ABSTRACT

THE OHIO BAR AND RESTAURANT RECYCLING TOOLKIT: A RESOURCE DESIGNED TO ASSIST BARS AND RESTAURANTS IN IMPLEMENTING AN EFFECTIVE RECYCLING PROGRAM TO HELP MEET OHIO’S DEMANDS FOR RECYCLED GLASS

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This paper discusses the research and development of a Bar and Restaurant Recycling Toolkit for the Ohio Environmental Protection Agency. The purpose of this toolkit is to assist bar and restaurants in implementing an effective and successful recycling program. Methods included interviews with representatives from bars and restaurants, the recycling industry and solid waste management districts. In addition, I developed a survey for bars and restaurants that helped identify benefits and barriers to a recycling program. The main barriers identified were costs of implementing and maintaining a recycling program, interior and exterior space constraints for recycling collection containers, lack of relationships with recycling/waste haulers and local governments, and a misunderstanding of recycling regulations within local communities and solid waste districts. Additionally, The Toolkit includes marketing materials developed by Miami University marketing students to assist users in capturing external and internal markets, and to give Ohio EPA a state-wide, definitive recycling brand image.
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SECTION 1. BACKGROUND ON RECYCLING

For centuries, recycling was a part of everyday life stemming from the necessity to replenish scarce materials (NRDC, 2008). Recycling as an essential practice was especially prevalent during the 1800’s. Prior to the emergence of mass production, basic items were continually being repaired or reused in order to meet the needs of a community, family, or an individual (U.S EPA, 2013). In the late 1940’s and early 1950’s however, production efficiencies increased and new technologies in assembly lines made products more accessible (PBS, 2013). This combined with America’s fast growing economy and an increase in spending power led the nation to experience a phenomenon of increased consumerism (PBS, 2013). As soldiers returned home from war and families grew, Americans began to equate their consumption with national pride.

It was not long however before a fine line was crossed, and America evolved from a nation of consumers to a nation with a “disposable” culture (U.S. EPA, 2013). Given the newfound affordable and available nature of a plethora of commodities, businesses and homes did not prioritize recycling in the way that they once had (NRDC, 2008). Consumerism was at its peak, especially because of the emergence of plastic packaging, a decrease in recycling incentives, and a decreased desire to live a thrifty lifestyle (Scheinberg, 2003). In addition, the technology for recycling materials was not well developed at this point in history (Scheinberg, 2003). Recycling existed only within the context of the war, where scrap metals were salvaged to build military machinery and cooking grease was saved for ammunition (U.S. EPA, 2013).

The environment did not become a matter of consideration until the 1970’s, when the emergence of landfill concerns, diminishing natural resources, pollution, and poor atmospheric conditions began to surface (NRDC, 2008). This newfound environmental awareness led to the formation of the United States Environmental Protection Agency. By 1971, the first “Bottle Bill” was introduced, and by 1973 the first recycling curbside program was born (NRDC, 2008). As time progressed, recycling programs and rates increased and by 2012, 34.5% of all municipal solid waste\(^1\) generated within the United States was recycled (U.S. EPA, 2010; Figure 1.1).

\[\text{Figure 1.1  Municipal solid waste recycling rates, 1960 to 2012 (U.S. EPA)}\]

\(^1\)During fiscal year 2008-2009, 1.07 tons of solid waste per person per year and a total of 1,255,079 tons of recycled material were recorded. During fiscal year 2012-2013, 0.94 tons of solid waste per person per year and 1,348,548 tons of recycled material were recorded (U.S. EPA, 2012).
1.1 WHAT IS RECYCLING?

Recycling is the process of disposing of used materials in a manner that will allow those materials to be reprocessed into another useable product (U.S EPA, 2014). ‘Recyclables’ refer to products that can be recycled. Common recyclables within the United States include paper and paperboard, plastics, metals, glass, yard trimmings, wood, and food waste (Figure 1.2) (U.S. EPA, 2012). Recyclables can come from a variety of sources, including residential communities and apartment complexes, commercial businesses, industrial businesses, schools and institutions, and hospitals (U.S. EPA, 2012).

![Figure 1.2](image)

The environmental, social, and economic benefits of recycling are innumerable. The list below includes a selection of these benefits that are among the most considerable (U.S EPA, 2014; NRDC, 2008; Rumple Recycling, 2012; ODNR, 2011)

**Environmental benefits:**
- Diverts materials away from landfills, thus reducing waste and the reliance on limited landfill space
- Protects and conserves natural resources and habitats
- Saves energy and reduces the need to collect raw materials
- Reduces greenhouse gas emissions and helps mitigate climate change

**Social benefits:**
- Creates a more sustainable future for generations to come
- Promotes green lifestyles to individuals and within communities

**Economic benefits:**
- Promotes green business practices
- Supports the creation of jobs
- Helps national and state economies grow
1.3 THE SUPPLY CHAIN OF RECYCLING

The recycling process begins when recyclables are separated from trash and collected for reprocessing rather than being sent to a landfill. Separating the recyclables can be done in a number of ways including single-stream recycling, dual-stream recycling, and source separated recycling (Figure 1.3). Single-stream recycling, popularly known as commingling, involves mixing recyclables together in one receptacle (Rumpke Recycling, 2012). Dual-stream recycling requires the separation of one type of recyclable material (most commonly paper) from the rest of the recyclables. Source-separated recycling involves separating all recyclable materials from one another (NMWDA, 2013; Rumpke Recycling 2012). There has been a considerable movement towards single-stream recycling. Technological advancements in material recovery facilities (MRFs) have allowed a variety of recyclables to be sorted with superior efficiency (Container Recycling Institute, 2009). These advancements have maximized the amount of recyclables redirected from landfills by eliminating the necessity for manual separation (Rumpke Recycling, 2012). As a result, communities with low socioeconomic standings have been provided a viable solution to the problematic accumulation of recyclables at their landfills (Container Recycling Institute, 2009). Furthermore, single-stream offers the best economic savings for collection haulers (Minnesota Pollution Control Agency, 2006).

![Figure 1.3 Common recycling disposal methods (Yosemite EPA)](image)

Service haulers are companies that collect and transport garbage and or recyclables from the source of disposal, such as single-family homes or apartment complexes, to landfills, MRFs, and manufacturers. Recyclables are most commonly collected in one of the following three ways: 1) pick up from curbsides (common for single-family homes) or shared dumpsters (common in apartment complexes or business districts) by a service hauler, 2) drop-off dumpster locations, and 3) refund or deposit programs (U.S. EPA, 2014). After the recycled material has been sorted,

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2 Material recovery facilities, or MRFs, are centralized operating facilities that collect commingled, single-stream lined or source separated recyclables in order to process them manually or using technologically advanced machinery. They are then prepared for various market specifications in order to sell them for their market value (U.S. E.P.A., 1991)
cleaned, and processed to meet industries specifications, manufacturers buy the recycled content for its production value. Glass containers, paper and plastic are among the everyday household objects that are made primarily of recycled materials (U.S EPA, 2014).

The systemization for transporting recyclables from the collection point to the manufacturers is varied and complex. Service haulers can be city-operated or privately owned (e.g. Waste Management, Inc. and Rumpke). Similarly, collection methods and employment of service haulers vary throughout each individual state.

In Ohio, the Ohio Environmental Protection Agency is responsible for overseeing waste reduction and recycling programs. To do this, Ohio EPA has established 52 solid waste management districts (SWMD) in an effort to manage recycling efforts at the local, city, and community levels. Within each of these districts available resources and contracts differ and are therefore managed individually by various district coordinators, each of whom report directly to the Ohio EPA (Organization of Solid Waste Districts of Ohio, 2014).

The supply chain of recycling is dynamic and multifaceted. Each recyclable material is treated differently in how it is processed, produced, and manufactured. For example, glass is considered to have a closed-loop supply chain. This means that glass materials can be recycled and used an infinite number of times (Rumpke Recycling, 2012). On the other hand, recycled paper that has been turned into pulp and then fibers sometimes needs to be combined with raw paper fiber in order to maintain strength and smoothness (Paper University, 2001).

SECTION 2. RECYCLING MANAGEMENT IN OHIO

The Ohio Environmental Protection Agency (Ohio EPA) is a state agency whose mission is to protect the environment and public health (Ohio EPA, 2014). The Ohio EPA was created in 1972 when several state environmental programs formed one molecular agency.

Today, there are 16 divisions within Ohio EPA, one of which is the Division of Materials and Waste Management. This division works to develop and inform regulations concerning the disposal of waste, establish and implement statewide waste reduction, recycle, develop the recycling market, and implement programs for litter prevention as well as programs for non-hazardous waste (Ohio EPA, 2014).

In 1988, when Ohio began to face many challenges as a result of an inadequate solid waste program, Ohio EPA passed House Bill 592 (HB 592). HB 592 established a more effective solid waste program for the state through the following provisions:

- Regulations for disposal facilities
- Adoption of a state solid waste management plan
- The creation of an advisory council for preparing and approving the state plan
- The creation of SWMDs for all 88 counties, either individually or in conjunction with other counties
- The creation of a solid waste management plan for each district
- Requirements for solid waste facilities established prior to January 1st, 1980 to upgrade to the most state of the art technologies available
House Bill 592 prioritized becoming less dependent on landfills by encouraging material reduction, reuse and recycling. Although the bill has been modified throughout the years, its central focus has remained the same (Ohio EPA, 2010a). For a summary of HB 592, refer to Appendix I. The State Solid Waste Management Plan, a document associated with HB 592, was revised in 2010 for the purpose of remaining relevant to the state of Ohio. The plan aims to reduce waste by setting recycling goals for both the state and its 52 SWMDs. Amongst other things, The Plan requires strategies to be established that will promote markets for recyclable materials and products (Ohio EPA, 2010b). For a summary of the Plan, refer to Appendix II.

2.1 THE GLASS RECYCLING INDUSTRY

Glass is a unique material because it can be recycled into new glass products infinitely and still maintain quality and purity. The ability for glass to be reused over and over again provides many economic and environmental benefits, such as less reliance on raw materials and reduced CO$_2$ emissions from reduced energy demands (Glass Packaging Institute, 2010). Glass recycling therefore has both a cradle-to-cradle life cycle (Figure 2.1) and a closed-loop supply chain (Figure 2.2).

Figure 2.1 Glass recycling life cycle (Glass Packaging Institute)
Many prominent players in the Ohio glass-manufacturing industry include Owens Corning, Owens-Illinois, and Johns-Mansville; all are companies that produce fiberglass and glass containers (ODNR, 2011). The industry has a high demand for glass cullet. Cullet is the final processed form of recycled glass, consisting of small, broken down glass. Cullet can be melted down at a much lower temperature than raw materials which lowers energy demands by allowing industry furnaces to run in a cost effective manner (Rumpke Recycling, 2012). For this reason, glass cullet meets industry specifications in favor of raw material (Glass Packaging Institute, 2010).

Because industry furnaces run 24 hours a day (barring times of maintenance or operational malfunction), filling them to capacity is the most efficient way to operate glass-manufacturing facilities. Doing so requires between 275,000 and 295,000 tons of recycled glass per year. According to a 2011 study conducted for the Ohio Department of Natural Resources, manufacturing facilities are falling short of that requirement by an estimated 185,000 tons annually (ODNR, 2011). This shortage is due in part to the fact that 90% of today’s used glass containers are being directed toward landfills rather than recycling facilities (ODNR, 2011).

As early as 1998, Ohio glass-manufacturing industries began to ask the Ohio EPA for assistance with obtaining more recycled glass from Ohio municipalities. Since that time, the Ohio EPA has been heavily involved in the orchestration of glass recycling projects throughout the state of Ohio in an effort to bridge the gap that the industry shortage has created.

SECTION 3. THE BAR AND RESTAURANT RECYCLING TOOLKIT

3.1 PROJECT DESCRIPTION

To help meet the demands of recycled glass, the Ohio Environmental Protection Agency has identified the Ohio bar and restaurant industry as a targeted industry to bring in more recyclable materials. To assist with this process, I was responsible for developing a Bar and Restaurant Recycling Marketing Toolkit (The Toolkit) that would help organizations implement successful recycling programs. To develop the toolkit, I focused on the following three objectives:
1. Identify barriers to recycling by bars and restaurants.
2. Develop the structure and content of the Bar and Restaurant Recycling Marketing Toolkit.
3. Define a brand for The Toolkit through the use of marketing materials.

3.2 METHODOLOGY

To lay the groundwork for the construction of The Toolkit, it was fundamental that I identify potential barriers to recycling. To do so, I took a number of approaches to researching the recycling efforts within bars and restaurants on local, state, and national levels, including the following: (1) interviews with recycling industry representatives and solid waste district coordinators, (2) interaction with the City of Oxford’s local bars and restaurants, (3) private tours of recycling facilities throughout the state, (4) extensive personal interaction with various stakeholders of the recycling industry, and (5) the distribution of an online survey to bar and restaurant owners within the state of Ohio. Additionally, The Toolkit was inspired by recycling toolkits already effectively in place, community-based social marketing and recycling research, and my experiences working in the bar and restaurant industry. By virtue of a number of editing sessions with my clients at Ohio EPA, The Toolkit’s structure evolved quite significantly over time. To develop possible brand images and marketing materials, I worked with students from Miami University’s Spring 2014 Sustainable Marketing Management class taught by Professor Robert Dahlstrom.

3.2.1 PREVIOUS GLASS RECYCLING EFFORTS – OHIO

I quickly learned in my research that several bar and restaurant glass recycling programs had already been implemented by solid waste districts across the state. One responsibility of mine was to study these programs and create a toolkit that could be used by all solid waste districts to help them implement similar programs. The programs I examined included ones in Hamilton, Butler and Marion Counties as well as a pilot program in Columbus, Ohio. Examining these programs helped me gather information regarding the barriers that may prevent bars and restaurants from recycling, how to overcome these barriers, and creative ideas for advancing recycling within a variety of communities.

The Hamilton County Solid Waste District began a bar and restaurant recycling assistance program in 2010 focused mostly in Cincinnati. The program offers technical assistance to establishments which are interested in setting up a recycling program of their own by doing the following: coordinating recycling services with the establishments’ waste hauler, providing free indoor collection containers, offering free educational materials for employees and customers, and providing a window decal that notifies the public of the establishments’ recycling efforts (Figure 3.1) (FOX19, 2011).
Butler County, Ohio includes the City of Hamilton, West Chester, the City of Oxford, and 12 additional small townships. Butler County Recycling and Solid Waste District started its bar and restaurant recycling assistance program in 2011. Much like Hamilton County’s assistance program, Butler County’s offers free recycling containers, promotional and marketing materials (Figure 3.2), coordination between waste haulers, informational materials on the benefits of recycling, training for employees, and waived recycling service fees for anywhere between two months to a full year (Butler County, 2014).
Marion County Solid Waste District began its recycling operation in 2010. Glass Act, the county’s cleverly named recycling and litter prevention program, assists in purchasing indoor and outdoor recycling containers, provides funding for infrastructure improvements, and adds to recycling’s aesthetic appeal by incorporating their Glass Act logo on recycling containers. By generating over 2.5 tons of glass per week, the program has gained national recognition and become the state’s prototype for recycling (Ohio Galvanizing Corporation, 2012). According to Glass Act director Angela Carbetta, coordinating the program was just as rewarding as it was challenging. Without the help of effective marketing and substantial financial backing, Glass Act would not have been able to accomplish such a recognizable level of achievement. Funding for the program came primarily from the following entities: the Ohio Department of Natural Resources, Marion County, Sims Brothers Inc., Rumpke Waste and Recycling, Hammbone’s Dumpster & Sanitation, DelMar Distributing, and the Ohio Galvanizing Corporation (Glass Act Brochure, 2012). The programs marketing and branding began to flourish when the Ohio Galvanizing Corporation matched the programs initial grants; a contribution that provided Glass Act with a logo (Figure 3.3), brochures, t-shirts, outdoor advertisements, decals and newspapers advertisements (Ohio Galvanizing Corporation, 2012). For their exemplary commitment to the environment, the Ohio Galvanizing Corporation was awarded the Marion Green Community Award (Ohio Galvanizing Corporation, 2012).

