Comprehensive Organics Management Plan

EDUCATION

RESIDENTS

BUSINESSES

Prepared for: City of Ann Arbor, Michigan

Prepared by: CB&I Environmental & Infrastructure, Inc.

In association with:

PROJECT INNOVATIONS INCORPORATED

Lake Research Partners

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SECTION 1
EXECUTIVE SUMMARY

In response to community interest in the expansion of organics diversion in both the residential and commercial sectors in Ann Arbor, in 2015 the Ann Arbor City Council directed that a Comprehensive Organics Management Plan (Organics Plan) be developed to provide program recommendations for its further consideration, with a long-term goal of increasing diversion performance and reducing landfill disposal quantities. This is consistent with recommendations contained in prior planning and policy development efforts in the City, including the 2012 *Climate Action Plan*, 2015 *Sustainability Action Plan*, and 2013 update to the *Waste Less: Solid Resources Plan*. Work on the Organics Plan began in April 2016.

Development of the Organics Plan has included a robust process to secure data and input from a number of sources, enabling synthesis of local conditions and industry-wide best practices to guide development of program recommendations. Input to the planning process has been obtained from:

- Local data provided by City staff, including historical and current operating conditions, organics practices, and costs of service;
- Citizens, businesses, and institutions through extensive public engagement efforts, including stakeholder interviews, a series of Residential Advisory Committee and Commercial Advisory Committee meetings, and a scientific survey of a representative cross-section of residents; and
- Experience in benchmark communities, highlighting expected diversion performance, program design options, and best practices.

While the organic waste stream includes a number of materials, including yard wastes, woody wastes, food wastes, and fats/oils/greases (FOG) from cooking, food waste is the principal focus of this Organics Plan. This is due to the high prevalence of food waste within the disposed waste stream, estimated at approximately 20% (by weight) on average, and the diverse range of generators to which food waste diversion programs would apply. By comparison, woody wastes are generated by a relatively small set of generators and infrastructure exists to manage the diversion of woody wastes at the Ann Arbor Compost Facility. FOG, though generated by many restaurants throughout the City, is segregated from other wastes and often managed at no cost to generators, with collection provided by private companies; one program recommendation has been included in the Organics Plan to provide greater tracking related to FOG management.

Because of differences in existing service to the residential and commercial sectors, as well as differences in the types and quantities of organic wastes generated and potentially diverted between the sectors, separate program recommendations have been developed for each sector. In addition to sector-specific recommendations, a number of Citywide recommendations were developed. Principal among these include:

- Promotion of source reduction activities to reduce the quantity of organics requiring management;
- Promotion of donation of usable food to non-profit food rescue organizations; and

- Robust education and outreach to residents and businesses to identify the environmental benefits of reducing and diverting organic wastes and promote the programs available to them to divert organic wastes. Education and outreach may provide an immediate and lower cost option to increase diversion, particularly at the residential level. Education and outreach aimed primarily at the residential sector is projected to incur an annual cost of $3 to $4 per household, or $67,500 to $90,000 and may increase the use of existing and established services in the City.

The analysis developed and presented in this Organics Plan represents a planning-level evaluation of the options. Due to the planning-level at which the analysis is performed, it is important to note that:

- Potential diversion performance estimated for each program recommendation is based on experience from other communities. Diversion performance achieved in Ann Arbor will be dependent on individual generator participation rates and diversion behavior and therefore may be lower or higher than the projections included herein.

- Cost projections have been developed at a high level based on assessment of each option utilizing current costs of waste-related operations in Ann Arbor as a base for scaling costs for program expansions. As individual options are further evaluated by the City for implementation, a more detailed financial and operational analysis may result in changes to the projected costs. In addition, a number of waste-related services are provided through contracts with private service providers, including operation of the Ann Arbor Compost Facility, transfer and disposal of waste from residents and businesses, and commercial waste collection. As these contracts expire and new contracts are procured, system costs may be impacted.

Specific funding approaches to implement the recommendations were not evaluated as part of the Organics Plan.

Summary Residential Program Recommendations

The City currently provides a strong seasonal organics collection program to its residents, operated from April through November. Through the City's residential organics collection program, residents are currently provided curbside collection of yard wastes (which have been banned from landfill disposal in Michigan since 1995) as well as the option of food waste collection (which can be mixed with yard waste in a compost cart, if the resident purchases a compost cart from the City at a current one-time cost of $25).

The City's residential program has allowed for food waste diversion since 2009, when vegetative food waste could first be added to the compost cart, and was expanded in 2014 to allow all plate scrapings to be placed in the compost cart. To date, it is estimated that approximately 5,000 households have purchased a compost cart, and approximately 30% of these households are reportedly placing food waste in the cart. In total, current recycling and organics diversion in the residential sector has resulted in an estimated diversion rate of 54.6%.

The City provides residential waste services to a total of approximately 22,500 residential households, indicating a significant opportunity to increase the distribution of carts to more households and thereby increase the number of households who could possibly divert food waste through the City's existing program. In addition, some residents have indicated that the lack of organics collection service during winter months limits their diversion of food waste.

These conditions were identified by members of the Residential Advisory Committee and reinforced by responses to the resident survey conducted as part of the planning process.

The following program recommendations have therefore been considered to enhance residential collection options and increase diversion performance in the residential sector:

- Year-round organics collection, on either a weekly or monthly basis
- Pilot evaluation of providing compost carts to all households in select "test" areas of the City, with either 3 or 5 "test" areas evaluated over a single seasonal collection period

Based on diversion performance observed in other communities, it is estimated that residential organics programs may result in diversion of an average 2 to 5 pounds of food waste per household per week, with peak diversion being achieved at a rate of 7 pounds per household per week in Seattle where organics have been banned from disposal. Based on the City's 22,500 residential households and at a rate of 2 to 5 pounds per household per week, this would equate to an additional diversion of 1,170 to 2,925 tons of food waste annually after long-term program operation.

Table 1-1 identifies diversion tonnage and costs for current operations and summarizes the potential diversion performance and costs of each of the program options analyzed. Section 7 of this Organics Plan includes detailed program analyses for each option considered.

TABLE 1-1. SUMMARY DIVERSION PERFORMANCE AND COSTS - RESIDENTIAL PROGRAM RECOMMENDATIONS

Program	Projected Tons Diverted	Diversion Rate Impact	Annual Cost	Cost/Ton Diverted
Current Operations	8,323	NA	$1,345,600	$162
Year-Round Collection (Weekly)	85 - 213	0.2% - 0.6%	$176,800	$185 - $188
Year-Round Collection (Monthly)	85 - 213	0.2% - 0.6%	$60,100	$168 - $171
Cart Pilot (3 Areas)	79 - 197	0.2% - 0.6%	$361,800	$212 - $216
Cart Pilot (5 areas)	131 - 328	0.4% - 1.0%	$466,400	$223 - $230

Notes:
1. Refer to Section 7 for detailed program analyses.
2. Projected tons diverted represent incremental (additional) tons to current organics tonnage.
3. Diversion rate impact does not assume any reduction in generation due to source reduction or donation of usable food.
4. Annual costs are rounded to the nearest $100 and reflect the average cost where ranges are reported in the detailed analyses.
5. Cost/ton diverted based on current and incremental costs and tonnage (excluding fall leaf collection) for each program option.

As Table 1-1 indicates, the options evaluated for expanded residential organics collection service are projected to result in up to, though often less than, 1% increases to the residential diversion rate and may incur significant additional costs to achieve. It is important to note, however, that where pilot programs are evaluated, the diversion performance is limited to the scope of the pilot and costs may be higher than ongoing operating costs for the service due to

the additional monitoring and evaluation costs and less efficient collection practices incurred through the pilot operation. A pilot will, however, provide local operations, cost, and diversion performance data to refine further analysis of Citywide service expansion.

Summary Commercial Program Recommendations

At the commercial level, the City does not currently provide an organics collection program. For commercial generators, which include businesses and institutions as well as some multi-family apartment complexes, it is expected that food waste would be the predominant material targeted for collection. Commercial waste collection is currently provided by a private hauler through a commercial waste collection franchise serving customers with dumpsters; the current franchise agreement terminates in June 2019. The City also provides commercial waste collection to cart customers in the commercial sector.

On a high level, there are a number of constraints that may impact the feasibility of providing a Citywide commercial organics collection program. Space constraints within downtown alleys and behind businesses limit the ability to incorporate additional collection containers outside of the business. In addition, operational changes would be required to segregate food waste from other wastes inside the business, and space may be limited in kitchens or in indoor storage areas. Cost is an additional constraint; while residential yard waste collection has been provided in Ann Arbor for more than 20 years and provided an existing service to add food waste to, commercial organics collection represents a new service and requires the addition of more containers, collection vehicles, and collection route drivers, thereby increasing the costs of waste management in total for the average commercial generator.

Though all commercial properties are generators of some amount of food waste, the proportion of food waste in the waste stream for food-oriented businesses such as restaurants, grocery stores, schools, and hotels is generally greater than for other businesses. Across all commercial generators, food waste averages 20% of the disposed waste stream, but when considering food-oriented businesses food waste is nearly 40% of the disposed waste stream. As a result, members of the Commercial Advisory Committee concurred that an initial commercial organics collection program in Ann Arbor is likely to focus on securing participation from food-oriented businesses to achieve greater diversion impact at a potentially lower net cost to the business. The Commercial Advisory Committee also generally concurred that an initial organics program in the commercial sector would likely be a voluntary program to provide for opportunity to refine operations and address concerns such as space constraints for additional containers.

The following program recommendations have been considered to provide commercial organics collection options and divert organics in the commercial sector:

- Pilot evaluation of organics collection service at 10 downtown restaurants and 9 public schools, consistent with a City budget amendment approved in May 2016, with the pilot collection period conducted for either a 3-month or 6-month period

- Incorporation of commercial organics collection service in the City's commercial waste collection franchise agreement, with service provided either to all commercial accounts or to only food-oriented commercial accounts

Table 1-2 summarizes the potential diversion performance and costs of each of the program options analyzed. Section 7 of this Organics Plan includes detailed program analyses for each option considered.

TABLE 1-2. SUMMARY DIVERSION PERFORMANCE AND COSTS - COMMERCIAL PROGRAM RECOMMENDATIONS

Program	Projected Tons Diverted	Diversion Rate Impact	Cost	Cost/Ton Diverted
Pilot (3-Month Collection)	101	0.3%	$106,700	$1,056
Pilot (6-Month Collection)	296	0.8%	$184,500	$623
Commercial Franchise (All Accounts)	1,768 - 5,051	4.5% - 13.0%	$1,165,800	$292 - $652
Commercial Franchise (Food-Oriented)	997 - 2,850	2.6% - 7.3%	$378,100	$169 - $372

Notes:
1. Refer to Section 7 for detailed program analyses.
2. Diversion rate impact does not assume any reduction in generation due to source reduction or donation of usable food.
3. Costs are rounded to the nearest $100 and reflect the average cost where ranges are reported in the detailed analyses.

As Table 1-2 indicates, costs to perform a 3-month pilot collection program with a limited number of downtown restaurants and public schools are approximately equal to the budget amount allocated. However, for greater operational and diversion performance data, it is recommended that a more extended pilot be considered, which would necessitate additional funding. The pilot also assumes that participating businesses and schools will be identified that can accommodate the added collection containers.

Commercial franchise cost projections are based on current commercial waste franchise collection rates, on the assumption that organics collection operations (i.e., containers, trucks, labor) would be generally consistent with waste collection operations. Cost projections assume broad participation in a collection program through the commercial waste franchise; if voluntary participation rates are low, it is likely that the collection costs may be greater than are currently offered for waste collection due to reduced route density. Further surveying and assessment of the commercial sector's interest in participating in an organics collection program is therefore recommended to provide guidance to private haulers, if organics collection service is to be included in the next commercial franchise agreement.

