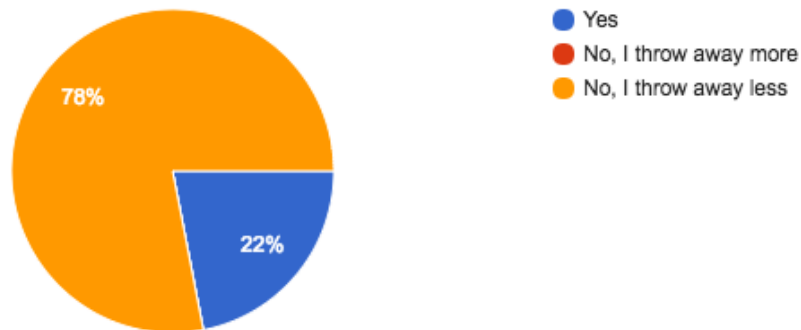
### What factors influence your decisions about throwing food away?

- Guilt, Saving money
- Guilt
- Saving money
- N/A
- Food insecurity
- Saving money, Food insecurity
- Guilt, Saving money, Food insecurity



### Do you throw away about the same amount of food (on campus) as your peers?

41 responses



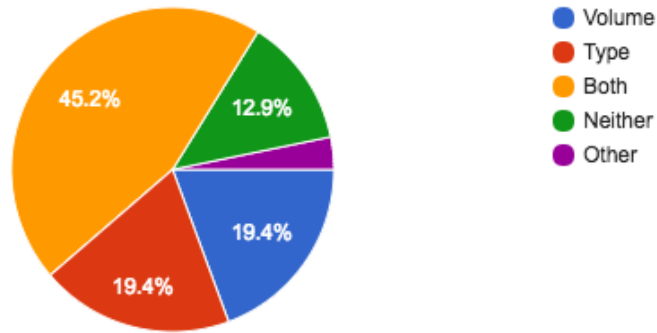
### Post-Survey:

Immediately following the audit, 84% of respondents were surprised by the type and/or volume of waste, 12.9% were surprised by neither type nor waste, and 3.2% of respondents

indicated another surprise. Of the same respondents, 0% indicated that they would change nothing in their behavior following the waste audit; 41.9% reported they would bring containers to keep leftovers, 6.5% indicated they would order less food, 45.2% indicated both, and 12.9% of respondents indicated behavioral changes other than what was listed in the survey.

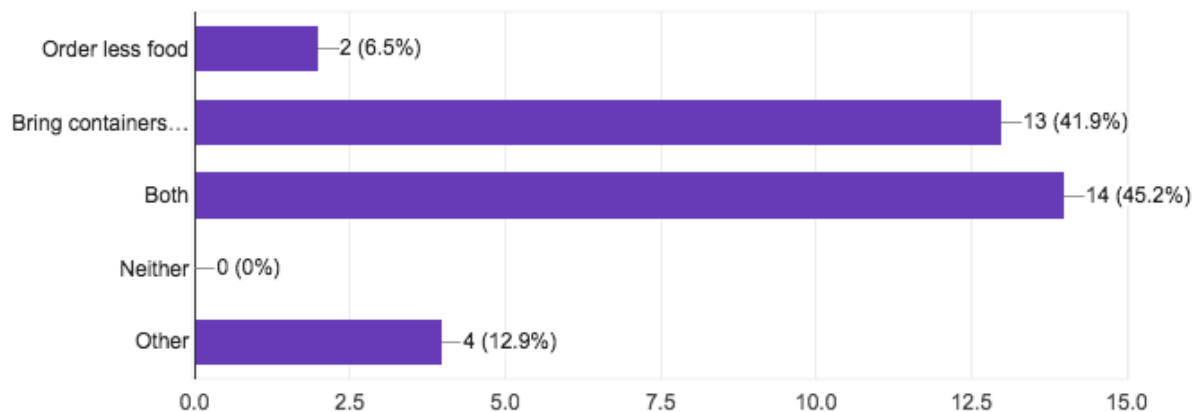
### What did you find most surprising?

31 responses



### What will you change?

31 responses



## *Qualitative*

### **Waste Audit:**

As students gained understanding of how the waste was to be sorted, their reactions of disgust about touching waste lessened. Students reacted negatively as they dealt with substantial proportions of untouched food waste relative to the amount of the total waste being audited. Within the waste itself, there was recycling improperly disposed of, regardless of the sixth year of the campus-wide recycling initiative to adjacently place labeled recycling bins next to landfill bins. Student volunteers identified an educational component to the waste audit when confronted with recycling too contaminated to divert from the landfill waste stream. Participants also expressed negative reactions to food packaging options offered on campus which give the appearance of being recyclable or compostable but which are actually trash, like soda and coffee cups.

### **Post-Survey:**

In the waste audit post-survey, respondents also reported that they were surprised by what is not considered recyclable and how little thought is put into throwing an item away. Respondents also described behavioral changes other than what was listed such as, finishing food, knowing what to recycle and properly cleaning recyclable containers, and recycling and composting more often after being educated.