Figure 3.3  Marion County’s recycling program logo

In July 2013 the city of Columbus, Ohio began piloting a glass recycling program on High Street, a section of the city populated by bars and restaurants. Called “Recycling on High,” this program sought to overcome space constraints for receptacles. The chief objective of the program is to increase recycling in public spaces, bars, and restaurants. Supported by both Mayor Michael B. Coleman and the Ohio EPA, Recycling on High is currently being fine-tuned and promoted in order to gain more participation from local bars and restaurants (City of Columbus, 2013). Although only in the piloting stage of its development, the success and barriers to recycling that this program has experienced provided me with extremely valuable information for the construction of The Toolkit. I obtained this information through a phone interview with Erin Miller from the City of Columbus, as she was my contact for Recycling on High.
3.2.2 PREVIOUS GLASS RECYCLING EFFORTS – OTHER STATES

In addition to the Ohio programs, recycling efforts and awareness within the bar and restaurant industry exist on a national level. Among the states with the most impressive initiatives are North Carolina and Delaware. Since the passing of House Bill 1518 in 2008, all Alcohol Beverage Container (ABC) permit holders within the State of North Carolina have been mandated to recycle. This sanction is enforced by the North Carolina ABC Commission, which exercises uniform control over the sale, purchase, transportation, manufacturing, consumption and possession of all alcoholic beverages in the state (ABC Commission, 2014). Within three years of implementing HB 1518, North Carolina saw an increase of almost 50% in the number of glass containers being recycled (Glass Packing Institute, 2013). Despite the impressive forward motion developed by the mandate, the state’s Department of Environment and Natural Resources recognized that contract terms and costs within various industries continue to create barriers to recycling. In an effort to mitigate these barriers, the Division of Environmental Assistance and Customer Service engaged a program called RE3, to provide recycling outreach campaign resources for programs throughout the state (North Carolina RE3, 2010). Included among these resources is a recycling program toolkit that was developed for all businesses, not just bars and restaurants. The toolkit is called “9 Steps to Start a Recycling Program” (Appendix III) (North Carolina Division of Environmental Assistance and Customer Service, 2010). With each passing year, the state has reduced waste and increased the recycling rate. (North Carolina Solid Waste and Materials Management Annual Report, 2013).

Comparable to North Carolina is the state of Delaware, which implemented legislation in 2010 mandating recycling throughout different sectors of the state. The legislation is a three-part mandate, first focusing on single-family residential recycling, second focusing on multi-family residential services, and lastly focusing on commercial recycling. In January of 2014, the state further developed the mandate to include a focus on the commercial/services sector (Delaware Recycles, 2013). The complete program, called Delaware Recycles: It’s Second Nature, includes toolkits for residences, convenient stores, health care facilities, hotels, bars and restaurants (Appendix IV), office buildings, public spaces, schools, events, and supermarkets. Available on the program’s website are various materials for download dedicated to restaurant recycling, as well as a step-by-step tutorial on how to appoint a recycling program at an establishment (Delaware Restaurant Association, 2014). Delaware has reported that the percent of recyclables diverted from landfills has been steadily rising. In 2011, the commercial sector, which includes bars and restaurants, diverted 28.6% (137,502 tons) of its total municipal solid waste from landfills. The following year, the commercial sector diverted 33.8% (149,925 tons) of its solid waste from landfills (Delaware Recycles, 2013).

3.2.3 INTERACTIONS WITH INDUSTRY STAKEHOLDERS

As previously mentioned, much of the information gathered throughout the course of my research was obtained through my communication with various stakeholders in the recycling industry. My primary contacts were Butler County Solid Waste Management District (BCSWMD), Marion Country Recycling and Liter Prevention (MCRLP), Adams-Clermont Solid Waste Management District (ACSWMD), the City of Columbus, Rumpke Recycling, the City of Oxford, and various additional SWMDs throughout the state (Appendix V).
My collaboration with five of the industry stakeholders in particular involved an interview with seven questions (Appendix VI). There were no variations on the questions between interviews, and each interview was conducted identically, with the exception of interviewing via phone and email. I was very meticulous in maintaining consistency throughout my interviewing processes, so as to yield results that were uniformly relevant to the construction of The Toolkit. The following paragraphs summarize each interaction with the stakeholder and their responses to the interview questions.

**Butler County Solid Waste Management District:** The City of Oxford, home to Miami University, is located within the Butler County Solid Waste Management District. For this reason, my relationship with BCSWMD was especially important to the project. District Coordinator Anne Fiehrer-Flaig was my main correspondent and among the first stakeholders that I had the opportunity to meet. In our initial meeting, Fiehrer-Flaig explained to me the close relationship she had developed with Rumpke, which is one of southwest Ohio’s biggest hauling service companies. She also briefed me on her newly founded process of recruiting establishments in the City of Hamilton to pilot recycling programs of their own. We discussed Oxford’s current recycling initiatives and the initiatives of the entire district, as well as the recycling infrastructure and habits within the City of Oxford. She informed me on the work she had begun with uptown Oxford’s Starbucks, and was able to show me the beginning stages of their recycling program. After giving me samples of various marketing materials created by BCSWMD, Fiehrer-Flaig joined me on a walk around the three blocks that constitute uptown Oxford. Here, we were able to observe the alleyway spaces that Oxford businesses share when storing waste (Figure 3.4)

![](image)

**Figure 3.4** Shared recycling spaces within Oxford’s uptown district (City of Oxford GIS)

Because of Fiehrer-Flaig’s knowledge of recycling barriers currently faced by bars and restaurants, she was a central resource in my efforts on constructing The Toolkit. It was with the help of her knowledge that I was able to create and distribute a recycling survey inquiring about recycling habits throughout the state of Ohio. Additionally, and in a final demonstration of her generosity, Fiehrer-Flaig utilized her connections at the Oxford Press to help publish a press release promoting that survey (Appendix VII).
Hamilton County Recycling and Solid Waste District: For the initial segment of my research involving Hamilton County, my primary correspondent was district coordinator Holly Christmann. I first met with Christmann and representatives from the Ohio EPA for a casual lunch conversation on general recycling issues throughout the state. At this meeting and throughout my research, she provided valuable insight on what Hamilton County and Cincinnati have been doing with their new bar and restaurant recycling programs. Toward the latter half of my study I also worked with Jenny Lohman, the Education Outreach Coordinator for Hamilton County’s Solid Waste District. The close relationships that she has developed with the bars and restaurants in Hamilton County helped me further understand potential barriers to recycling, including physical barriers and relationship barriers. For example, Lohman had stated that although Hamilton County’s program had a couple bars and restaurants that were very generous with their time and patience with helping to test their program, she did not want to become overbearing with requests or favors from the establishments. As well, Lohman advised me during the development and marketing phases of The Toolkit, and guided me in the construction of a survey that was distributed to Ohio bars and restaurants.

Marion County Recycling and Litter Prevention Program: My main contact with Marion County Recycling and Litter Prevention was Program Director Angela Carbetta. At our initial meeting, Carbetta explained that one of the biggest obstacles she faced with developing a bar and restaurant recycling program was forming relationships with bars and restaurants in her district. She also apprised me that obtaining the financial support necessary to facilitate a recycling program can be very difficult an undertaking, and that the personal time commitment involved is at times taxing. Carbetta served as a valuable resource throughout my research and advised me in the development of both The Toolkit and the survey.

Adams-Clermont Joint Solid Waste Management District: My main correspondent with Adams-Clermont Solid Waste Management District was district coordinator Paul Braasch. In preliminary face-to-face meetings, he advised me about the types of stakeholders I should meet with, explained the recycling supply chain and arranged for me to be given a tour of the Brown County Recycling facility. Because we did not discuss the prominence of recycling in Adams-Clermont during our face-to-face meeting, Braasch was kind enough to grant me an interview that was completed via email. In this interview, I learned that Adams-Clermont currently has no bar and restaurant recycling program in place due in part to private waste haulers in the district refusing to accept glass. Braasch did however indicate a willingness to assist in the implementation of a recycling program in the bars and restaurants in his district, but expressed that in order for this to happen the waste haulers would have to do a separate collection.

City of Columbus: To learn about recycling barriers in the City of Columbus, I interviewed Erin Miller, the main correspondent for the city’s pilot recycling program. I learned that ‘Recycling on High’ was launched in January of 2013, and has for the past 6 to 7 months been recruiting bars and restaurants on a volunteer basis. A main barrier that Miller cited in implementing the program throughout the city was a lack of interest amongst the local establishments. There are 40 bars in the High Street business district they targeted, and at the time of our interview, only 14 were participating. She emphasized that obtaining a significant
number of volunteer bars and restaurants was a ‘hard sell’ because there were no financial incentives and it was difficult to persuade them on the integrity of recycling.

**Cuyahoga County Solid Waste District:** My primary contact for Cuyahoga County was executive director Diane Bickett. In an interview with Bickett I learned that Cuyahoga County did not have a recycling program in place, predominantly because of barriers pertaining to space constraints. Additionally, Bickett suggested that for a toolkit to be successful in her district it would have to include a method of calculation where a bar or restaurant could easily do a waste stream assessment. My secondary contact for Cuyahoga County was Doreen Schreiber. In an interview with Schreiber I learned that glass recycling in Cuyahoga County is largely com mingled through waste and recycling vendors such as Waste Management, Republic Service, Kimble Companies, and Rumpke Waste and Recycling Services. She apprised me that there are currently no incentives offered to bars and restaurants who implement a recycling program, but that she is presently focused on a glass recycling pilot project. Additionally, Ms. Schreiber expressed an interest in distributing the Ohio EPA survey about barriers to recycling throughout her district, and informed me on what kind of reference information, such as contacting your solid waste district coordinator, should be included in The Toolkit.

**Lawrence-Scioto Solid Waste District:** My primary contact for Lawrence-Scioto was district coordinator Dan Palmer. In an interview with Palmer, I learned that Lawrence-Scioto did not currently have a bar and restaurant recycling program or a glass-recycling program in place. This is due in part to the fact that Lawrence-Scioto’s Solid Waste District does not have the funds to offer incentives to bars and restaurants that recycle. Palmer asserted that in order for bar and restaurant recycling programs to be implemented in his district, someone would have to provide the containers and dumpsters necessary to facilitate said programs. He also alluded to the district’s lack of transportation resources necessary to enable the supply chain of glass recyclables. Palmer did suggest that targeting bars and restaurants for recycling in the district is feasible if establishments were in close geographic ranges. Additionally, he expressed an interest in helping me distribute a survey regarding barriers to recycling throughout Lawrence-Scioto.

### 3.2.4 INTERACTIONS WITH THE CITY OF OXFORD, OHIO

My primary contacts with the City of Oxford were the employees of various local bars and restaurants. My experience working in the bar and restaurant industry dates back to as early as 2006, when I was a 16 year old high school student with my first ever job as a hostess. Since that time, I have held a variety of titles in a variety of restaurant settings, and in doing so have become very familiar with the industry. Along the way I have observed the ways in which recycling practices tend to differ between establishments, and these experiences helped me form my own conclusions about potential barriers to recycling in the bar and restaurant industry. Each bar and restaurant is different, therefore they each can have their own unique barriers to address.

In addition, from 2011 to 2014 I was employed as a waitress at an Oxford bar and restaurant called Mac n’ Joes. Mac n’ Joes falls under the heading of establishments who do not recycle. Through interviews with upper management, I learned that the main barriers for recycling included cost, shared alleyway space, and limited space inside the establishment. In addition, I
learned that liability concerns prevented employees from personally transporting recyclables to collection facilities.

3.2.5 BAR AND RESTAURANT RECYCLING SURVEY

To obtain additional information on recycling habits, barriers, successes, and overall opinions on recycling in bars and restaurants, I developed a survey in collaboration with the client and several stakeholders. The survey included 18 questions (Appendix VIII). Below is a summary of the responses. The total number of respondents included 99 responses. A complete analysis of the survey responses is located in Appendix IX.

The demographics of the respondents include the following:

- **Ownership type:**
  - 71% Independent operators
  - 18% Franchisee/corporate-owned chain operator
  - 11% Other (e.g. fraternal club)

- **Operation type:**
  - 72% full-service operator
  - 15% quick-service operator
  - 13% other (e.g. coffeehouse, theater)

- **Establishment location:**
  - 50% Southwest Ohio
  - 23% Central Ohio
  - 21% Northeast Ohio
  - 4% Northwest Ohio
  - 2% Southeast Ohio

- **Establishment type:**
  - 67% Both bar and restaurant
  - 19% Restaurant
  - 15% Bar

The survey also gathered respondent’s current recycling practices, knowledge, and overall opinions on recycling. Of all the respondents, approximately 67% of them already recycled, 17% of them were interested in recycling, and 8% made an attempt to recycle in the past. From these respondents, general barrier and opinion topics to recycling were addressed. The following table and subsequent paragraph summarize the respondents’ barriers and opinions on recycling (Figure 3.5).

<table>
<thead>
<tr>
<th>Description</th>
<th>Barrier</th>
<th>Not a barrier</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inside space</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Outside space</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Too time-consuming</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Too confusing, too difficult</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Staffing</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Outside pressures and relationships</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Negative customer feedback</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Associated costs</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

Figure 3.5 Summary of survey respondent’s barriers
Space constraints included both inside and outside spaces. Inside space was not a barrier for majority, however because of shared alleyway spaces and dumpsters, outside space posed a major barrier for about half the respondents. Majority of respondents felt that recycling was not too time-consuming, too confusing, nor too difficult. These line items also include that respondents felt recycling does not require technical assistance. Various staffing issues regarding recycling such as willingness to participate, devoting enough time, and having sufficient amount of staff were not barriers. Outside pressure from the community was not a barrier, however relationships with their local government, city, and service hauler(s) were a barrier for about half the respondents. Majority of respondents also felt that customers would not react negatively to the implementation and promotion of a recycling program. Lastly, associated costs, such as recycling pick-up fees, posed as the greatest barrier to recycling for most respondents.

3.2.6 SOCIAL MARKETING AND RECYCLING

Since increasing recovery of glass from bars and restaurants would involve changing the current behavior of employees, I also researched a marketing theory called social marketing. Social marketing is a strategy that focuses on improving social, environmental, and economic welfare by aiming to change human behavior (McKenzie Mohr, 2011). An effective social marketing campaign focuses on identifying barriers, classifying target audiences, and determining which marketing mix is best suited to each classification (Landis, 2005). My research included a literature review of social marketing methods and reviewing Social Marketing for Recycling in Ohio: A Guide to Understanding, Planning and Conducting Social Marketing Projects, a document published by Ohio’s Division of Recycling & Litter Prevention (2005). This publication helped create a foundation for the communication, education, and marketing content of The Toolkit.

3.2.7 INVOLVEMENT WITH MIAMI UNIVERSITY’S MARKETING DEPARTMENT

Within the myriad of statewide recycling programs, each individual unit has a unique repertoire of marketing and branding materials. One of the functions of The Toolkit is to unify recycling efforts in the state of Ohio by simplifying the representation of every program’s objective to an interchangeable brand. Implementing a universal statewide brand will raise awareness for the need to recycle, ideally resulting in the smooth integration of recycling into Ohio businesses.

During the spring semester of 2014, Dr. Robert Dahlstrom (Seibert Professor and Chair to the Miami University Marketing Department) was generous enough to let me collaborate with a section of his students to develop some marketing ideas for The Toolkit. Dr. Dahlstrom and I arrived at the decision that his Sustainable Marketing Management class would constitute seven teams of five students focused on developing marketing materials for The Toolkit.

My involvement with the marketing students spanned the entirety of the spring semester. Their expertise, in conjunction with Dr. Dahlstrom’s counsel, led them to create resources that centered on constructing a state-wide consistent brand for recycling within the bar and restaurant industry. I introduced the term project by giving a presentation articulating the need for effective
marketing and branding amongst recycling programs in Ohio. Also included in the introductory presentation was an explanation of what was expected of the students as it pertained to their involvement with The Toolkit. The first half of the semester called on each team to comprehensively research the internal and external target markets of their assigned restaurant. Encompassed within these markets are the people who work within the bar and restaurant industry as well as the customers and surrounding community. The students presented their findings mid-term in a formal in-class presentation. During the second half of the semester, the teams focused on designing a logo and slogan, and incorporated that design in marketing materials that were likely to appeal to their target audiences. The teams presented their marketing ideas in a formal presentation at the end of the semester to me and a panel of stakeholders including my clients from Ohio EPA, IES affiliates, and several solid waste district coordinators. The following sections with accompanied figures highlight some of the teams’ final deliverables and strategies.