Near-Term Implementation of Recommendations

Based on the program recommendations and costs noted, Table 1-3 depicts a suggested implementation phasing schedule beginning in July 2017 for the significant program options identified. The actual schedule upon which recommendations are implemented will be determined in part by the ability to identify funding and staffing resources for implementation.

TABLE 1-3. PROPOSED IMPLEMENTATION SCHEDULE FOR SIGNIFICANT RECOMMENDATIONS

Recommendation	2017		2018				2019			
	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Citywide Recommendations										
Education and Outreach		$67,500 - $90,000 annually (Ongoing)								
Residential Recommendations										
Compost Cart Pilot				$361,800 - $466,400						
Year-Round Collection						$60,100 - $176,800				
Commercial Recommendations										
Restaurant/Schools Pilot		$106,700 - $184,500								
Commercial Franchise								$378,100 - $1,165,800		
FOG Licensing	(No cost impact projected)									

Structure of the Comprehensive Organics Management Plan

The remainder of this Organics Plan includes the following sections, with additional supporting information provided as attachments:

- Section 2 - Background
- Section 3 - Public Engagement
- Section 4 - Current Organics Management Operations
- Section 5 - Organics Management Strategy Alternatives
- Section 6 - Case Studies
- Section 7 - Future Organics Management Considerations
- Section 8 - Recommended Organics Management Plan

SECTION 2
BACKGROUND

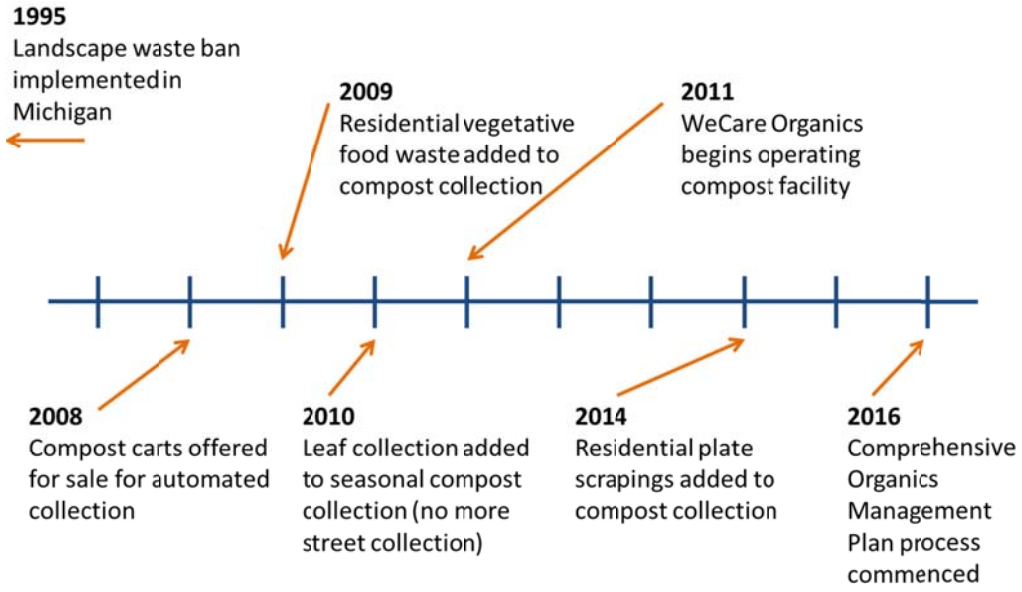
2.1 Introduction

Over the past decade, the City of Ann Arbor has developed a number of goals related to sustainability. These goals are documented through actions of the City Council and in the adoption of a series of documents including the City's *Climate Action Plan*, *Sustainability Action Plan*, and *Waste Less: Solid Waste Resources Plan*:

- In 2007, the City of Ann Arbor's Environmental Commission and City Council established the policies and goals of the City's Environmental Action Plan, including a goal of producing Zero Waste.
- The 2012 *Climate Action Plan* includes 18 goals specific to waste reduction, including goals addressing management of organic wastes.
- The 2015 *Sustainability Action Plan* contains 2 targets with related actions to increase waste diversion rates in Ann Arbor.
- The City's 2013 update to its *Waste Less: Solid Waste Resource Plan* identifies a number of strategies to move towards Zero Waste. Among these are several strategies specifically addressing the management of organic wastes.

Through each of these processes, continued attention has been focused on reducing the amount of waste disposed by Ann Arbor's residents and businesses. In particular, recognition of the potential opportunities to increase diversion performance through the expansion of organics diversion programs have grown over time. This is also reflected in the development of the City's residential organics collection services, as shown in the timeline in Figure 2-1.

FIGURE 2-1. ANN ARBOR ORGANICS PROGRAM TIMELINE



In May 2015, in response to the recommendations of the *Waste Less: Solid Waste Resources Plan* and related goals established through prior City planning projects, and the continued interest of Ann Arbor residents and businesses in enhancing and expanding organic waste diversion programs in the City, the Ann Arbor City Council directed that a Comprehensive Organics Management Plan (Organics Plan) be developed[1].

In March 2016, the City retained CB&I Environmental & Infrastructure, Inc. (CB&I) to develop the Organics Plan, with work on the plan commencing in April 2016 and continuing through February 2017.

2.2 Plan Objectives

The Organics Plan proposes a set of recommended, interrelated strategies designed to increase the potential collection of organics from both the residential and commercial / institutional sectors. Strategies considered have been evaluated for a range of criteria, including diversion potential, cost, convenience for residents and businesses, and community acceptance. The potential strategies identified at the project outset included, but were not limited to:

- Source reduction education and outreach to reduce the volume of food waste
- Coordination and support of food rescue programs in the community
- Home composting demonstration and outreach
- Year-round organics collection in the residential, commercial and institutional sectors
- Urban wood and forestry waste recovery
- Fats, oils, and greases (FOG) management

To ensure the recommendations of the Organics Plan are implementable and reflective of the unique local conditions of Ann Arbor, the project team also conducted extensive public engagement, as detailed further in Section 3.0 of the Organics Plan. The multiple sources of input to the planning process have included:

- Citizen, business, and institution input through significant public engagement efforts;
- Historical and current organics collection and processing operations in Ann Arbor; and
- Best practices and program operation details exemplified by organic waste diversion operations in other communities.

Based on this diverse and valuable input, the Organics Plan recommendations herein provide direction to City staff and the Ann Arbor City Council for the development and implementation of enhanced and/or new efforts to manage organic wastes generated in Ann Arbor.

[1] Enactment No. R-15-169, Resolution to Adopt Ann Arbor City Budget and Related Property Tax Millage Rates for Fiscal Year 2016, Amendment #3, May 18, 2015.

2.3 Project Scope

The term "organics" as utilized in the context of this study means materials that are related to or derived from living matter, and organic wastes are those waste materials which were derived from living matter or were once living matter. Specifically, the types of organics focused on in the development of this Organics Plan include:

- Yard wastes, including grass clippings and tree and bush trimmings generated through the maintenance of outdoor spaces at homes, businesses, institutions, and in the City's parks and public spaces.
- Woody wastes, including tree limbs, stumps, and non-treated lumber.
- Food scraps, including food production wastes, food preparation wastes, spoiled or expired food, and plate scrapings.
- Fats, oils, and greases (FOG) from cooking (also referred to as "yellow grease"), predominantly generated from food service operations such as restaurants.

FIGURE 2-2. TYPES OF ORGANIC WASTES INCLUDED IN THE PLAN

YARD WASTES

WOODY WASTES

FOOD SCRAPS

FATS, OILS, AND GREASES

To effectively plan for the management of organics, it is necessary to consider the full scope of activities required to divert material. There are four primary steps involved in the management of organics, all of which are addressed within the Organics Plan:

- Segregating organics from other waste materials, typically performed by the generator. Segregation requires operational and behavioral changes to be made by the generator and adequate space to store segregated materials for collection.

- Collecting segregated organics from the generator site, typically performed by a service provider (such as City of Ann Arbor Public Works or a private hauling company). Collection requires proper equipment to containerize and remove segregated organics, including carts or dumpsters and waste hauling vehicles.

- Processing collected organics to convert materials to a marketable finished product. Processing requires available composting facilities or alternate organics processing operations (e.g., anaerobic digestion facility) with adequate capacity and (where applicable) regulatory approval to manage the quantity and types of organics being collected.

- Marketing of finished products (e.g., compost produced from a composting facility). Marketing of finished products requires market demand for the product(s) produced in order to “close the loop”.

While all types of properties have the potential to generate organic waste which could be diverted from disposal, the targeted generators include those where services can be provided uniformly (such as residences), as well as those where food waste is generated in larger quantities and therefore where organics diversion may result in greater disposal reduction and be performed more cost-effectively. Therefore, the Organics Plan includes recommendations to manage organic wastes generated on a citywide basis from a number of sources:

- Residential properties, including single-family homes, duplexes, and larger multi-family properties

- Food-centric businesses, including restaurants, grocery stores, hospitality facilities (hotels and catering businesses), and food distribution operations

- Institutions, including schools, universities, and hospitals

- Non-profit entities, including food rescue operations

SECTION 3
PUBLIC ENGAGEMENT

Engaging Ann Arbor stakeholders and the public in the development of the Organics Plan was an important element of the Plan development. The purpose of the public engagement process was to allow the public an opportunity to learn about the development of the Organics Plan, to provide input to ensure community interests are taken into consideration, to establish appropriate expectations for potential organics collection and management strategies that may be considered, and to secure feedback on potential management program options.

Throughout the public engagement process, a number of opportunities were available to the community to provide input into the development of the Organics Plan. This section identifies the public engagement strategies employed and summarizes the input received.

3.1 Public Engagement Strategy

Early in the planning process, the project team developed a robust public engagement strategy. The strategy included conducting a number of stakeholder interviews, establishing two advisory committees, and performing a random scientific survey of residents. To develop the strategy, the project team:

- Reviewed and discussed the purpose of public engagement in the development of the Organics Plan
- Identified stakeholders to invite to interviews and to participate on advisory committees
- Discussed advisory committee meeting objectives
- Identified the schedule for completion of all public engagement activities

The City of Ann Arbor has an established public engagement process. To comply with the City's process, the project team formalized the engagement plan. A copy of the Organics Management Community Engagement Project Plan required by the City, as well as a copy of the Communications and Community Engagement Plan Summary, is included in Attachment A.1.

3.2 Stakeholder Interviews

A series of stakeholder interviews were conducted to assess attitudes, perspectives, and interests of key stakeholders regarding current and future organics management strategies in Ann Arbor. A total of 14 stakeholder interviews were completed in July and August 2016. Stakeholders interviewed included:

- Institutions (University of Michigan)
- Food-oriented businesses (Argus Farm Store, Red Hawk Restaurant, Whole Foods, Zingerman's)
- Non-profit organizations (Food Gatherers, Recycle Ann Arbor)
- Cooking oil management companies (Detroit Grease)
- City commissions (Ann Arbor Environmental Commission, Ann Arbor Housing Commission)
- City departments (Public Works collection operations, Customer Service)
- Service providers (Waste Management, WeCare Organics)

During the stakeholder interviews, participants were asked a series of questions to gauge their current involvement with and perspective regarding organics management in the City. They were also provided an opportunity to share their feelings about potential future efforts to increase organic waste diversion in the community. Finally, participants were asked what role they perceived themselves having in future organics management programs in the City.

The interviews provided valuable insight into historical practices regarding waste management, and specifically organics management, in Ann Arbor. They also identified that, while there is notable interest from a variety of stakeholders in increasing the diversion of organic wastes from landfill disposal, there are also a number of known challenges that would need to be addressed. Interviews were conducted on a confidential basis, and therefore individual interview summaries are not included in the Organics Plan.

In general, stakeholder interviews identified the following significant takeaways:

- There is interest from a number of stakeholders in expanding organics diversion opportunities in both the residential and commercial sectors, though there is limited support for the extent of this expansion presently (see final bullet below). Interviewees supporting the expansion of programs often referenced environmental benefits and contribution towards achievement of the City's sustainability goals as reasons for supporting increased organic waste diversion.

