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Reducing Our Waste in Bloomington-Normal, IL

A Community Recycling Program Assessment

Prepared by Stevenson Center Graduate Students in the Departments of Economics, Politics and Government, and Sociology: Ashley Conrad, Alyssa Curran, Phillip Dawson, Tim Glaza, Lauren Karplus, Greg King, Amber Madden, Dane Myers, Ambuj Neupane, Nancy Ouedraogo, Elizabeth Rardin, Katie Saunders, Robyn Savacool, Carolyn Schulte, Danielle Shtraus, Kate Slisz, Andrew Smolski, Luke Tervola, and Jenna Williams.

ABSTRACT

The purpose of this report is to inform public officials, the Ecology Action Center, and Bloomington/Normal residents of current habits, unmet needs and areas for improvement concerning community recycling programs. The findings are based on a survey of 290 Bloomington/Normal households, as well as interviews conducted with key stakeholders in the community. One of the more significant findings was the almost universal support for the expansion of the curbside recycling program in the area. Respondents also reported a general dissatisfaction with the current state of apartment recycling efforts, and support of the implementation of mandatory recycling in school districts. To conclude, we make recommendations for improvement of the Bloomington/Normal recycling programs.

Produced for: **Prepared by**:

STEVENSON CENTER
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Table of Contents

Tables and Figures

I. INTRODUCTION

The Stevenson Center for Community and Economic Development at Illinois State University in partnership with the Ecology Action Center (EAC) conducted a drop-off/pick-up survey in October 2011 to learn more about residents' current perceptions, concerns, and activities regarding recycling and solid waste management. The goal was to inform public officials and the EAC about citizens' needs and concerns regarding current recycling services and help guide the creation of future programs and activities within the Bloomington-Normal community.

To guide the research, we investigated what community actions, program operations, incentives and policies will optimize recycling behaviors among Bloomington-Normal residents. We explored the perceptions of recycling programs, recycling behaviors currently in practice, and unmet needs of residents by conducting key informant interviews with local stakeholders and administrating a questionnaire to a sample of 800 Bloomington-Normal residents. The Illinois Solid Waste Planning and Recycling Act requires Illinois counties to design, adopt, and implement a twenty-year municipal solid waste management plan, which requires a review and update at five-year intervals. In 2007, the Integrated Solid Waste Management Plan (the "ISWMP") five-year update for McLean County was submitted to and approved by the Illinois Environmental Protection Agency (IEPA). The county's environmental education, information, and outreach resource - the Ecology Action Center (EAC) - prepared this plan, emphasizing solid waste disposal and recycling service strategies. Through this project, the EAC will aim to meet specific elements in the ISWMP plan such as: (1) expansion of residential recycling programs (including curbside collection and drop-off centers); (2) increase in composting; (3) evaluation of options for disposing hazardous household waste; and (4) increase in active education and

promotional programs related to recycling. Furthermore, the updated goal for McLean County in 2007 was to increase recycling participation rates to 40 percent before the next five-year review. Research on waste management is timely due to the impending closure of the McLean County Landfill #2 operated by American Disposal Service in 2016, according to the Solid Waste Landfill Capacity Certification conducted by the IEPA.

II. LITERATURE REVIEW

In order to provide a theoretical framework for the assessment, an examination of previous research relevant to recycling and waste management practices was performed. Previous research conducted provides a deeper understanding of key themes concerning recycling: sociological and demographic factors that affect participation, ways to increase participations rates, and policies that lead to greater efficiencies.

Sociological and Demographic Factors Affecting Recycling Participation

An essential part of performing a community recycling assessment is first understanding who recycles and why. However there is much contention surrounding this identification. In a mail-back survey conducted in the greater Toronto area, Scott (1999) found that recycling participant's main motivation for recycling was environmental concern. Contrary to Scott's article, Oskamp et al. (1991) found that it cannot be assumed that a general environmental concern will be a factor in predicting recycling behavior. After performing telephone interviews concerning a recently implemented curb-side recycling program in Southern California, they concluded that to promote recycling participation, awareness of the personal benefits should be specifically marketed, not just a general concern for the environment (Oskamp 1991). This is important to take into consideration in the Bloomington-Normal community. Marketing

strategies implemented may be more effective if they are recycling specific. In another study, Nigbur, Lyons and Uzzell (2010) found the most significant factors that contribute to recycling participation were self-identification as a recycler and descriptive norms, namely if you see others around you recycling, you are likely to do the same. Therefore, making recycling more visible in the community may lead to high participations rates.

An analysis of the demographics of households participating in recycling programs led to a more general consensus. Owens, Dickerson and Macintosh (2000) found the most significant variables predicting participation in recycling programs were annual household income, home ownership status, and level of education attained by lead recycler. Miller et al (2009) also obtained similar results when analyzing waste generation for a Western New York community.

Methods to Increase Recycling Participation

The U.S. Government Office of Accountability (GOA) report (2006) suggests some ways to increase participation in community recycling programs. They explain that making recycling convenient and easy for residents, offering financial incentives for recycling and conducting public outreach were effective methods. Viscusi, Huber and Bell (2011) also found financial incentives to be a powerful determinant of participation in their analysis of the presence of water bottle deposits in the United States. They found that the most influential factor on whether or not people chose to recycle their water bottles was the presence of a water bottle deposit. According to the study, the most powerful way to convert non-recyclers into avid recyclers was through economic incentives. The implementation of economic penalties for waste generation has also been cited as a factor for increased recycling participation (Owens, Dickerson and Macintosh 2000). However, in a study conducted by Kinnaman (2006), it was found the demand to toss waste was inelastic, and did not change when economic penalties were implemented. This

contention leads us to question the effect of economic incentive implementation in the Bloomington-Normal community. This was addressed by asking Bloomington-Normal residents about their willingness to pay for recycling and waste disposal services.

Policies Affecting Recycling

Looking at the various policies that affect recycling, those implemented by local government as well as those adopted by the companies responsible for waste management, leads us to important insights surrounding the Bloomington-Normal system. It was found that, "Local governments that relied exclusively on curbside pick-up had an average cost per tonne that was significantly higher than those that had depot pick-up or a combination of depot and curbside pick-up. Curbside pick-up tends to be more labour and equipment intensive than mixed or depot-only systems" (McDavid & Mueller 2008:602). However, governmental policies such as enforcing that recycling bins be full before pick-up can decrease the cost of recycling, making it more feasible and viable for both governments and citizens (McDavid and Mueller 2008). McDavid and Mueller also found that increasing tons per vehicle, increasing compost in loads and increased participation rates in the community led to decreased curb-side recycling costs. With the right policies being enforced, an efficient curbside program can be carried out. It was also found that local governments with more stringent laws, such as mandatory recycling requirements, experienced a rise in recycling locations, increasing the ease and reducing the time of recycling (Viscusi et al. 2010). For example, Viscusi et al. found that "The percent of non-recyclers, those who indicated they did not recycle at all, is 6 percent for states with water bottle deposit laws, 17 percent for states with deposit laws that do not cover water bottles, and 35 percent for states with no deposit laws"(2010:67). This shows that the policies adopted by the local governments of Bloomington-Normal can have a great impact on recycling participation.

III. CONCEPTUAL DESIGN OF THE STUDY

Assessing Community Recycling

The Illinois Solid Waste Planning and Recycling Act requires Illinois counties to design, adopt, and implement a twenty-year municipal solid waste management plan, which requires a review and update at five-year intervals. In 2007, the Integrated Solid Waste Management Plan (the "ISWMP") five-year update for McLean County was submitted to and approved by the Illinois Environmental Protection Agency (IEPA). The county's environmental education, information, and outreach resource - the Ecology Action Center (EAC) - prepared this plan, emphasizing solid waste disposal and recycling service strategies. Through this project, the EAC will aim to meet specific elements in the ISWMP plan such as: (1) expansion of residential recycling programs (including curbside collection and drop-off centers); (2) increase in composting; (3) evaluation of options for disposing hazardous household waste; and (4) increase in active education and promotional programs related to recycling. Furthermore, the updated goal for McLean County in 2007 was to increase recycling participation rates to 40 percent before the next five-year review.

Guiding Research Questions

Research questions that guided this study included several concepts derived from the previously discussed literature review on recycling and solid waste management, as well as key elements related to recycling as determined by the EAC. The study addresses two separate questions about community recycling in Bloomington-Normal.

1.) What community actions, program operations, incentives or policies will optimize recycling behaviors?

2.) What are the current perceptions of recycling programs, unmet needs and recycling behaviors among Bloomington-Normal residents?

The reason for the multitude of variables in the two research questions is that the literature has many key concepts that simultaneously address community specific recycling behaviors as correlated to public policy. These key concepts are on the agent (individual) level and the structural (institutional) level based in ideas of rational choice economic theory and sociological theories on the operations of social norms (Emerson 2011; Government Accountability Office 2006; Kinnaman 2006; Nigburr, Lyons and Uzzell 2010; Oskamp et al. 1999; Sarkhel et al. 2009; Scott 1999; Viscusi, Huber and Bell 2011).

Participants in the Study

Although commercial recycling is taken into consideration with McLean County's municipal solid waste management plan, our focus is on residential recycling. Participants in this study included both key informants and residents of Bloomington-Normal. Key informants helped shape the research questions and main concepts and were selected for interviews based on their knowledge of and connection to recycling in the community. Residents of Bloomington-Normal were randomly selected from census tracts, and are part of a simple random sample that is meant to be representative of the Bloomington-Normal community.

Recyclable Materials

Recycling in this assessment refers to both traditional and non-traditional recyclable materials. For the purpose of this study, traditional recyclable materials are categorized as aluminum cans, magazines/catalogues/junk mail, green yard waste, cardboard, milk jugs/plastic containers, tin cans, plastic bottles, and newspapers. Non-traditional recyclables include materials such as motor oil, household hazardous waste, clothing, paint, batteries, and

electronics. The recyclable materials are not necessarily constituted as part of government programs for recycling, but rather these are possibilities that are assumed by assessments of what can be recycled. Another form of residential recycling is composting, which includes both green yard waste and organic food materials. The materials recycled by the City of Bloomington or the Town of Normal are discussed further in the portion on recycling programs.

Community Recycling Programs

Recycling programs in the community are differentiated by two separate policies: (1) a bimonthly curbside pick-up program in Bloomington; and (2) a drop-off service in Normal where residents must bring their recycling to specific drop-off locations. Bloomington recently switched to a single-stream system for private homes (but not for apartments or trailer homes), whereby all recyclable materials are mixed together (in the recycling bins and collection trucks) for biweekly pickup. Recyclables are later separated at a materials recovery facility. Residents must provide their own recycling containers because Bloomington no longer supplies bins. Normal's program requires recyclable materials to be dropped off by the individual at a designated location. There are fifteen drop-off sites throughout Bloomington-Normal, open 24 hours a day, 7 days a week. Recyclables must be separated into three categories: (1) containers; (2) corrugated cardboard; and (3) paper products. This requires a standardized labeling system, to clearly indicate which materials (and what percentage of those materials) have been recycled.

Recycling Behavior: Motivations and Barriers

Recycling is more than just separating certain materials from the solid waste stream. Optimizing recycling services requires a well-informed public; people need to know what, when, and where to recycle. Recycling behaviors are another concept that is important to define. Under the questionnaire heading "recycling behaviors," the following inquiries are addressed: (1) how

frequently does an individual (or household) recycle; (2) what motivates someone to participate in recycling; (3) and what are potential barriers that limit a person's ability to recycle. By looking at current recycling behaviors, residents' perceptions and knowledge of current recycling options, motivations for recycling, and unmet needs of residents with regard to recycling, we hope to aid in the understanding of how to improve recycling programs and maximize community recycling participation rates.

Recycling behaviors also include how frequently a household recycles. This varies among participants for several reasons, but the main delineation in the survey was based on whether the participant lived in Bloomington or Normal. The former has a curbside collection service, while the latter utilizes a drop-off service. Participants in the study could specify which service they currently use (if any), and describe how often they set out materials for recycling collection at their home, or how often they use recycling drop-off locations. If they set out materials for collection at home, they could determine whether they do so every other week, once a month, or how often (if one of these two categories did not best describe their recycling habits).

Motivations for recycling are based on economic, social, and environmental reasons. These reasons include cost, social responsibility, personal expectations, how enjoyable recycling is, whether or not they perceived it as being good for the environment, or because it reduces landfill waste. These statements about recycling motivations were gleaned from past research and formulated by theories of rational choice and social norms therein. Barriers to recycling were conceptualized in terms of individual perceptions of and attitudes towards recycling programs. Does an individual believe recycling benefits them personally, or benefits the community? Do they have sufficient knowledge of recycling options, including programs, which materials can be

recycled, and where to recycle? Does it take too much time, or is it too difficult to find room for temporary storage of recyclable materials in their homes? Participants can also indicate whether or not they have transportation to deliver recyclables to a drop-off location. Desires for future recycling opportunities address possible unmet needs. For residents of Bloomington-Normal, future opportunities include recycling program changes, such as: (1) a bottle deposit/return program; (2) a city-wide composting initiative; (3) a pay-as-you-throw program; (4) mandatory recycling requirements for public school districts; (5) an apartment recycling program; (6) the implementation a curb-side collection service (for Normal residents); and (7) the option to recycle hazardous waste.