**TGIFriday’s:** The student team TGIF created a unique brand image that served the general bar and restaurant industry and also could be modified to suit the TGIF franchise. The team addressed the state of Ohio market first in order to lay the foundation of developing strong brand recognition for the general public. The team’s logo and slogan, ‘Upgrade Ohio for a Better Tomorrow,’ sends a message that recycling is beneficial for future generations within Ohio. The logo resembles the ‘reduce, reuse, recycle’ waste reduction hierarchy, but replaced at the top with an outline of the state of Ohio (Figure 3.6). They also provided examples of how the logo and slogan can be incorporated into useful items for restaurant and bars, such as a window decal, bottle opener, and t-shirts (Figure 3.7).

![Figure 3.6 Team TGIF logo and slogan](image)

![Figure 3.7 Team TGIF brand incorporation materials](image)
Their modified branding for the TGIF franchise incorporated the colors of the franchise and included a survey questionnaire to collect information on the recycling program (Figure 3.8). This type of customer feedback is creative as it is used to encourage recycling by offering discounts or freebies if one chooses to provide their knowledge and thoughts to the franchise.

![Figure 3.8 Team TGIF’s modified branding](image)

**Chili’s**: Team Chili’s developed a logo and slogan (Figure 3.9) that can be used throughout Ohio’s bar and restaurant industry. Their logo and slogan was designed to make their customer remember that glass recycling is not just a community effort, but also a global effort. The team described the use of the logo and slogan as to promote brand recall by placing their marketing materials on the backside of the menus, using commercials, social media, and window decals. Team Chili’s had a well thought out assessment plan for after the implementation of the marketing strategies (Figure 3.10). Their plan included following up with the customers with surveys to determine how well they could identify the brand image and asking their opinions about dining at establishments with recycling programs. This will justify the amount of impact the marketing strategies have on the recycling brand.

![Figure 3.9 Team Chili’s Logo and Slogan](image)
Buffalo Wild Wings: Team Buffalo Wild Wings emphasized a strategy that truly engaged the external, customer markets. The team developed a logo and slogan that was easily identifiable with the Ohio EPA’s initiatives for recycling; therefore it would be easy for customers to know that this restaurant recycles (Figure 3.11). Since Buffalo Wild Wings has a sports-themed atmosphere, the team developed a competitive way to bring each franchise location to become more sustainably driven with a three-tiered accreditation program (Figure 3.12). This accreditation program gives the restaurant a goal to stay committed to the recycling program. The team also incorporated a button employees can wear while interacting with customers (Figure 3.13). This encourages customers to inquire about the recycling program and how Buffalo Wild Wings has committed to the environment.
Silver Certification

- Successfully met and reported:
  - Step 1: Analyze Waste Stream
  - Step 2: Review Recycling Options
  - Step 3: Design a Program

Gold Certification

- Successfully met and reported:
  - Step 1: Analyze Waste Stream
  - Step 2: Review Recycling Options
  - Step 3: Design a Program
  - Step 4: Train and Support
  - Step 5: Market and Promote
  - Step 6: Monitor and Evaluate

Platinum Certification

- Successfully met and reported all six steps for three consecutive years

Figure 3.12 Buffalo Wild Wings accreditation program

Example Button for Employees

Figure 3.13 Buffalo Wild Wings employee button
SECTION 4. TOOLKIT ORGANIZATION

The methods detailed in the Section 3 helped to develop elementary units of The Toolkit. The client emphasized that The Toolkit needed to be comprehensive and contain easily laid-out instructions. In order to adhere to these criteria, I used terms and phrases generally used in the bar and restaurant industry. Additionally, I designed an easy step-by-step guide so that participants were less likely to feel inconvenienced by recycling. The Toolkit also included many informational resources. The graphics and overall display of The Toolkit are aesthetically pleasing, and it is accessible via hardcopy for district coordinators to distribute and eventually as a digital copy for public access. The following sections summarize The Toolkit. Please refer to Appendix X for the entire Toolkit.

4.1 STRUCTURE

In designing the structure of The Toolkit, I drew my inspiration from a number of other toolkits with objectives similar to mine. (North Carolina Division of Environmental Assistance, 2010; North Carolina RE3, 2010; Delaware Recycles, 2013). The Toolkit’s most characteristic feature is the step-by-step list of procedures. My research revealed that steps were most common among other toolkits. The steps were easy to follow and provided an effective way to keep toolkits short and precise. Keeping the length of The Toolkit to a minimum was something I always kept in mind, as time was a valuable asset to business owners. The Toolkit’s final design consisted of six steps (Figure 4.1).

Figure 4.1  Steps of The Toolkit
4.2 CONTENT

The Toolkit’s cover page included the names of the Ohio EPA representatives, the Ohio EPA logo, and a blank space reserved for a logo designed specifically for the glass recycling program. The subsequent introductory pages are comprised of a page designated for the comments of the Ohio EPA director (Figure 4.2), a checklist outlining steps one through six (Figure 4.3), and a worksheet designed to assist the participants in logging their progress and tracking their goals (Figure 4.4).

Figure 4.2 Letter from Ohio EPA
Checklist for implementing a successful recycling program

Step 1: Analyze Your Trash
Understand how much you can recycle by analyzing your trash. This will help you design the best program for your establishment.

Step 2: Review Your Recycling Options
Depending on your solid waste district, hauler, and contract terms, recycling can be addressed in a variety of ways. To determine the best recycling option for your establishment, contact your solid waste district and your trash hauler.

Step 3: Design Your Program
Design a program that works for you. Consider options for inside collection and outside storage. The design should be just as convenient as throwing an item in the trash.

Step 4: Build Your Team
An effective recycling program relies on your staff. Educate staff and incorporate leadership to ensure the success of your program.

Step 5: Market and Promote Your Program
Be sure to tell your customers and community that you recycle. Marketing your efforts makes good business sense and attracts more customers.

Step 6: How’s Your Program Going?
To ensure the success of your program, be sure to touch base with your staff and see if you are reaching your goals.

Figure 4.3 Checklist of steps
Figure 4.4  My recycling plan worksheet
4.2.1 STEP 1: ANALYZE YOUR TRASH

In Step 1, participants learn what a waste assessment is and why it is important to analyze their trash. This is a critical element of the process because it informs the staff of a procedure to calculate the volume of recyclables that were previously being sent to the landfill. Synonymously, it informs the amount of recyclables they can divert from their own trash.

After informing the user of the purpose of analyzing trash, participants are instructed to contact their solid waste district to request a waste assessment. A waste assessment, or waste audit, includes categorizing recyclables, nonrecyclables, and compostable materials from one another and recording their weight (U.S. EPA, 2014). If the user does not know what solid waste district they are located in, they can reference a map of solid waste districts located in Appendix A. If their solid waste district does not provide free assessments, the participants are advised to seek a free waste assessment from their service hauler (e.g. Rumpke). If neither of these options is available, the participants can refer to The Toolkit’s Appendices B and C for instructions about how to perform their own waste assessment (Figure 4.5).

C. Options for calculating a waste assessment:

Contact your local solid waste district
If you haven’t already contacted your solid waste district, give them a call. Most districts offer free assessments. If those services are not available in your area, you solid waste district can provide resources to provide you with your recycling efforts. You can find your district and contact by referring to Appendix A: Solid Waste Districts of Ohio Map or by following this URL:

http://epa.ohio.gov/dmwm/Home/recycle/tabid/6105/LiveTabId/143809/Default.aspx#where

Contact your trash hauler
If your district does not provide free assessments, your service hauler is the next best option. Many haulers offer free assessments to help you create the best recycling contract terms for your business.

Perform your own waste assessment
If your solid waste district and hauler do not offer free assessments, it is possible to perform your own assessment. Appendix B and Appendix C provide a Do-it-Yourself Waste Assessment template and a Glass Calculator template to help guide you through the process.

Figure 4.5 Snapshot of Step 1C

4.2.2 STEP 2: REVIEW YOUR RECYCLING OPTIONS

The second step of The Toolkit stresses the importance of understanding the establishment’s waste hauling contract. This is important because, based on my interviews with solid waste districts and Rumpke, a service like recycling can be added to a contract relatively easily. This step of The Toolkit also provides suggestions on how to address issues within the contract. From my research, many stakeholders were unaware what was in their contract. The Toolkit contains a ‘Things to look for in your contract’ and ‘Questions to ask your hauler’ section (Figure 4.6).
Through my research, I learned that recycling services vary across the state, and even within one solid waste district. I also learned that not all bar and restaurant employees were aware of the different types of collection methods. Therefore, Step 2 of The Toolkit offers advice on how to research the multitude of recycling services available to their restaurant or bar. This also educates the user on different recycling options. For example, The Toolkit defines single-stream recycling, source-separated recycling, and drop-off recycling (Figure 4.7).

**What is single-stream recycling?** A recycling collection process that involves no requirements to separate recyclable materials from one another, allowing commingling of recyclables items.

**What is source-separated recycling?** A recycling collection process where each type of recyclable material needs to be disposed in their own separate containers, for example separating paper, glass, and metals from one another.

**What is a drop-off?** Trailers, roll-off containers, or other types of containers that are used as collection points for residential and sometimes commercial recyclables. Residents or businesses store their recyclables and then periodically drive to the drop-off site to deposit their recyclables into the container.

Figure 4.6 Service haulers, contract objectives, and questions to ask your hauler, Step 2A

Figure 4.7 Types of recycling services, Step 2B

4.2.3 STEP 3: DESIGN YOUR PROGRAM

The third step of The Toolkit calls on the participants to begin the process of designing a recycling program for their establishment. When designing a program, all aspects need to be well thought out, including the logistics within the establishment, such as containers. This step guides the user to what type of items they will start to recycle, how to dispose of those recyclables, and the physical adjustments that may be needed to make room for the new recycling containers. This includes both inside and outside the establishment. In addition to reviewing the logistics of whether containers should be placed inside or outside of an establishment, Step 3 addresses the types of recycling containers available so that participants
can customize their recycling program with the space constraints of their establishment in mind (Figure 4.8).

C. What containers should I use?

There are many different types and sizes of recycling containers available for your use. When choosing a container, recognize space constraints, volume of material, and weight of material. Consider how staff will have to handle the containers and avoid purchasing large containers that are difficult to move when full. Containers should be a different color than trash bins for ease of identification. If recycling multiple materials in a source separated system, use different colors for each container.

D. Where should I put the containers?

Keep in mind, you are not generating more materials, just managing them differently. Therefore, you may not need to make additional space. A reduction in the amount and the size of trash bins may be necessary in order to accommodate for recycling bins inside and outside your establishment.

Although The Toolkit is intended to facilitate recycling of every variety, this step asserts the value of introducing recycling to an establishment one classification at a time. It suggests that glass is the best place to start given its high demand. Glass is also easily recognizable to separate from other recyclables and trash. Participants are encouraged to use signs and labels on or around receptacles to guide patrons and staff that may be unsure of where they should discard their recyclables. Appendix D offers signs and labels establishment staff can use in order to remind staff of the recycling program and also to avoid contamination within recycling bins. These reminders can be associated with community based social marketing prompts, which emphasizes in changing behaviors to a daily routine (McKenzie-Mohr, 2011) (Figure 4.9).

Figure 4.8 Types of recycling containers, Steps 3C and 3D

Figure 4.9 Labeling recycling containers from trash and compost (Recycle Across America)
4.2.4  STEP 4: BUILD YOUR TEAM

The fourth step of The Toolkit indicates the parallels between a well-trained staff and a successful recycling program. Naming this step ‘Build Your Team’ creates a mindset that to boast a successful recycling program, staff need to support the program. It also references that the efforts put forth are truly from a team level, as having only a few dedicated staff members would be ineffective. It is recommended that each establishment identify a ‘recycling champion’ among the staff who will work to maintain unity and progress within the crews recycling efforts. Additionally, the recycling champion will be responsible for building a ‘green team’ of staff members that are particularly dedicated to the recycling program and its goals. Figure 4.10 addresses the champion’s responsibilities. For the sake of quality control, it is suggested that the green team include representatives from each area of service within the establishment. For example, one would have a representative from the kitchen area, floor/service area, and bar area on the team.

![Figure 4.10](#)  Responsibilities of the recycling champion, Step 4A

Step 4 emphasizes the importance of effective and consistent communication between the staff and its leaders. Additionally, it underlines the value of a well-educated recycling team. Through thorough and consistent communication, education can be achieved through word of mouth and through labels and signs, and the use of prompts (Figure 4.11). Included in this step are materials that can be used to educate the staff on the recycling program and its relevance. For example, it refers users to Appendix E, which gives templates for a ‘Message from Owner’ and also an employee ‘Commitment Letter’.

![Figure 4.11](#)  Emphasis on the need to consistently educate and communicate, Step 4C
4.2.5 STEP 5: MARKET AND PROMOTE YOUR PROGRAM

The fifth step of The Toolkit is designed to familiarize an establishment’s customers and community with their commitment to recycling. Displaying evidence of collaboration with Ohio EPA is a candid demonstration of environmental responsibility. Given the millennial generation’s multidimensional approach to going green, this type of publicity makes excellent business sense (Figure 4.12) (Furlow et al., 2009; Smith et al., 2012). Additionally, promoting the recycling program provides a platform for the employees to take a much-deserved measure of pride in their hard work. Doing so raises team moral by generating a sense of unity between the staff and the community (McKenzie-Mohr, 2011).

<table>
<thead>
<tr>
<th>B. Marketing and promoting makes good business sense</th>
</tr>
</thead>
<tbody>
<tr>
<td>At this point, you have put forth much effort developing a recycling program for your establishment. Use this to your advantage and help boost your establishment's wealth and reputation. You can potentially strengthen and broaden your customer base. It also makes a statement about your business in a variety of ways:</td>
</tr>
<tr>
<td>- Shows your commitment to the community</td>
</tr>
<tr>
<td>- Shows your commitment to the environment</td>
</tr>
<tr>
<td>- Supports local and state economies</td>
</tr>
<tr>
<td>- Supports global environmental initiatives</td>
</tr>
<tr>
<td>- Supports green business initiatives</td>
</tr>
</tbody>
</table>

Figure 4.12 An explanation of why to market your recycling efforts, Step 5B

Appendix G of the Toolkit will include a mix of marketing materials that will be chosen by Ohio EPA after assessing the marketing students’ materials. The mix of marketing materials provides a structured marketing strategy, with a brand image that will be well established and recognizable through more and more use within Ohio. The determined marketing mix, and overall Toolkit strategy, addresses the four P’s of marketing: product, price, place, and promotion (Landis, 2005). Users are encouraged to take advantage of these free marketing resources, as they were developed specifically for this recycling within Ohio bars and restaurants. Specifically, the mix addresses product, place, and promotion of a good marketing strategy (Landis, 2005).

4.2.6 STEP 6: HOW’S YOUR PROGRAM GOING?

The final step of The Toolkit asserts the value of monitoring the recycling program on a regular basis. Here, participants are advised to maintain records that track their progress. Tracking and monitoring allows for baselines to be determined and is the best way to evaluate your progress. As well, this step provides a detailed account of the program’s evolution and enables concise and effective troubleshooting should an issue arise (McKenzie-Mohr, 2011; Cole et al., 2013).

In this step, the importance of celebrating a program’s success with the participating staff and community is emphasized. In my own experience working within the service industry, a staff that works together as a team and that feels appreciated in doing so is inclined to maintain the forward motion that helped bring their original goals to fruition. This in return aids in inviting the public to join the celebration shows environmental leadership.
Also included in Step 6 is information regarding the use of the press release template located in Appendix F. Participants are encouraged to use this template to assist them in notifying the press of their recycling program’s successes. Creating a press release is recommended because it further involves the community and through promotion with media messages can effectively reach the target market of an establishment (Figure 4.13) (Landis, 2005).

C. Share your successes

Having a well organized monitoring and evaluating system can be used for other areas of the business. If your program is going well then share your positive results with your staff and the community. This is good for staff morale and showcasing your environmental leadership to the public. You can publicize your accomplishments in a variety ways. Use the press release template in Appendix F to reach the community and or post a status report on the staff bulletin board to share the success. Inform the staff of how well they are performing.

And always, thank your staff for being committed to the program and for their hard work.