- There is an awareness of, and sensitivity to, challenges that must be addressed as part of an expansion of organics diversion:

  In the residential sector, challenges include: the uncertainty of resident interest or support in increasing program participation; difficulty in collecting the small quantities of organics that would be set out in winter months if the current program was offered year-round; and, the impact of contamination on the success of the program and quality of finished compost. Other challenges include space constraints at multi-family properties and property management impacts in public housing developments.

  In the commercial sector, challenges were noted to include space constraints in downtown alleys and properties, impacts on regular business operations with the need to segregate food waste from other waste materials, and financial impacts to businesses for the increased service.

- Because of the challenges noted, interviewees were not generally supportive of considering mandatory diversion of organics or a ban on disposal of organics in the near term in Ann Arbor.

3.3 Advisory Committees

Due to differences in the current availability of organics collection services to residents and businesses, as well as differences in the likely future delivery of services to these generators, separate advisory committees were formed to focus on the residential sector and the commercial sector and provide input to the Organics Plan. The purpose of the advisory committees was specifically to: provide input to the project team regarding their experience and awareness of current organics management practices in Ann Arbor; participate in small group and full committee discussions and exercises to consider potential expansions in organics collection services; and, provide feedback on preliminary program recommendations developed over the course of the project.

City staff extended invitations to a large number of parties identified in consultation with the project team to secure participation from a diverse range of community members. Invited members of the community included:

Residential Advisory Committee

- All registered neighborhood associations, representing residents at-large
- Residential sector service providers or potential service providers, including Recycle Ann Arbor, Waste Management, and WeCare Organics
- Organizations serving specific community segments, including Downtown Development Authority and Washtenaw Area Apartment Association
- Public commissions, including Ann Arbor Housing Commission and Ann Arbor Environmental Commission

Commercial Advisory Committee

- All registered business associations, representing various business districts within the City
- Food-centric businesses, including grocery stores, restaurants, and hotels with food service operations
- Institutions, including Ann Arbor Public Schools and University of Michigan
- Non-profit organizations, including Food Gatherers and Recycle Ann Arbor
- Commercial sector service providers, including Waste Management and WeCare Organics
- Public commissions, including Ann Arbor Environmental Commission
- Property management companies and multi-tenant building owners
- Organizations serving specific community segments, including Downtown Development Authority and A2Y Regional Chamber

The project team sought to identify up to 25 participants for each committee. Based on the number of interested participants responding to the invitations extended, the project team did not limit participation for either advisory committee or select the members of the committees; all interested participants were included as members of the advisory committees. In total, 13 members of the community participated in at least one meeting of the Residential Advisory Committee and 27 members of the community (representing 20 different businesses or organizations) participated in at least one meeting of the Commercial Advisory Committee.

The project team identified a preliminary meeting approach for the advisory committees prior to inviting participants. In total, four meetings of each committee were scheduled to occur between July 2016 and January 2017. All advisory committee meetings were open to the public and included the opportunity for public comment. The focus of the four meetings of each advisory committee was generally similar and included:

- Meeting 1: Introduction to the Organics Plan process and review of background information on historical organics management operations in Ann Arbor
- Meeting 2: Discussion of needs and challenges associated with expansion of organics management services
- Meeting 3: Discussion of potential program options and input to preliminary recommendations
- Meeting 4: Review and discussion of preliminary recommendations

Two tours of the Ann Arbor Compost Facility were also conducted, and all members of the advisory committees were invited to tour the facility. The compost facility tours included observation of a number of aspects of facility operation, including organics delivery, placement of material in windrows for composting, screening of finished compost, and storage of finished material for distribution to customers. Detailed discussion of the facility's operations was provided by the site operator to educate tour participants on the current organics processing being performed and address their questions about current operations, the impact of expanded organics collection on facility operations, and specifically the impact of future increases in food waste on operations and compost quality.

Advisory committee meeting agendas, meeting summaries, and compost facility tour summaries are included in Attachment A.2. In addition, a dedicated project page has been established on the City's website to provide the public with access to all meeting materials. The project page is accessible at www.a2gov.org/organicsplan. The website also includes a video highlighting the engagement exercises completed during the second meeting of the Commercial Advisory Committee, which were highly interactive and provided significant insight into the needs and opportunities in organics management within the commercial sector.

FIGURE 3-1. ADVISORY COMMITTEE SMALL GROUP EXERCISES

The advisory committees were established to serve purely in an advisory role for the development of the Organics Plan. The committees were not tasked with reaching consensus on the recommendations for the Organics Plan or making any recommendation for approval or adoption of the Organics Plan. The final meetings of the advisory committees included presentation and discussion of the preliminary recommendations that had been developed to date.

Comments from the advisory committees have been taken into consideration in the development of the final recommendations included in the Organics Plan. Written comments received from advisory committee members are included in Attachment A.3. In general, committee feedback indicated that the preliminary recommendations fairly represented the needs and interests of the committees. Specific feedback included the following:

- Committee members expressed support for a strong education program for residents and businesses to reduce organic wastes and inform them of opportunities to divert the organic wastes generated from disposal through either donation or segregated collection for composting.

- Residential Advisory Committee members supported expansion of collection operations through the winter months, noting that collection on a bi-weekly or monthly basis during the winter months would be appropriate considering the reduced quantities of yard waste produced at that time.

- Residential Advisory Committee members supported further evaluation of the impact of providing all households with a compost cart to encourage diversion of food waste, possibly through a pilot of select neighborhoods.

- Commercial Advisory Committee members supported establishment of a coordinated collection program focused primarily at food-centric businesses. Concerns about the program included the ability to serve all interested businesses in the downtown area due to space constraints in alleys, as well as the likely increase in costs to businesses for the added service.

- Committee members questioned how expanded services would be funded, including whether costs can be structured to incentivize diversion of organic wastes from disposal. Funding of the recommended strategies contained in the Organics Plan will require further analysis by City staff during implementation of the plan recommendations.

3.4 Resident Survey

Input received from stakeholder interviews and advisory committee meetings represents the perspectives and experience of engaged, educated, and motivated community members with specific interest in the development of the City's Organics Plan. To obtain input from a more representative cross-section of the population and reflect the input of the community at-large, a scientific survey of a random sampling of Ann Arbor households was conducted.

The scientific survey was conducted by telephone by Lake Research Partners, a national public opinion research firm. The survey questionnaire was developed collaboratively by the project team, City staff, and Lake Research Partners and was reviewed by members of the Residential Advisory Committee. The survey was structured to be completed in 14 minutes. A copy of the survey questionnaire is contained in Attachment A.4.

The survey was conducted November 28 through December 5, 2016. A total of 26,805 calls were made, and the surveyors secured responses from 601 qualified Ann Arbor households. Based on the number of responses secured, responses are statistically significant with a margin of error at the 95% confidence level of ± 4%. In other words, if 50% of respondents answered a given question with the same response, we can be 95% confident that the percentage across all Ann Arbor households that would answer the same would be ± 4% of 50%, or between 46% and 54% of households.

The survey was designed to gauge resident attitudes and behaviors regarding current organic waste management services as well as potential program enhancements or changes. A series of screening questions were established to ensure responses were received from residents within Ann Arbor's municipal limits. The screening questions further sought to include only residents who were aware of and responsible for waste and recycling in the household. This resulted in survey responses being received at a greater proportion from homeowners and slightly older residents than the entirety of Ann Arbor's population due to the large fraction of the population comprised of transient students. However, the survey team found this to be an appropriate sampling of the population given that the respondents generally represented more

permanent residents of the City and direct taxpayers who would be impacted by changes in service costs and long-term service changes.

A detailed summary of the survey findings is contained in Attachment A.5. Key findings from the survey indicate the following:

- Satisfaction with existing services: There is generally a high level of satisfaction with current services. When considered as a whole, 94% of residents are satisfied with overall trash, recycling, and compost collection services. By comparison, a 2008 survey of City residents indicated 89-92% of residents rated the City's waste and recycling services as good or excellent. Considering just compost collection, 80% of residents report satisfaction with current services; an additional 13% indicate they don't know whether they are satisfied or dissatisfied, possibly due to their lack of use of the City's compost collection service.

- Compost cart ownership and use: When asked whether they have a brown City of Ann Arbor compost cart, 62% of survey respondents indicated they have purchased a compost cart. The survey-reported that cart ownership rate is higher than the estimated cart ownership Citywide when considering all properties receiving City collection services, likely as a result of the survey respondents representing homeowners at a greater proportion than is present Citywide.

- Awareness of food waste compost opportunity: A majority of respondents indicated they are aware that food waste can be placed in the compost cart. However, about 1 in 3 respondents indicated they were not aware that food waste could be placed in compost carts. In addition, 21% of respondents who currently have a compost cart indicated they were not aware food waste could be placed in the cart.

- Current food waste management practices: The predominant management methods for food waste include placing it in the trash (34% of respondents), using an in-sink disposal (18% of respondents) or both (18% of respondents). In addition, 19% of respondents indicate they compost some food waste at home, and 19% of respondents report placing food waste in a compost cart. Considering only those respondents who own a compost cart, only 30% report that they place food waste in the cart. Of respondents who place food waste in the compost cart, 46% say they do so for environmental reasons and another 20% say they do it because they already have the cart available.

- Food waste reduction: The vast majority (83%) of respondents indicate they feel informed with regard to the impact of wasted food at the social and environmental level. A similar majority of respondents (78%) are interested in reducing the amount of wasted food their household produces, but there is lesser interest in using a checklist or set of educational tools (43% interested) or attending a food waste education workshop (29% interested) to learn tools and techniques to reduce food waste.

- Program changes to increase satisfaction: When asked what changes to the current collection program would increase their satisfaction with services, 20% of respondents cited a request for year-round collection and 21% of respondents identified interest in the City providing kitchen containers and compostable bags. Less frequently recorded responses included having a periodic cart cleaning service, being provided a compost cart, access to cheaper compostable bags, having a smaller container, and the return of curbside leaf vacuuming in the fall. Additionally, 32% of respondents indicated that they would not change anything and are satisfied with current services.

- Cost of service considerations: There is significant willingness to segregate food waste if a compost cart is provided *at no cost*, with 73% of respondents who do not currently have a compost cart indicating a willingness to place food waste in a compost cart in this case. In addition, though nearly half of respondents indicate they have a need for yard waste collection during the winter months, there is a lack of support for paying a supplemental fee to extend compost collection through the winter months. Less than 30% of respondents are willing to pay an additional fee, and 45% of respondents state they would be "not at all likely" to be willing to pay an additional fee to have year-round compost collection.

Tabulation of the survey data also enables evaluation of responses by subsets of the population, including by ward, age, gender, race, and household type. This enables further consideration of the survey findings to serve as a tool in identifying and measuring future implementation of education and outreach program efforts. It can also be used to select areas of the City in which to conduct a future pilot study of program changes or to order the phasing of future implementation if a phased approach is desirable. The survey report provides analysis of responses by the various population subsets.

SECTION 4
CURRENT ORGANICS MANAGEMENT SYSTEM

To evaluate alternatives for the future management of organic wastes in Ann Arbor, it is important to first understand the existing operations and infrastructure available, as well as the quantity of material that could potentially be diverted from disposal. Current waste collection services are provided by a mix of City of Ann Arbor collection crews and contracted hauler crews through the City's commercial waste franchise. Collected materials are managed at local facilities owned by the City of Ann Arbor and operated by private contractors. This section provides a summary of current collection and processing operations for organic wastes generated in Ann Arbor, as well as historical data on waste, recycling, and organics quantities from the residential and commercial sectors.

4.1 Collection Operations

Yard wastes have been banned from disposal in Michigan landfills since 1995, and Ann Arbor provides separate residential collection of yard wastes with City collection crews to divert yard wastes to composting. Yard waste collection service is provided seasonally, beginning in April and ending in November; collection during winter months has not historically been provided due to the minimal quantity of yard wastes generated in the winter. Businesses and institutions that generate yard wastes also separately manage these materials through either direct haul to a compost facility or through the use of landscape contractors providing property maintenance.