### **Interview:**

Student participants in the waste audit self-selected to participate in a brief qualitative interview of 14 questions. Interviewees were students of three different backgrounds: traditional—living with parents, traditional—living independently, and nontraditional—married, with children. Coding interview responses indicated the waste audit was a positive learning



experience. Three-fourths of interviewees described seeing themselves as change agents as an important step in changing waste habits. As a general consensus, interviewees reacted negatively to the amount of food wasted, and promoted several solutions for consideration. Among these solutions was an increase in individual mindfulness through institutional implementation of passive education, like waste sorting diagrams. Education, exposure, and examination of waste habits throughout the life cycle, were described as common themes that might yield behavioral changes for students and changes in practice for the campus. Interviewees specifically described participating in the waste audit as changing their perceptions and behaviors around waste. Throughout each interview conducted, all respondents contradicted themselves with regard to whether food is a useful product separate from landfill-bound waste, even with strong negative reactions to food waste.

### **Conclusion**

Throughout the study, exposure to conversations about and interaction with waste after it is thrown “away” was a consistent theme in helping students understand that “throwing edible food away” is a poor option for many different reasons. Common solutions given to issues of food waste during the interview process of the JCCC’s audit identified engaging opportunities such as the audit in being more effective in educating individuals than passive signage. One participant noted the carelessness of edible food disposal, and noted they would not have understood these poor choices had they not participated in the audit. As also exemplified by the Arizona students in *Garbology*, exposure to the problem increases understanding and facilitates behavioral change.

Participating in studies like the waste audit also provides students with the opportunity to think critically about food systems and personal agency. One respondent identified that smaller

plates in the cafeteria would encourage portion control and reduce consumer waste. Respondents also indicated that personal changes could help facilitate larger institutional changes, like advocating for a change in non-compostable “to-go” products by bringing their own containers. This parallels the case study the Army corps conducted on their food waste which led to mess hall changes to the menu.

Based on post-survey analysis, interview coding, and how both in Johnson County Community College’s waste audit relate to literature on the subject matter of food and food waste, there is reasonable evidence to support that the implementation of waste audits and subsequent conversations about food and food waste are effective educational tools for perceptions of waste and behavioral changes.

### *Recommendations*

As programs like post-consumer composting and the meal-share program at Johnson County Community College’s campus are implemented, educational components will be necessary to properly utilize and address these programs. More waste audits, structured with curricular offerings and also as co-curricular events are useful tools to continue to employ going further for student awareness of food insecurity and food waste, both on campus and in their daily lives.

## **References**

Analysis. (2017). *ReFED*. Retrieved December 11, 2017,

from <http://www.refed.com/?sort=economic-value-per-ton>

ReFED is an organization based on food waste prevention. Their beliefs state that doing so could save resources, create jobs, stimulate the economy, and help minimize the effects of climate change. The organization provides analytical data of food waste and solutions.

Blagg, K., Whitmore-Schanzenbach, D., Gundersen, C., & Ziliak, J. (2017, August 07).

Assessing Food Insecurity on Campus. *The Urban Institute*. Retrieved December 13,

2017, from <https://www.urban.org/research/publication/assessing-food-insecurity-campus>

This study positions two-year colleges, like JCCC, in the context of student food insecurity. This is timely information, given JCCC's efforts toward reducing hunger on campus.

Bloom, J. M. (2011). *American Wasteland: How America Throws Away Nearly Half of its Food*

*(and what we can do about it)*. Cambridge: Da Capo Press.

Bloom writes of the US food system throwing away half of its produced food per year. This food is uneaten and left to rot, primarily in landfills, further contributing to the massive amount of garbage the US wastes annually. Specifically in chapter three, Bloom speaks on the relationship between food waste and hunger in the United States. This work is essential in highlighting the way in which the waste audit at JCCC was conducted to create conversations about food and food waste. The book also later gives examples of change, which relates to the waste audit as a factor of agency in behavioral changes.

Humes, E. (2013). *Garbology: Our Dirty Love Affair with Trash*. New York: Avery.

*Garbology* investigates the rise of the waste system in the US—breaking down waste statistics, analyzing what is being thrown, and researching how the waste stream affects communities. In Hume's research of garbage, there are significant charts and data on what is wasted, how much, and how. Humes also ties the waste stream with the food system.

The Johnson County, Kansas Food System. (2016, December). *Johnson County, Kansas*

*Government*. Retrieved December 11, 2017,

from <https://www.jocogov.org/sites/default/files/documents/DHE/PBH/Jo%20Co%20Food%20Assessment.pdf>

Johnson County is where JCCC is located. While the county has the highest median income rates in the state, at least 5% of the population is still at or below the poverty line. The food system report provides data which centers the breadth of the problem the waste audit was conducted to highlight locally.

Key Statistics & Graphics. (2017, October 4). *United States Department of Agriculture*

*Economic Research Service*. Retrieved December 11, 2017,

from <https://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/key-statistics-graphics.aspx>

The USDA conducted a study of food insecure households in the United States in 2016. The study also provides a definition for food insecurity at several levels. This data gives national context of issues of hunger while also highlighting the national averages compared to state and county data.