Figure 4.13 The benefit of sharing your successes with your staff, Step 6C

SECTION 5. DISCUSSION & RECOMMENDATIONS

I would like to express my gratitude to the stakeholders who were kind enough to assist me in the construction of The Toolkit. Working with important industry stakeholders gave me valuable knowledge of how complex the recycling industry is, and how many players are involved in the supply chain from source of disposal to making new products. Ohio has many districts that manage their solid waste differently, and within the districts, municipalities handle their waste and recycling differently from one another. The amount of stakeholders I was able to work with gave me great skills in communicating effectively and also qualitative research skills.

Albeit educational, gathering the data necessary to construct The Toolkit was at times challenging. Communicating with so many stakeholders throughout the state required me to be organized and flexible with my outreach methods. I used face-to-face interviews, email correspondence and phone conversations to help ease the burden on the stakeholders. This was often successful, but I quickly understood that I needed to be patient when waiting for responses and clear and concise in my communications.

An additional challenge was designing a toolkit that was versatile enough to address the different solid waste and recycling systems across the state. For example, the Butler County Solid Waste District uses Rumpke Recycling as their main hauler for city contracts, whereas the City of Cincinnati employs a number of haulers; some private, some city owned. In order for The Toolkit to be applicable to multiple systems, I had to combine all information gathered, determine some common areas of constraints, and also address some smaller, yet still significant, issues. The common themes of barriers from all gathered information were addressed in The Toolkit and outlying barriers that didn’t seem to be an issue for most stakeholders were
immersed within the steps as individual details. This seemed most appropriate as it appeared as a theme in previous toolkits I studied. It also made the toolkit specific enough to users to develop a successful recycling program, but also touched upon a more generalized topics.

A third challenge that I faced throughout the course of my research was gathering information from bars and restaurants. Because these establishments are very busy during much of the day, bar and restaurant employees often do not have the time to sit down and discuss such topics as recycling, nor do they regularly access email which interfered with the ability to take the survey. Therefore the most effective way to obtain information from these establishments was to meet in person during the hours when they were not busy. An additional challenge with approaching bars and restaurants for information was dealing with chain restaurants. Because of corporate policies and procedures, I found out quickly that I would need to communicate with the regional offices. Due to my own time constraints, I unfortunately was not able to do so.

Another challenge that I faced was encouraging Miami’s marketing students to take advantage of my time and resources during the development of their materials. More interaction could have better enhanced Step 5 of the Toolkit. I felt fortunate to meet with three out of the seven groups for help on their final deliverables. To make the experience more enriching for all parties, I would have requested a meeting with each group during the interim phase of their project and before the final presentations of their deliverables.

A final challenge that I would like to address relates to the efficiency of the statewide survey. The responses represented a skewed sample, as a majority of them were limited to Southwest Ohio. This regional allocation of responses undoubtedly reflects my closer relationships with southwest area stakeholders, as this area is where I was residing during my time of research. However, the value of all stakeholder inputs was also very significant in the identification of barriers and overall opinions of recycling within bars and restaurants. This challenge could have been prevented if I could have formed closer relationships with stakeholders of other regions, but several barriers existed such as distance to these regions and available time. Spending more time to obtain all stakeholder inputs would have delayed the development of The Toolkit.

5.1 RECOMMENDATIONS

After applying the compilation of my data to the objectives of The Toolkit, I was able to arrive at several recommendations for the Ohio EPA as well as the various Solid Waste Districts throughout the state of Ohio. These recommendations could potentially bring in more recycled glass to manufacturers, through increased recycling programs in the state.

1. **Partner with Ohio Restaurant Association:** I recommend that the Ohio EPA partner up with the Ohio Restaurant Association in their branding and marketing efforts. This could increase brand recognition and enhance the education portion of recycling, if a reader was not aware of recycling behavior.

2. **Collaborate with service haulers throughout the state:** I recommend that the Ohio EPA initiate collaboration with various service haulers throughout the state to provide incentivized recycling. Doing so would be advantageous to both parties, as it would provide good publicity and perhaps bring in more business for the service hauler as well as temporarily free recycling to the restaurants and bars.
3. **Explore implementing the Toolkit at chain restaurants:** I recommend that Ohio EPA, and perhaps the Ohio Restaurant Association, partner up with chain restaurants to set up a standard recycling program within each chain. This will not only create leaders in environmental stewardship and good public image that other restaurants can follow, but would make a serious impact on the amount of recyclables diverted from the landfills.

4. **Pilot The Toolkit:** I recommend that the Ohio EPA pilot The Toolkit throughout the state of Ohio, and not just in one location. Piloting is important because it allows The Toolkit to be modified and changed in regards to how the users react to its usage before it is actually accessible to all bars and restaurants (Landis, 2005). Ohio has many cities of different sizes with different resources. Piloting in a variety of cities will make The Toolkit most advantageous for Ohio EPA.

5. **Continue to provide additional funding:** I recommend that Ohio EPA advocate to district coordinators to apply for grants. Ohio EPA obtained a $1 million dollar grant to fund recycling efforts throughout the state. Without this funding, many of the recycling efforts would have been non-existent. As well, Butler, Hamilton, and Marion counties all used funding to help implement their own district and community programs. The grants will offer financial resources that can be used to offer free recycling pick-ups for a year, free containers, and free educational resources. Although the grants do take time to apply for and obtain, the benefits of the work put into achieving a grant are exponential.

6. **Additional surveys:** I recommend that Ohio EPA, possibly in conjunction with the Restaurant Association, distribute a recycling survey on an annual basis, and that a more efficient distribution strategy for the survey be devised. Doing so allows for more manageable administration for distribution of the survey and better execution for obtaining more data on a consistent basis.

**SECTION 6. REFLECTION**

During my first year in IES program, I worked on a team project for IES 610 where I helped calculate a carbon footprint for Miami University. This carbon footprint, along with a greenhouse gas inventory, helped Miami University to pioneer their environmental sustainability initiatives. Because this was the first long-term, team-based project I have been a part of, it taught me about the many facets of working with people of an assortment of skillsets and backgrounds. Through this experience, I gained much knowledge as it pertained to sustainability initiatives, the generality of carbon footprints within various organizations, and carbon offsetting. Additionally, this experience helped be to build a repertoire of skills in team building, geographic sciences, data management, and client business relationships.

Given my history within the restaurant industry along with my educational concentration in sustainable business practices, I jumped at the opportunity to work with Ohio EPA during my second year in the IES program. The process of completing this practicum provided me with extensive knowledge as it relates to the inner workings of recycling within the solid waste management industry, along with the intricate nature of the recycling supply chain. The experiences I had working with a variety of stakeholders of the recycling industry taught me a...
number of valuable approaches to business relationships. Through learning to manage the names and contacts of those involved in my industry interactions, I gained instrumental communication skills that will undoubtedly carry over into my professional life. I feel so fortunate to have been afforded the opportunity to work with all of those who helped me with the construction of The Toolkit, and would not have had nearly as enriching an experience if not for their guidance and support. Furthermore, through working with a diverse group of individuals, I learned a lot about the multifaceted nature of networking.

The hands-on experience that I was afforded in the work force lent itself to the development of my recently acquired professional skills. It is to these skills that I can accredit my current position as an intern at a non-profit, green building company in Atlanta, Georgia called Southface Energy Institute. In addition to being an honor, being a part of the IES program was extremely rewarding. Through being a part of this network I have become a more empowered and passionate person than ever before, and am convicted in my mission to teach others the importance of sustainability.
Appendix I: Summary of Ohio House Bill 592

House Bill 592 (HB 592), signed into law on June 24, 1988, dramatically revised Ohio’s outdated solid waste regulatory program. The law also established a solid waste management planning program to be implemented at both the state and local government levels. The bill emphasized the need to reduce Ohio’s reliance on landfills for the disposal of waste by increasing solid waste reuse, recycling, and minimization efforts. This fact sheet is one in a series explaining the provisions of HB 592 that make up Ohio’s solid waste management planning program.

Why was House Bill created?

Prior to House Bill 592 (HB 592), Ohio’s solid waste regulatory program was based on a law adopted in 1967 and regulations adopted in 1976. While Ohio’s existing law and regulations established a basic solid waste program, the overall scope of the program was limited.

In the mid- to late-80s, Ohio faced a number of problematic solid waste management issues, partly due to the lack of comprehensive regulations governing solid waste facilities and partly due to the lack of planning for how to manage Ohio’s solid waste. These issues included:

- decreasing available landfill capacity and fewer operating landfill facilities;
- a lack of planning for new disposal facilities;
- increasing amounts of long-haul (out-of-state) waste being brought into Ohio;
- ground water contamination from poorly sited and designed landfill facilities;
- explosions due to methane gas migrating from landfill facilities;
- desire for increased local control over waste;
- a lack of consistent and effective enforcement of the solid waste regulations;
- limited public involvement in the landfill approval process; and,
- poor operating history of some Ohio landfills.

The seriousness of those issues greatly concerned Ohio’s government, private, and public sectors. As a result, Ohio’s General Assembly quickly wrote and passed HB 592. The bill made many needed changes to Ohio’s solid waste program and created Ohio’s current solid waste management planning and regulatory programs.

Requirements Established by HB 592

The new solid waste law instituted by HB 592 created a comprehensive solid waste regulatory program and, for the first time, required Ohio to minimize its reliance on landfills for managing solid waste by increasing efforts to reduce, reuse, and recycle. To accomplish this, HB 592:

- required the director of Ohio EPA to adopt comprehensive regulations governing solid waste disposal facilities.
- required the director of Ohio EPA to adopt a state solid waste management plan.
- created the Solid Waste Management Advisory Council to assist in the preparation and approval of the state solid waste management plan.
- required the board of county commissioners of each of Ohio’s 88 counties to establish a solid waste management district, either individually or with other counties.
- required each solid waste management district, working through a policy committee, to prepare, adopt and submit a solid waste management plan to Ohio EPA.
- required the owner or operator of any solid waste facility that began operating prior to Jan. 1, 1980 to upgrade the facility by incorporating best available technology.

Since 1988, Ohio’s General Assembly has made changes to the law originally established by HB 592. In some cases, these changes have altered the original provisions covering the solid waste management planning program. Still, the basic intent of the program remains unchanged.

Appendix II: Summary of Ohio State Solid Waste Management Plan

State Solid Waste Management Plan

House Bill 592 (HB 592), signed into law on June 24, 1988, dramatically revised Ohio’s outdated solid waste regulatory program. The law also established a solid waste management planning program to be implemented at both the state and local government levels. The bill emphasized the need to reduce Ohio’s reliance on landfills for the disposal of waste by increasing solid waste reuse, recycling and minimization efforts. This fact sheet is one in a series explaining the provisions of HB 592 that make up Ohio’s solid waste management planning program.

Applicable Law
Ohio Revised Code Section 3734.50.

What is the solid waste management plan?
The main purpose of the state plan is to reduce Ohio’s reliance on using solid waste landfill facilities to manage solid waste. To do this, the state plan establishes the waste reduction and recycling goals for both the State and Ohio’s 52 solid waste management districts (SWMDs). The solid waste law defines eight requirements for the state plan:
- reduce Ohio’s reliance on landfills to manage the State’s solid wastes;
- establish objectives for solid waste reduction, recycling, reuse, and minimization and a schedule for implementing those objectives;
- establish restrictions on disposing of solid wastes when there are alternative waste management methods available;
- examine alternative methods for disposing of fly ash and bottom ash resulting from burning mixed municipal solid wastes;
- establish a statewide strategy for managing scrap tires;
- establish a strategy to promote markets for products containing recycled materials;
- establish a program for the proper separation and disposal of hazardous waste generated by households; and
- establish revised general criteria for locating solid waste facilities.

All of these requirements are necessary to ensure that solid waste is managed properly. However, the primary purpose of the solid waste planning program is to divert waste from landfills through reduction and recycling.

Who prepares the plan?
Ohio EPA prepares the state plan with advice from the Solid Waste Management Advisory Council (SWAC). SWAC is an advisory body of 19 members who represent various parties that are involved in or have an interest in solid waste management. Thus, SWAC is able to provide Ohio EPA with well-balanced input for developing the state plan.

Who decides when the state plan is complete?
Once Ohio EPA and SWAC complete a draft version of the state plan, Ohio EPA must hold public hearings around Ohio. During these hearings, interested parties can provide oral testimony regarding the draft and submit written comments to Ohio EPA.
Following completion of the hearings, Ohio EPA reviews all comments received and revises the draft state plan as appropriate.
Next, SWAC votes on whether to approve or reject the draft document. Once SWAC approves the state plan, then the director of Ohio EPA adopts the state plan. After the director adopts the state plan, it replaces the previous version as the effective state plan.

Who implements the state plan?
Ohio’s SWMDs and Ohio EPA have primary responsibility for implementing the state plan. Ohio’s SWMDs devote significant resources to achieving the goals of the state plan. Implementing the state plan requires collaboration with many other parties, including other state agencies, such as ODNR, local governments, the waste industry, elected officials, non-profit organizations, business owners, educators, and residents.
State Solid Waste Management Plan

How often is the state plan updated?

There is not an established schedule for updating the state plan. However, Ohio EPA, working with SWAC, must review the progress Ohio has made toward achieving the goals of the state plan every three years. If the findings from the review indicate that conditions warrant a new state plan, then Ohio EPA and SWAC prepare, approve and adopt a revised version.

The current state plan is the 2009 State Plan which was adopted on March 3, 2010. It is the fourth version of the state plan.

For More Information

Ohio EPA
Division of Solid and Infectious Waste Management
P.O. Box 1049
Columbus, Ohio 43216-1049
(614) 644-2621 (phone)
(877) 372-2621 (toll free)
(614) 728-5315 (fax)
www.epa.ohio.gov/dsiwm/

For more information about the planning process and solid waste management in your area, contact your local SWMD. To determine what SWMD you live in, use the Map of Ohio’s Solid Waste Management Districts that is available on the SWMD/Planning Page on DSIWM’s Web site.

To contact your SWMD, call or e-mail the coordinator listed on the SWMD Coordinators and Policy Committee Chairpersons List that is available on the SWMD/Planning Page on DSIWM’s Web site. You can also contact DSIWM to get information about your SWMD.

Related Documents

The Division of Solid and Infectious Waste Management (DSIWM) developed a series of fact sheets describing the requirements from HB 592 that apply to Ohio’s solid waste management planning program. The document numbers and titles of other available fact sheets are:

- 0196 — House Bill 592
- 0594 — Ratification of Solid Waste Management District Disposal and Generation Fees
- 0633 — Local Solid Waste Management Planning Process
- 0655 — Ratification of Solid Waste Management District Solid Waste Management Plans
- 0658 — Solid Waste Management Advisory Council
- 1004 — Local Solid Waste Management Plans
- 1005 — Solid Waste Management Districts

The documents listed above and the current state plan can all be found on the SWMD/Planning Page on DSIWM’s Web site.

Interested parties can also contact DSIWM to obtain hard copies of the fact sheets and the current state plan.

Appendix III: North Carolina, Recycling Program Toolkit

9 Steps to Start a Recycling Program

1. LEARN a Little About Recycling

There are several categories of recyclable materials: containers, paper, electronics, food waste, and building materials are just a few. Your program should especially consider recycling aluminum cans and plastic bottles, as they are banned from all North Carolina landfills. Explore the sites below to learn more about recycling in general.

- Division of Environmental Assistance and Customer Service: www.ncenvironmentalassistance.org
- Recycle More NC, a statewide recycling campaign geared for adults 35 and older: www.recyclemorenc.org
- RE3.org, a statewide recycling campaign geared toward young adults: www.re3.org
- Recycle Guys, a statewide recycling campaign for children: www.recycleguys.org

2. GAIN Support for Recycling

Do a little research to gauge support for recycling. No matter your type of facility—office building, school, hospital, church, sport field, recreation building or entertainment venue—building/event management and/or property owners should be involved in determining the best recycling options. You might consider coordinating a recycling or green team to implement the program. In seeking support for a program, remember to mention the landfill bans on plastic bottles, aluminum cans and other items.

3. IDENTIFY an Outlet for Collected Materials

There are many ways to recycle plastic bottles. You may be able to use the drop-off or collection services of your city or county recycling program. You can also work with your current trash hauler or recycling service provider to start a program.


To search for recycling services, use the Recycling Markets Directory and choose “Landfill Ban Materials Recycling” in Step 1 and then look for the materials you want to recycle in Step 2. Recycling service listings can also be found in the local Yellow Pages or www.Earth911.org. If you need additional help or guidance, call the Division of Environmental Assistance and Customer Service toll-free at 877-623-6748.