Food waste collection, commingled with yard waste, has been available to Ann Arbor residents since 2009. Residents were first able to place vegetative food waste (i.e., plant parts, excluding meat, bones, dairy) in the optional compost collection cart beginning in 2009, and all plate scrapings (including meat, bones, and dairy) have been able to be placed in the cart since 2014. Food waste is permitted only in the City compost collection carts; it is prohibited in kraft paper bags, though residents may use the paper bags for yard wastes set out for collection. Because food waste is commingled with yard waste, which is collected only eight months per year, food waste collection is not currently provided during winter months. Residents are instead directed to continue placing food waste in the compost collection cart, layering it with leaves or newspaper to minimize odors, until collection resumes in April.

FIGURE 4-1. ANN ARBOR RESIDENTIAL ORGANICS EDUCATIONAL GRAPHIC

Organics collection service for businesses and institutions is not currently provided by the City on a community-wide basis, either by City collection crews[2] or through the City's commercial waste collection franchise. Businesses wishing to divert organic wastes have the option of

[2] Approximately 20 businesses are currently provided seasonal organics collection by City collection crews on a case-by-case basis. However, due to issues with overweighting of carts and the impact on the ability of City collection crews to also perform residential collection services, additional businesses have not been considered for inclusion in the program.

separately contracting for service with a private hauler of their choosing, with the full cost of that service then paid by the business. Due to the City's collection of the solid waste millage to fund solid waste operations, and the need for businesses to pay at least a portion of their garbage collection and disposal cost, few businesses have pursued additional collection service for organic wastes. However, business community interest in having an organics collection option has been noted through requests to City staff for service and the adoption of a budget amendment to establish a commercial organics collection pilot in the downtown area and at select schools[3].

Fats, oils, and grease (FOG) is currently managed by a number of private companies operating within the City. FOG collection is often performed at no cost to generators because of its value as a fuel. There are currently no licensing or reporting requirements in place for FOG, and the City therefore lacks information on the companies providing the service, the businesses utilizing existing FOG collection containers, or the quantity of materials generated or diverted.

FIGURE 4-2. FOG COLLECTION CONTAINERS IN DOWNTOWN ANN ARBOR ALLEYS

4.2 Processing and Compost Marketing Operations

The City of Ann Arbor owns a registered composting facility, the Ann Arbor Compost Facility. Operation of the facility has been contracted to a private company, WeCare Organics[4] (WeCare), since 2011. Under the operating contract, WeCare is responsible for receiving and processing organic wastes delivered by the City from its residential organics collection program. WeCare is also responsible for the marketing and distribution of compost produced at the facility. In addition, WeCare is authorized to market the facility for the receipt of organics from third-party collectors, including landscaping companies, waste haulers providing organics collection service, and institutions that self-haul material, such as the University of Michigan. This third-party (or merchant) material is received at a rate set by WeCare, and the City receives a credit of $1.00 per merchant ton received.

Under the current operating contract, the City of Ann Arbor pays WeCare $17.50 per ton of organics delivered to the facility for composting. In addition, the contract was amended in 2014 to include payment of an additional $14,950 per year in exchange for the facility processing food waste commingled with yard waste in the City's residential material. Based on current estimated

[3] Enactment No. R-16-201, Resolution to Adopt Ann Arbor City Budget and Related Property Tax Millage Rates for Fiscal Year 2017, Amendment 6, May 16, 2016.

[4] WeCare Organics became WeCare Denali, LLC in Fall 2016.

food waste delivery quantities of 500 tons per year from the City's residential collection program[5], this equates to a supplemental rate of approximately $30 per ton for food waste compared to yard waste, indicating that the City's residential food waste is accepted for a net fee to the City of $47.50 per ton. The operating contract for the facility expires in January 2018.

In addition to the food waste received that is commingled with yard waste from the City's residential collection program, loads of source-separated food waste are also delivered to the Ann Arbor Compost Facility from the University of Michigan. Rates for the delivery of food waste from third-party sources such as the University are negotiated directly with WeCare; University of Michigan currently pays a tipping fee of $38 per ton for segregated food waste delivered to the facility.

FIGURE 4-3. ANN ARBOR COMPOST FACILITY

Compost produced at the Ann Arbor Compost Facility is distributed by WeCare to residents, area landscapers, golf courses, farmers, and construction companies for a variety of uses. At the start of the compost season, WeCare makes available up to 1,000 cubic yards of compost or mulch for Ann Arbor residents to pick up from the facility at no charge. Residents must bring their own containers and shovels to load the compost and mulch, with a limit of one cubic yard per household per year. Additional compost is sold by WeCare, and the City receives a credit of $0.50 per ton for the compost sold.

Throughout Michigan, a limited number of registered composting facilities are currently accepting food wastes. Within the Washtenaw County area, two additional facilities - Tuthill Farms and Johnston Farms - currently accept food waste. Michigan regulations do not limit the amount of food waste that can be accepted at registered composting facilities, nor is data reported or collected on the current intake of food waste at the facilities. These facilities could be considered in the future to provide additional compost capacity if food waste quantities

[5] Because food waste from Ann Arbor residents is commingled with yard waste, this tonnage estimate has been developed based on an estimate of 5,000 households with compost carts (because a cart is required for food waste to be set out for compost collection) and an estimated diversion of 5 pounds of food waste per household per week during the seasonal collection period (see Table 5-3). We Care has previously estimated receipt of 1,000-1,500 tons of food waste per year from the City's residential program; this appears to be an over-estimation, as it would result in diversion of 11-17 pounds of food waste per cart household per week, approximately double the average diversion in Seattle where organics are banned from disposal (see Table 5-3).

collected in Ann Arbor exceed the ability of the Ann Arbor Compost Facility to compost food waste and other organics.

4.3 Organics Quantities

Table 4-1 provides a summary of historical quantities of residential and commercial waste, recycling, and organics managed by City of Ann Arbor operations for the period 2013-2015, as well as average annual tons managed through that period. City of Ann Arbor operations include waste, recycling, and organics collection provided by City collection crews, Recycle Ann Arbor (through City-contracted residential recycling collection) and Waste Management (through City-contracted commercial waste collection).

TABLE 4-1. HISTORICAL WASTE, RECYCLING, AND ORGANICS QUANTITIES, CITY OF ANN ARBOR (TONS, 2013-2015)

	2013	2014	2015	Average
Residential Generators				
Waste	14,912.88	15,073.23	14,974.77	14,986.96
Recycling	9,668.22	9,747.26	9,658.91	9,691.46
Organics	8,385.19	8,399.33	8,183.13	8,322.55
Total	32,966.29	33,219.82	32,816.81	33,000.97
Diversion Rate	54.8%	54.6%	54.4%	54.6%
Commercial Generators				
Waste	31,561.41	34,413.81	36,278.87	34,084.70
Recycling	4,583.70	4,977.13	5,054.72	4,871.85
Organics	0.00	0.00	0.00	0.00
Total	36,145.11	39,390.94	41,333.59	38,956.54
Diversion Rate	12.7%	12.6%	12.2%	12.5%
Total				
Waste	46,474.29	49,487.04	51,253.64	49,071.66
Recycling	14,251.91	14,724.39	14,713.63	14,563.31
Organics	8,385.19	8,399.33	8,183.13	8,322.55
Total	69,111.39	72,610.77	74,150.40	71,957.52
Diversion Rate	32.8%	31.8%	30.9%	31.8%

Source:
1. City inbound scale report.

Notes:
1. Multi-family waste collected from dumpsters is included in the reported commercial waste tonnage. Separate tracking and reporting of tonnage from multi-family sources is not available, due to the manner in which collection is provided.
2. Classification of recycling as residential or commercial is approximate.

A review of the tonnages in Table 4-1 indicates that annual waste tonnages have been steady to growing over recent years, while recycling and organics quantities have generally been stable. Overall diversion rates have also been stable over the 3-year period, with an average diversion rate of nearly 55% in the residential sector and 13% in the commercial sector, resulting in an average citywide diversion rate of approximately 32%.

Residential collection service is provided to approximately 22,500 households[6]. Based on the average organics collection tonnage in Table 4-1, residential organics are currently diverted at a rate of 62 pounds per household per month, averaged over a 12-month period[7]. Section 6 includes summary diversion quantities from benchmark communities evaluated in the development of this Plan. Based on the diversion quantities reported in other communities, Ann Arbor's current seasonal residential program is performing higher than developing programs in Austin and San Antonio, but not achieving the higher diversion quantities observed in more mature programs in Seattle, Portland, and San Francisco. This indicates there is likely an opportunity for increased diversion performance with further promotion and expansion of the City's services.

An estimated 807 commercial and multi-family properties[8] currently receive dumpster collection from Waste Management under the City's commercial waste franchise. A brief assessment of the accounts served by Waste Management indicates that approximately 180 accounts (22%) are clearly identifiable as food-oriented businesses (such as restaurants and grocery stores) or businesses with potential food service operations (such as hotels and schools). These businesses may be the target of food waste collection operations under a future commercial organics program. Additional properties receive cart-based collection from the City; property-level data was not available to provide a similar evaluation of the accounts served by the City.

6 The households referenced include primarily single-family homes and multi-family properties up to 4 units. Larger multi-family properties are typically provided dumpster collection service, either by the City or its contracted commercial waste franchise hauler, and are therefore managed similar to commercial properties.

7 As noted previously, residential organics are collected seasonally April through November, for an 8-month collection period. However, for comparability to programs in other communities which operate year-round, quantities here have been averaged over the full year.

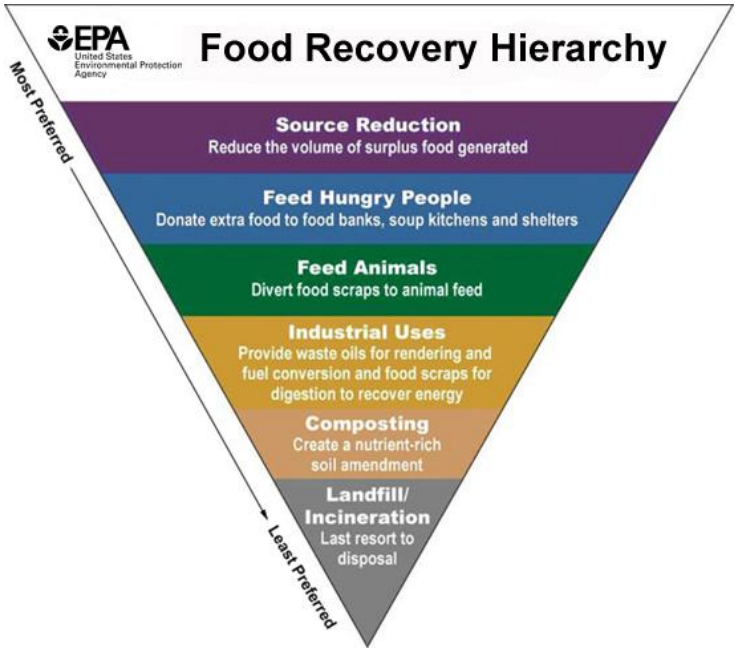
8 A commercial property may include multiple businesses; the number of businesses in Ann Arbor that are provided waste collection is therefore greater than the number of properties served.

SECTION 5
ORGANICS MANAGEMENT STRATEGY ALTERNATIVES

This section of the Organics Plan provides first a projection of the potential quantities of organics diversion that could be realized through expanded or new collection programs serving the residential and commercial sectors and the impact on the City's diversion rate performance overall. The remainder of this section includes a summary of the various management alternatives that have been considered for implementation to reduce organic waste disposal from Ann Arbor generators.

The U.S. EPA has established and promoted its Food Recovery Hierarchy (see Figure 5-1) to guide generators in the actions they can take to reduce and divert wasted food. The hierarchy ranks actions from most preferred to least preferred, with source reduction and donation options preferred over composting and landfill disposal. Options considered generally follow the priorities identified in the U.S. EPA Food Recovery Hierarchy.