IV. RESEARCH METHODS

Methodology: Qualitative – Key Informant Interviews

In spite of their different advantages and disadvantages, there is not one method of data collection that provides a foolproof means of achieving measurement validity, causal validity, or generalizability. Each method will have some limitations in a specific research application and all can benefit from the combination of one or more other method. Therefore, we used a triangular research design to explore our research questions. Triangulation is the use of multiple methods to study one research question. "The term suggests that a researcher can get a clearer picture of the social reality being studied by viewing it from several different perspectives" (Schutt 2001:399).

First, we conducted qualitative research through key informant interviews to gain a better understanding of the current recycling programs and policies in Bloomington-Normal. Qualitative research is a subjective approach to research that uses words to describe meaning, to discover things, and to understand phenomena (Cottrell and McKenzie 2005). Key informant interviews are qualitative, in-depth interviews with people who know what is going on in the community. The purpose of key informant interviews is to collect information from a wide range of people—including community leaders, professionals, or residents—who have first-hand knowledge about the community. These community experts, with their particular knowledge and understanding, can provide insight on the nature of problems and give recommendations for solutions. In this particular study, key informants were used to gain a better understanding of the current recycling programs and policies in Bloomington-Normal.

The intended research subjects for the qualitative portion of this project were individuals who had first-hand knowledge and expertise surrounding the recycling programs and policies in

Bloomington-Normal. Nine key informants were interviewed. These individuals represented various sectors and groups within the community, such as local government, waste management companies, property management companies, and various community organizations. The final list of key informants consisted of a diverse mix of nine key informants, which helped researchers to obtain a broad range of perspectives surrounding the recycling programs and policies of Bloomington-Normal.

Measurement. The qualitative data was collected through semi-structured, key informant interviews. According to Reinard (2001), "unlike many questionnaire studies, interviews can produce interpretations for the reasons behind answers. By reporting on the results of follow-up questions and funnel question patterns, interviewers often gain insight to explain previously unknown reasons" (p. 242). Key informant interviews allowed us to gain rich, in-depth information about current recycling programs and policies that might not otherwise have been obtainable through other research methods.

Open-ended questions were arranged before the interview and allowed for deviation if participants chose to elaborate on a certain question. Informants were first asked several questions pertaining to their background and their role in community recycling. Next, they were asked to explain how recycling has evolved over time in the community. Informants were then asked questions that focused on gaining insight into what barriers currently exist for residential recycling. Next, they were asked to gauge the overall effectiveness of local recycling programs and policies, as well as their opinion on current educational and community outreach surrounding recycling. Finally, informants were asked to provide recommendations and suggestions surrounding future recycling programs and policies they would like to see in the community (See Appendix A). Interviews lasted approximately 30 minutes to an hour.

Analysis. In the qualitative portion of the study, Glaser's (1965) constant comparative method was used to analyze the qualitative data collected. Constant comparative analysis is "a research method for the subjective interpretation of the content of text data through the systematic classification process of coding and identifying themes or patterns" (Hsieh and Shannon 2005:1278). Open-coding was conducted to analyze the messages conveyed in each interview, as well as to identify any possible themes that existed across interviews. As Strauss and Corbin explained (1990), the purpose of this analysis is to understand the research by grouping the data collected into a small but exhaustive set of themes. Glaser and Strauss (1967) explained that in constant comparative analysis, "one generates conceptual categories or their properties from evidence, then the evidence from which the category emerged is used to illustrate the concept" (23). These themes were then further analyzed and used to help guide us in the design of our survey instrument.

Methodology: Quantitative – Self-reported Questionnaires

Survey design. A questionnaire about household waste recycling was distributed to a sample of 800 households throughout the residential Bloomington-Normal area, using a drop-off/pick-up methodology. This ensured a representative demographic spread. The relevant predictors of recycling were assessed using quantitative self-report scales. See Appendix B.

Sampling method. Using simple random sampling, a subset of 800 residential addresses were chosen from the total residential population of Bloomington-Normal and provided by Survey Sampling International. This unbiased simple random selection of residencies allows us to draw externally valid conclusions about the entire population. Furthermore, the simplicity of this sampling approach made project completion possible within the projected time frame in order to analyze data collected (using Statistical Package for the Social Sciences, SPSS).

Survey distribution methods. Students were divided into 2-3 person teams and matched with a selection of the sample for which they were responsible. Over a two week period each research team went to every household address in their assigned sample to request participation in the survey. Research teams returned to each household address a minimum of three times to make personal contact with the resident and request participation in the study. If the subject confirmed willingness to participate, students would tell the respondent to complete the survey, place it in the red plastic bag and hang it on the front doorknob within 24 hours. If households did not complete the survey within 24 hours the student team would deliver reminder postcards. If surveyed households completed the survey within the allotted time the research team would pick up the survey and deliver "thank you" postcards. Research teams might return as many as four times at 24 hour intervals to retrieve the completed survey. Students kept logs of the survey distribution process. After the fourth reminder the household would be regarded as an incomplete/refusal. Research teams took care to track progress and gather completed surveys in a systematic manner. Table 1 provides an overview of final response rates and Table 2 provides an overview of the final distribution rates for the survey.

Table 1. Survey Response Rate

Rates of Response	Percentage of Sample
Response Rate*	69.7%
Non-response Rate**	30.3%

*Response rate is calculated as total completed over total delivered
**Non response rate is calculated as total incomplete over total delivered

Table 2. Survey Distribution

Distribution Results	Percent	Number
Completed	36.4%	291
Refusal	9.8%	78
Undeliverable*	13.5%	108
Delivered and Uncompleted	15.8%	126
No Contact	24.6%	197
Sample TOTAL		800

*Surveys were undeliverable in the cases of vacant residences and locked inaccessible apartment complexes.

Advantages and Limitations

This project utilized both qualitative and quantitative methods of data gathering. The research team chose the best methodology of survey design and distribution possible under the time and budget constraints. Typical mail surveys are distributed over the course of twelve weeks. The "drop off pick up" format was an efficient technique to compensate for the short time frame of survey distribution and collection. Despite the disadvantages accompanying a short time frame this distribution method resulted in a fairly high response rate. A portion of the sample was inaccessible due to vacancy or location in locked apartment complexes. The self-

administered survey was meant to act as a stand-alone instrument of measurement and provided us with a sufficient measure of validity.

V. FINDINGS

This section summarizes both the qualitative and quantitative findings from the collected data. The general themes from the key informant interviews are presented followed by the aggregate survey results. Common themes are then discussed, as well as unexpected and unusual findings. This information is then related back to the literature review, and a discussion of what is supported and refuted by the findings is included. Lastly, the findings are related back to the guiding research questions for this project.

Key Informant Interviews Summary

Curbside vs. drop-off recycling programs. With regard to the local leaders interviewed by research teams, there is widespread support for curbside recycling programs and an acknowledgement that it is the direction the town of Normal is headed in. There is also a recognition that of the large amount of recyclables collected at Normal drop off locations, a substantial portion of those materials may be dropped off by residents from other towns. One Normal official involved in the town's solid waste management advocates for the implementation of curbside pickup in addition to the drop off program in order to maintain recycling services for business, apartment dwellers, and residents of other towns.

Recycling motives. When asked about why people recycle, several key informants explained that they believe recycling is a habit that must be developed. Other interviewees, including those working in property management and solid waste management explained that the lack of participation in recycling programs can be explained, in their own words, as "laziness".

Barriers to participation in recycling programs.   Most of the key informants recognized that one of the greatest barriers to a successful recycling program is the lack of education and knowledge residents have about the programs. Many of them recognized that education programs currently do exist in schools but they advocated for more emphasis on the subject and increased focus on educating adult residents. Several interviewees cited a lack of easily accessible information about local recycling programs as a major problem.

Several individuals with knowledge of Bloomington's curbside recycling program pointed out that although the program has switched to single stream, in which all recyclables can be collected together, and does not require residents to separate different recyclable materials, many residents still do. The city switched to single stream recycling because it has a documented record of increasing participation in recycling due to the fact that it makes recycling easier for residents. The interviewees explained that more outreach and education must be done in order to see the increased participation desired from the switch to single stream.

Local leaders working with low-income populations in West Bloomington and North Normal emphasized the lack of transportation, the lack of recycling outreach and education, the language barrier, and recycling being framed as an individual effort rather than a communal effort as the greatest obstacles to participation in recycling programs within local low income communities.

One individual who works in the local solid waste industry cited the strong influence of landfill companies in local and state legislative bodies as a barrier to the development of recycling programs in the area. He explained that landfill owners often lobby against recycling initiatives because their profits depend on the amount of solid waste dumped in their landfill.

Proposals for improvement. Many of the local government officials interviewed supported the implementation of a unit-based pricing system for solid waste. This type of program is often referred to as "pay as you throw" because resident's payment for trash removal would be based on the amount of trash they generated (based on weight or volume). In such programs, pick up of recyclable materials is usually free. The interviewees suggested that such a program would motivate residents to recycle more because it would save them money on their garbage bill.

When asked about the development of a large scale composting program, many of the interviewees recognized it as an area with the potential for huge growth. Two of the interviewees suggested creating a partnership between the local governments and ISU and the EAC's composting programs. A waste management administrator explained, "I think in ten years we will have expanded composting programs. If we see landfills getting full, we won't send food scraps there, but use other options."

Quantitative Data Summary

Overview of respondents. *O*verall, our pool of respondents to the survey is demographically representative of the Bloomington/Normal community. However, racial minorities are largely underrepresented according to the demographics of Bloomington/Normal (Economic Development Council of the Bloomington-Normal Area 2011). Demographic frequencies for respondents are shown in Table 3.

Table 3. Demographic Frequencies of Respondents

Demographics	Percentage of Sample
Location	
Bloomington	58.8%
Normal	41.2%
Sex	
Male	45.7%
Female	54.3%
Education	
High School Diploma or Higher	96.4%
Bachelors Degree or Higher	61.7%
Masters or Doctoral	18.7%
Race	
White	83%
Hispanic/Latino	1%
Black/African American	6%
Two or More Races	2%
Homeownership Status	
Own my Home	72.3%
Rent/Lease my Home	25.9%
Age	
Group 1 = 18-44	43%
Group 2 = 45-64	36%
Group 3 = 65+	18%
Income	
Low Income = 0-39,999	26%
Middle Income = 40,000-79,999	28%
Upper Income = 80,000+	38%

Common Themes from Quantitative Data

Beyond the qualitative interviews, a summary of the quantitative findings will also help in our exploration of our research questions. Our summary of the aggregate survey results will include a discussion of the following themes: (1) overall recycling participation and satisfaction; (2) drop-off locations; (3) lack of knowledge and awareness of recycling programs; (4) general

support for expanding curbside program (5) motivation to recycle; (6) expansion of other recycling programs; (7) renters vs. homeowners ; and (8) informing residents of garbage collection.   The discussion of themes will be followed by a summary of our unexpected findings, two statistical tests (bivariate correlations and T-tests), and support for new programs. Finally, we will wrap up our quantitative findings summary by relating the findings to both previous research and the research questions that guided our study.

Overall recycling participation and satisfaction. 73% of respondents reported that they currently recycle. It is expected that an inflated number of people will say they recycle even if they do not recycle regularly (due to self-reporting bias - some may report what they would like to do rather than their actual behaviors). 26% of residents are dissatisfied with recycling services which suggest the program has some room for improvement in terms of satisfying resident's needs.
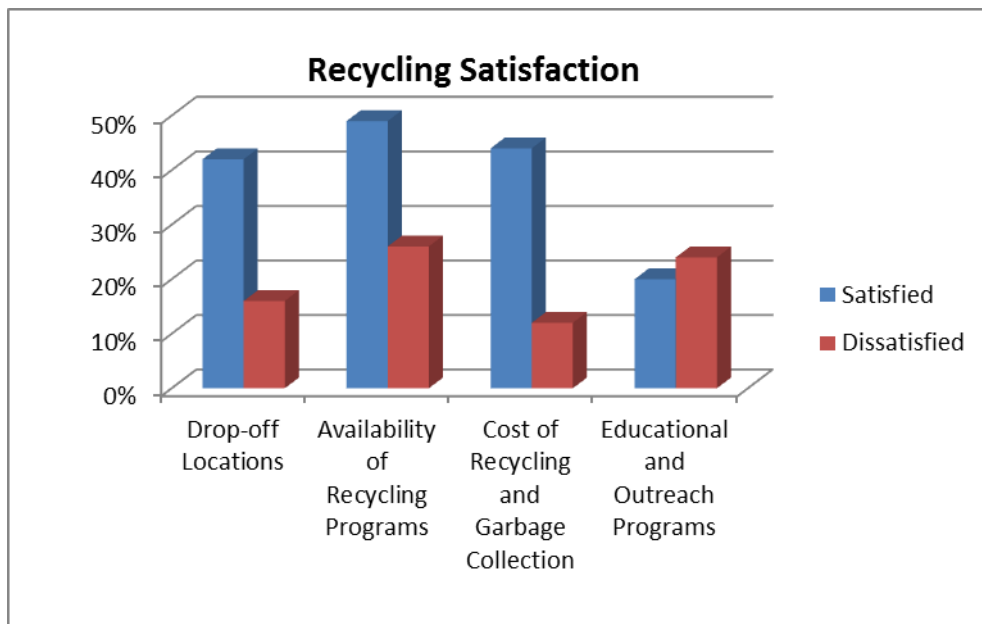
Figure 1. Satisfaction with Recycling Services

Drop-off locations. As Figure 1 shows, 16% of respondents are dissatisfied with the drop-off locations. Further evidence to this point is 17% of respondents indicated not knowing where to take recycling as a reason why they do not recycle. There were multiple respondents who commented that they were unsatisfied with the maintenance of the drop-off locations writing that often times the drop-off units are full and suggested that there be more frequent pick-ups of the recycled materials. Some Bloomington residents also said they would like drop-off locations in their community so they do not have to travel to Normal to use their facilities.