4. PLAN to Implement Materials Collection

Once you’ve determined the best outlet for the recyclable materials, you can work on the details of putting a program together. Draft a preliminary budget and plan for material collection. Building/event management and/or property owners should participate in organizing the budget plan. Consider the roles of facility staff, vendors, and volunteers at venues and events and key upper management should also be involved when making decisions at institutions. Participation of the person who signs off on collection contracts is critical in all cases since you may need to hire a collection vendor or change your hauling contract. Remember that recycling should reduce the waste stream, so you may be able to reduce frequency of trash pick-ups or the size of your disposal containers and then allocate the savings toward recyclables collection.
CONSIDER Logistics
Your recycling outlet or service provider will tell you how materials should be separated from the trash and what recyclables can be mixed together. “Single stream” recycling is becoming a more common practice, meaning all recyclables are mixed together. “Dual stream” is another approach, where paper fiber is collected separately from mixed containers. In some cases, you may need to separate all materials by type. Keep in mind the amount of space you have for recycling bins and make sure to keep the fire marshal happy by not blocking hallways with bins. Ideally, it is best to “twin” recycling containers with trash containers, which makes it convenient for users and helps reduce contamination of recyclables with garbage.

PURCHASE and/or Arrange for Collection Containers
Sometimes as part of a contract, your recycling service provider may supply collection containers. If that is not the case, you can find suitable containers at local office, janitorial supply, and home improvement stores. You can also find a comprehensive list of recycling and trash receptacle suppliers here: www.ncenvironmentalassistance.org/web/deao/recycling/plastic-bottles/toolkit/purchase.

Implement a COLLECTION Strategy
Discuss the collection process with all parties involved in material handling and set a date for program implementation. This will likely include custodial staff. Often building occupants are required to take materials to centralized collection containers. Determine the final location of collection bins and calculate how many bins you’ll need. Figure out precisely how materials will flow through your collection system, including who plays which role in the process. Work out the final details of how materials will be picked up by a service provider or delivered to a recycling center.

Implement an EDUCATION Campaign
If you want your recycling program to succeed, plan to implement a robust educational effort. Everyone should know what and how to recycle, which can be encouraged by clear directions and excellent signage. Reach out to all the potential users of your program and maintain a consistent commitment to education and promotion. Help users easily identify receptacle locations. Define what is recyclable and what is not, and explain how to separate the materials, if needed. Purchase or create signs, stickers or posters to label the containers to keep the bins free from contaminants and designated for recycling.

- For stickers, signs and posters to label bins: http://www.re3.org/graphics.htm.
- For more formal education techniques, check out DEAC’s PowerPoint presentations available for use, including recycling myths: www.slideshare.net/NCDENR.

MAINTAIN Support
Stay in close contact with your recycling service provider to regularly check in on how collections are going and obtain weight tracking data. Maintain program visibility to keep your recycling program strong and healthy. Update users on a continuous basis regarding the success of the project by highlighting recycling and waste reduction figures. Reward those that participate by letting them know how their part helps the environment.

- Recycling statistics can be found here: www.re3.org/facts.htm.

(Source: http://infohouse.p2ric.org/ref/49/48995.pdf)
Appendix IV: Delaware, Commercial Recycling Toolkit

Restaurants

Recycling Waste Makes Good Business Sense

Yes, recycling can save money! Recycling is often less expensive than trash disposal. Whether you are just starting or are trying to improve an existing program, it always helps to have a plan. Designing an effective recycling program will ensure that you comply with the Universal Recycling Law, will help reduce your waste stream, will save natural resources and energy, and has the potential for significant waste disposal savings. This toolkit will provide assistance in setting up a new recycling program or help you evaluate your current program.

Other elements of waste reduction include ways you reduce and reuse the waste you generate. The first and most effective component of the waste hierarchy is to reduce the waste created. Restaurants can reduce waste by purchasing in bulk, buying items with less packaging, composting food waste, and switching to reusable instead of single-use items. These efforts benefit the environment and often offer financial incentives. Despite efforts to reduce the amount of waste generated, consumers and businesses still create a substantial amount of waste. The U.S. Environmental Protection Agency estimates that each American generates 4.3 pounds of waste daily. Much of this waste can be reduced, reused, or recycled to minimize the strain on the environment and municipal waste management. A very simplistic example is consumers using refillable water bottles to minimize the number of plastic bottles being discarded. Consumers also have a financial incentive in this example because tap water is far less expensive than bottled water.

Recycling Plan

Step 1: Identify your recycling program coordinator

The facility manager or their designee should plan and oversee the recycling program. This individual should be motivated, have a good rapport with staff and customers, and take an interest in waste reduction, reuse, and recycling. Announce the program and the new recycling coordinator to all staff to encourage cooperation and compliance. The recycling coordinator should:

- Establish recycling policy and procedures.
- Interface with staff and with recycling service providers.
- Determine the start date of the program.
- Facilitate education & promotion of recycling by explaining how recycling works and why it is important.
- Track the progress and success of the recycling program.
- Assemble a green team to help plan, implement, evaluate and manage the program. The team should include employees from each area of operation (kitchen, bussers, servers, managers, etc.).

Step 2: Conduct a characterization of your waste stream

A waste characterization is the process used to quantify the types of wastes and recyclables being generated. You literally inspect, identify, and weigh the types of materials discarded. This characterization will help you identify recycling and waste prevention opportunities, potential savings from reduced disposal costs, potential revenue from the sale of recyclables, and establish baseline data for measuring the future effectiveness of the program. To conduct a waste characterization:

- Utilize knowledgeable staff (for guidance see: Additional Resources - Northeast Recycling Council), or contact your waste hauler, recycling service provider, or a waste/recycling consultant to perform the characterization.
- Small businesses may request a free characterization of their waste stream by contacting DSWA at 800-404-7080 or DNREC at 302-739-9403. Requests for a free waste characterization will be addressed on a first come, first serve basis as resources allow.
Step 3: Identify materials currently discarded

Work with your waste hauler, recycling service provider, or waste/recycling consultant to analyze the information collected during your waste characterization. Once you see what you’re discarding, identify opportunities for waste reduction, reuse, and recycling. Request that your vendors use reusable shipping boxes and totes instead of cardboard boxes. Install air dryers in the restrooms. Buy beverages and cleaning supplies in concentrate and condiments in bulk. Finally, identify recyclable items. These materials, commonly found in restaurants, can be commingled in one single-stream recycling bin:

- Newspapers
- Magazines and catalogs
- Boxboard
- Mixed paper (office, junk mail)
- Corrugated cardboard
- Glass bottles and jars
- Plastic bottles, jugs, containers
- Tetra-pack milk & juice boxes
- Aluminum and steel cans
- Telephone books
- Plastic buckets
- Other ________________

Large quantities of certain materials may be sorted for very cost-effective recycling, or even for a profit. These materials, commonly found in restaurants, may be beneficial to recycle separately:

- Corrugated cardboard
- Plastic film/shrink wrap
- Office paper
- Food waste
- Fluorescent lamps and bulbs (consider using high efficiency ballasts and lamps (T-5 & T-8))
- Ink and toner cartridges (check your suppliers take-back program)

For more information see: www.recycling.delaware.gov or www.dswa.com/programs.asp

Step 4: Determine collection program logistics

Making recycling easy and convenient will boost levels of participation. Recycling should be as easy as throwing something in the trash, so recycling containers should be placed wherever you currently have trash containers (kitchen, office, hostess station, parking lot, entrances and exits, etc.). Take the following criteria into consideration when choosing containers:

- Placement
- Location
- Capacity
- Durability
- Ease of handling
- Cost
- Shape
- Color
- Opening type
- % recycled content

The recycling containers should look different from trash cans, be easily identified, and be clearly labeled. Labels can be self-made or purchased. Lids should have restricted openings. Consider choosing blue bins for recycling, green bins for composting, and black for trash. Use clear liners so staff can easily identify recyclables and compostables from trash once bins are emptied. Other considerations include:

- Is your recyclable storage area of adequate size for your hauler to pick up?
- Do your recyclable materials need to be crushed, baled, banded or compacted?
- Is a recycling service needed for a specific material stream?

Step 5: Select a recycling service provider

You may choose one or more recycling or food composting service providers to collect your materials for processing. For a list of vendors, check the phonebook, do an internet search, or visit www.dswa.com/universalRecyclingServices.asp. While many waste haulers offer recycling services, some companies specialize in providing strictly recycling services. Services might include baling, shredding, crushing, or compacting as well as transporting and marketing the recyclable materials. Discuss collection schedules and options with a variety of service providers and request a billing structure that will reduce your waste disposal costs. Monitor how full collection dumpsters are and make arrangements to adjust the collection schedule based on volume. Finally, if you choose not to use a collection service, you can self-haul your recyclables directly to a recycling or composting processor.
Step 6: Outreach and education
Before you launch the program, promote your recycling effort and educate staff about recycling procedures. Once the program has begun, you should reinforce good habits and keep staff and customers interested in the program.

Choose a launch date to officially start the program. Alert staff well in advance and prepare simple information explaining the benefits and procedures to promote the program. Organize training sessions for staff that may have new duties. Prepare a press release to publicly announce and promote the program – and your business! Plan an event to launch the program and to generate enthusiasm. Involve local business and government leaders with a “ribbon-cutting” ceremony.

For a recycling program to be effective you must educate staff and customers. This can be done in a variety of ways including:

- Download and distribute the ‘How to Recycle’ guide in both English and Spanish at: [www.recycling.delaware.gov](http://www.recycling.delaware.gov).
- Meet with staff to discuss the recycling procedures and program goals.
- Inform vendors about the program.
- Place recycling information in obvious and readily available locations.
- Stress the importance that recyclables be kept free of trash and contamination.
- Place labeling and signage with recycling information on trash and recycling containers and dumpsters.
- Display recycling goals and/or promote the amount that has been recycled on signs and displays.
- Request feedback from staff regarding contamination or improper handling of recyclables.
- Send out press releases to publicize your recycling program and announcing milestones.
- Encourage participation and publicize program successes through newsletters, e-mails, posters, and new employee orientation.

Step 7: Sustaining the program
Monitor and evaluate the recycling program on a regular basis. Request a monthly disposal report from your hauler stating the amounts of recyclables by material type and disposal data in tonnage or cubic yard measurements.

- Post results and accomplishments listing the quantity of recyclables collected, total waste diverted, and revenue from the commodities.
- Percentage of waste diverted by your recycling program – compare the tonnage of recyclables collected to the tonnage of waste generated.
- Maintain records for charges for hauling waste and recyclables. Calculate savings from reduced disposal costs.
- Request contamination reports from recycling hauler or perform routine inspections of recyclables.
- Monitor progress and make the diversion rates mean something – translate the data into terms the average person can understand.
- Consult DNREC or a private consultant for help.

Additional strategies for waste reduction
In addition to recycling, the following waste reduction strategies can reduce operating costs associated with unnecessary material use and waste.

Reduce – Purchase, consume, and discard less material. Control the volume and waste types generated by your business through upstream purchasing decisions. Source reduction prevents the generation of waste in the first place, and is a preferred method of waste management.

- Make plastic carryout bags and drinking straws available upon request only
- Eliminate single use packets of sugar, cream, syrup, butter, etc. - try pitchers, sugar shakers, and ramekins
- Instead of paper placemats and coasters, leave tables bare
- Use cloth towels instead of paper towels in the kitchen
- Encourage customers using self-serve dispensers to take only as much as they need
- Buy beverages and cleaning supplies in concentrate or bulk form
- Place rubber mats around bus and dishwashing stations to eliminate breakage
Request products with minimal packaging from your suppliers
Use effective food inventory control methods to minimize wastes
Purchase energy efficient light bulbs and fixtures
Purchase locally grown produce and other foods
Install air dryers in restrooms

Reuse – Reusing items by repairing, donating, or selling them is even better than recycling! Unlike recycling, reusing items means they do not have to be processed before they can be used again. Encourage reuse of materials:
- Refill condiment bottles from bulk supplies
- Provide reusable mugs, plates, and cutlery
- Use a linen service instead of paper napkins and tablecloths
- Have food wastes collected by a local composting facility
- Donate extra food to a local food bank
- Request that your vendors use reusable shipping crates, pallets, and totes instead of cardboard boxes
- Set-up a ‘Reuse Area’ for supplies you no longer need
- Reuse printer cartridges by participating in take-back programs

Buy Recycled – If you are not buying recycled content products you are not recycling! Purchase products that are remanufactured or made from post-consumer waste recycled content such as:
- Anti-fatigue mats made from recycled tires
- Paper products (office paper, receipt tape, napkins, paper towels, toilet tissue, etc.) made from 100% post-consumer recycled paper

Additional Resources:
Delaware’s Universal Recycling Grant and Low Interest Loan Program: [www.dnrec.delaware.gov/services/Pages/Loans.aspx](http://www.dnrec.delaware.gov/services/Pages/Loans.aspx)
Delaware Recycles: [www.recycling.delaware.gov](http://www.recycling.delaware.gov) and [www.facebook.com/DelawareRecycles](http://www.facebook.com/DelawareRecycles)
(Download ‘How to Recycle’ guide, Commercial Recycling toolkits)
DNREC, Division of Waste and Hazardous Substances: [www.dnrec.delaware.gov/whs/awm](http://www.dnrec.delaware.gov/whs/awm) or call (302) 739-9403
Delaware Solid Waste Authority (DSWA): [www.dswa.com](http://www.dswa.com) or call 1-800-404-7080.
Electronic waste: For guidance in disposing of electronic waste and take-back programs
- Step Initiative: [www.step-initiative.org](http://www.step-initiative.org)
EPA Environmentally-Preferable Purchasing Program: [www.epa.gov/epp](http://www.epa.gov/epp) (Costs and benefits of purchasing choices)
EPA Food Recovery Challenge: [www.epa.gov/foodrecoverychallenge](http://www.epa.gov/foodrecoverychallenge) (Food waste reduction)
Green Business: [www.greenbiz.com](http://www.greenbiz.com)
Product Stewardship: [www.productstewardship.us/index.cfm](http://www.productstewardship.us/index.cfm)
(Some material streams including: batteries, fluorescent lamps and bulbs, ink and toner cartridges, paint, prescription medication, scrap tires, used motor oil, and white goods may require special handling)
Sustainable Business: [www.sustainablebusiness.com](http://www.sustainablebusiness.com)
Encourages food donation to nonprofits by minimizing liability, in accordance with the Model Good Samaritan Food
US Green Building Council: [www.usgbc.org](http://www.usgbc.org)
More recycling information: [www.earth911.com](http://www.earth911.com)
Appendix V: Map of Ohio Solid Waste Districts

(Source: Ohio EPA; http://epa.ohio.gov/dmwm/Home/recycle/tabid/6105/LiveTabId/143809/Default.aspx#where)
Appendix VI: Interview Questions for Industry Stakeholders

1) Do you currently have any type of bar/restaurant recycling program in your District? If so, please describe.
   a. Barriers to implementation:
   b. Benefits to bars/restaurants and to your District:
   c. Successes:
   d. Failures:

2) Please share any past, present experiences you have had with glass recycling in your District.
   a. Barriers to implementation:
   b. Entities involved in program:
   c. Successes:
   d. Failures:

3) If a toolkit were available for a bar/restaurant recycling program, what kind of information would you like to see included in that toolkit? What information would be useful/helpful? Should the toolkit be created for the establishment? Or for a solid waste district to assist the establishment in creating a recycling program?

4) Several solid waste districts are offering incentives to bars/restaurants who implement a recycling program at their establishment. Are resources available in your District to offer bar/restaurant owners with incentives to implement a recycling program? If so, please describe.
   a. Examples: free containers – free hauling for a year – free publicity – free signage – free technical assistance

5) Overall, what would it take or what tools would you need to implement a bar/restaurant recycling program in your District?

6) Is targeting bars/restaurants in your District a feasible task given the geographic attributes of your area?

7) Miami University and Ohio EPA have developed an online, anonymous survey for distribution to bar and restaurant owners/managers throughout your district. This survey will provide information for the development of a recycling toolkit. As well, if the survey volunteer chooses to seek more information from their district and is interested in developing a program, they have the ability to list their contact information for further steps. Would you be interested in distributing this survey throughout your district?
Appendix VII: Press Release, Butler County

BUTLER COUNTY
Businesses urged to recycle

Butler County Recycling and Solid Waste District is seeking local bar, restaurant and apartment managers to increase recycling in southwest Ohio, particularly of glass.