FIGURE 5-1. U.S. EPA FOOD RECOVERY HIERARCHY



5.1 Organics Diversion Potential

Ann Arbor's current waste and organics quantities were presented in Table 4-1. To assess collection and processing needs and estimate the impact of increased organics diversion on the City's overall diversion rate, forecasts of future quantities of organics that could be diverted from disposal through enhanced or new organics collection programs in Ann Arbor have been developed. A number of data sources were evaluated to develop the forecasts:

- A waste composition study performed for the City in 2012[9] estimated approximately 40% of the disposed waste stream was comprised of food wastes. The methodology used in this study, however, resulted in an overestimation of the quantity of food waste available for recovery and diversion because it included the weight of glass and plastic containers in instances where packaged food waste was identified.

[9] City of Ann Arbor, *Waste Less: Solid Waste Resource Plan Update 2013-2017*, October 7, 2013.

- Statewide studies of waste composition have been performed in a number of states in recent years. Studies completed for California (2014), Connecticut (2015) and Illinois (2015) included separate characterization of the residential and commercial/institutional waste streams, providing more detailed assessment of the composition of the waste streams from these sectors. Table 5-1 summarizes the compostable fraction of the waste stream as identified in these studies.

TABLE 5-1. SUMMARY ORGANIC WASTE COMPOSITION DATA

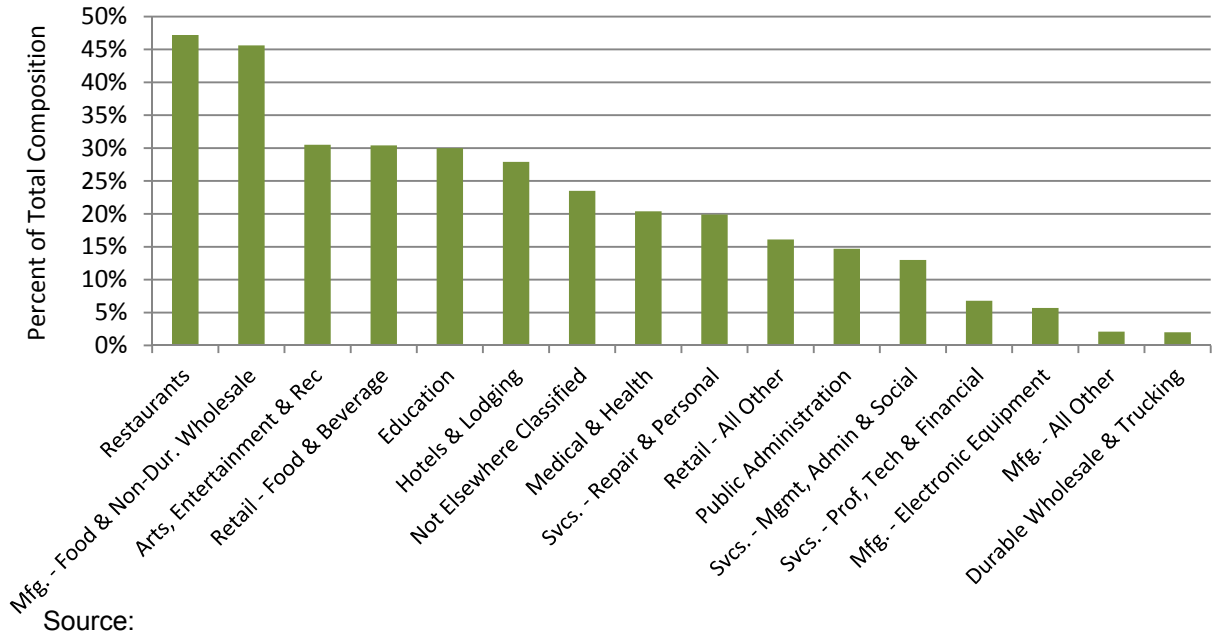
	California	Connecticut	Illinois	Average
Residential				
Compostable organics	31.8%	39.1%	29.5%	33.5%
Food waste only	21.9%	20.0%	20.2%	20.7%
Commercial				
Compostable organics	28.1%	41.0%	21.7%	30.3%
Food waste only	20.1%	25.5%	16.4%	20.7%

Sources:
1. *2014 Disposal-Facility-Based Characterization of Solid Waste in California*, Cascadia Consulting Group, October 6, 2015.
2. *Connecticut DEEP 2015 Statewide Waste Characterization Study*, MSW Consultants, March 15, 2016.
3. *Illinois Commodity / Waste Generation and Characterization Study Update*, CDM Smith, March 30, 2015.

Notes:
1. "Compostable organics" includes food waste, compostable paper, and yard waste present in the disposed waste stream.

- Within the commercial sector, waste stream composition varies widely based on business type. In 2014, the State of California completed an extensive generator-level study of waste composition at 16 different types of businesses. Figure 5-2 displays the percentage of compostable organic materials generated by each business type identified in the study, including food waste, yard waste, and compostable paper. As indicated in Figure 5-2, food-oriented businesses such as restaurants, grocery stores (reflected as Retail - Food & Beverage), hotels, and education institutions typically generate a greater proportion of food waste compared to other types of businesses. This supports focusing a potential commercial organics collection program toward food-oriented businesses due to the larger proportion of food waste they generate, as this would be expected to result in greater diversion impacts than would be achieved from other business types.

FIGURE 5-2. FOOD WASTE FRACTION OF GENERATED WASTE BY BUSINESS TYPE



Source:

1. *2014 Generator-Based Characterization of Commercial Sector Disposal and Diversion in California*, Cascadia Consulting Group, September 10, 2015.

- The diversion performance achieved in other communities that have implemented comprehensive organics collection programs can be used to estimate the diversion potential that may be realized by various program designs. Residential diversion performance in other communities is summarized in Table 5-2[10], which indicates that the incremental diversion that may be realized with inclusion of food waste in existing yard waste collection programs in the residential sector may be expected to range from 2 to 5 pounds per household per week, with a top-performing program (Seattle) achieving a higher diversion of 7 pounds per household per week.

TABLE 5-2. RESIDENTIAL FOOD WASTE DIVERSION PERFORMANCE ACHIEVED IN REFERENCE COMMUNITIES

Community	Diversion Performance (lbs/household/week)
Austin, Texas	4.2
Barrington, Illinois	1.9
Bridgewater, Connecticut	1.2
Cambridge, Massachusetts	1.4
Highland Park, Illinois	4.4
Oak Park, Illinois	0.6
Seattle, Washington	7.2
Takoma Park, Maryland	4.5
Average (excluding Seattle / including Seattle)	2.6 - 3.2
USEPA Region 5 Multi-Community Survey	2.8 - 3.6

Sources:
1. BioCycle, *Nationwide Survey: Residential Food Waste Collection in the U.S.*, January 2015.
2. Econservation Institute, *Best Management Practices in Food Scraps Programs*, prepared for U.S. EPA Region 5, undated.
3. Community case studies cited in Attachment B of this report.

Notes:
1. Diversion performance for communities in the BioCycle survey (Bridgewater, Cambridge, Oak Park, Takoma Park) reported as pounds per participating household. Diversion performance reported in this table reflects pounds per household based on the total households in the community and is therefore reduced from the rate reported by BioCycle based on reported participation rates.
2. The USEPA Region 5 survey identified a range of diversion of 7 to 9 pounds per participating household, with a participation rate of 35% to 45%. Diversion performance reported in this table reflects the adjusted pounds per household based on the range of 7 to 9 pounds per participating household and an average participation rate of 40%.

[10] Due to variability in business composition from community to community and limited available data on the number of commercial accounts and organics tonnage in reference communities, a similar summary for the commercial sector has not been compiled.

Based on the data in Table 5-1, in both the residential and commercial sectors it is estimated that approximately 20% of disposed waste may consist of food waste[11]; an additional 5-10% of the disposed waste stream may be comprised of other compostable materials, including compostable paper[12]. Applying these estimates to Ann Arbor waste quantities in Table 4-1 results in the projected quantities of total available organics presented in Table 5-3 below.

A second consideration when evaluating diversion potential is the expected capture rate of materials present in the waste stream. The capture rate is defined as the percentage of available organics present in the waste stream that are diverted through organics collection programs. Based on a review of data available from existing programs, it is estimated that mature voluntary or subscription-based programs may achieve a capture rate of approximately 35-45%[13]. By comparison, mandatory programs (such as the City of Seattle) target capture of 80% of available organics when the program reaches maturity[14]; however, Seattle indicates current estimates of 50-60% capture, two years after implementation of its organic waste disposal ban. Applying these capture rates to the projected quantity of organics within the residential and commercial waste streams yields the diversion potential presented in Table 5-3.

[11] On a state-to-state level, variation around the average 20% food waste composition in the commercial sector is noted; therefore, for purposes of this Organics Plan a range of 15-25% of waste disposed is applied to commercial waste tonnages.

[12] Only the food waste fraction of the disposed waste stream has been included in projections of diversion potential in this Organics Plan. While WeCare accepts compostable paper at the Ann Arbor Compost Facility, discussion with WeCare indicated a preference to accepting food waste and yard waste materials only, with limited inclusion of compostable paper and BPI-certified compostable plastic due to contamination and compost quality concerns.

[13] Econservation Institute, *Best Management Practices in Food Scraps Programs*, prepared for U.S. EPA Region 5, undated.
Northern Tilth, *ecoMaine Organics Recycling Feasibility Study*, November 2013.

[14] Hans Van Dusen, Solid Waste Contracts Manager, Seattle Public Utilities, personal correspondence, March 2017.

TABLE 5-3. POTENTIALLY RECOVERABLE ORGANICS IN THE WASTE STREAM (TONS)

	Total Available Organics	Projected Recovery - Voluntary Program	Projected Recovery - Mandatory Program
Residential			
20% of waste stream	2,997	1,049	2,398
25% of waste stream	3,747	1,311	2,998
Equivalent lbs/hh/week	5.1 - 6.4	1.8 - 2.2	4.1 - 5.1
Commercial			
15% of waste stream	5,113	1,790	4,090
25% of waste stream	8,521	2,982	6,817

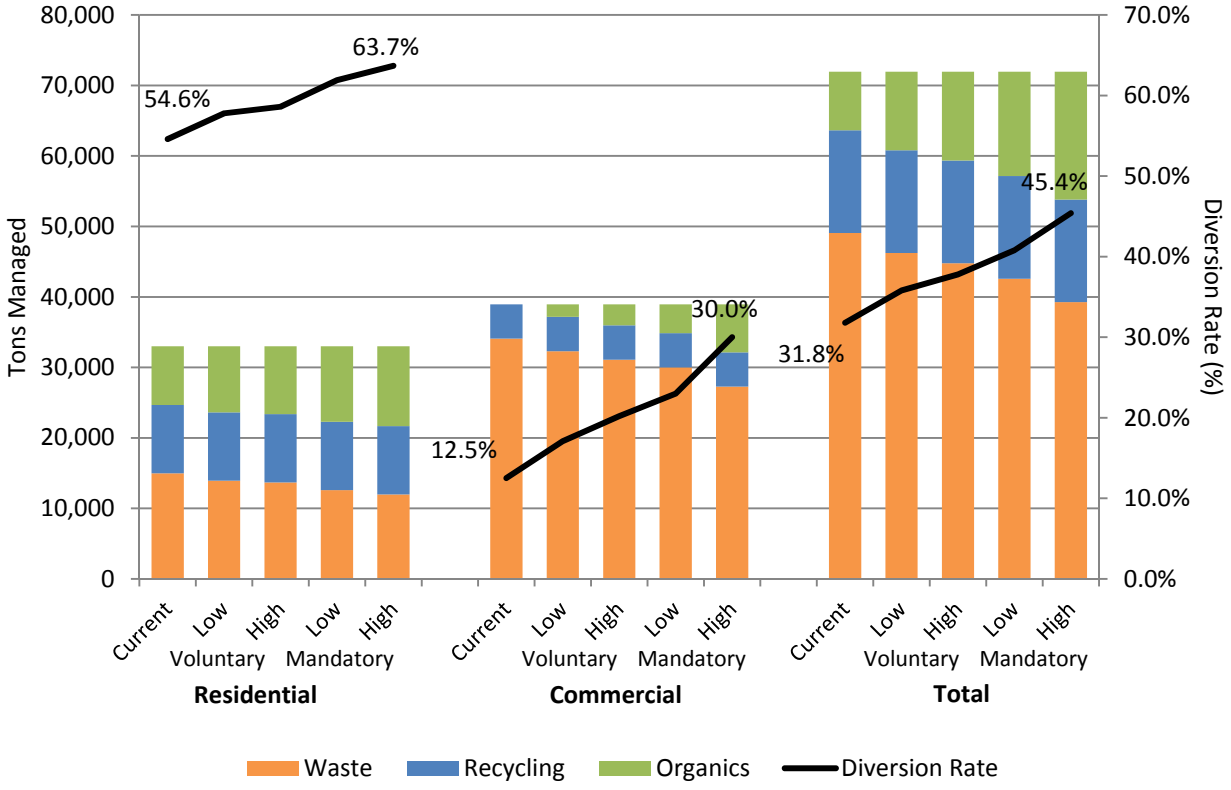
Notes:
1. Projected Recovery - Voluntary Program based on 35% capture rate.
   Projected Recovery - Mandatory Program based on 80% capture rate.
2. Projected recovery quantities are in addition to current organics quantities collected and delivered to the Ann Arbor Compost Facility.
3. Equivalent lbs/hh/week calculated based on 22,500 households and 52 weeks per year.
4. Actual recovery will be dependent on Ann Arbor household participation rates and diversion behavior.