Lack of knowledge and awareness of recycling programs. 52% of respondents are neutral on awareness of educational/outreach programs and 57% are not at all aware of EAC programs. Also, 40% do not have the knowledge they need about recycling programs, and 56% say they do (which is perhaps enough knowledge to do what they are doing and nothing more). Further, 20% are satisfied with educational outreach programs suggesting that residents lack the information they need which might explain some of the dissatisfaction with the program in general. Participants who feel that they have knowledge about recycling, recycle more and participants who feel that they have knowledge about recycling are more aware of the EAC. Also, participants that are more aware of the EAC recycle more. However, there is a lack of accessible information regarding what materials can be recycled along with when and where hazardous materials are collected.

General support for expanding curbside program. Table 4 shows support for expanding the curbside program. Multiple respondents commented that they do not have the space to store recyclables or time to use drop-off locations; therefore, more people would be willing to recycle if curbside was offered to everyone in Bloomington and Normal. These respondents commented that they would like curbside-recycling materials to be picked up on a weekly basis instead of the

current bi-weekly rate. Also, multiple participants commented that they would like the "blue bins" to be provided free of charge as well as increasing the size of the containers to the size of regular trash cans with a lid to protect the materials from water damage.

Table 4. Participant Support for Curbside Recycling

Findings Showing Support for Curbside Program	
Response	**Percentage**
Do not recycle because of no curbside*	46%
Would recycle more if had curbside*	47%
Think curbside is important for all B/N	83%
Willing to pay for curbside	59%

*Out of those respondents who do not recycle

Motivation to recycle. Figure 2 highlights various motivations to recycle. There is a strong relationships between environmental concerns, social responsibility and recycling. According to our data, economic incentives are not a strong motivator to recycle. However, multiple respondents commented that they believe that economic incentives, in the form of tax reductions, bottle drop-off centers, etc., would be a good way to motivate community members to recycle, especially the college age population.
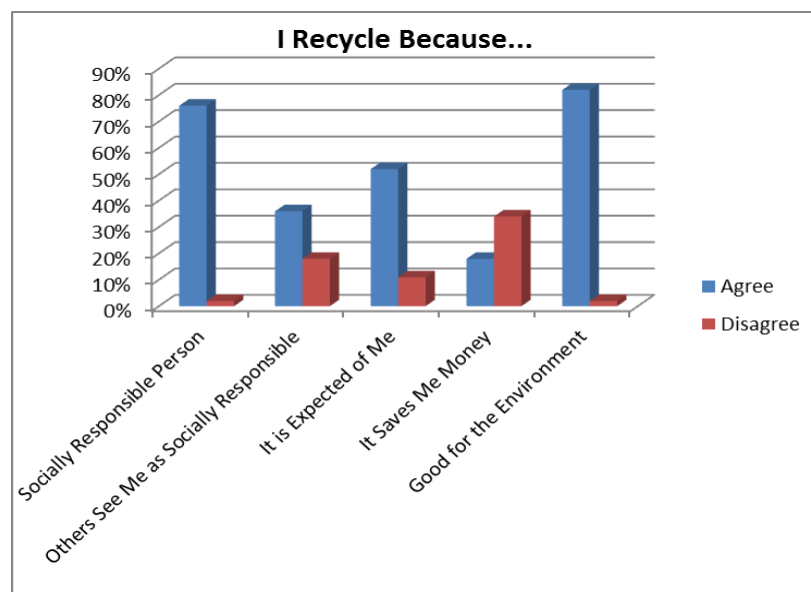
Figure 2. Motivations for Recycling

Expansion of other recycling programs. Figure 3 shows support for various recycling programs. There is general support for many recycling programs except for the pay-as-you-throw program, which suggests that residents do not want an added cost for a service that they are already receiving. This table also shows support for expanding the recycling program to apartment complexes. Multiple respondents commented that they would like to see a program enabling the recycling of plastic bags at grocery stores; however, these programs already exist. This is further evidence that there is a lack of knowledge of various recycling programs that are already in place.
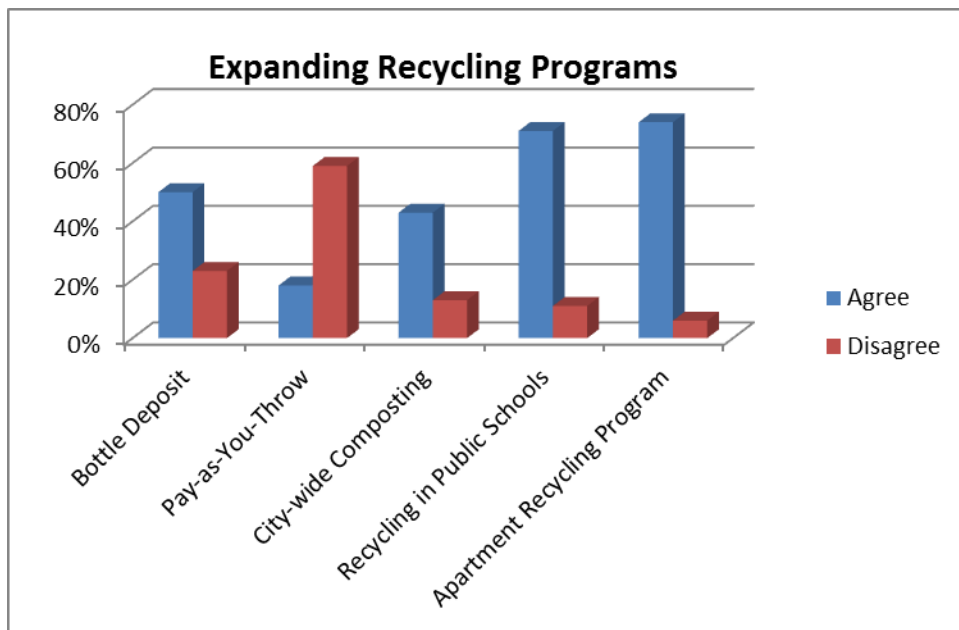
Figure 3. Support for Future Recycling Initiatives

Renters vs. homeowners. Figure 4 shows that homeowners recycle more and are more satisfied than renters. This implies that there is a significant difference in access to recycling programs between those who own their homes and apartment dwellers. In addition, many respondents commented that they would like to see curbside recycling become available to

apartment dwellers in Bloomington and Normal, which further suggests a need to improve

apartment recycling programs.
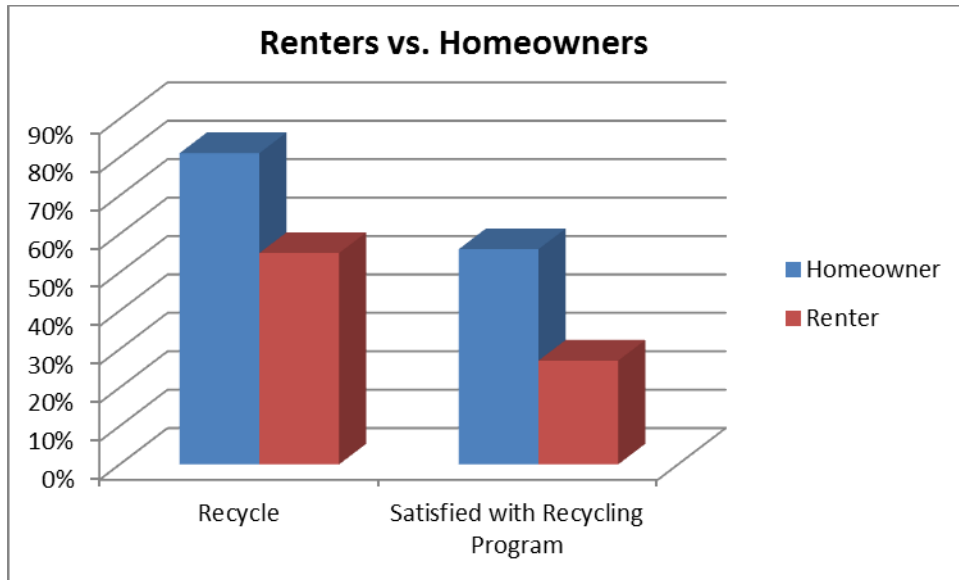
Figure 4. Recycling Participation and Satisfaction

Informing residents of garbage collection. The two best ways to inform residents of

collection updates are through direct mail and fliers. 74% of respondents indicated they would

like to receive updates through the mail while 53% indicated that fliers would inform them the

best. 27% of respondents indicated Radio/TV as the best way to inform them of collection

updates, and 34% of respondents indicated e-mail as the best way. This is important because

radio/TV advertisements can be expensive and according to these results would be a waste of

money.

Unexpected Findings

Transportation. Out of the respondents who do not recycle, 14% reported that they do

not recycle because they do not have transportation. This low percentage implies that this is not

that important a barrier to recycling, which is not in accordance with some of the key informant

interviews.

Household hazardous waste. Although only 11% of respondents said that they recycle household hazardous waste (HHW), there is more support for HHW collection than for a curbside program in terms of willingness to pay. 50% of respondents would pay at least 5 dollars for HHW pick up compared to 26% for curbside. This may be because people may not want to pay for something they already have. Currently no one has HHW pick up. This result also suggests a strong desire by residents to recycle their HHW.

City-wide composting program. Only 13% of respondents currently compost which may imply that residents do not know what composting is or how to do it, but 43% of respondents support a city-wide composting program which suggests that residents would like to compost but do not have the necessary knowledge in order to do so, as shown in Figure 3 above, Expanding Recycling Programs.

Bivariate Correlations

A bivariate correlation is a statistical test used to determine the nature of the relationship between two variables. In the following section we will look at bivariate correlations that were computed to determine how recycling participation rates, motivations for recycling (or not), satisfaction with services, and support for new programs related to factors such as location, income, age groups, homeownership status, and children (under eighteen years of age) living in the home.

Recycling participation. There is a significant positive relationship between the city a person lives in and whether or not they practice recycling. The positive relationship indicates that respondents that live in Bloomington have a greater propensity to recycle than respondents in Normal. There is a significant negative relationship with annual household income and recycling participation. This indicates that respondents with higher incomes are less likely to participate in

recycling than respondents with lower incomes. There is a significant negative relationship between age and recycling practice. This indicates that older respondents are less likely to practice recycling. The number of children in the household does not have a significant relationship with the participation of recycling. There is a significant positive relationship between home ownership status and recycling practice. This means that homeowners are more likely to recycle than are non-homeowners. This result is in accordance with the previous literature. Figure 5 reveals which areas in the community participate in the current recycling programs.

Percentage of People Who Recycle by Census Tract

- Inconclusive Data
- Less than 50%
- 51-75%
- 76-90%
- 91-100%

Bloomington Normal Border

0   0.375 0.75   1.5   2.25   3
Miles

Data Source: Stevenson Center for Applied Community and Economic Development
GIS Sources: USGS, US Census Bureau
Cartographer: Phillip Dawson
December 6, 2011
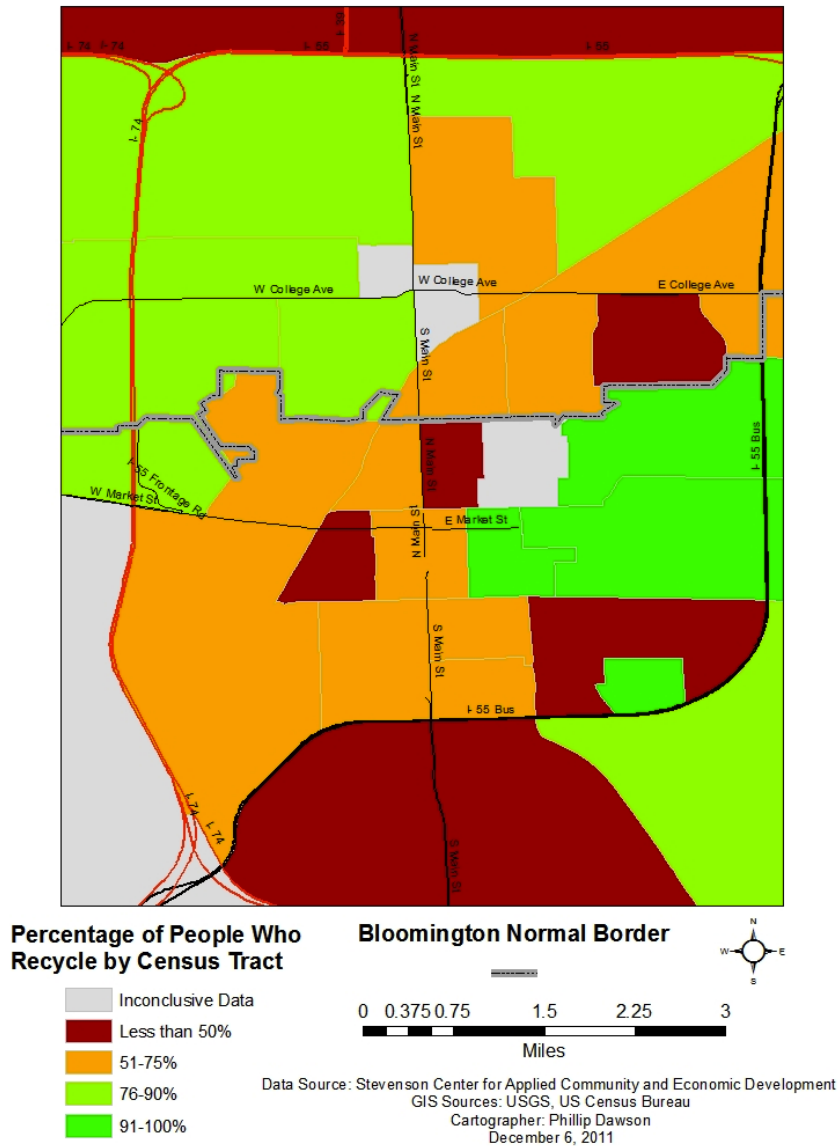
Figure 5. Recycling Participation Rates by Census Tract

There is a significant negative relationship between where a person lives and their satisfaction with recycling. This indicates that respondents of Bloomington are more satisfied than the respondents in Normal. There is a significant positive relationship with annual household income and satisfaction with recycling. This indicates that respondents with higher incomes are more satisfied with their recycling than respondents with lower incomes. There is a significant positive relationship at the level between age and satisfaction with recycling. This

30

indicates that older respondents are more satisfied with their recycling than younger respondents. The number of children in the household does not have a significant relationship with satisfaction of recycling. There is a significant negative relationship between home ownership status and satisfaction with recycling. This means that respondents who own their home are more satisfied with recycling than are respondents who do not own their home.