Mikulak, M. (2014). *Politics of the Pantry: Stories, Food, and Social Change*. Montreal:

MQUP.

Mikulak's work analyzes food movements and their narratives. He compares this with the history of food politics and opens a dialogue of social change. This dialogue is most relevant to the JCCC waste audit, as the audit was conducted as a medium for social change in behaviors and perceptions of food as waste.

Municipal Solid Waste. (2016, March 29). *Environmental Protection Agency*. Retrieved

December 12, 2017, from <https://archive.epa.gov/epawaste/nonhaz/municipal/web/html/>

The EPA has data on US national diversion rates for waste as well as data of the average waste generation in the states annually and per person per day.

Neff, R. A., Spiker, M. L., & Truant, P. L. (2015, June 10). Wasted Food: U.S. Consumers'

Reported Awareness, Attitudes, and Behaviors. *PLoS One*, *10*(6). Retrieved December

11, 2017, from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4465675/>

The research published in the National Library of Medicine reports on consumer attitudes and behaviors on wasted foods in the United States. This research is relevant to the participants' attitudes and behaviors on food waste at the JCCC waste audit.

Rogers, H. (2006). *Gone tomorrow: The Hidden Life of Garbage*. New York: New Press.

A comprehensive overview of American habits of trash—from food to goods to packaging. This work talks about American historical context while also noting the global garbage issues.

"Rogers' book traces the connections between modern industrial production, consumer culture, and our throwaway lifestyle." This will be used to highlight culture perception as well as to provide background and context of the issues of waste.

Schanbacher, W. D. (2010). *The Politics of Food*. Santa Barbara, Calif.: Praeger.

This is a call for a change in the global food system as it currently stands. Schanbacher believes this model is a human rights violation as many starve and are stripped of their economic sovereignty over their food production in a global system. I will use this to contrast the disparity between the striking amounts of food we waste and the lack of food security throughout the world.

U.S. Food Waste Challenge. (n.d.). *United States Department of Agriculture Office of the Chief Economist*. Retrieved December 11, 2017,

from <https://www.usda.gov/oce/foodwaste/faqs.htm>

The USDA's food waste challenge highlights the attempt to curb food waste generation on a national level. This challenge also reports on the importance of the issue of food waste and why it needs a solution. It defines food waste and also uses the challenge as a baseline for food waste reduction in the United States.

Qi, D., & Roe, B. E. (2016, July 21). Household Food Waste: Multivariate Regression and Principal Components Analyses of Awareness and Attitudes among U.S.

Consumers. *PLoS One*, *11*(7). Retrieved December 11, 2017,

from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4956302/>

This research also reported on consumer attitudes of food waste in the context of household waste generation. Much of their analysis mirrors the findings from surveys and interviews with the waste audit at JCCC. Their findings provide analysis of consumer perceptions of food waste in context primarily of food taste and quality.

## Appendices

### Pre-Survey:

1. How important is the creation of food waste in your dining decisions?

Not Important      1      2      3      4      5      Extremely Important

2. What factors influence your decisions about throwing food away? Mark as many options as apply to you.

a.      N/A              b. Guilt              c. Saving money              d. Food insecurity

3. Do you throw away about the same amount of food (on campus) as your peers?

a.      Yes              b. No, I throw away more.              c. No, I throw away less

### Post-Survey:

1. What did you find more surprising?

a.      Volume              b. Type              c. Both              d. Neither              e. Other \_\_\_\_\_

2.      What will you change?

a. Order less food              b. Bring containers to carry out              c. Both              d. Nothing

e. Other \_\_\_\_\_

**Interview:**

Thank you for participating in our waste audit. We have a series of questions to help us understand your experience and what we can learn for broader application across JCCC's campus. The following questions will help us understand subjects' reactions to our on-campus waste audit on 25 August:

1. Was this your first experience at a waste audit? What thoughts would you like to share? (If not - how did this audit compare to others you've been involved in?)
2. Did you find anything particularly surprising?
3. After your experience, could you imagine doing another waste audit? Why or why not?
4. How do you think that participating in a waste audit will affect your behaviors on or off campus?
5. In your opinion, what did your experience indicate about waste habits at JCCC?

The following questions will help us understand subjects' decision-making processes where waste is concerned:

6. Consider a meal that you've eaten on campus, at a restaurant, or at your home. How would you describe unfinished food in those situations? Do you think of it as waste or something else?
7. In the US, 30-40% of edible food is wasted. At JCCC, a little over half of the waste you saw at the audit was food. Does understanding how much of our waste is food related suggest any changes in behavior on campus? At home?

8. Please describe the decisions you make at home and on campus that affect your waste footprint.
9. How would you describe an ideal waste stream in your home or community?
10. What suggestions do you have about making your ideal waste stream a reality on campus?
11. After evaluating a lot of different people's trash, what lessons have you learned about community behavior?
12. After considering your own trash in a different light, what have you learned about your behavior?
13. What suggestions do you have for campus as we try to address waste as an institution?
14. Based on the recommendations and observations from your experiences in the waste audit, describe the role that individual decisions play on larger institutional policies.