Based on the potential diversion quantities in Table 5-3 and current waste management quantities presented in Table 4-1, and assuming no change in total material generation, the projected future impact of expanded organics management programs on Ann Arbor diversion rates is displayed in Figure 5-3, which indicates the following potential impacts to overall Citywide diversion with various levels of participation and program requirements:

- A high-performing and mature voluntary organics collection program in both the residential and commercial sectors may increase the Citywide diversion rate by 4-6%. The residential diversion rate may increase 3.2-4%, and the commercial diversion rate may increase 4.6-7.7%.

- A high-performing and mature mandatory organics collection program in both the residential and commercial sectors may increase the Citywide diversion rate by 9-13.6%. The residential diversion rate may increase 7.3-9.1%, and the commercial diversion rate may increase 10.5-17.5%. However, there are increased budgetary impacts associated with a mandatory program that were not calculated as part of the development of this Organics Plan.

FIGURE 5-3. FUTURE DIVERSION RATE IMPACT OF EXPANDED ORGANICS PROGRAMS



5.2 Source Reduction

Source reduction -- not generating a waste in the first place -- is an important element of any diversion strategy and is the most preferred management method in the food recovery hierarchy. With respect to organics management, source reduction is currently practiced in Ann Arbor through the encouragement of using mulching mowers and leaving grass clippings on the lawn, thus eliminating the need for collection and composting of grass clippings.

Considering specifically food waste and how source reduction can be applied as a management strategy, consumer education is a primary need. ReFED (Rethink Food Waste Through Economics and Data), a collaboration of over 30 business, nonprofit, foundation, and government leaders formed in 2015 to develop a national economic study and action plan to reduce food waste, identified consumer education campaigns as a top prevention strategy for implementation[15].

Education campaigns focused to raising awareness of the impact of wasted food and strategies that can be implemented to save money and waste less food are recommended. In 2016, the Natural Resources Defense Council (NRDC) partnered with the Ad Council to roll out a national campaign, Save the Food (www.savethefood.com) to communicate benefits of food waste reduction. Such national campaigns can be brought to the local level and expanded to include information about specific local resources to assist in food waste reduction.

[15] ReFED, *A Roadmap to Reduce U.S. Food Waste by 20 Percent*, 2016.

FIGURE 5-4. EXAMPLE EDUCATION CAMPAIGN MATERIALS

Source: Ad Council / NRDC, www.savethefood.com.

Reduction of wasted food was identified as a goal of a strong majority of Ann Arbor residents surveyed through the scientific resident survey (see Section 3.4 and Attachment A.5). In fact, 78% of respondents indicated an interest in reducing wasted food, including a near majority (47%) stating they are very interested. Respondents were less interested in using a checklist or set of educational tools to help them reduce food waste, with only 43% of respondents indicating an interest. Tools from public sources are currently available that the City can promote to its residents and businesses to facilitate efforts to reduce wasted food, including U.S. EPA's *Food: Too Good to Waste* toolkit[16]; these tools can be provided to residents through City outreach and communications channels and posted on its website at virtually no cost to the City. Reduction was also supported as a key recommendation from the advisory committees.

Measuring the impact of source reduction efforts is difficult since reduction results in a lack of materials to be managed, and it is not likely that quantifiable diversion impacts will be identified or tracked over time. In addition, source reduction will reduce only a fraction of the food wasted currently through improved purchasing and consumer habits; additional diversion practices will also need to be implemented to address the food waste that continues to be generated.

[16] U.S. EPA's *Food: Too Good to Waste* implementation guide and toolkit is available at https://www.epa.gov/sustainable-management-food/food-too-good-waste-implementation-guide-and-toolkit.

5.3 Donation

It is estimated that one in eight people in the U.S. are food insecure[17], lacking reliable access to a sufficient quantity of affordable, nutritious food. With an estimated 40% of food produced in the U.S. going to waste, feeding hungry people is the second most preferred option in the food recovery hierarchy. Feeding hungry people requires vital food rescue and food donation infrastructure to be in place.

Within Ann Arbor, Food Gatherers serves in this important role as a non-profit food rescue organization. In 2015, Food Gatherers redistributed more than 6 million pounds (3,000 tons) of food to those in need, with a portion of this generated through donations from residents and businesses[18]. Individuals and businesses donating food to non-profit food rescue organizations like Food Gatherers are provided protection from criminal and civil liability under the Bill Emerson Good Samaritan Food Donation Act. Encouraging food donation to non-profits to afford donors these protections is therefore important.

Provided tracking methods are in place to measure food donation quantities from Ann Arbor residents and businesses to organizations such as Food Gatherers, these quantities can be included in calculations of Ann Arbor's diversion performance. In discussion with Food Gatherers through the public engagement process completed for development of this Organics Plan, they have indicated that data tracking and reporting may be conducted for the City's use in this manner as part of a collaborative approach to this aspect of food waste management.

FIGURE 5-5. FOOD DONATION MANAGEMENT

An additional element of this collaborative approach may also consider the financial impact of increased donations on food rescue operations. By encouraging increased donation of uneaten or expiring food items to food rescue, the quantity of food waste and packaging waste generated by Food Gatherers is likely to increase because, typically, a portion of donations are unable to be distributed for use due to time or quality issues. Currently, Food Gatherers' waste collection is performed consistent with any other business, with waste collection and disposal costs paid to the City based on its service volume and the City's billed rates. Viewing Food Gatherers instead as a service provider or partner in food waste management, it may be appropriate for the City to consider exempting Food Gatherers from collection and disposal fees associated with material that cannot be safely repurposed for meals. This was also supported by some members of the advisory committees.

To facilitate the matching of donations and local needs, and to reduce handling of donated food, donation tools including mobile applications to request pickups or identify drop locations for donors are developing in some parts of the country. This developing option may assist businesses in particular in getting donations to organizations such as Food Gatherers for timely

[17] United States Department of Agriculture, *Household Food Security in the United States in 2015*, September 2016.

[18] Sebastian Wreford, Development Associate, Food Gatherers, personal correspondence, September 2016. Food Gatherers also purchases food for distribution to those in need to supplement donations and provide a predictable and reliable stream for distribution.

redistribution to the community. It is recommended that the City and/or Food Gatherers monitor development of such options in other communities for possible future implementation in Ann Arbor.

5.4 Home Composting / On-Site Composting

Home composting or backyard composting by residents may be performed through the use of purchased or constructed compost bins or in static piles, depending on the materials being managed by the homeowner. Similarly, businesses and institutions may engage in on-site composting activities through the use of composting containers, digesters, or static piles / windrows.

The City of Ann Arbor encourages residents to engage in backyard composting of yard wastes and some food wastes, and the City also promotes Washtenaw County's Master Composter class for engaged and interested residents. Members of the Residential Advisory Committee indicated support for continued encouragement of home composting and noted the benefits to the homeowner associated with producing their own compost. Based on the responses to the resident survey performed in the development of this Organics Plan, approximately 19% of respondents currently compost at least some of their food waste at home, indicating this is an established method for organics management for many residents.

Currently, home composting and on-site composting requirements are not stipulated in the City's solid waste rules or regulations. As a best practice and to provide the ability to regulate home composting practices should a problem arise, the City may consider developing guidelines, at a minimum, or regulations for home composters to ensure that the activity does not result in odors or attract pests as a result of poor management or incorporation of materials that are not suitable for home composting. For example, meat, bones, and dairy products are generally not allowed in home composting bins or piles because compost temperatures are not high enough for the breakdown of the proteins. As a result, residents who actively engage in home composting activities may still have a need for curbside compost collection for those organics that should not be incorporated into a home compost pile.

At least one community studied during the development of this Organics Plan (the City of Seattle) provides an exemption from its mandatory organics collection service requirements for those residents and businesses who perform on-site composting. Approximately 3% of Seattle's residential properties are currently receiving the exemption. This option should be considered by Ann Arbor in the future if a requirement for mandatory service is implemented, and would be expected to include a similarly small number of properties.

5.5 Commercial Composting

Commercial composting operations (i.e., registered or permitted compost facilities accepting organics from off-site generators) are the principal method for managing organics currently collected in Ann Arbor's residential collection program, with composting occurring at the Ann Arbor Compost Facility. Composting is also the predominant method for management of organics collected through other programs in the U.S., with commercial composting facilities currently expanding their handling capabilities for food waste as part of the organics feedstock. A recent estimate indicates that 3,800 commercial composting facilities managing yard waste or mixed organics have been developed in the U.S., and of these 347 (9%) accept food waste[19].

[19] Biocycle, "State of Composting in the U.S.", July 2014.

Barriers to food waste acceptance at commercial composting facilities can include local and state regulations, concerns about operational impacts such as odors and vermin, and concerns about increased contamination of the compost product. The State of Michigan does not currently limit the amount of food waste that registered composting facilities can accept. However, of the 111 registered sites in the state, only 8 (7%) are currently reported by Michigan Department of Environmental Quality to be accepting food waste[20]. This is on par with the 9% of compost facilities nationally reported to be accepting food waste.

Compost facilities are often low-technology facilities operating with open windrows that are monitored for temperature, oxygen, and moisture and turned periodically to maintain aerobic composting conditions. As the quantity of food waste accepted at a facility increases, there may be an interest in considering more advanced compost technologies such as aerated static piles (windrows with air lines beneath the piles to regularly inject oxygen into the pile, reducing the need to turn the piles and speeding the rate of decomposition), covered or enclosed windrows, or in-vessel options. Each of these alternatives may be considered to mitigate odors, produce compost more quickly, and ensure the technology is consistent with the materials being managed. Each of these options, though, also result in increased capital and operating costs for the facility, which would need to be evaluated against the revenue potential and material quantities managed at the facility.

FIGURE 5-6. ANN ARBOR COMPOST FACILITY MULCHING AND COMPOSTING OPERATIONS

The Ann Arbor Compost Facility, operated for the City by WeCare Organics under contract through January 2018, accepts yard waste, clean wood (such as pallets), food waste commingled with yard waste from the City's residential collections, and source separated food waste from the University of Michigan. The compost facility has accepted approximately 14,000 tons of organics in 2015 and 2016. Of this, WeCare estimates that 1,500 to 2,000 tons consists of food waste from the City and University of Michigan, representing approximately 11-14% of incoming material by weight.