Table 5: Bivariate Correlation - Satisfaction Index

		Recycle SatisIndex1	Home ownership status	Age	Where do you live	Annual Household Income	Children in household under 16
Recycle SatisIndex1	Pearson Correlation	1	-.221**	.408**	-.425**	.217**	-.118
	Sig. (2-tailed)		.000	.000	.000	.001	.062
	N	255	252	251	254	226	252

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Motivations of recycling participant. Table 6 shows that significant correlations exist between the location of a home and the reason respondents recycle. The significant variables were: "to save money", "because it is pleasant" and "because it is good for the environment". A negative relationship exists with "saves them money" or "they find it pleasant" which indicates that respondents in Bloomington are more likely than residents of Normal to recycle for these reasons. The positive relationship with the variable "good for the environment" indicates that Normal respondents are more likely to agree with this statement than Bloomington respondents. There are no significant indicators between motivation and homeownership status. There is a significant negative relationship between household income and respondents who report that they participate in recycling because they agree that it is "expected of them". This indicates that respondents with lower reported annual household incomes are more likely to agree that they recycle because they feel it is "expected of them". There is a significant positive relationship

between age and respondents who report that they participate because they agree it "saves money", "they want others to think of them as responsible" and they "feel it is a pleasant activity". The positive relationship indicates that older Respondents are more likely to agree that these are three motivations to why they recycle.

Table 6: Bivariate Correlations - Recycling Participants' Motivation for Recycling

		Saves Money	Socially Responsible person	Others	Pleasant Activity	Expected	Good For Environent	Reduce Landfill
Where do you live	Pearson Correlation	-.227**	.060	-.026	-.201**	.007	.149*	.113
	Sig. (2-tailed)	.002	.413	.726	.006	.919	.041	.126
	N	185	186	187	183	187	187	186
Home Ownership Status	Pearson Correlation	-.009	.035	-.025	-.119	.042	-.043	-.032
	Sig. (2-tailed)	.901	.638	.732	.111	.571	.564	.672
	N	182	184	184	181	184	185	183
Annual Household Income	Pearson Correlation	-.110	-.050	-.086	-.030	-.177*	-.038	-.068
	Sig. (2-tailed)	.157	.522	.266	.702	.022	.630	.381
	N	168	167	169	165	169	166	166
Age	Pearson Correlation	.252**	-.007	.295**	.180*	.109	-.035	.042
	Sig. (2-tailed)	.001	.930	.000	.016	.143	.636	.569
	N	182	183	184	180	184	184	183

** Correlation is significant at the 0.01 level (2-tailed).
 * Correlation is significant at the 0.05 level (2-tailed).

Motivations of non-recycling participants. Table 7 shows significant relationships exist between the location of the home and the reasons respondents do not recycle. The significant variables were: inconvenience, lack of transportation and do not have curbside. The positive relationship between these variables indicates that the residents of Normal agree with these three factors as barriers to participation in recycling. There are no significant indicators between motivation and home ownership status. There is a positive relationship between age and the following three variables: "does not personally benefit me", "does not benefit the community"

and "it is difficult to know what items can be recycled". This indicates that those that reported being in higher age groups agree that these are reasons why they do not recycle. Respondents in different income brackets do not have significantly different motivations to recycle.

Table 7: Bivariate Correlations – Non Recycling Participants' Reasons for not Recycling

		Personal Benefit	Benefit Community	Do not Know What to Recycle	Do Not Have Time	Do Not Have Enough Recyclables
Home ownership status	Pearson Corr.	.048	-.203	-.172	-.121	.046
	Sig. (2-tailed)	.710	.105	.171	.338	.717
	N	63	65	65	65	65
Age	Pearson Corr.	.293[*]	.283[*]	.251[*]	.158	.132
	Sig. (2-tailed)	.020	.022	.043	.210	.295
	N	63	65	65	65	65
Where do you live	Pearson Corr.	-.034	.123	-.089	-.129	-.140
	Sig. (2-tailed)	.793	.328	.479	.305	.267
	N	63	65	65	65	65
Annual Household Income	Pearson Corr.	.014	.078	.129	.134	-.061
	Sig. (2-tailed)	.917	.562	.338	.320	.653
	N	56	57	57	57	57

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Table 7: Bivariate Correlations – Non Recycling Participants' Reasons for not Recycling (cont.)

		Do Not Have Storage	Do Not Know Where to Recycle	Inconvenient	No Transportation	No Curbside
Home ownership status	Pearson Corr.	-.075	.024	.018	.072	-.200
	Sig. (2-tailed)	.549	.851	.888	.571	.110
	N	66	64	65	64	65
Age	Pearson Corr.	.024	.206	.014	.057	-.177
	Sig. (2-tailed)	.849	.102	.914	.654	.158
	N	66	64	65	64	65
Where do you live	Pearson Corr.	-.043	-.049	.294*	.276*	.544**
	Sig. (2-tailed)	.732	.702	.017	.027	.000
	N	66	64	65	64	65
Annual Household Income	Pearson Corr.	.094	.083	.221	-.202	.219
	Sig. (2-tailed)	.481	.545	.098	.136	.101
	N	58	56	57	56	57

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Knowledge about recycling and participation. There is significant evidence that there is a positive relationship between the knowledge that people have about recycling and their recycling participation. Of the people that do recycle, 72% of them feel that they have the knowledge they need about their recycling program. Of the people that do not recycle, 78% of them feel that they do NOT have the knowledge they need about their recycling program.

There is significant indication that there is a positive relationship between awareness of the Ecology Action Center (EAC) and recycling participation. Of the people that do NOT have the knowledge they need about recycling, 75% of them are NOT at all aware of the EAC, and of the people that do NOT recycle, 80% of them are NOT at all aware of the EAC. Of the people that do have the knowledge they need about recycling, 48% of them are not at all aware of the EAC, and of the people that do recycle, 52% of them are not at all aware of the EAC.

Support for New Programs

Bottle deposit program. There is a significant positive relationship with homeownership status and a bottle deposit program, which indicates that people who do not own homes are more likely to agree with starting a bottle deposit program than homeowners. There is a significant negative relationship between age and a bottle deposit program which indicates that people in younger age groups are more likely to support a bottle deposit program. There is a significant positive relationship with household location and support for bottle a deposit program indicating that people in Normal are more willing to support a bottle deposit program. There is a significant negative relationship with income groups and support for a bottle deposit program indicating that people in higher income brackets are less supportive of a bottle deposit program.

City-wide composting. There is a significant negative relationship between age and agreement on a city-wide composting program. This indicates that younger age groups are more likely to agree with having a city wide composting program. There is a significant positive relationship with location and agreement on a city-wide composting program. This indicates that individuals in Normal support a city-wide composting initiative.

Mandatory recycling for public schools. There is a significant negative relationship between income and mandatory recycling for public school districts, indicating that people in higher income groups are less likely to agree with supporting a mandatory recycling program for public schools.

Apartment recycling program. There is a significant negative relationship between income and apartment recycling programs. This indicates that people in higher income groups are less likely to agree with supporting an apartment recycling program.

Table 8: Bivariate Correlations - Support for New Programs

		Bottle Deposit Program	City-wide Composting Program	Pay as You Throw Program	Mandatory Recycling for Public School Districts	Apartment Recycling Program
Home Ownership Status	Pearson Correlation	.172**	.047	.062	-.003	.048
	Sig. (2-tailed)	.004	.438	.304	.961	.425
	N	274	272	273	276	276
Age	Pearson Correlation	-.230**	-.170**	-.019	.004	-.106
	Sig. (2-tailed)	.000	.005	.759	.950	.078
	N	273	271	272	275	275
Where do you live	Pearson Correlation	.162**	.122*	.067	.042	.088
	Sig. (2-tailed)	.007	.043	.266	.481	.142
	N	276	274	275	278	278
Annual Household Income	Pearson Correlation	-.235**	-.041	-.124	-.136*	-.147*
	Sig. (2-tailed)	.000	.523	.054	.033	.021
	N	245	244	243	246	246

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

T-Tests

   T-tests are a basic statistical technique used to determine if there is a significant difference between the means of two independent groups. In the following section we will look at T-tests that were computed to determine the specific difference in satisfaction between age groups, location, income groups and homeownership status. We will also discuss the T-tests computed to determine a difference in the mean support for different waste management programs between age groups, location, income groups and homeownership status.

   Age. There is a significant difference in satisfaction between age group 1 (18-44), age group 2 (45-64) and age group 3 (65+). Age group 1 reports a mean of 2.87, age group 2 reports a mean of 3.55, and age group 3 reports a mean of 3.85. This data indicates that respondents who are 65+ are on average more satisfied than other age groups. Furthermore, respondents

between the ages of 45 to 64 are on average, more satisfied than respondents between the ages of 18 to 44.

 Location. There is a significant difference in the level of satisfaction based on where a participant lives. The mean satisfaction level of Bloomington residents is reported as 3.61 and the mean satisfaction level of Normal respondents is reported as 2.79. This test indicates that there is a significant difference, where respondents in Bloomington are, on average, more satisfied than respondents in Normal. Figure 6 reveals that Bloomington residents are more satisfied with the recycling services available compared to the residents in Normal.
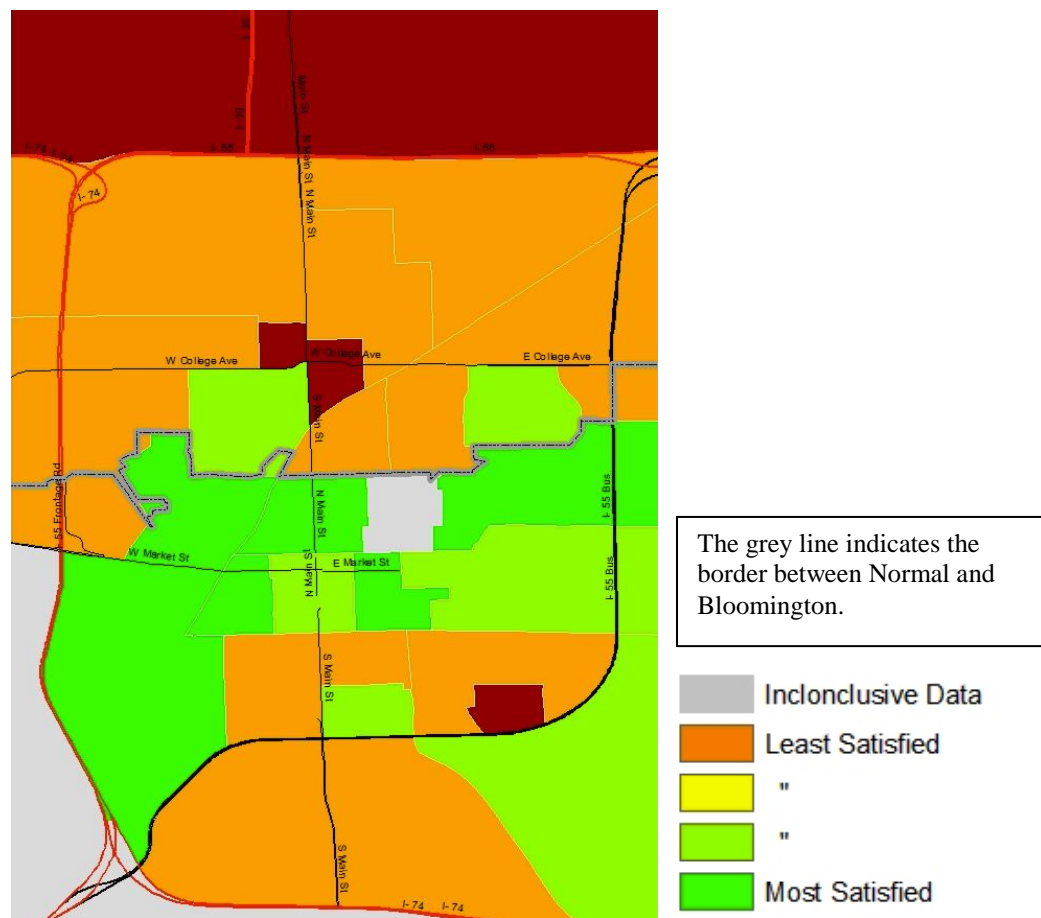
Figure 6. Satisfaction for Recycling Services by Census Tract

Income. There is no significant difference in satisfaction between low income respondents and middle income respondents. There is a significant difference in the satisfaction level of low income respondents and upper income respondents. The mean satisfaction level of low income respondents is 3.00 and the mean satisfaction level of upper income respondents is 3.51. There is also a significant difference in the satisfaction level of middle income respondents and upper income respondents. The mean satisfaction level of middle income respondents is 3.19, compared with 3.51 for upper income respondents. This data indicates that respondents in the upper income category are on average more satisfied than respondents with lower reported household incomes.