Butler County Recycling asks these business managers to contact their office at 513-887-3963 for help setting up a recycling program. The government agency says it is able to train small businesses on the basics of how to recycle, provide containers and helps pay some costs of recycling services.

Apartment communities willing to place recycling dumpsters onsite for convenient access to residents are also being sought.

Butler County Recycling is also asking business owners to complete a survey developed by the Ohio Environmental Protection Agency and Miami University. Bar and restaurant owners will be asked for their input on what recycling services are most needed, and about obstacles preventing them from starting a recycling program. To complete the survey, visit www.butlercountyrecycles.org.

(Source: Oxford Press; January 9th, 2014)
Appendix VIII: Bar & Restaurant Recycling Survey Questions

This survey is designed to gather information from bars and restaurants about your current recycling practices. This information is very valuable because it will help Miami University and the Ohio Environmental Protection Agency develop a glass marketing toolkit. This toolkit will target commercial establishments and help them develop, implement, and monitor a recycling program that is specific for their business needs. By volunteering to complete this survey, you can help this state-wide problem and improve your community’s local economy and environmental stewardship. This survey will help our team recognize and understand individual establishment barriers, successes, opinions, and past experiences with recycling. Ultimately all the information gathered from this survey and team research will be structured into common themes that the toolkit will address. If you have questions about the project, please contact Suzanne Zazycki, Outreach Coordinator for the Institute for the Environment and Sustainability at Miami University at 513-529-5845 or email: zazycks@muohio.edu. If you have questions about your rights as a research participant, please call the Office of Advancement of Research and Scholarship at 529-3600 or email: humansubjects@miamioh.edu.

If you would like to receive more information about recycling within your business and talk with your Solid Waste District about obtaining recycling materials, please leave your contact information by following the link at the end of the survey. Your participation in this research project is voluntary. You may decline to participate at any time. Only individuals 18 years or older may participate in the project. These provisions allow the project research to be conducted with little risk to the volunteers. Your survey results will remain anonymous.

- I agree to take this survey. I understand that it is voluntary and that I can stop at any time.
- No thank you, I don't agree to take this survey.

I am at least 18 years or older.
- Yes
- No

My establishment ownership is considered:
- Independent operator
- Franchisee/corporate-owned chain operator
- Other: ________________________
My establishment is a:
- Bar
- Restaurant
- Both

My establishment operates as a:
- Full service operator
- Quick service operator
- Other _______________________

My establishment is located in the city of...

Which hauler are you contracted with to pick up your landfill waste?
- Rumpke
- Waste Management
- Republic/CSI
- Other _______________________
- I am not sure

How many times per week is your establishment’s waste picked up?
- 1
- 2
- 3
- 4 or more
- I am not sure

Does your business have a shared space with other businesses for waste collection? (E.g., using an alleyway with a designated space for waste and recycling shared by your establishment and at least one other establishment.)
- Yes
- No
- I am not sure
I have communicated with my solid waste management district regarding recycling at my establishment.

- Yes
- No
- I do not know what a solid waste management district is.

Does your business currently recycle?

- Yes
- No, but have made an attempt to recycle in the past
- No, but have an interest in recycling.
- No

Which hauler are you contracted with to pick up your recyclables?

- Rumpke
- Waste Management
- Republic/CSI
- I haul the recyclables to a drop-off location myself.
- Other: _______________________

How many times per week are your recyclables picked up or dropped off at a drop-off site?

- 1
- 2
- 3
- 4 or more
- I am not sure

Are your recyclables and waste picked up at the same time?

- Yes
- No
- I am not sure

Does your business recycle in the front of the house or the back of the house?

- Front of the house
- Back of the house
- Both

Who separates your recyclables in the front of the house?

- Staff alone
- Customers alone
- Both staff and customers
- I do not recycle in the front of the house.
How many hours per week does staff dedicate to your recycling efforts?
- 0 to 2
- 3 to 4
- 5 to 6
- 6 or more
- It takes no more time than disposing of trash.

How much of each recyclable makes up your recycling mix (%)?
- Plastics
- Cardboard
- Glass
- Paper
- Aluminum or metal cans
- Cooking oil or grease
- Food scraps

How strongly do you agree with each statement below?

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>I Am Not Sure</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recycling would provide for long-term cost savings.</td>
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<tr>
<td>Recycling is the &quot;right thing to do&quot;.</td>
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<tr>
<td>Recycling would attract more customers and or create more loyal customers.</td>
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<td>Recycling would allow for less frequent waste pick-ups.</td>
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<td>Recycling would increase my overall operating costs and in general is too costly.</td>
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<tr>
<td>Recycling is too confusing.</td>
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<td>Recycling is too difficult.</td>
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<tr>
<td>Recycling is too time-consuming.</td>
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<tr>
<td>Recycling takes up too much space.</td>
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</table>
Recycling programs require technical assistance.
Recycling programs require financial assistance.
I lack the staff to implement and operate a fully function recycling program.
There are outside pressures (e.g. city, community, customers) to recycle.
Customers would appreciate that we recycle at my establishment.
Besides cardboard, we do not generate large amounts of recyclable materials.
We currently advertise recycling at my establishment.
Recycling is a priority at my establishment.
Recycling would improve the image of my business.
Customers would not participate in the recycling program.

In your opinion, which items below are a barrier or not a barrier in regards to recycling in your bar or restaurant?

<table>
<thead>
<tr>
<th></th>
<th>Not a Barrier</th>
<th>I Am Not Sure</th>
<th>Definitely a Barrier</th>
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</thead>
<tbody>
<tr>
<td>Physical space in the establishment</td>
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<tr>
<td>Physical space within the waste collection area</td>
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<td>Contract(s) with hauler(s) and your relationship with them</td>
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<td>City regulations and your relationship with them</td>
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<tr>
<td>Cost of purchasing recycling containers</td>
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<td>Cost of maintaining a recycling program</td>
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<td>----------------------------------------</td>
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<tr>
<td>Time-consuming</td>
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<tr>
<td>Willingness of staff to participate</td>
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<td>Lack of knowledge among staff regarding recycling</td>
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<td>Safety of staff regarding the recycling of glass</td>
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<tr>
<td>Not enough staff to devote sufficient time to recycle</td>
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<td></td>
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<tr>
<td>Negative consumer reaction</td>
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<tr>
<td>Lack of interest in recycling, overall</td>
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</tbody>
</table>

Which methods would you use to promote recycling at your establishment? Please choose all that apply.
- My establishment's website
- Advertising (newspaper, websites, magazines)
- Social Media (Facebook, Twitter)
- Information on menus
- Posters
- Flyers
- Window stickers
- Printed recycling information on napkins and coasters
- Table tents

If you have any additional thoughts, experiences, suggestions, and or questions that you would like to share, please feel free to write in the space below:

Would you like your Solid Waste District to contact you about starting a recycling program in your establishment or enhancing one that already exists?
- Yes
- No thank you.
Appendix IX: Bar & Restaurant Survey Summary & Analysis of Results

The purpose of developing and distributing the survey throughout the state of Ohio was to identify current habits, opinions, and barriers in regards to recycling. These results reflect the responses from February 11, 2014 to April 27, 2014. Throughout this time, 99 respondents accessed the survey. The survey was on a volunteer basis, therefore if a participant chose not to answer a certain question, they were able to skip to the next question.

Part A. The demographics of the respondents include the following:

- **Ownership type:**
  - 71% Independent operators
  - 18% Franchisee/corporate-owned chain operator
  - 11% Other (e.g. fraternal club)

- **Operation type:**
  - 72% full-service operator
  - 15% quick-service operator
  - 13% other (e.g. coffeehouse, theater)

- **Establishment location:**
  - 50% Southwest Ohio
  - 23% Central Ohio
  - 21% Northeast Ohio
  - 4% Northwest Ohio
  - 2% Southeast Ohio

- **Establishment type:**
  - 67% Both bar and restaurant
  - 19% Restaurant
  - 15% Bar

Part B. Valuable information on recycling knowledge and habits was gathered as well. The following points summarize the information gathered:

- Most establishments (51%) have a shared collection space with other businesses for waste and recyclables storage.
- More than half of the establishments have not communicated with their solid waste management district (SWMD) or don’t know what a SWMD is.
- Of the responses, approximately 67% already recycle, 17% have an interest in recycling, and 8% have made an attempt to recycle in the past.
- Most recyclables are not picked up at the same time by the service hauler(s).
- Approximately half recycle in both the front-of-the-house and the back-of-the-house. Establishments that recycle within the front-of-the-house have either staff alone (42%) or staff and customers combined (27%) to dispose of recyclables.
- About 84% of respondents said it takes very little time to recycle, and even takes no more time than throwing something away in the trash.
- According to the respondents, cardboard (40%) and glass (26%) make up majority of their recycling mix.
Most respondents felt that the best way to promote and market a recycling program within their establishment is to use visuals within high traffic areas, such as window stickers near the front of their establishment, and frequented social media infrastructure, such as their website, Twitter, or Facebook.

**Graph B: Preferred Methods of Marketing Recycling**

- My establishment's website 18%
- Social Media (Facebook, Twitter) 19%
- Information on menus 12%
- Advertising (newspaper, websites, magazines) 3%
- Posters 11%
- Flyers 4%
- Window stickers 18%
- Table tents 5%

Part C. The following statistical analysis compares similar questions that were asked from two multi-answer questions. The purpose of this type of analysis is to test the validity of respondents’ answers. The
one question was a Likert Scale question that included a range of strongly disagree, disagree, I am not sure, agree, and strongly agree. The second question asked whether or not a certain situation was a barrier, not a barrier, or if they were unsure to recycling within their establishment. To provide a better response rate and a more feasible comparison and validity test, the Likert Scale question’s strongly disagree and disagree were merged into one category and strongly agree and agree were merged into one category.

Table 1: Perceptions of Cost and Recycling

<table>
<thead>
<tr>
<th>How strongly do you agree with each statement below? – Recycling would increase my overall operating costs and in general is too costly.</th>
<th>Strongly Disagree, Disagree</th>
<th>I Am Not Sure</th>
<th>Agree, Strongly Agree</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>How strongly do you agree with each statement below? - Recycling would provide for long-term cost savings.</td>
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<td></td>
</tr>
<tr>
<td>Strongly Disagree, Disagree</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>6</td>
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<tr>
<td>17%</td>
<td>50%</td>
<td>33%</td>
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<td>6%</td>
<td>21%</td>
<td>15%</td>
<td>13%</td>
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<tr>
<td>I Am Not Sure</td>
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<td>5</td>
<td>14</td>
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<td>29%</td>
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<tr>
<td>22%</td>
<td>36%</td>
<td>38%</td>
<td>31%</td>
<td></td>
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<tr>
<td>Agree, Strongly Agree</td>
<td>13</td>
<td>6</td>
<td>6</td>
<td>25</td>
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<tr>
<td>52%</td>
<td>24%</td>
<td>24%</td>
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<td>72%</td>
<td>43%</td>
<td>46%</td>
<td>56%</td>
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<td>Total</td>
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</tbody>
</table>

Majority of respondents that felt that the overall operating costs of recycling in general is not too costly also felt that recycling would provide long-term cost savings.

Of a total of 45 respondents who answered these questions, a total of 13 answered that high operating costs were not a concern and also it would provide them with long-term cost savings. The chi square result for these cost questions is 4, with 4 degrees of freedom, and a p-value estimated to be P<0.25. These responses are independent of each other.
Majority of respondents felt that recycling in general does not take up too much space and space inside the establishment is not a barrier. However, space outside the establishment, such as the physical space within the collection area for storage, was almost split evenly; for some it was a definite barrier and for others it was not. Analyzing this unique combination, it seems that physical space outside establishments is more of an issue for some bars and restaurants, but space inside is not.

Of a total of 44 respondents who answered these questions, 20 respondents answered both that space in general was not an issue and space inside the establishment was not a barrier. The chi square value of these questions is 15, with 4 degrees of freedom, and a p-value estimated to be $P<0.005$. These responses are dependent on each other.

Of a total of 44 respondents who answered these questions, 15 respondents answered both that space was not an issue in general and that space outside the establishment was not a barrier. Oppositely, of a

### Table 2: Space Constraints and Recycling

<table>
<thead>
<tr>
<th>How strongly do you agree with each statement below? - Recycling takes up too much space.</th>
<th>Strongly Disagree, Disagree</th>
<th>I Am Not Sure</th>
<th>Agree, Strongly Agree</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not a Barrier</td>
<td>20</td>
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<td>0</td>
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<td></td>
<td>91%</td>
<td>9%</td>
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<td></td>
<td>69%</td>
<td>29%</td>
<td>0%</td>
<td>50%</td>
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<tr>
<td>I Am Not Sure</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>5</td>
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<td></td>
<td>20%</td>
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<td></td>
<td>3%</td>
<td>29%</td>
<td>25%</td>
<td>11%</td>
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<tr>
<td>Definitely a Barrier</td>
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<td>3</td>
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<td>28%</td>
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<td>75%</td>
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<td>Total</td>
<td>29</td>
<td>7</td>
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<td></td>
<td>66%</td>
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<thead>
<tr>
<th>How strongly do you agree with each statement below? - Physical space in the establishment</th>
<th>Not a Barrier</th>
<th>I Am Not Sure</th>
<th>Definitely a Barrier</th>
<th>Total</th>
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<td>79%</td>
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<td>63%</td>
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total of 44 respondents who answered these questions, there were 13 respondents who answered that physical space in general was not an issue, however that physical space outside the establishment was a barrier. The chi square value of these questions is 13, with 4 degrees of freedom, and a p-value estimated to be P<0.02. These responses are dependent on each other.

Table 3: Perceptions of Time and Recycling

<table>
<thead>
<tr>
<th>How strongly do you agree with each statement below? - Recycling is too time-consuming.</th>
<th>Strongly Disagree, Disagree</th>
<th>I Am Not Sure</th>
<th>Agree, Strongly Agree</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not a Barrier</td>
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<td>97%</td>
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<td>94%</td>
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<td>70%</td>
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<td>33%</td>
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<td></td>
<td>6%</td>
<td>50%</td>
<td>17%</td>
<td>14%</td>
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<tr>
<td>Definitely a Barrier</td>
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<td>7</td>
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<td></td>
<td>0%</td>
<td>29%</td>
<td>71%</td>
<td>100%</td>
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<td></td>
<td>0%</td>
<td>33%</td>
<td>83%</td>
<td>16%</td>
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<tr>
<td>Total</td>
<td>31</td>
<td>6</td>
<td>6</td>
<td>43</td>
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<td>72%</td>
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</table>

Majority of the respondents felt that recycling is not time-consuming.

Of a total of 43 respondents who answered these questions, 29 of them answered both that recycling is not time-consuming and that time is not a barrier in regards to recycling. The chi square value of these questions is 39, with 4 degrees of freedom, and a p-value estimated to be P<0.0005. These responses are dependent on each other.

Table 4: Staffing Constraints and Recycling
I lack the staff to implement and operate a fully function recycling program.

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>I Am Not Sure</th>
<th>Agree, Strongly Agree</th>
<th>Total</th>
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</thead>
<tbody>
<tr>
<td>Not a Barrier</td>
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<td>90%</td>
<td>3%</td>
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<td></td>
<td>80%</td>
<td>20%</td>
<td>50%</td>
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<td>I Am Not Sure</td>
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<td>60%</td>
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<td>100%</td>
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<td></td>
<td>9%</td>
<td>40%</td>
<td>0%</td>
<td>11%</td>
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<tr>
<td>Definitely a Barrier</td>
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<td>44</td>
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<td>80%</td>
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<td>100%</td>
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</tbody>
</table>

In your opinion, which items below are a barrier or not a barrier in regards to recycling in your bar or restaurant? - Willingness of staff to participate

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>I Am Not Sure</th>
<th>Agree, Strongly Agree</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not a Barrier</td>
<td></td>
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<td>33</td>
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<td>94%</td>
<td>20%</td>
<td>0%</td>
<td>77%</td>
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<tr>
<td>I Am Not Sure</td>
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<td></td>
<td>6%</td>
<td>60%</td>
<td>0%</td>
<td>11%</td>
</tr>
<tr>
<td>Definitely a Barrier</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>0</td>
<td>1</td>
<td>4</td>
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<td>20%</td>
<td>80%</td>
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</tr>
</tbody>
</table>

Majority of respondents felt that their present staffing within their establishment was not an issue in regards to recycling. Most respondents felt that they have sufficient amount of staff to implement a successful recycling program, that their staff is willing to participate in recycling, and that they had enough staff to devote enough time to recycling.