WeCare also operates a number of other compost facilities in the U.S., and based on their diverse experience estimates the Ann Arbor Compost Facility may be able to manage an additional 5,000-6,000 tons of food without operational issues. Based on the potential quantities of food waste that may be captured from the residential and commercial sectors, presented in

[20] Michigan Department of Environmental Quality, List of DEQ Registered Composting Facilities, last updated March 6, 2017.

Table 5-3, and WeCare's estimate of the additional food waste it expects the facility could manage, the Ann Arbor Compost Facility may have adequate capacity to manage the increased food waste collected through a voluntary program. However, if a mandatory diversion program was implemented in the residential and commercial sectors, the facility may not be able to handle all of the material collected.

5.6 Wastewater Treatment Plant / In-Sink Disposal

An emerging option for management of food wastes from both residential and commercial sources is the use of in-sink disposals which grind food waste and mix it with wastewater that is then conveyed to a municipal wastewater treatment plant. This option is most often recommended in communities where the wastewater treatment plant incorporates anaerobic digestion technology for solid wastes passing through the treatment process. The City of Los Angeles, California, intends to perform pilot testing of the feasibility of this alternative in a portion of its service area beginning in 2017.

Ann Arbor's wastewater treatment plant does not have an anaerobic digester in use as part of its treatment process. In 2007, a study was performed to assess the feasibility of developing a digester as part of the redevelopment of the Ann Arbor wastewater treatment plant[21]. The City determined it was not economically feasible and identified concerns about the technical feasibility, and it was determined that an anaerobic digester component of the plan would not be developed. The facility is currently in the final stages of construction of significant renovations and therefore is not anticipated to consider possible incorporation of a digester in its operations for the foreseeable future.

Currently, food waste managed through an in-sink disposal from residents and businesses is processed at the wastewater treatment plant and managed as part of the biosolids produced from the facility. Biosolids are land-applied at area farms in accordance with state regulations during a portion of the year, and when land application is not feasible biosolids are landfilled. This is therefore not an optimal management method to divert organics from disposal in Ann Arbor, and the recommendations presented later in this Organics Plan do not include diverting food waste through in-sink disposals.

5.7 Biodigester / Anaerobic Digestion

A stand-alone biodigester or anaerobic digestion facility is another option for the management of organics. The City selected a consultant in 2016 to evaluate the feasibility of developing a biodigester to manage biosolids generated from the Ann Arbor wastewater treatment plant and food waste potentially collected from businesses in and around Ann Arbor. This study has not yet been finalized, but draft findings of the study indicate the project is not economically feasible at this time[22].

Biosolids were projected to be the predominant feedstock for the facility, constituting approximately 90% of the material to be handled. Commercial food wastes were considered a secondary feedstock. Residential organics were omitted from the study because yard wastes are not preferred feedstock for a biodigester or anaerobic digester. For purposes of evaluating the economic feasibility of the facility, costs were compared to the current biosolids management costs incurred by the City. While the conceptual biodigester facility was projected

[21] State of Michigan Biomass Energy Program Grant PLA-06-48, *Feasibility Study: Biodigester for Combined Heat and Power at Ann Arbor Wastewater Treatment Plant*, 2007.

[22] Matt Naud, Environmental Coordinator, City of Ann Arbor, personal correspondence, January 2017.

to have an operating cost that was approximately equal to current biosolids management costs, the capital cost of the facility was projected to be approximately $27 million, making development of the facility too costly relative to current operations. A biodigester or anaerobic digester is therefore not currently recommended as a management technology for organics diverted from Ann Arbor's residents and businesses.

5.8 Greenhouse Gas Emission Impacts

As identified in the City's 2012 Climate Action Plan, landfilling of organic wastes produces methane due to anaerobic decomposition, and methane is nearly 21 times more potent than carbon dioxide as a greenhouse gas. By comparison, composting organic wastes produces less carbon dioxide and does not produce methane because it is an aerobic process. Based on the activities considered in the Climate Action Plan, the waste management sector in Ann Arbor generated less than 1% of community-wide greenhouse gas (GHG) emissions in 2010. Because of its low overall contribution to community emissions, the Climate Action Plan indicated that "Any action taken to reduce emissions from the waste sector is unlikely to have a significant impact on total community emissions".

The Climate Action Plan did not include emissions reduction potential for the individual waste-related strategies identified. However, based on the total baseline emissions calculated Citywide (approximately 1,500,000 $MTCO_2e$) and the 1% contribution of waste management activities to emissions, it can be estimated that the City's waste management activities contribute approximately 15,000 $MTCO_2e$ to Citywide emissions annually.

Assuming expanded organics programs serving the residential and commercial sectors are implemented and achieve the diversion performance forecasted in Table 5-1, and that the diverted organics are composted, greenhouse gas emission impacts can be calculated. Using the U.S. EPA's Waste Reduction Model (WARM Model, Version 14, updated March 2016), GHG emission reductions for the various diversion potentials are presented in Table 5-4 below, as well as the equivalent removal of passenger vehicles. In general, diversion of every 100 tons of food waste from landfill disposal to composting is projected to result in reduction of 52.2 $MTCO_2e$ and removal of 11 passenger vehicles from area roadways.

TABLE 5-4. PROJECTED GREENHOUSE GAS EMISSION REDUCTIONS

	GHG Emissions Reductions		Passenger Vehicle Equivalent	
	Low Estimate	**High Estimate**	**Low Estimate**	**High Estimate**
Voluntary Program	1,483	2,243	312	472
Mandatory Program	3,390	5,128	714	1,080

Source:
1. U.S. EPA WARM Model, Version 14, updated March 2016.

Notes:
1. GHG emissions reductions expressed in metric tons of carbon dioxide equivalent ($MTCO_2e$).

Based on the diversion potential calculated and the outputs of the WARM model, implementation of a high-performing voluntary organics diversion program would reduce waste management sector emissions by 10-15%. Implementation of a high-performing mandatory organics diversion program would result in greater emissions reductions, estimated to be 23-33% of total sector emissions. Net impact to Citywide emissions is projected to be much less, since the waste management sector is estimated to contribute only 1% of baseline GHG emissions.

SECTION 6
CASE STUDIES

This section summarizes the benchmark community case studies compiled during the development of the Organics Plan. Case studies were developed for communities with mature and robust organics collection services as well as for communities in which organics collection services are currently developing.

Communities for which case studies were developed were identified based on input from advisory committee members regarding the communities they see Ann Arbor seeking to align with or that they view as leaders in organics management and diversion policies overall. Communities were also identified based on the availability of relevant data to supplement analysis of options for Ann Arbor. The communities included in the case studies include:

- Seattle, Washington
- Portland, Oregon
- San Francisco, California
- Boulder, Colorado
- Austin, Texas
- San Antonio, Texas
- Lake County, Illinois

No communities in Michigan were included in the case studies because Ann Arbor is the only community known to currently provide a Citywide organics collection program incorporating food waste.

Case study findings are summarized in this section first for residential programs, then for commercial programs. Detailed case studies are included in Attachment B.

6.1 Residential Organics Collection Programs

In general, communities have established greater control over organics collection services in the residential sector (as compared to the commercial sector), have more uniform program offerings, and are able to provide more details regarding their residential programs such as diversion quantities and customer rates. Table 6-1 summarizes residential program parameters for the communities studied, including:

- Requirements for collection: “Mandatory” collection indicates that residents must select organics collection as part of their waste and recycling services; collection “Provided by city” indicates that organics collection is universally provided at a single service level, with a collection cart/can provided to every residential property.

- Requirements for diversion: “Mandatory” diversion indicates that organics have been banned from disposal in the trash; “Voluntary” diversion indicates that residents may choose whether to segregate organics (specifically the food waste fraction of organics; yard waste disposal bans in some states already require diversion of the yard waste fraction).

- Diversion in pounds per household per month: Based on publicly available data on residential organics collection quantities and number of residences served, averaged over a 12-month period.

- Rate structure: Pay-as-you-throw ("PAYT") indicates rates vary based on the size of trash container (and, in some cases, the size of the organics container) selected. "Organics fee" indicates that the rate includes both a charge for trash service and a separate charge for organics service. "No organics fee" indicates that organics service rates are included in the trash collection rate.

- Service provider: This column indicates who provides collection services for the residential organics program.

TABLE 6-1. SUMMARY CASE STUDIES - RESIDENTIAL ORGANICS PROGRAMS

Community	Collection	Diversion	Diversion (lbs/hh/month)	Rate Structure	Service Provider
Seattle, WA	Mandatory	Mandatory	100	PAYT-O	City-contracted private hauler
Portland, OR	Provided by city	Voluntary	85	PAYT-O	City-contracted private hauler
San Francisco, CA	Mandatory	Mandatory	75	PAYT-O	City-contracted private hauler
Boulder, CO	Offered by hauler	Voluntary	NA	PAYT (Hauler sets rates)	Open market private hauler
Austin, TX	Provided by city	Voluntary	40[1]	PAYT-T	City
San Antonio, TX	Provided by city	Voluntary	30[1]	PAYT-T	City
Lake County, IL	Provided by cities	Voluntary	NA	Flat contract rate, no organics fee	City-contracted private haulers

Notes:
1. Diversion quantities for Austin and San Antonio based on average diversion observed during pilot programs in each community.
2. Austin's residential collection program continues to be a pilot serving only a portion of the city. Citywide roll-out is planned to begin in 2017.
3. "PAYT-O" indicates communities in which customer rates are based on the size of trash container and the size of organics container selected. "PAYT-T" indicates communities in which customer rates are based only on the size of trash container selected, with no separate charge indicated for the organics collection service.

As demonstrated in Table 6-1 and the case studies in Attachment B, the majority of residential programs are voluntary for residents to participate in. Collection carts are provided to all residents, with collection service predominantly provided by private haulers through municipal contracts. Rates in most communities are established on a variable pay-as-you-throw structure, thus providing an economic incentive or reward to residents for using a lower volume trash container and diverting more material through recycling and composting. It is important to note that, with the pay-as-you-throw rate structure, customer rates (i.e., the rate paid by the customer for service) are not necessarily reflective of contracted service costs (i.e., the cost of collection

and management incurred by the hauler and charged to the community), and rates therefore may not provide an accurate characterization of the costs of service.

Similar findings regarding residential organics collection programs were identified in a study of food scrap management programs performed for U.S. EPA Region 5 (of which Michigan is a part) in 2010 and 2011. The study[23] identified the following parameters nationwide for residential programs at that time:

- Resident participation in programs is largely voluntary.
- Pay-as-you-throw rate structures are in place in 80% of communities with residential organics collection programs. Nearly 70% of communities require an added fee for organics collection.
- Average participation in residential programs is 35-45% of eligible households. Food scrap diversion is estimated to range from 7-9 pounds per household per week, with higher rates of 12 pounds per household per week identified in more mature programs.
- The costs to provide residential organics service average $5.40 per month, while rates charged to customers average $7.50 per month.

The study also identified best management practices for residential food scrap programs. Some of the practices identified include:

- Build program support through summits with key stakeholders including haulers, processors, generators, decision-makers, and regulators.
- Consider conducting a pilot program for programs in areas where neighboring communities do not provide local experience to draw from. The pilot program should be conducted for a randomly selected area, not on an opt-in basis, to ensure results are representative of the community at large.
- Include soiled paper in addition to food waste and yard waste.
- Perform collection on a weekly basis, with possible every-other-week collection during winter months in northern climates.
- Include a base level of organics collection in trash collection fees, ensuring all households pay for the service when they all have access to it.
- Provide kitchen containers on an as-requested basis, possibly with the use of a coupon system to pick up a free container from a local retailer. The study indicated that kitchen containers are a large cost to programs when provided to all residents, and the effectiveness of the containers in supporting participation is not clear.
- Provide a range of cart sizes for residents to select from.
- Allow, but do not promote, the use of compostable bags to contain food scraps.