Home ownership status. There is a significant difference in mean satisfaction of recycling programs between homeowners and renters. Homeowners record a mean satisfaction of 3.45 and renters record a mean satisfaction of 2.83. Thus, homeowners on average are more satisfied than renters.

Support for New Waste Management Programs Based on Age Groups

Bottle deposit program. There is a significant difference in the means of age group 1 (18-44) and age group 2 (45-64) in their support of a bottle deposit program. The respondents in age group 1 report a mean of 3.70 in support of a bottle deposit program, whereas respondents in age group 2 report a mean of 3.13 in support of a bottle deposit program. Thus, indicating that those in age group 1 are more supportive of this program. The same is reported to be true of the difference in the means of age groups 1 and 3 (65+), whereas age group 1 is reported to be more supportive of the bottle deposit program than age group 3 whose mean is 3.04. This indicates that as age increases, respondents are less likely to support a bottle deposit program.

City-wide composting program. There is a significant difference in the means of age group 1 (18-44) and age group 2 (45-64) in their support of a city-wide composting program. The respondents in age group 1 report a mean of 3.60 in support of a city-wide composting program, where respondents in age group 2 report a mean of 3.29. The same is reported to be true of the difference in the means of age groups 1 and 3, whereas age group 1 is reported to be more supportive of the programs than age group 3 (65+) whose mean is 3.17 for a composting program. This indicates that as age group increases, respondents are less likely to support a city-wide composting program.

City-wide composting and bottle deposit program. The data indicates that individuals under the age of 45 are more likely to be the most supportive of a bottle deposit program and a composting program.

Support for New Programs Based on Location

Bottle deposit program. There is a significant difference in the means of individuals who support a bottle deposit program based on whether or not they live in Bloomington or Normal. The respondents who live in Normal have reported a mean of 3.60 and the respondents of Bloomington have reported a mean of 3.21. Thus, respondents of Normal are on average more supportive of this program.

City-wide composting program. There is a significant difference in the means of individuals who support a composting program based on whether they live in Bloomington or Normal. The respondents who live in Normal have reported a mean of 3.54 and the respondents of Bloomington have reported a mean of 3.29. Thus, respondents of Normal are on average more supportive of this program initiative. Further support of this finding is found in a frequency

cross-tabulation that indicates there are a higher proportion of households in Normal that participate in composting, than in Bloomington.

Support for New Programs Based on Income-levels

  Bottle deposit program. There is a significant difference in the means of low income residents and middle income residents for their support of a bottle deposit program. Respondents in the low income group reported a mean of 3.77 and respondents in the middle income group have a reported mean of 3.36. There is also a significant difference in the means of low income residents and upper income residents for their support of a bottle deposit program. Respondents in the upper income group have a reported mean of 3.07. Thus, for those in the lower income group, respondents are more supportive of the bottle deposit program. There is no significant difference between the middle income group and the upper income group for support of this program.

  Apartment recycling program. There is a significant difference in the means of low income residents and upper income residents for their support of an apartment recycling program. Respondents in lower income group reported a mean of 4.12 and respondents in the upper income group have a reported mean of 3.80. There is a significant difference in the means of middle income residents and upper income residents for their support of an apartment recycling program. Respondents in middle income group reported a mean of 4.07. Thus, those that are in the middle income group are more supportive of this program. Overall this indicates that support for an apartment recycling program decreases with increases in annual household income.

Support for New Programs Based on Home-ownership Status

Bottle deposit program. There is a significant difference in the means of those who support a bottle deposit program based on their home ownership status. Respondents who own a home reported a mean of 3.22, whereas respondents who rent reported a mean of 3.80 in support of a bottle deposit program. This indicates that those who rent would be more supportive of this program.

Relating the Findings to Previous Research

One primary reason for recycling mentioned in the literature is general environmental concerns, which is consistent with our findings. The literature also stressed social responsibility as a motivator for recycling. Our results were in accordance with this theory. Also, the literature claims that higher education, income levels, and home ownership led to increased recycling rates. We found similar results in respect to education levels and homeownership status but not with respect to income. This could be due to the fact that our sample had a relatively high level of income compared to the previous studies (Owens et al., 2000).

Further, the literature states external factors had more influence on the development of recycling habits, such as economic incentives. In our findings, economic incentives were a weak motivator for recycling overall, but there are some significant relationships between saving money and certain demographic segments of the respondents. The bottle deposit program receives support from half of the respondents, and there is some correlation between the bottle deposit program and certain demographic segments. Some respondents commented that more economic incentives would help to increase recycling rates.

The literature also stressed social responsibility as a motivator for recycling. Our results were in accordance with this theory. Researchers have found that "pay as you throw" or unit-

based pricing systems are effective in increasing recycling efficiency and improving waste reduction levels. However, our findings do not suggest the majority of residents would support this program. The literature indicates that curb-side recycling can be more cost-effective for local governments, and our findings demonstrate that there is much support for the expansion of the curb-side recycling program in Normal.

Relating the Findings to the Guiding Research Questions

1.) What community actions, program operations, incentives or policies will optimize recycling behaviors? As evident from our findings, expanding the curbside recycling program would be beneficial in increasing recycling behaviors. Also, better maintenance and more frequent pick up at drop-off locations could improve recycling rates. More programs that involve economic incentives may be useful in improving recycling behaviors for certain demographics as well, such as a bottle deposit program. There is also some evidence that a household hazardous waste recycling program may have some benefit, and there is some support for a composting program. A mandatory recycling for public schools may also be beneficial. There a significant lack of knowledge about recycling programs, and the Ecology Action Center. Increased education and promotion of these programs would be highly beneficial.

2.) What are the current perceptions of recycling programs, unmet needs, and recycling behaviors among Bloomington-Normal residents? Generally most respondents are satisfied or neutral with the recycling program. A recurrent theme in our findings is that there is a lack of convenient recycling programs in Normal, and in apartments more specifically. Expanding single-stream curb-side recycling programs to Normal would fulfill an unmet need of these residents, and setting programs up for apartment complexes would fulfill this need for renters. Also, there is some evidence that expanding recycling programs to include trailer parks is

warranted as they are currently left out. A large proportion of respondents feel that they do not have adequate knowledge of their recycling programs and feel that they do not have adequate knowledge of drop-off locations.

The most common motivations for recycling by respondents is due to the desire to be a socially responsible person and because it is good for the environment. We also found that although there is a desire to expand and improve the recycling program, people do not want to have to pay for these improvements. This suggests that although residents do believe recycling is an important community issue, they do not feel it is important enough to warrant payment.

VI. STRENGTHS AND LIMITATIONS OF THE STUDY

Strengths of the Study

The study had many strengths which are briefly summarized in the following discussion. We analyzed the behavior and perceptions of both receivers and providers of recycling services using both qualitative and quantitative methods. This richness of data sources (recycling service receivers and providers) and data types (qualitative and quantitative) legitimizes our findings. Our discussions with key informants helped us create a survey specifically for Bloomington-Normal residents. The survey itself was designed to find information about respondent's current recycling habits and perceptions and attitudes towards recycling, giving us a comprehensive picture of residential recycling in Bloomington-Normal. Furthermore, the questionnaire successfully addressed our research questions and goals. We were able to gather enough data to provide public officials as well as the EAC information about citizens' needs and concerns regarding current recycling services, along with recommendations for community leaders, the EAC, school districts, property managers, and waste disposal companies. The questionnaire's rate of response was likely increased by utilizing a face-to-face contact method of delivery. The

simple random sample provided an accurate demographic representation of Bloomington-Normal.

Challenges of the Study

One major challenge was conducting a study in two neighboring communities with different policies on recycling. Normal utilizes a drop-off method for recycling, placing containers in fifteen different locations, whereas Bloomington utilizes bi-monthly curbside pickup. It is difficult to provide findings and recommendations spanning across both communities due to the different recycling practices in the communities. As such, our recommendations are written to address the broader community of Bloomington-Normal as a whole, and then broken down to specific recommendations for each individual community.

Limitations of the Study

One potential limitationof the study is the time constraint placed on the researchers and surveyed residents. This time constraint prevented the researchers from conducting pre-test or follow up measures, which are common quality-assurance methods in social science research. Also, our sample size was reduced by barriers, including apartment buildings with locked front doors, road construction, and no-soliciting signs. There was a possibility of lost or damaged samples due to wind and rain. Lack of communication among participants within households could have also led to lost questionnaires. The time of year the study was conducted may have had an adverse effect on ability of researchers to reach participants. Due to the time of sunset, evening hour availabilities of survey distribution were limited, which may have prevented researchers from reaching some households where the participants worked conventional hours. Along the same vein, much of the research was conducted during weekend days, which may have excluded residents working during the weekend.

Our questionnaire was geographically limited to Bloomington and Normal despite the fact that our client, the Ecology Action Center, provides education and other services to the entire county. It does not accurately assess the recycling behaviors and attitudes of residents of the greater McLean County area, some of whom participate in Normal's drop-off recycling program. Furthermore, this questionnaire only covered residential recycling, and did not attempt to capture commercial recycling trends.

The respondents may have had some difficulty understanding some of the concepts presented in the questionnaire. For instance, respondents did not seem to know what "pay as you throw" meant, based on their comments and the response rate for this question. It is therefore difficult to recommend policy based on this topic.

Finally, as with many questionnaires, there is a chance of self-reporting bias. Self-reporting bias is the tendency of a respondent to report a certain answer based upon its social desirability. In our case, it may have been possible that respondents identified as recyclers, because they believed that that was what the researchers wanted to hear.

VII. RECOMMENDATIONS AND FUTURE RESEARCH

Recommendations for the City of Bloomington and Town of Normal

*S*urvey respondents from lower-income neighborhoods were less satisfied with current programs. As several key informants indicated, recycling in West Bloomington and North Normal is difficult due to transportation problems, language barriers, and a lack of recycling outreach. It is possible that these communities are currently under-served by existing programs. We recommend that both Normal and Bloomington explicitly examine their recycling services and recycling awareness in these neighborhoods with the ultimate goal of offering more feasible programming for these residents. Our datashowed that there is low satisfaction among non-

homeowners in both Bloomington and Normal. Furthermore, fewer non-homeowners recycle, possibly due to the fact that they do not have easily accessible recycling services. We recommend that the Bloomington City Council and Normal Town Council brainstorm policy and pursue further study into apartment recycling programs. One possible area to study is the feasibility of ordinances requiring landlords to provide recycling services to tenants. We recommend that landlords and property managers be specifically included in programming which may incentivize their recycling participation. This may include curbside pick-up options.

As our findings have indicated, younger survey respondents, non-homeowners, respondents in middle to lower income brackets, and respondents living in Normal are more likely to support the Bottle Deposit Program. While opportunities to pursue a program such as this might be limited, in lieu of relative successes in other states (see especially Viscusi et al. 2010), communities such as Bloomington-Normal may urge communities similar to their own to research public opinion regarding this program, and communicate potential benefits to appropriate state officials to try to generate support for a state-wide Bottle Deposit Program. Additionally, results showed that younger respondents and respondents living in Normal are more likely to support the City-wide Composting Program. A total of 40% of respondents support the implementation of such a program. Although additional education regarding composting is relevant in this case, it may be pertinent to offer increased opportunities for composting to the interested groups while additionally increasing public awareness of the benefits of composting.

There was overwhelming support for mandatory recycling in public schools and for an apartment recycling program. We recommend that community leaders and the EAC take these

findings to school boards and apartment management companies and begin working out plans to implement such programs.

Our survey found that fliers and direct mail are the preferred methods of contact to inform residents of recycling policy and services. If a need to contact residents regarding programming arises or if the cities wish to inform residents of programming in light of poor residential awareness, these are the most effective methods to do so. Furthermore, updates to the website with up-to-date and accessible information about recycling programs will help residents seeking information about services offered. Some examples include easy-to-find and up-to-date information on curbside pick-up dates and procedures in Bloomington, and a clear mapping/description of drop-off locations and procedures in Normal. These should be easy to find via a direct link from the main websites of both communities.