Of a total of 44 respondents who answered these questions, 28 of them answered both that they do have sufficient staffing to implement a functional recycling program and their staff is willing to participate in recycling. The chi square value of these questions is 11, with 4 degrees of freedom, and a p-value estimated to be P<0.05. These responses are dependent on each other.

Of a total of 44 respondents who answered these questions, 33 answered both that they have sufficient staff to implement a functional recycling program and that they have enough time to devote sufficient
time to recycling. The chi square value of these questions is 50, with 4 degrees of freedom, and a p-value estimated as P<0.0005. These responses are dependent on each other.

Table 5: Perceptions of Public Image and Recycling

<table>
<thead>
<tr>
<th>How strongly do you agree with each statement below? - Recycling would improve the image of my business.</th>
<th>Strongly Disagree, Disagree</th>
<th>I Am Not Sure</th>
<th>Agree, Strongly Agree</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td>0</td>
<td>0</td>
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<td></td>
<td>50%</td>
<td>0%</td>
<td>0%</td>
<td>5%</td>
</tr>
<tr>
<td>How strongly do you agree with each statement below? - Recycling is the &quot;right thing to do&quot;.</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>2</td>
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<tr>
<td></td>
<td>0%</td>
<td>50%</td>
<td>50%</td>
<td>100%</td>
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<tr>
<td></td>
<td>0%</td>
<td>14%</td>
<td>4%</td>
<td>5%</td>
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<td></td>
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<td>6</td>
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<td>33</td>
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<td>6%</td>
<td>18%</td>
<td>76%</td>
<td>100%</td>
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<td></td>
<td>50%</td>
<td>86%</td>
<td>96%</td>
<td>89%</td>
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<tr>
<td>Total</td>
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<td>7</td>
<td>26</td>
<td>37</td>
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<td></td>
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<td>100%</td>
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<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>How strongly do you agree with each statement below? - Recycling is a priority at my establishment.</th>
<th>Strongly Disagree, Disagree</th>
<th>I Am Not Sure</th>
<th>Agree, Strongly Agree</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2</td>
<td>1</td>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>22%</td>
<td>11%</td>
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<td></td>
<td>50%</td>
<td>17%</td>
<td>23%</td>
<td>25%</td>
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<td>0</td>
<td>2</td>
<td>7</td>
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<td></td>
<td>0%</td>
<td>22%</td>
<td>78%</td>
<td>100%</td>
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<td>0%</td>
<td>33%</td>
<td>27%</td>
<td>25%</td>
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<td>11%</td>
<td>17%</td>
<td>72%</td>
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<td>50%</td>
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<td>Total</td>
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<td>6</td>
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<td>36</td>
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<td>100%</td>
<td>100%</td>
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</tbody>
</table>

Majority of respondents felt that recycling is the right thing to do, recycling would improve the image of their business, and that recycling is a priority at their establishment. It is important to note, however, that 67% of the total respondents are already recycling within their establishment, thus creating biased responses for this comparison of questions.

Of a total of 37 respondents who answered these questions, 25 answered both that recycling would improve the image of their business and recycling is the right thing to do. The chi square value of these questions is 19, with 4 degrees of freedom, and a p-value estimated to be P<0.001. These responses are dependent on each other.
Of a total of 36 respondents who answered these questions, 13 respondents answered both that recycling would improve the image of their business and recycling is a priority at their establishment. The chi square value of these two questions is 2, with 4 degrees of freedom, and a p-value estimated to be P<0.25. These responses are independent of each other.

Table 6: Overall Knowledge of Recycling

<table>
<thead>
<tr>
<th>In your opinion, which items below are a barrier or not a barrier in regards to recycling in your bar or restaurant? – Lack of knowledge among staff regarding recycling</th>
<th>Not a Barrier</th>
<th>I Am Not Sure</th>
<th>Definitely a Barrier</th>
<th>Total</th>
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</thead>
<tbody>
<tr>
<td><strong>Strongly Disagree, Disagree</strong></td>
<td>20</td>
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<td>8</td>
<td>36</td>
</tr>
<tr>
<td></td>
<td>56%</td>
<td>22%</td>
<td>22%</td>
<td>82%</td>
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<td></td>
<td>87%</td>
<td>73%</td>
<td>80%</td>
<td></td>
</tr>
<tr>
<td><strong>I Am Not Sure</strong></td>
<td>0</td>
<td>3</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>0%</td>
<td>75%</td>
<td>25%</td>
<td>9%</td>
</tr>
<tr>
<td></td>
<td>0%</td>
<td>27%</td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td><strong>Agree, Strongly Agree</strong></td>
<td>3</td>
<td>0</td>
<td>1</td>
<td>4</td>
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<tr>
<td></td>
<td>75%</td>
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<td>9%</td>
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<td>13%</td>
<td>0%</td>
<td>10%</td>
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<td><strong>Total</strong></td>
<td>23</td>
<td>11</td>
<td>10</td>
<td>44</td>
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<td>52%</td>
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<td>100%</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>How strongly do you agree with each statement below? - Recycling is too confusing.</th>
<th>Strongly Disagree, Disagree</th>
<th>I Am Not Sure</th>
<th>Agree, Strongly Agree</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strongly Disagree, Disagree</strong></td>
<td>19</td>
<td>7</td>
<td>7</td>
<td>33</td>
</tr>
<tr>
<td></td>
<td>58%</td>
<td>21%</td>
<td>21%</td>
<td>75%</td>
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<tr>
<td></td>
<td>83%</td>
<td>64%</td>
<td>70%</td>
<td></td>
</tr>
<tr>
<td><strong>I Am Not Sure</strong></td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>20%</td>
<td>40%</td>
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<td>11%</td>
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<td>4%</td>
<td>18%</td>
<td>20%</td>
<td></td>
</tr>
<tr>
<td><strong>Agree, Strongly Agree</strong></td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>50%</td>
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<td>17%</td>
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<td><strong>Total</strong></td>
<td>23</td>
<td>11</td>
<td>10</td>
<td>44</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>How strongly do you agree with each statement below? - Recycling programs require technical assistance.</th>
<th>Strongly Disagree, Disagree</th>
<th>I Am Not Sure</th>
<th>Agree, Strongly Agree</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strongly Disagree, Disagree</strong></td>
<td>19</td>
<td>4</td>
<td>3</td>
<td>26</td>
</tr>
<tr>
<td></td>
<td>73%</td>
<td>15%</td>
<td>12%</td>
<td>59%</td>
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<tr>
<td></td>
<td>83%</td>
<td>36%</td>
<td>30%</td>
<td></td>
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<tr>
<td><strong>I Am Not Sure</strong></td>
<td>2</td>
<td>7</td>
<td>4</td>
<td>13</td>
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<td></td>
<td>15%</td>
<td>54%</td>
<td>31%</td>
<td>30%</td>
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<tr>
<td></td>
<td>9%</td>
<td>64%</td>
<td>40%</td>
<td></td>
</tr>
<tr>
<td><strong>Agree, Strongly Agree</strong></td>
<td>2</td>
<td>0</td>
<td>3</td>
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<td></td>
<td>40%</td>
<td>0%</td>
<td>60%</td>
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</tr>
</tbody>
</table>
Majority of respondents felt that there is not a lack of knowledge in regards to recycling among the staff. Also, majority of respondents felt that, in general, recycling is not confusing, recycling is not difficult, and recycling programs do not require technical assistance.

Of a total of 44 respondents who answered these questions, 20 of them answered both that there is no lack of knowledge of recycling among staff and recycling is not confusing. The chi square value of these two questions is 8, with 4 degrees of freedom, and a p-value estimated to be P<0.1. These responses are dependent on each other.

Of a total of 44 respondents who answered these questions, 19 of them answered both that there is no lack of knowledge of recycling among staff and recycling is not difficult. The chi square value of these two questions is 3, with 4 degrees of freedom, and a p-value estimated to be P<0.25. These responses are independent of each other.

Of a total of 44 respondents who answered these questions, 19 of them answered that knowledge among staff in regards to recycling is not an issue and recycling programs do not require technical assistance. The chi square value of these two questions is 17, with 4 degrees of freedom, and a p-value estimated to be P<0.0025. These responses are dependent on each other.

Table 7: Perceptions of Community & Industry Relationships and Recycling

<table>
<thead>
<tr>
<th>In your opinion, which items below are a barrier or not a barrier in regards to recycling</th>
<th>How strongly do you agree with each statement below? - There are outside pressures (e.g. city, community, customers) to recycle.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Strongly Disagree, Disagree</td>
</tr>
<tr>
<td><strong>Not a Barrier</strong></td>
<td></td>
</tr>
<tr>
<td>In your opinion, which items below are a barrier or not a barrier in regards to recycling in your bar or restaurant? - Contract(s) with hauler(s) and your relationship with them</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>47%</td>
</tr>
<tr>
<td></td>
<td>30%</td>
</tr>
<tr>
<td><strong>I Am Not Sure</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>8</td>
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<td></td>
<td>53%</td>
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<tr>
<td></td>
<td>35%</td>
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<tr>
<td><strong>Definitely a Barrier</strong></td>
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<td></td>
<td>8</td>
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<tr>
<td></td>
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<tr>
<td></td>
<td>35%</td>
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<tr>
<td><strong>Total</strong></td>
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<td>23</td>
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<tr>
<td></td>
<td>53%</td>
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<tr>
<td></td>
<td>100%</td>
</tr>
<tr>
<td><strong>In your opinion, which items below are a barrier or not a barrier in regards to recycling</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Not a Barrier</strong></td>
<td></td>
</tr>
<tr>
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<td>8</td>
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<tr>
<td></td>
<td>47%</td>
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<tr>
<td></td>
<td>35%</td>
</tr>
</tbody>
</table>
in your bar or restaurant? - City regulations and your relationship with them

<table>
<thead>
<tr>
<th></th>
<th>Definitely a Barrier</th>
<th>I Am Not Sure</th>
<th>Not a Barrier</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>Definitely a Barrier</td>
<td>71%</td>
<td>43%</td>
<td>53%</td>
</tr>
<tr>
<td></td>
<td>0%</td>
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<td></td>
<td>29%</td>
<td>33%</td>
<td>21%</td>
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<tr>
<td></td>
<td>100%</td>
<td>44%</td>
<td>100%</td>
</tr>
<tr>
<td>Total</td>
<td>7</td>
<td>19</td>
<td>43</td>
</tr>
<tr>
<td></td>
<td>71%</td>
<td>43%</td>
<td>100%</td>
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</tbody>
</table>

Majority of respondents felt that there aren’t outside pressures, such as from the community and or customers, to recycle. Oppositely, contracts and relationships with haulers were evenly spread across as definitely a barrier to not a barrier for the respondents. Lastly, regulations and relationships with cities as barriers to recycling were answered as mostly unsure, but was a close tie to not a barrier. Although most respondents said that outside pressures to recycle were not an issue, most answers to the relationships with their community, city, and hauler seemed to be an obvious issue. *(Note: This variety of answers could be because of a lack of knowledge on what their contract says and overall doing business with either haulers or their city for pick up service.)*

Of a total of 43 respondents who answered these questions, 7 answered that there are no outside pressures for their business to recycle and hauler contracts and relationships were not a barrier. Of a total of 43 respondents who answered these questions, 8 answered that there are no outside pressures for their business to recycle and that they were unsure if their contracts and relationships with their haulers was a barrier to recycle. Of a total of 43 respondents who answered these questions, 8 answered that there are no outside pressures to recycling and that their relationship and contract with their hauler was in fact a barrier to recycling. The chi square value of these two questions is 2, with 4 degrees of freedom, and a p-value estimated to be P<0.25. These responses are independent of each other.

Of a total of 43 respondents who answered these questions, 10 respondents answered that outside pressures to recycle is not an issue and that they are not sure if city relationships and regulations are an issue in regards to recycle or not. Of a total of 43 respondents who answered these questions, 8 respondents answered both that city relationships and regulations is not a barrier to recycling and also outside pressures to recycle at their establishment is not an issue. The chi square value of these two questions is 3, with 4 degrees of freedom, and a p-value estimated to be P<0.25. These responses are independent of each other.

Table 8: Perceptions of Customer Relationships and Recycling

<table>
<thead>
<tr>
<th>How strongly do you agree</th>
<th>In your opinion, which items below are a barrier or not a barrier in regards to recycling in your bar or restaurant? - Negative consumer reaction</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not a Barrier</td>
</tr>
<tr>
<td>Strongly</td>
<td>10</td>
</tr>
</tbody>
</table>

60
Majority of the respondents felt that customers would not respond negatively to recycling within their establishment, they are not sure if recycling would attract more customers or create more loyal customers, that customers would appreciate recycling in their establishment, and were either unsure or would agree that customers would participate in a recycling program within their program.

Of a total of 43 respondents who answered these questions, 19 of the respondents answered both that they are not sure if recycling at their establishment would attract more customers or create more loyal
customers and felt that consumers would not respond negatively to a recycling program. The chi square value of these two questions is 0, with 4 degrees of freedom, and a p-value estimated to be $P<0.25$. These responses are independent of each other.

Of a total of 36 respondents who answered these questions, 22 of the respondents answered both recycling would not create negative consumer reactions and customers would appreciate recycling at their establishment. The chi square value of these two questions is 2, with 4 degrees of freedom, and a p-value estimated to be $P<0.25$. These responses are independent of each other.

Of a total of 36 respondents who answered these questions, 15 of the respondents answered both recycling would not cause negative consumer reactions and that they were unsure whether or not customers would participate in a recycling program. Of a total of 36 respondents who answered these questions, 15 also answered both recycling would not cause negative consumer reactions and that customers would participate in a recycling program. The chi square value of these two questions is 0, with 4 degrees of freedom, and a p-value estimated to be $P<0.25$. These responses are independent of each other.
Appendix X: Ohio Bar & Restaurant Recycling Toolkit

Marketing students logo:
TBD by Ohio EPA
Director’s Comments

Dear Toolkit User,

Thank you,

Craig W. Butler
Director of Ohio Environmental Protection Agency

John R. Kasich
Governor of Ohio

Authored by Kathryn Lovda, Miami University
Contributions by Miami University Marketing Department

Source: All Surface Design
Checklist for implementing a successful recycling program

Step 1: Analyze Your Trash
Understand how much you can recycle by analyzing your trash. This will help you design the best program for your establishment.

Step 2: Review Your Recycling Options
Depending on your solid waste district, hauler, and contract terms, recycling can be addressed in a variety of ways. To determine the best recycling option for your establishment, contact your solid waste district and your trash hauler.

Step 3: Design Your Program
Design a program that works for you. Consider options for inside collection and outside storage. The design should be just as convenient as throwing an item in the trash.

Step 4: Build Your Team
An effective recycling program relies on your staff. Educate staff and incorporate leadership to ensure the success of your program.

Step 5: Market and Promote Your Program
Be sure to tell your customers and community that you recycle. Marketing your efforts makes good business sense and attracts more customers.

Step 6: How's Your Program Going?
To ensure the success of your program, be sure to touch base with your staff and see if you are reaching your goals.
# My Recycling Plan Worksheet

Use this worksheet to outline your plan. Keep it in a convenient place for a quick reference. Your solid waste district contact can help you create an optimal plan. Find your district and coordinator here: [http://epa.ohio.gov/dmwm/Home/recycle/tabid/6105/ Live TabId/143809/Default.aspx#where](http://epa.ohio.gov/dmwm/Home/recycle/tabid/6105/LiveTabId/143809/Default.aspx#where)

My solid waste district contact is ____________________________

## Step 1: Analyze Your Trash

- % Nonrecyclables
- % Recyclables (Glass, Plastic, Cardboard)

## Step 2: Review Your Recycling Options

Number of trash pick-ups: ___________ Cost per pick-up: $ ___________

Number of recycling pick-ups: ___________ Cost per pick-up: $ ___________ Not recycling (N/A): ___________

## Step 3: Design Your Program

My Program Goal:

<table>
<thead>
<tr>
<th>Recycling Area</th>
<th>Yes</th>
<th>No</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Front of house recycling</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Back of house recycling</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Customer recycling</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Step 4: Build Your Team

e.g. Recycling champion? Green team? Signs? Commitment letter to employees?...