Recommendations for the City of Bloomington

The City of Bloomington plans to switch from its current system of single stream using 14 and 33 gallon bins to a new automated single stream system using 96 gallon flip-top bins. Based upon comments obtained from our questionnaires, it is recommended that Bloomington enact this switch. However, our findings indicated that there is a general lack of awareness about recycling programs, as 40% of respondents indicated that they do not have the knowledge they need about current recycling programs in Bloomington-Normal. This information gap could be exacerbated by changes, due to the fact that this new program will be an opt-in one. Because it is a new program, it is important for the citizens of Bloomington to understand the dimensions of the program, cost distribution, and what this will mean for their recycling capacity. Therefore, an extensive public outreach campaign is recommended to make residents aware of the steps

they need to take to continue receiving recycling services. This public outreach campaign should include the delivery of fliers and/or mail contact. Recommendations for the Town of Normal:

The residents of Normal are generally less satisfied with current recycling programs than residents of Bloomington and were found to recycle less than Bloomington residents. Our study indicates that this is due to a lack of curbside pick-up, as 46% of residents reported not recycling due to a lack of curbside pick-up. Additionally, 47% would recycle more if they had curbside, and 59% reported that they would be willing to pay for the service. We recommend that the Town of Normal begin investigating possible curbside pick-up options for recycling using best practices and observations from Bloomington's experience. Furthermore, Normal survey respondents indicated that the recycling collection bins were often overflowing, and 16% were dissatisfied with drop-off locations. We recommend a higher removal frequency from high-traffic collection bins and an analysis of potential additional locations for collection bins.

Recommendations for the Ecology Action Center

We recommend that the Ecology Action Center improve awareness of the programs they offer, because 57% of respondents have no knowledge of EAC programs. Upon browsing through the EAC resources, there were several deficiencies which could easily be addressed. The EAC website could use a revamp, so that its programs are more prominent and accessible to the public. More information about the programs offered by the EAC would also be useful, presented in a way which stands out to visitors.

Only 13% of respondents indicated that they currently compost, but 43% indicated that they would support a city-wide composting initiative. There was strong support for implementing a household hazardous waste collection program, as 72% of respondents indicated they would be willing to pay a yearly fee. Of those in support, 47% would be willing to pay up

to ten dollars a year, 19% would pay between $11-$0 a year, and 6% would pay $21 or more a year. Seniors are less aware about recycling programs than the younger generation. Outreach programs targeted towards seniors should be a focus of the EAC so as to increase senior participation rates.

As there are no hazardous household waste (HHW) collection practices currently in effect, the EAC may want to look into the creation of a program to deal with HHW. Survey results indicated that only 11% of respondents recycle HHW, and 50% indicated a willingness to pay an extra five dollars per year for the collection of HHW.

Recommendations for School Districts

Although this study was directed at individual households, 71% of respondents indicated support for implementing a mandatory recycling requirement for public school districts in Bloomington-Normal. For this reason, we urge local superintendents and school boards to seriously consider implementing recycling programs in area schools. In addition to diverting the large amount of solid waste generated by schools to recycling, this also exposes children to the habit, and can turn them into lifelong recyclers. They may be likely to take the practice home with them which increases recycling in general.

Recommendations for Property Management Companies

Non-homeowners have recycling needs that are not met with current programming. Property management companies may find it prudent meet with council members to discuss ideas about how to fill this service gap. One possibility could be to reexamine the Town of Normal's current drop off locations. Property management companies deal largely with students that may not have adequate transportation to take items to the drop off locations. If possible, perhaps these locations could be moved near clusters of apartment buildings making it easier for

apartment dwellers to participate in recycling. If cost effective, new drop off locations could be added to these areas to maintain current recycling rates. Also of note, each community could enact ordinances that require apartment companies to recycle.

Recommendations for Waste Disposal Companies

Waste disposal companies in Bloomington and Normal have the unique position of working in an industry whose future will increasingly include recycling services. We recommend that these companies look for opportunities to expand their services to include recycling services, particularly for non-permanent residents (students) and apartment dwellers.

Recommendations for Improving Program Awareness

Seventeen percent of respondents indicated that they did not know where to take their recycling and cited this as their reason for not recycling. Overall, more residents were dissatisfied with educational and outreach program; 57% of respondents were not at all aware of EAC programs; and 38% of respondents reported not having sufficient knowledge regarding recycling programs. This recurring theme throughout the data reveals disconnect and a loss of information between the providers of recycling service and the receivers of service. We suggest that Bloomington-Normal increase awareness of recycling programs through community outreach programs, as our study found that respondents who felt they had more knowledge about recycling tended to recycle more. The study showed that there are multiple gaps and areas for improvement in our community's recycling programs, and we hope that these findings are useful for the leaders of our community's sustainability efforts.

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APPENDIX A

Key Informant Interview Protocol

1. Please tell us about your position/job/role.

   a. How does this position relate to recycling?

   b. Do you have any responsibility for recycling? (to property managers)

2. How do you see recycling as having evolved in the community?

   a. What direction do you think it should take in the future

3. What do you think are some of the challenges to recycling for residents?

   a. Barriers for optimal effectiveness

4. What is your overall view on the effectiveness of the current recycling program?

   a. What improvements would you like to see?

5. Please tell us about any community programs you know about that educate or encourage recycling.

6. Is there anything else you would like to tell me?

7. Is there anyone else we should talk to?

8. If you would like a copy of the completed document, we can provide that for you.

Survey Instrument

STEVENSON CENTER
FOR COMMUNITY AND ECONOMIC DEVELOPMENT
Illinois State University

Community-Wide Recycling Assessment

The Stevenson Center for Community and Economic Development at Illinois State University and the Ecology Action Center are conducting this survey to learn about residents' perceptions, concerns, and current activities regarding recycling and solid waste management. Your input will help inform public officials and the Ecology Action Center about citizens' needs and concerns and help guide the creation of future programs and activities within the Bloomington-Normal community. Thank you for taking the time to contribute to this study. Your participation is much appreciated!

(For Office Use tract #_____)

Section 1: Current Waste Management and Recycling Behaviors

1. **Overall, how satisfied are you with the current recycling program in your area?**

Very Dissatisfied	Dissatisfied	Neutral	Satisfied	Very Satisfied
1	2	3	4	5

2. Does your household currently recycle? If NO, skip to #7.

☐ Yes   ☐ No

3. What traditional materials does your household recycle? Check all that apply.

☐ Aluminum cans   ☐ Milk jugs/plastic containers

☐ Magazines/catalogues/junk mail   ☐ Tin cans

☐ Green yard waste   ☐ Plastic bottles

☐ Cardboard   ☐ Newspaper

☐ Other(s)_____

4. What nontraditional materials does your household recycle? Check all that apply.

☐ Motor oil   ☐ Paint

☐ Household hazardous waste   ☐ Batteries

☐ Clothing   ☐ Electronics   ☐
     Other(s)_____

5. Do you currently have curbside recycling at your home? If NO, skip to #7.

☐ Yes   ☐ No

6. How often do you set out materials for recycling collection at your home?

☐ Every other week   ☐ Once a month   ☐ Other_____

7. Does your household currently compost (food/yard waste) on your property?

☐ Yes   ☐ No

8. How often do you use a recycling drop-off location in Normal or Bloomington?

☐ More than once a week ☐ Once a week ☐ More than once a month

☐ Once a month ☐ Less than once a month ☐ Never

9. How satisfied are you with the location of the recycling drop-off locations?

Very Dissatisfied	Dissatisfied	Neutral	Satisfied	Very Satisfied
1	2	3	4	5

10. How satisfied are you with the current garbage and recycling services you receive?

	Level of Satisfaction				
	Very Dissatisfied	Dissatisfied	Neutral	Satisfied	Very Satisfied
A. Trash service	1	2	3	4	5
B. Availability of recycling programs	1	2	3	4	5
C. Materials collected by recycling program	1	2	3	4	5
D. Responsiveness of haulers to problems or complaints	1	2	3	4	5
E. Cost of recycling & garbage service	1	2	3	4	5
F. Town/City's educational programming and outreach pertaining to recycling	1	2	3	4	5

11. Do you feel you have the knowledge and information you need about your city's recycling program to recycle effectively?

☐ Yes   ☐ No

12. What are the best ways to inform you about garbage collection updates? (Please check up to THREE)

☐ Residential mail delivery   ☐ Flyers at your door   ☐ Email

☐ Radio or television news   ☐ Other_____

Section 2: Motivations and Barriers for Recycling

Please circle your level of agreement with the following statements:

13. I recycle because:	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	I Do Not Recycle
a. It saves me money.	1	2	3	4	5	0
b. I want to be a socially responsible person.	1	2	3	4	5	0
c. I want other people to think of me as a responsible person.	1	2	3	4	5	0
d. I find it to be a pleasant activity.	1	2	3	4	5	0
e. I feel it is expected of me.	1	2	3	4	5	0
f. It is good for the environment.	1	2	3	4	5	0
g. It reduces materials in the landfill.	1	2	3	4	5	0
h. Other_____	1	2	3	4	5	0

14. I <u>do not</u> recycle because:	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	I Do Recycle
a. Recycling does not benefit me personally.	1	2	3	4	5	0
b. Recycling does not benefit the community.	1	2	3	4	5	0
c. It is difficult to know what items can be recycled.	1	2	3	4	5	0
d. It takes too much time.	1	2	3	4	5	0
e. I do not have enough recyclables.	1	2	3	4	5	0
f. It's too difficult to find room for temporary storage of recyclable items.	1	2	3	4	5	0
g. I don't know where to take recycling.	1	2	3	4	5	0
h. The recycling location is not convenient.	1	2	3	4	5	0
i. I don't have transportation to take recycling to a drop-off location.	1	2	3	4	5	0
j. I do not have curb-side recycling.	1	2	3	4	5	0
k. Other_____	1	2	3	4	5	0

15. I would be willing to pay the following monthly fee for curb-side recycling collection:

☐ None   ☐ $1-4   ☐ $5-10   ☐ $11-20   ☐ $21+

Section 3: Desires for Future Recycling Opportunities

16. What is the likelihood you would recycle more if you were offered curb-side recycling? (If you currently have curb-side recycling, please SKIP to # 17)

☐ I would not   ☐ Sort of likely   ☐ Likely   ☐ Very likely

17. How important do you think it is to have community-wide curb-side recycling service available to all Bloomington-Normal residents?

☐ Essential   ☐ Important   ☐ Somewhat important   ☐ Not at all Important

18. I would be willing to pay the following yearly fee to ensure annual household hazardous waste collection in Bloomington-Normal.

☐ None   ☐ $1-4   ☐ $5-10   ☐ $11-20   ☐ $21+

19. How aware are you of the Ecology Action Center's recycling, household hazardous waste, and composting information?

☐ Not at all aware   ☐ Somewhat aware   ☐ Very aware

20. Please circle your level of agreement for potential new waste management or recycling programs for Bloomington-Normal.

Bloomington-Normal should start a…	Level of Agreement				
	Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
A. Bottle deposit/return program (5 cents back per can/ bottle taken to depositories located around town).	1	2	3	4	5
B. City-wide composting initiative.	1	2	3	4	5
C. Pay as you throw program. (Residents pay for trash by weight)	1	2	3	4	5
D. Mandatory recycling requirement for public school districts.	1	2	3	4	5
E. Apartment recycling program.	1	2	3	4	5

Section 4: Basic Demographics

21. What is your race?

☐ White American   ☐ Hispanic or Latino   ☐ Black or African

☐ Asian   ☐ American Indian or Alaska Native   ☐ Other race

☐ Native Hawaiian or other Pacific Islander   ☐ Two or more races

22. What is your home ownership status?

☐ I own my own home (ie: student, relative) ☐ I rent/sublease ☐ I live with family

☐ Other (Please specify)_____

23. How many children under the age of 16 live in your household?

☐ None ☐ 1-2 children ☐ 3-4 children ☐ More than 4 children

24. What is your highest attained level of education?

☐ Some high school degree ☐ High school diploma/GED ☐ Some College/AA

☐ 4-year College graduate ☐ Some graduate school ☐ Master's degree

☐ Doctorate ☐ Other

25. What is your sex?

☐ Male ☐ Female

26. What is your household annual income?

☐ $10,000 or less ☐ $10,001 to $19,999 ☐ $20,000 to $39,999

☐ $40,000 to $59,999 ☐ $60,000 to $79,999 ☐ $80,000 and up

27. Do you live in Bloomington or Normal?

☐ Bloomington ☐ Normal

28. Please select your age category.

☐ 18-24   ☐ 25-34   ☐ 35-44   ☐ 45-54

☐ 55-64   ☐ 65-74   ☐ 75+

Continued on next page please….

Any additional comments (please use the space below):

_____

_____

_____

_____

Thank you for your input! The information you shared will be useful to the Ecology Action Center as they work to improve recycling services within Bloomington-Normal.

STEVENSON CENTER
FOR COMMUNITY AND ECONOMIC DEVELOPMENT
Illinois State University

Recycling Survey Variable Frequencies

Satisfaction with Recycling

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	very dissatisfied	36	12.5	12.9	12.9
	dissatisfied	38	13.1	13.7	26.6
	neutral	71	24.6	25.5	52.2
	satisfied	77	26.6	27.7	79.9
	very satisfied	56	19.4	20.1	100.0
	Total	278	96.2	100.0	
Missing	99.00	8	2.8		
	System	3	1.0		
	Total	11	3.8		
Total		289	100.0		

Currently Recycle

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	193	66.8	73.1	73.1
	No	71	24.6	26.9	100.0
	Total	264	91.3	100.0	
Missing	99.00	22	7.6		
	System	3	1.0		
	Total	25	8.7		
Total		289	100.0		

Traditional materials aluminum

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	174	60.2	61.3	61.3
	No	46	15.9	16.2	77.5
	Skip	64	22.1	22.5	100.0
	Total	284	98.3	100.0	
Missing	99.00	2	.7		
	System	3	1.0		
	Total	5	1.7		
Total		289	100.0		

Traditional materials magazine catalogues junk mail

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	155	53.6	54.6	54.6
	No	65	22.5	22.9	77.5
	Skip	64	22.1	22.5	100.0
	Total	284	98.3	100.0	
Missing	99.00	2	.7		
	System	3	1.0		
	Total	5	1.7		
Total		289	100.0		

Traditional materials green yard waste

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	70	24.2	24.6	24.6
	No	150	51.9	52.8	77.5
	Skip	64	22.1	22.5	100.0
	Total	284	98.3	100.0	
Missing	99.00	2	.7		
	System	3	1.0		
	Total	5	1.7		
Total		289	100.0		

Traditional cardboard

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	170	58.8	60.1	60.1
	No	50	17.3	17.7	77.7
	Skip	63	21.8	22.3	100.0
	Total	283	97.9	100.0	
Missing	99.00	2	.7		
	System	4	1.4		
	Total	6	2.1		
Total		289	100.0		

Traditional milk jugs plastic

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	173	59.9	61.1	61.1
	No	46	15.9	16.3	77.4
	Skip	64	22.1	22.6	100.0
	Total	283	97.9	100.0	
Missing	99.00	2	.7		
	System	4	1.4		
	Total	6	2.1		
Total		289	100.0		

Traditional tin cans

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	136	47.1	47.9	47.9
	No	84	29.1	29.6	77.5
	Skip	64	22.1	22.5	100.0
	Total	284	98.3	100.0	
Missing	99.00	2	.7		
	System	3	1.0		
	Total	5	1.7		
Total		289	100.0		

Traditional plastic bottles

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	181	62.6	63.7	63.7
	No	39	13.5	13.7	77.5
	Skip	64	22.1	22.5	100.0
	Total	284	98.3	100.0	
Missing	99.00	2	.7		
	System	3	1.0		
	Total	5	1.7		
Total		289	100.0		

Traditional newspaper

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	153	52.9	53.9	53.9
	No	68	23.5	23.9	77.8
	Skip	63	21.8	22.2	100.0
	Total	284	98.3	100.0	
Missing	99.00	2	.7		
	System	3	1.0		
	Total	5	1.7		
Total		289	100.0		

Traditional other

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	29	10.0	10.2	10.2
	No	186	64.4	65.5	75.7
	Skip	69	23.9	24.3	100.0
	Total	284	98.3	100.0	
Missing	99.00	2	.7		
	System	3	1.0		
	Total	5	1.7		
Total		289	100.0		

Nontraditional motor oil

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	34	11.8	12.1	12.1
	No	183	63.3	65.1	77.2
	Skip	64	22.1	22.8	100.0
	Total	281	97.2	100.0	
Missing	99.00	5	1.7		
	System	3	1.0		
	Total	8	2.8		
Total		289	100.0		

Nontraditional household hazardous waste

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	23	8.0	8.2	8.2
	No	193	66.8	68.7	76.9
	Skip	65	22.5	23.1	100.0
	Total	281	97.2	100.0	
Missing	99.00	5	1.7		
	System	3	1.0		
	Total	8	2.8		
Total		289	100.0		

Nontraditional clothing

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	120	41.5	42.7	42.7
	No	98	33.9	34.9	77.6
	Skip	63	21.8	22.4	100.0
	Total	281	97.2	100.0	
Missing	99.00	5	1.7		
	System	3	1.0		
	Total	8	2.8		
Total		289	100.0		

Nontraditional paint

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	29	10.0	10.4	10.4
	No	188	65.1	67.1	77.5
	Skip	63	21.8	22.5	100.0
	Total	280	96.9	100.0	
Missing	99.00	6	2.1		
	System	3	1.0		
	Total	9	3.1		
Total		289	100.0		

Nontraditional batteries

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	76	26.3	27.0	27.0
	No	141	48.8	50.2	77.2
	Skip	64	22.1	22.8	100.0
	Total	281	97.2	100.0	
Missing	99.00	5	1.7		
	System	3	1.0		
	Total	8	2.8		
Total		289	100.0		

Nontraditional electronics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	62	21.5	22.1	22.1
	No	155	53.6	55.2	77.2
	Skip	64	22.1	22.8	100.0
	Total	281	97.2	100.0	
Missing	99.00	5	1.7		
	System	3	1.0		
	Total	8	2.8		
Total		289	100.0		

Nontraditional other

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	9	3.1	3.2	3.2
	No	200	69.2	71.7	74.9
	Skip	70	24.2	25.1	100.0
	Total	279	96.5	100.0	
Missing	99.00	7	2.4		
	System	3	1.0		
	Total	10	3.5		
Total		289	100.0		

Currently have curbside recycling

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	124	42.9	44.9	44.9
	No	152	52.6	55.1	100.0
	Total	276	95.5	100.0	
Missing	99.00	10	3.5		
	System	3	1.0		
	Total	13	4.5		
Total		289	100.0		

How often set out for recycling

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	every other week	100	34.6	37.6	37.6
	once a month	9	3.1	3.4	41.0
	other	16	5.5	6.0	47.0
	Skip	141	48.8	53.0	100.0
	Total	266	92.0	100.0	
Missing	99.00	20	6.9		
	System	3	1.0		
	Total	23	8.0		
Total		289	100.0		

Household currently compost

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	34	11.8	12.9	12.9
	No	230	79.6	87.1	100.0
	Total	264	91.3	100.0	
Missing	99.00	22	7.6		
	System	3	1.0		
	Total	25	8.7		
Total		289	100.0		

How often use recycling dropoff

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	more than once a week	2	.7	.7	.7
	once a week	35	12.1	12.5	13.2
	more than once a month	43	14.9	15.4	28.6
	once a month	41	14.2	14.6	43.2
	less than once a month	67	23.2	23.9	67.1
	never	92	31.8	32.9	100.0
	Total	280	96.9	100.0	
Missing	99.00	6	2.1		
	System	3	1.0		
	Total	9	3.1		
Total		289	100.0		

How satisfied with dropoff locations

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	very dissatisfied	20	6.9	7.6	7.6
	dissatisfied	23	8.0	8.7	16.3
	neutral	110	38.1	41.7	58.0
	satisfied	69	23.9	26.1	84.1
	very satisfied	42	14.5	15.9	100.0
	Total	264	91.3	100.0	
Missing	99.00	22	7.6		
	System	3	1.0		
	Total	25	8.7		
Total		289	100.0		

How satisfied with trash service

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	very dissatisfied	5	1.7	1.8	1.8
	dissatisfied	3	1.0	1.1	2.8
	neutral	36	12.5	12.7	15.5
	satisfied	118	40.8	41.7	57.2
	very satisfied	121	41.9	42.8	100.0
	Total	283	97.9	100.0	
Missing	99.00	3	1.0		
	System	3	1.0		
	Total	6	2.1		
Total		289	100.0		

How satisfied with availability of recycling programs

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	very dissatisfied	27	9.3	9.9	9.9
	dissatisfied	45	15.6	16.5	26.4
	neutral	68	23.5	24.9	51.3
	satisfied	75	26.0	27.5	78.8
	very satisfied	58	20.1	21.2	100.0
	Total	273	94.5	100.0	
Missing	99.00	13	4.5		
	System	3	1.0		
	Total	16	5.5		
Total		289	100.0		

How satisfied with materials collected by recycling

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	very dissatisfied	15	5.2	5.6	5.6
	dissatisfied	27	9.3	10.0	15.6
	neutral	70	24.2	25.9	41.5
	satisfied	93	32.2	34.4	75.9
	very satisfied	65	22.5	24.1	100.0
	Total	270	93.4	100.0	
Missing	99.00	16	5.5		
	System	3	1.0		
	Total	19	6.6		
Total		289	100.0		

How satisfied with responsiveness of haulers to problems

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	very dissatisfied	6	2.1	2.3	2.3
	dissatisfied	10	3.5	3.8	6.1
	neutral	155	53.6	58.7	64.8
	satisfied	46	15.9	17.4	82.2
	very satisfied	47	16.3	17.8	100.0
	Total	264	91.3	100.0	
Missing	99.00	22	7.6		
	System	3	1.0		
	Total	25	8.7		
Total		289	100.0		

How satisfied with cost of recycling and garbage collection

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	very dissatisfied	8	2.8	2.9	2.9
	dissatisfied	24	8.3	8.8	11.8
	neutral	121	41.9	44.5	56.3
	satisfied	83	28.7	30.5	86.8
	very satisfied	36	12.5	13.2	100.0
	Total	272	94.1	100.0	
Missing	99.00	14	4.8		
	System	3	1.0		
	Total	17	5.9		
Total		289	100.0		

How satisfied with educational/outreach programs

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	very dissatisfied	26	9.0	9.7	9.7
	dissatisfied	38	13.1	14.2	23.9
	neutral	151	52.2	56.3	80.2
	satisfied	43	14.9	16.0	96.3
	very satisfied	10	3.5	3.7	100.0
	Total	268	92.7	100.0	
Missing	99.00	18	6.2		
	System	3	1.0		
	Total	21	7.3		
Total		289	100.0		

Do you have knowledge you need about recycling programs

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	163	56.4	60.1	60.1
	No	108	37.4	39.9	100.0
	Total	271	93.8	100.0	
Missing	99.00	15	5.2		
	System	3	1.0		
	Total	18	6.2		
Total		289	100.0		

I recycle because it saves me money

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	31	10.7	11.7	11.7
	disagree	60	20.8	22.6	34.3
	neutral	87	30.1	32.8	67.2
	agree	35	12.1	13.2	80.4
	strongly agree	13	4.5	4.9	85.3
	do NOT recycle	39	13.5	14.7	100.0
	Total	265	91.7	100.0	
Missing	99.00	21	7.3		
	System	3	1.0		
	Total	24	8.3		
Total		289	100.0		

I recycle because I want to be a socially responsible person

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	2	.7	.7	.7
	disagree	4	1.4	1.5	2.2
	neutral	18	6.2	6.7	9.0
	agree	91	31.5	34.1	43.1
	strongly agree	113	39.1	42.3	85.4
	do NOT recycle	39	13.5	14.6	100.0
	Total	267	92.4	100.0	
Missing	99.00	19	6.6		
	System	3	1.0		
	Total	22	7.6		
Total		289	100.0		

I recycle because I want others to think of me as socially responsible

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	21	7.3	7.9	7.9
	disagree	28	9.7	10.5	18.4
	neutral	82	28.4	30.7	49.1
	agree	62	21.5	23.2	72.3
	strongly agree	35	12.1	13.1	85.4
	do NOT recycle	39	13.5	14.6	100.0
	Total	267	92.4	100.0	
Missing	99.00	19	6.6		
	System	3	1.0		
	Total	22	7.6		
Total		289	100.0		

I recycle because I find it to be a pleasant activity

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	10	3.5	3.8	3.8
	disagree	46	15.9	17.5	21.3
	neutral	89	30.8	33.8	55.1
	agree	54	18.7	20.5	75.7
	strongly agree	25	8.7	9.5	85.2
	do NOT recycle	39	13.5	14.8	100.0
	Total	263	91.0	100.0	
Missing	99.00	23	8.0		
	System	3	1.0		
	Total	26	9.0		
Total		289	100.0		

I recycle because it is expected of me

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	10	3.5	3.7	3.7
	disagree	20	6.9	7.5	11.2
	neutral	60	20.8	22.4	33.6
	agree	97	33.6	36.2	69.8
	strongly agree	42	14.5	15.7	85.4
	do NOT recycle	39	13.5	14.6	100.0
	Total	268	92.7	100.0	
Missing	99.00	18	6.2		
	System	3	1.0		
	Total	21	7.3		
Total		289	100.0		

I recycle because it is good for the environment

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	3	1.0	1.1	1.1
	disagree	1	.3	.4	1.5
	neutral	6	2.1	2.2	3.7
	agree	53	18.3	19.6	23.3
	strongly agree	167	57.8	61.9	85.2
	do NOT recycle	40	13.8	14.8	100.0
	Total	270	93.4	100.0	
Missing	99.00	16	5.5		
	System	3	1.0		
	Total	19	6.6		
Total		289	100.0		

I recycle because it reduces materials in the landfill

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	2	.7	.7	.7
	disagree	1	.3	.4	1.1
	neutral	9	3.1	3.3	4.4
	agree	52	18.0	19.3	23.7
	strongly agree	166	57.4	61.5	85.2
	do NOT recycle	40	13.8	14.8	100.0
	Total	270	93.4	100.0	
Missing	99.00	16	5.5		
	System	3	1.0		
	Total	19	6.6		
Total		289	100.0		

I recycle because other...