Details: ______________________________

Details: ______________________________

Details: ______________________________

Details: ______________________________

## Step 5: Market & Promote


Details: ______________________________

Details: ______________________________

Details: ______________________________

Details: ______________________________

## Step 6: How’s Your Program Going?

<table>
<thead>
<tr>
<th>Date</th>
<th>Program Status &amp; Evaluation</th>
<th>Changes to Program?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Notes:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Notes:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Notes:</td>
</tr>
</tbody>
</table>
Step 1: Analyze Your Trash

A. Why analyze your trash?
Analyze your trash to determine how much is recyclable. This will help you figure out your plan. You can conduct a waste assessment (also referred to as a waste audit) to analyze your trash and identify what is recyclable and what is not.

B. What is a waste assessment?
A waste assessment is the examination and identification of the materials that make up your trash. A basic way to begin a waste assessment is categorizing items into recyclables, nonrecyclables, and compostable materials such as food scraps. An assessment should include the following:

- The types of materials found, such as nonrecyclables, glass, plastics, paper, metals...
- The total weight of each material
- Disposal method for each material

Compiling this data will provide you with a baseline to measure future successes such as waste reduction, increased recycling, and cost-savings.

C. Options for calculating a waste assessment:

Contact your local solid waste district
If you haven't already contacted your solid waste district, give them a call. Most districts offer free assessments. If those services are not available in your area, you solid waste district can provide resources to provide you with your recycling efforts. You can find your district and contact by referring to Appendix A: Solid Waste Districts of Ohio Map or by following this URL:

http://epa.ohio.gov/dmwm/Home/recycle/tabid/6105/LiveTabId/143809/Default.aspx#where

Contact your trash hauler
If your district does not provide free assessments, your service hauler is the next best option. Many haulers offer free assessments to help you create the best recycling contract terms for your business.

Perform your own waste assessment
If your solid waste district and hauler do not offer free assessments, it is possible to perform your own assessment. Appendix B and Appendix C provide a Do-It-Yourself Waste Assessment template and a Glass Calculator template to help guide you through the process.
Step 2: Review Your Recycling Options

A. Review your contract

Review your current contract with your waste hauler to determine if recycling is included. If recycling is already provided and you want to expand your existing program, ensure that the contract provides for flexibility such as reduced waste pick-ups, increased recycling pick-ups and/or options for containers. Since you will be disposing of less waste, ensure that there are opportunities for cost-savings on waste disposal. If your current contract is preventing you from seeing these cost-savings, consider re-negotiating your contract.

Things to look for in your contract:
- Different type of fees: hauling, disposal, fuel surcharge, environmental, administrative, etc.
- Frequency and times of pick-ups
- Cost differences between nonrecyclables and recyclables

Questions to ask your hauler:
- What are my different options for containers?
- Is there automatic renewal of contract terms? If so, do I have the ability to renew my contract on similar terms?
- Am I able to bundle my nonrecyclables and recyclables hauling services?

If you are not able to make changes to your contract or your needs are not being met, a “last-resort” option is start considering other haulers. Call your solid waste district contact to obtain a comprehensive list of haulers in your area.

B. Type of recycling services offered in your area

There are many different options available to manage recyclables at your establishment. The different types of recycling programs highly depend on what your local hauler(s) are able to offer. For instance, they may offer single-stream recycling, source-separated recycling, or a drop-off program. Start by asking what your current hauler is able to offer.

What is single-stream recycling? A recycling collection process that involves no requirements to separate recyclable materials from one another, allowing commingling of recyclables items.

What is source-separated recycling? A recycling collection process where each type of recyclable material needs to be disposed in their own separate containers, for example separating paper, glass, and metals from one another.

What is a drop-off? Trailers, roll-off containers, or other types of containers that are used as collection points for residential and sometimes commercial recyclables. Residents or businesses store their recyclables and then periodically drive to the drop-off site to deposit their recyclables into the container.
Step 3: Design Your Program

A. How do I get started?
Determine which service(s) matches your needs. This mostly depends on your comfort level but also on what is feasible for your establishment, as you may need additional space for containers (but not always!). Use your waste assessment to decide what to recycle.

B. What am I going to recycle?
The first step in designing your program is to establish a goal. Your goal can address the amount of trash produced, the cost of pick-ups, or both. Keep in mind, there is nothing wrong with starting small. Consider recycling one item and expanding the program in the future. Glass is a great place to start. Glass is generated in large volumes at bars and restaurants. Glass is heavy and could add to your trash disposal costs; therefore separating glass from trash can potentially reduce those costs. Also, glass is easy to manage and separate from other materials.

C. What containers should I use?
There are many different types and sizes of recycling containers available for your use. When choosing a container, recognize space constraints, volume of material, and weight of material. Consider how staff will have to handle the containers and avoid purchasing large containers that are difficult to move when full. Containers should be a different color than trash bins for ease of identification. If recycling multiple materials in a source separated system, use different colors for each container.

D. Where should I put the containers?
Keep in mind, you are not generating more materials, just managing them differently. Therefore, you may not need to make additional space. A reduction in the amount and the size of trash bins may be necessary in order to accommodate for recycling bins inside and outside your establishment.

   Inside your establishment:
   To make it easy for your staff, recycling containers inside your bar or restaurant should be placed near trash containers. Different colored containers with labels makes it that much easier for staff to recycle properly. If you are recycling both front and back of the house, you might place your containers in different areas and ways in order to meet both needs.

   Outside your establishment:
   Where you store your recyclables depends on individual situations. There are many options to consider. Do you need a 64 gallon cart or a dumpster? Can they be placed next to your trash dumpster? Or do you need additional space? Can you share with space with other businesses? Explore these options with your solid waste district contact and your hauler.

E. Include signs and labels
To complete your program design, there should be signs and labels to explain what should and should not be recycled. Signs and labels remind and educate your staff what to recycle and how to avoid contamination. For examples, see Appendix D.
Step 4: Build Your Team

Training your staff is important to ensuring a successful recycling program. Staff will be most affected by your program because they must change their disposal habits. The following examples can strengthen your recycling program:

- Show commitment via written agreements
- Create leadership roles and team atmospheres
- Use visuals to educate and remind

A. Identify your champion

The prospective candidate should already have an reputable, respected position within your establishment. A General Manager or Shift Supervisors would be good contenders. Regardless of whom you choose, your coordinator should have permanent and respected influence on all staff and be committed to the program. Having a dependable staff is very important because they need to include recycling within their daily tasks; therefore it is beneficial to have a champion that has become very familiar with restaurant flow, different staff positions and their responsibilities, rules, and goals. The responsibilities of the recycling champion include:

- Develop a strategic, goal-oriented program with owner(s)
- Announce the new recycling program to all staff
- Communicate and educate all staff on the importance of recycling
- Coordinate staff meetings to maintain quality of disposal methods
- Monitor and evaluate the progress of the program

B. Form a “Green Team”

A “Green Team” is a group of employees who are dedicated to recycling. This team could have a representative from each area of service: floor/service, kitchen, bar, etc. They are responsible for communicating between the recycling champion and their area of service. They can ensure quality for non-contaminated recycling bins and make sure recyclables are reaching their appropriate bins. This is especially useful for establishments that have a large staff.

C. Educate and communicate

Include signs and labels that remind and educate what to recycle and how to avoid contamination. Place signs in high traffic areas, such as the schedule board. Examples of signs are located within the Appendix D. The signs and labels should be:

- Clear – the message should be self-explanatory and easy to understand
- Concise – the message should be short enough for staff to remember
- Colorful – eye-catching, noticeable, and engaging designs
- Convenient – placed in areas where staff frequently visit to constantly remind

Continuously communicating and educating importance of recycling are necessary, especially in establishments with high turnover of staff. Emphasize to your staff that everyone can make a difference by working together as a team and that it is a good business decision. Appendix E includes a “Message from the Owner” template to help communicate these ideas.

Ask your staff to make a commitment to recycling. If they make a commitment, they are more likely to participate. Written commitments are more effective than verbal. Appendix E also has a template of a commitment letter. The letter shows that recycling is a priority at your establishment.
A. Tell people what you’re doing

Marketing your recycling efforts to your local community will promote your bar or restaurant and attract more customers. You can become a leader in your local community by making recycling a norm within the bar and restaurant industry. These marketing and promotional efforts will help pave the way for others to follow in your footsteps.

B. Marketing and promoting makes good business sense

At this point, you have put forth much effort developing a recycling program for your establishment. Use this to your advantage and help boost your establishment’s wealth and reputation. You can potentially strengthen and broaden your customer base. It also makes a statement about your business in variety of ways:

- Shows your commitment to the community
- Shows your commitment to the environment
- Supports local and state economies
- Supports global environmental initiatives
- Supports green business initiatives

C. Use a marketing and promotional mix

There are different ways to market and promote your recycling efforts to your customers and community. This toolkit includes materials to help get the word out that your establishment recycles and includes marketing materials. Examples on this page include materials used in previous bar and restaurant recycling initiatives. Appendix F includes a press release that can be used a template for your establishment. Marketing and promo materials were specially developed for this toolkit, which are located within Appendix G.
Step 6: How’s Your Program Going?

To make sure your program is effective, be sure to monitor and evaluate your program on a regular basis. Consider evaluating your program on a biweekly, monthly, or bimonthly basis. Review your goal when you monitor and evaluate the program to make sure you are headed in the right direction.

A. Maintain records of the data collected

Maintaining records are valuable because it shows how you are progressing as time continues. With records, you can see your trends and if they are advancing towards your goal. Records can help you predict the future of the program. Make sure to keep a well-organized record of all data gathered. Keep your hauling service bills filed and ask your service providers for any informational reports that can be obtained at the same time as your bills.

B. Trial and error

Once you have started to gather sufficient data to start keeping records, you may need to start making changes to your program. It is better to make changes when the program is still in its earliest stages. The monitoring and evaluation step is a good time to ask questions and use your resources (e.g. solid waste districts and haulers) if your program is not going well. Have you reduced your costs? Have you reduced your trash amount? Should you expand your recycling program to include other items such as plastics, glass, metals, paper, etc.? Is your staff not recycling properly? Consult with your solid waste district contact and hauler to see what options are available for assistance.

C. Share your successes

Having a well organized monitoring and evaluating system can be used for other areas of the business. If your program is going well then share your positive results with your staff and the community. This is good for staff morale and showcasing your environmental leadership to the public. You can publicize your accomplishments in a variety ways. Use the press release template in Appendix F to reach out to the community and or post a short status report on the staff bulletin board to share the success. Inform the staff of how well they are performing.

And always, thank your staff for being committed to the program and for their hard work.
# Appendix B: DIY Waste Assessment

<table>
<thead>
<tr>
<th>MATERIALS</th>
<th>LOCATION</th>
<th>RECYCLED Y/N</th>
<th>DISPOSAL LBS/WEEK</th>
<th>DISPOSAL TONS/YR</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer Paper</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ledger Paper</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mixed Paper</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corrugated</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Newspaper</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Magazines</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glass Containers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aluminum Cans</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Steel Cans</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scrap Metals</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plastics</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pallets</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Batteries</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>others</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTALS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# How much recyclable glass does your business generate?

## A Worksheet

Use this table to calculate monthly volumes of 100% recyclable glass.

<table>
<thead>
<tr>
<th>Package Size</th>
<th>Single Container Weight</th>
<th>Number of Cases per Month</th>
<th>Average Case Weight</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>BEER</td>
<td>12 oz. 7 oz.</td>
<td></td>
<td>10.5 lbs.</td>
<td></td>
</tr>
<tr>
<td>Heavy Bottle</td>
<td>12 oz. 9.5 oz.</td>
<td></td>
<td>14.25 lbs.</td>
<td></td>
</tr>
<tr>
<td>LIQUOR</td>
<td>1.75 36 oz.</td>
<td></td>
<td>13.5 lbs.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>750 ML 15 oz.</td>
<td></td>
<td>11.25 lbs.</td>
<td></td>
</tr>
<tr>
<td>HOUSE WINE</td>
<td>4 Litre 41 oz.</td>
<td></td>
<td>10.25 lbs.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 Litre 36 oz.</td>
<td></td>
<td>9.0 lbs.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.5 Litre 28 oz.</td>
<td></td>
<td>10.5 lbs.</td>
<td></td>
</tr>
<tr>
<td>VARIETAL WINE</td>
<td>1.5 Litre 28 oz.</td>
<td></td>
<td>10.5 lbs.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>750 ML 15.5 oz.</td>
<td></td>
<td>11.6 lbs.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>375 ML 13 oz.</td>
<td></td>
<td>19.5 lbs.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>187 ML 7.5 oz.</td>
<td></td>
<td>11.25 lbs.</td>
<td></td>
</tr>
<tr>
<td>CHAMPAGNE</td>
<td>1.5 Litre 52 oz.</td>
<td></td>
<td>19.5 lbs.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 Litre 35 oz.</td>
<td></td>
<td>26.25 lbs.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>750 ML 25 oz.</td>
<td></td>
<td>18.75 lbs.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>187 ML 13 oz.</td>
<td></td>
<td>19.5 lbs.</td>
<td></td>
</tr>
<tr>
<td>OTHER</td>
<td>Wine Cooler 12 oz. 7 oz.</td>
<td></td>
<td>10.5 lbs.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bar Mixes 10 oz. 5.6 oz.</td>
<td></td>
<td>8.4 lbs</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mineral Water 11 oz. 9 oz.</td>
<td></td>
<td>13.5 lbs.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Perrier Water 6.5 oz. 5.3 oz.</td>
<td></td>
<td>7.9 lbs.</td>
<td></td>
</tr>
</tbody>
</table>

**SUBTOTAL**

**TOTAL**
Marketing students materials:

TBD by Ohio EPA
Appendix E: Message from the Owner and Staff Commitment Letter

Message from the Owner:
To: Current Establishment Employees
From: Owner Name

This message is to give all employees a notice that there will be changes happening within your workplace. Establishment has recently implemented changes to its trash disposal methods to include recycling. The decision to recycle within our establishment is because of the environmental, financial, and social benefits. By recycling, we can reduce our waste to the landfill, cut our solid waste disposal costs, and promote our business as environmentally conscious to our customers, potential customers, and the community as a whole. To implement a successful recycling program within Establishment we need to manage our disposal habits differently in order to make recycling a priority. This adopted change is something that I believe we can succeed in because as individual workers, we work very hard, which is why we make a great team. Working together, as a team, we can truly make a difference by incorporating recycling into our daily tasks. If there are any questions, please feel free to contact me. Thank you all and keep up the great work!

Staff Commitment Letter:

Dear Establishment staff,

Maintaining a successful recycling program within Establishment means your help will be needed. As a team, we need to manage our disposal habits differently in order to make recycling a priority. Individually, your commitment is needed to ensure quality in our recycling program to effectively reap the benefits. By signing below, you are acknowledging the above statement and agree to include recycling within your routine of disposing of trash.

I, ______________________, am committing to responsibly recycle all appropriate recyclable materials for Establishment recycling program. I understand that recycling has become a priority within the disposal processes of Establishment and will provide benefits to the establishment, environment, and the community. By signing this commitment letter, I pledge to include recycling within my disposal routine while working within Establishment.

Signature of employee: ______________________  Date: __________
For Immediate Release

Date

Establishment recycles to help a statewide glass initiative.

Establishment has recently initiated a new recycling program to help Ohio’s demand for recycled glass. Establishment decided to begin recycling not only because of the need for recycled glass, but to benefit the environment, the community, and business.

Ohio Environmental Protection Agency created a recycling marketing toolkit specifically for Ohio bars and restaurants to provide recycling assistance and solutions. Establishment is one of the first statewide to use the toolkit to change its disposal habits.

“Insert quote from business owner here…”

After Establishment staff members were introduced to the toolkit, they began to look at recycling in a different way. The toolkit shows that incorporating a recycling program into a bar or restaurant is a feasible task. It also has many benefits for not only Establishment, but for their community as well. It is environmentally and socially responsible and supports green business practices. Show your support for Establishment’s recycling efforts and pay them a visit.

Any bar or restaurant interested in starting a recycling program, improving its existing recycling program, or that has further questions should contact their solid waste district.
Marketing students materials:

TBD by Ohio EPA
Bibliography


REFERENCES