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	disagree	1	.3	1.3	1.3
	neutral	4	1.4	5.3	6.6
	agree	1	.3	1.3	7.9
	strongly agree	7	2.4	9.2	17.1
	88.00	16	5.5	21.1	38.2
	do NOT recycle	47	16.3	61.8	100.0
	Total	76	26.3	100.0	
Missing	99.00	210	72.7		
	System	3	1.0		
	Total	213	73.7		
Total		289	100.0		

I do not recycle because recycling does not benefit me personally

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	40	13.8	16.8	16.8
	disagree	42	14.5	17.6	34.5
	neutral	26	9.0	10.9	45.4
	agree	9	3.1	3.8	49.2
	strongly agree	2	.7	.8	50.0
	do recycle	119	41.2	50.0	100.0
	Total	238	82.4	100.0	
Missing	99.00	48	16.6		
	System	3	1.0		
	Total	51	17.6		
Total		289	100.0		

I do not recycle because recycling does not benefit the community

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	57	19.7	24.1	24.1
	disagree	47	16.3	19.8	43.9
	neutral	16	5.5	6.8	50.6
	agree	1	.3	.4	51.1
	strongly agree	2	.7	.8	51.9
	do recycle	114	39.4	48.1	100.0
	Total	237	82.0	100.0	
Missing	99.00	49	17.0		
	System	3	1.0		
	Total	52	18.0		
Total		289	100.0		

I do not recycle because it is difficult to know what items can be recycled

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	21	7.3	8.8	8.8
	disagree	42	14.5	17.6	26.4
	neutral	29	10.0	12.1	38.5
	agree	22	7.6	9.2	47.7
	strongly agree	10	3.5	4.2	51.9
	do recycle	115	39.8	48.1	100.0
	Total	239	82.7	100.0	
Missing	99.00	48	16.6		
	System	2	.7		
	Total	50	17.3		
Total		289	100.0		

I do not recycle because recycling takes too much time

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	31	10.7	13.1	13.1
	disagree	36	12.5	15.3	28.4
	neutral	25	8.7	10.6	39.0
	agree	23	8.0	9.7	48.7
	strongly agree	8	2.8	3.4	52.1
	do recycle	113	39.1	47.9	100.0
	Total	236	81.7	100.0	
Missing	99.00	52	18.0		
	System	1	.3		
	Total	53	18.3		
Total		289	100.0		

I do not recycle because I do not have enough recyclables

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	30	10.4	12.3	12.3
	disagree	44	15.2	18.1	30.5
	neutral	27	9.3	11.1	41.6
	agree	16	5.5	6.6	48.1
	strongly agree	8	2.8	3.3	51.4
	do recycle	118	40.8	48.6	100.0
	Total	243	84.1	100.0	
Missing	99.00	46	15.9		
Total		289	100.0		

I do not recycle because too difficult to find room to store

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	15	5.2	6.2	6.2
	disagree	27	9.3	11.2	17.4
	neutral	28	9.7	11.6	29.0
	agree	33	11.4	13.7	42.7
	strongly agree	22	7.6	9.1	51.9
	do recycle	116	40.1	48.1	100.0
	Total	241	83.4	100.0	
Missing	99.00	48	16.6		
	Total	289	100.0		

I do not recycle because I do not know where to take recycling

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	25	8.7	10.4	10.4
	disagree	35	12.1	14.6	25.0
	neutral	21	7.3	8.8	33.8
	agree	28	9.7	11.7	45.4
	strongly agree	13	4.5	5.4	50.8
	do recycle	118	40.8	49.2	100.0
	Total	240	83.0	100.0	
Missing	99.00	49	17.0		
	Total	289	100.0		

I do not recycle because recycling location is not convenient

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	22	7.6	9.2	9.2
	disagree	25	8.7	10.5	19.7
	neutral	41	14.2	17.2	37.0
	agree	18	6.2	7.6	44.5
	strongly agree	20	6.9	8.4	52.9
	do recycle	112	38.8	47.1	100.0
	Total	238	82.4	100.0	
Missing	99.00	51	17.6		
	Total	289	100.0		

I do not recycle because I don't have transportation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	40	13.8	16.7	16.7
	disagree	47	16.3	19.6	36.3
	neutral	18	6.2	7.5	43.8
	agree	10	3.5	4.2	47.9
	strongly agree	7	2.4	2.9	50.8
	do recycle	118	40.8	49.2	100.0
	Total	240	83.0	100.0	
Missing	99.00	49	17.0		
	Total	289	100.0		

I do not recycle because I do not have curbside recycling

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	24	8.3	10.1	10.1
	disagree	24	8.3	10.1	20.2
	neutral	19	6.6	8.0	28.2
	agree	9	3.1	3.8	31.9
	strongly agree	48	16.6	20.2	52.1
	do recycle	114	39.4	47.9	100.0
	Total	238	82.4	100.0	
Missing	99.00	51	17.6		
	Total	289	100.0		

I do not recycle because other...

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	3	1.0	2.5	2.5
	neutral	6	2.1	5.0	7.6
	agree	1	.3	.8	8.4
	strongly agree	5	1.7	4.2	12.6
	9.00	1	.3	.8	13.4
	88.00	12	4.2	10.1	23.5
	do recycle	91	31.5	76.5	100.0
	Total	119	41.2	100.0	
Missing	99.00	170	58.8		
	Total	289	100.0		

I would be willing to pay following for curbside recycling

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	none	109	37.7	41.1	41.1
	$1-4	87	30.1	32.8	74.0
	$5-10	60	20.8	22.6	96.6
	$11-20	9	3.1	3.4	100.0
	Total	265	91.7	100.0	
Missing	99.00	21	7.3		
	System	3	1.0		
	Total	24	8.3		
Total		289	100.0		

Recycle more if had curbside recycling

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	would not	26	9.0	10.2	10.2
	sort of likely	17	5.9	6.7	16.9
	likely	35	12.1	13.8	30.7
	very likely	83	28.7	32.7	63.4
	skip	93	32.2	36.6	100.0
	Total	254	87.9	100.0	
Missing	99.00	32	11.1		
	System	3	1.0		
	Total	35	12.1		
Total		289	100.0		

How important to have curbside for all B/N

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	essential	113	39.1	41.5	41.5
	important	113	39.1	41.5	83.1
	somewhat important	36	12.5	13.2	96.3
	not at all important	10	3.5	3.7	100.0
	Total	272	94.1	100.0	
Missing	99.00	14	4.8		
	System	3	1.0		
	Total	17	5.9		
Total		289	100.0		

I would be willing to pay the following for HHW collection

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	none	74	25.6	27.5	27.5
	$1-4	60	20.8	22.3	49.8
	$5-10	67	23.2	24.9	74.7
	$11-20	51	17.6	19.0	93.7
	$21 or more	17	5.9	6.3	100.0
	Total	269	93.1	100.0	
Missing	99.00	17	5.9		
	System	3	1.0		
	Total	20	6.9		
Total		289	100.0		

How aware of EAC programs for recycling, HHW, composting

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not at all aware	166	57.4	58.9	58.9
	somewhat aware	102	35.3	36.2	95.0
	very aware	14	4.8	5.0	100.0
	Total	282	97.6	100.0	
Missing	99.00	4	1.4		
	System	3	1.0		
	Total	7	2.4		
Total		289	100.0		

Agree with bottle deposit program

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	27	9.3	9.7	9.7
	disagree	36	12.5	13.0	22.7
	neutral	75	26.0	27.1	49.8
	agree	83	28.7	30.0	79.8
	strongly agree	56	19.4	20.2	100.0
	Total	277	95.8	100.0	
Missing	99.00	9	3.1		
	System	3	1.0		
	Total	12	4.2		
Total		289	100.0		

Agree with city-wide composting program

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	17	5.9	6.2	6.2
	disagree	18	6.2	6.5	12.7
	neutral	122	42.2	44.4	57.1
	agree	76	26.3	27.6	84.7
	strongly agree	42	14.5	15.3	100.0
	Total	275	95.2	100.0	
Missing	99.00	11	3.8		
	System	3	1.0		
	Total	14	4.8		
Total		289	100.0		

Agree with pay as you throw program

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	83	28.7	30.1	30.1
	disagree	79	27.3	28.6	58.7
	neutral	64	22.1	23.2	81.9
	agree	40	13.8	14.5	96.4
	strongly agree	10	3.5	3.6	100.0
	Total	276	95.5	100.0	
Missing	99.00	10	3.5		
	System	3	1.0		
	Total	13	4.5		
Total		289	100.0		

Agree with mandatory recycling for public school districts

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	17	5.9	6.1	6.1
	disagree	13	4.5	4.7	10.8
	neutral	51	17.6	18.3	29.0
	agree	118	40.8	42.3	71.3
	strongly agree	79	27.3	28.3	99.6
	24.00	1	.3	.4	100.0
	Total	279	96.5	100.0	
Missing	99.00	7	2.4		
	System	3	1.0		
	Total	10	3.5		
Total		289	100.0		

Agree with apartment recycling program

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	12	4.2	4.3	4.3
	disagree	4	1.4	1.4	5.7
	neutral	58	20.1	20.8	26.5
	agree	125	43.3	44.8	71.3
	strongly agree	80	27.7	28.7	100.0
	Total	279	96.5	100.0	
Missing	99.00	7	2.4		
	System	3	1.0		
	Total	10	3.5		
Total		289	100.0		

What is your race

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	white	240	83.0	87.6	87.6
	hispanic or latino	3	1.0	1.1	88.7
	black or african american	16	5.5	5.8	94.5
	asian	7	2.4	2.6	97.1
	american indian or alaska native	1	.3	.4	97.4
	other race	1	.3	.4	97.8
	two or more races	6	2.1	2.2	100.0
	Total	274	94.8	100.0	
Missing	99.00	12	4.2		
	System	3	1.0		
	Total	15	5.2		
Total		289	100.0		

What is your home ownership status

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	own my home	204	70.6	72.3	72.3
	rent/lease	73	25.3	25.9	98.2
	live with family	3	1.0	1.1	99.3
	Other	2	.7	.7	100.0
	Total	282	97.6	100.0	
Missing	99.00	4	1.4		
	System	3	1.0		
	Total	7	2.4		
Total		289	100.0		

How many children in household under age 16

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	none	193	66.8	68.2	68.2
	1-2	75	26.0	26.5	94.7
	3-4	15	5.2	5.3	100.0
	Total	283	97.9	100.0	
Missing	99.00	3	1.0		
	System	3	1.0		
	Total	6	2.1		
Total		289	100.0		

Highest level of education

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	some high school	6	2.1	2.2	2.2
	high school diploma/GED	36	12.5	13.0	15.2
	some college/AA degree	60	20.8	21.7	36.8
	4 year college graduate	94	32.5	33.9	70.8
	some graduate school	23	8.0	8.3	79.1
	master's degree	44	15.2	15.9	94.9
	doctorate	10	3.5	3.6	98.6
	other	4	1.4	1.4	100.0
	Total	277	95.8	100.0	
Missing	99.00	9	3.1		
	System	3	1.0		
	Total	12	4.2		
Total		289	100.0		

What is your sex

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	male	127	43.9	45.7	45.7
	female	151	52.2	54.3	100.0
	Total	278	96.2	100.0	
Missing	99.00	8	2.8		
	System	3	1.0		
	Total	11	3.8		
Total		289	100.0		

What is annual household income

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	10,00 or less	22	7.6	8.9	8.9
	10,001-19,999	19	6.6	7.7	16.5
	20,000-39,999	34	11.8	13.7	30.2
	40,000-59,999	35	12.1	14.1	44.4
	60,000-79,999	45	15.6	18.1	62.5
	80,000 or more	93	32.2	37.5	100.0
	Total	248	85.8	100.0	
Missing	99.00	38	13.1		
	System	3	1.0		
	Total	41	14.2		
Total		289	100.0		

Where do you live

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Bloomington	167	57.8	58.8	58.8
	Normal	117	40.5	41.2	100.0
	Total	284	98.3	100.0	
Missing	99.00	2	.7		
	System	3	1.0		
	Total	5	1.7		
Total		289	100.0		

What is your age category

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-24	24	8.3	8.5	8.5
	25-34	48	16.6	17.1	25.6
	35-44	52	18.0	18.5	44.1
	45-54	57	19.7	20.3	64.4
	55-64	47	16.3	16.7	81.1
	65-74	28	9.7	10.0	91.1
	75 or older	25	8.7	8.9	100.0
	Total	281	97.2	100.0	
Missing	99.00	5	1.7		
	System	3	1.0		
	Total	8	2.8		
Total		289	100.0		

Best ways to inform R re garbage collection - mail

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	208	72.0	73.8	73.8
	No	74	25.6	26.2	100.0
	Total	282	97.6	100.0	
Missing	99.00	4	1.4		
	System	3	1.0		
	Total	7	2.4		
Total		289	100.0		

Best ways to inform R re garbage collection - fliers

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	149	51.6	52.8	52.8
	No	133	46.0	47.2	100.0
	Total	282	97.6	100.0	
Missing	99.00	4	1.4		
	System	3	1.0		
	Total	7	2.4		
Total		289	100.0		

Best ways to inform R re garbage collection - email

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	96	33.2	34.0	34.0
	No	186	64.4	66.0	100.0
	Total	282	97.6	100.0	
Missing	99.00	4	1.4		
	System	3	1.0		
	Total	7	2.4		
Total		289	100.0		

Best ways to inform R re garbage collection - radiotv

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	76	26.3	27.0	27.0
	No	206	71.3	73.0	100.0
	Total	282	97.6	100.0	
Missing	99.00	4	1.4		
	System	3	1.0		
	Total	7	2.4		
Total		289	100.0		

Best ways to inform R re garbage collection - other

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	33	11.4	11.8	11.8
	No	246	85.1	88.2	100.0
	Total	279	96.5	100.0	
Missing	99.00	7	2.4		
	System	3	1.0		
	Total	10	3.5		
Total		289	100.0		