[23] Econservation Institute, *Best Management Practices in Food Scrap Programs*, prepared for U.S. EPA Region 5, undated.

- Provide clear and consistent education and outreach.

These best management practices closely align with program practices identified in the benchmark communities evaluated, as well as the interests communicated by members of the Residential Advisory Committee during the development of this Organics Plan.

6.2 Commercial Organics Collection Programs

Table 6-2 summarizes commercial program parameters for the communities studied, including:

- Requirements for collection: “Mandatory” collection indicates that businesses must have organics collection service; “Voluntary” collection indicates that businesses can choose whether to have organics collection service.

- Requirements for diversion: “Mandatory” diversion indicates that organics have been banned from disposal in the trash; “Voluntary” diversion indicates that businesses may choose whether to segregate organics.

- Diversion in pounds per commercial account per month: Based on publicly available data on commercial organics collection quantities and number of commercial accounts served, averaged over a 12-month period.

- Rate structure: Rates for commercial organics collection in most communities studied are set by private haulers on a competitive market basis. In some cases, such as the City of Seattle, City-contracted private haulers providing trash collection service also offer organics collection service at rates set by the City; however, businesses are not required to use the City-contracted hauler for organics collection.

- Service provider: This column indicates who provides collection services for the commercial organics program.

As seen in Table 6-2, though commercial organics collection programs are in place in all but one of the communities for which case studies are provided, communities are not as directly involved in the provision of services to the commercial sector. In several communities, commercial organics collection is provided on an open market basis with haulers competing for the service without municipal contracts. As a result, less detail on the quantity of material collected and customer rates for organics collection service are available. In fact, only two of the communities studied reports commercial organics diversion tonnage and tracks the number of commercial accounts to allow for calculation of diversion performance. As indicated by the comparison of diversion per account in Seattle and San Francisco, significant variability in average diversion may exist in the commercial sector, with factors such as the type and number of businesses impacting material quantities.

TABLE 6-2. SUMMARY CASE STUDIES - COMMERCIAL ORGANICS PROGRAMS

Community	Collection	Diversion	Diversion (lbs/acct/month)	Rate Structure	Service Provider
Seattle, WA	Mandatory	Mandatory	2,300	Set by City or private hauler	City-contracted private hauler or open market
Portland, OR	Mandatory	Voluntary	NA	Set by private hauler	Open market, 35 licensed haulers
San Francisco, CA	Mandatory	Mandatory	985	Set by City	City-contracted private hauler
Boulder, CO	Mandatory	Voluntary	NA	Set by private hauler	Open market private hauler
Austin, TX	Mandatory[1]	Voluntary	NA	Set by private hauler	Open market licensed haulers
San Antonio, TX	No commercial program				
Lake County, IL	Voluntary	Voluntary	NA	Commercial franchise rate	City-contracted private hauler or open market

Notes:
1. Organics collection service is mandatory in Austin only for food establishments.

Again, the food scrap management programs study performed for U.S. EPA Region 5 identified similar findings regarding commercial organics collection programs across the country. The study[24] identified the following parameters for commercial programs:

- Over half of communities with a commercial organics program have collection service provided by a single private hauler. Collection with city collection crews is not typical.
- Diversion performance and impact on overall diversion rates is highly variable and difficult to compare community to community due to differing business types and quantities of organics available for diversion.
- Most commercial programs are voluntary for both service and participation.
- Collection rates vary widely, but on average, organics collection is provided for a rate of $60 per cubic yard for once weekly collection[25]. Rates are typically lower than trash collection rates for the same size container and frequency of collection, with an average 42% reduction.

[24] Econservation Institute, *Best Management Practices in Food Scrap Programs*, prepared for U.S. EPA Region 5, undated.

[25] The $60 per cubic yard average is based on data for which a minimum rate of $28.58 per cubic yard and a maximum rate of $161.96 were reported, supporting the finding that rates vary widely.

Best management practices for commercial collection programs identified in the study include many of the same practices noted previously for residential programs. Additional guidance includes:

- Target generators with larger volumes of food scraps first, rather than broadly seeking participation from all types of businesses.
- Provide free or reduced price indoor containers to help businesses implement diversion practices.
- If using carts, limit the size to up to 64 gallons to ensure the container is not too heavy to empty.
- Provide on-site employee training and business support.

These additional commercial program best management practices provide valuable insight into the development of successful commercial organics programs and are generally consistent with the City's operating experience, experience of other communities studied in the development of the Organics Plan, and the input of the Commercial Advisory Committee.

SECTION 7
FUTURE ORGANICS MANAGEMENT CONSIDERATIONS

Considering the current and possible future organics management quantities and options discussed in previous sections of the Organics Plan, as well as the input obtained through the extensive public engagement process completed during Plan development, this section reviews the operational and logistical needs, as well as estimated costs, of expanded organics management options for residents and businesses in Ann Arbor. The following service options are addressed:

Residential Services:

- Current conditions (providing a baseline understanding of residential collection infrastructure and operations)
- Year-round organics collection (by City crews)
- Provision of compost carts to all households (pilot)

Commercial Services:

- Downtown restaurant and public schools collection pilot
- Commercial franchise contract service

For each option, the infrastructure and equipment needs are identified and potential diversion performance and costs are estimated. Diversion estimates are based on information compiled from a literature review and program performance in benchmark communities; actual diversion achieved in Ann Arbor will be dependent on the participation and behavior of local residents and businesses.

7.1 Residential Services: Current Conditions

The City has existing, established infrastructure and operations to provide seasonal organics collection, as described in Section 4. Understanding the diversion performance and costs resulting from existing collection programs provides a valuable baseline against which to assess future changes in service. The following points summarize the current program:

- The City provides trash and compost collection service to approximately 22,500 homes.

- Trash collection:
  - All homes are provided a wheeled trash cart, which is collected weekly. Residents may select a 32-gallon or 64-gallon trash cart at no additional cost or a 96-gallon cart for an additional annual fee.
  - Collection zones are established with designated collection days, with collection occurring 5 days per week.
  - 6 trucks / routes are operated daily.
  - Collected trash is delivered to the Ann Arbor Transfer Station and transfer hauled to a nearby regional landfill.

- Organics collection:
  - At the time of this Plan, all homes are provided weekly collection of organics on a seasonal basis, April through November (8 months). The City is considering extending service by one week in 2017 and beyond.
  - An estimated 5,000 homes have compost carts and are therefore currently able to add food waste to their organics set-outs.

- The remaining 17,500 homes either set out yard waste in kraft paper bags or do not set out yard waste. Food waste cannot be set out by these homes.
- 3-4 trucks / routes are operated daily during the organics collection season, with organics collected on the same day as trash.
- During the fall, collection operations are expanded to provide adequate service for fall leaf collection for approximately 6 weeks. The fall leaf program includes rental of additional collection vehicles and temporary labor to help staff the increased collection effort.
- Collected organics are delivered to the Ann Arbor Compost Facility for processing and composting.

The cost of current trash and organics management operations is identified in Table 7-1.

TABLE 7-1. RESIDENTIAL CURRENT CONDITION COSTS

	Trash	Organics		
Cost Category	**Regular Collection**	**Regular Collection**	**Fall Leaf Collection**	**Organics Total**
Labor	$725,000	$307,969	$47,342	$355,311
Equipment	$585,376	$600,586	$169,200	$769,786
Fuel	$101,173	$3,818	$0	$3,818
Supplies	$6,070	$38,414	$0	$38,414
Tipping Fees	$455,301	$142,606	$35,652	$178,258
Total	$1,872,920	$1,093,393	$252,194	$1,345,587
Tons Collected	14,987	6,658	1,665	8,323
Benchmark Costs				
Cost/Ton	$124.97	$164.22	$151.47	$161.67
Annual Cost/Household	$83.24	$48.60	$11.21	$59.80
Monthly Cost/Household	$6.94	$4.05	$0.93	$4.98

Notes:
1. All costs are FY2016 actual costs, provided by City of Ann Arbor.
2. Costs shown for Fall Leaf Collection represent temporary labor and rental vehicles for a 6-week collection period. Costs for Fall Leaf Collection program are approximate.
3. Leaf tonnage is approximate and estimated at 20% of total organics based on comparison of average weekly organics collection during the 6-week fall leaf collection period versus average weekly organics collection prior to the fall leaf collection period.
4. Monthly cost per household is based on 12 months for comparability between trash and organics collection costs, though organics collection only occurs over 8 months.

Current conditions and the costs identified in Table 7-1 indicate the following:

- On a cost per ton basis, the cost of trash collection in Ann Arbor is lower than the cost of organics collection. While the per-ton tipping fees for disposal and composting are approximately the same, trash collection costs are lower on a per-ton basis compared to organics collection because more tons of trash are set out and it is expected that more homes set out trash on a weekly basis.

- On a cost per household basis, trash collection costs are higher than organics collection costs because more tonnage is set out and more homes have set-outs present, requiring more collection vehicles and labor compared to organics collection. However, as compost collection extends on either end of the season, this ratio may shift.

- Fall leaf collection is somewhat less costly on a per-ton basis than regular organics collection because of the large amount of organics collected over the brief 6-week collection period, despite the need to secure rental trucks and temporary labor. These added costs are reduced when considered on a cost per ton basis due to the handling of approximately 20% of all compost tonnage with the added equipment and labor over a compressed timeframe.

7.2 Residential Services: Year-Round Organics Collection

One option to enhance residential organics services is to provide organics collection on a year-round basis for compost cart customers, with collection provided during winter months of December through March. This would provide continuous collection of food waste for residents through the year. Two service levels are considered for collection during the winter months, including: 1) continued weekly organics collection; and 2) monthly organics collection, considered due to the reduced organics tonnage generated and requiring collection during the winter and to provide service at a reduced cost compared to weekly collection.

To provide year-round collection, the following equipment and infrastructure would be required:

- Existing collection vehicles are assumed to continue to be used during the winter months. Currently, these vehicles are scheduled for maintenance or used to supplement trash collection vehicles during winter months.

- The compost facility would be required to operate daily on a year-round basis. The facility is currently operated year-round under the existing operating contract.

- Because compost carts are distributed across the City, the current collection routes operated daily on a Monday through Friday basis would be required to be maintained.

The cost of year-round organics collection, with collection provided on either a weekly or monthly basis during the winter months, is estimated in Table 7-2, with current organics collection costs from Table 7-1 provided for comparison. The costs in Table 7-2 also include the net tipping fee after avoided landfill costs for the tonnage diverted through organics collection during the winter months, on the assumption that the tonnage collected in the winter is incremental food waste tonnage diverted from disposal.

TABLE 7-2. YEAR-ROUND RESIDENTIAL COLLECTION COST PROJECTIONS

		Incremental Cost (Winter Month Totals)	
Cost Category	**Current Conditions**	**Weekly Collection**	**Monthly Collection**
Labor	$307,969	$153,985	$51,328
Equipment	$600,586	$0	$0
Fuel	$3,818	$1,909	$636
Supplies	$38,414	$19,207	$6,402
Net Tipping Fees	$142,606		
Diversion (2 lbs/hh/wk)		$983	$983
Diversion (5 lbs/hh/wk)		$2,457	$2,457
Total	$1,093,393		
Diversion (2 lbs/hh/wk)		$176,083	$59,349
Diversion (5 lbs/hh/wk)		$177,557	$60,823
Benchmark Costs			
Cost/Ton Diverted (Incremental)	$164.22		
Diversion (2 lbs/hh/wk)		$2,071.56	$698.23
Diversion (5 lbs/hh/wk)		$833.60	$285.56
Cost/Ton Diverted (Total)	$164.22		
Diversion (2 lbs/hh/wk)		$188.27	$170.95
Diversion (5 lbs/hh/wk)		$184.97	$167.98
Annual Cost/Cart Household			
Diversion (2 lbs/hh/wk)		$35.22	$11.87
Diversion (5 lbs/hh/wk)		$35.51	$12.16
Monthly Cost/Household	$4.05		
Diversion (2 lbs/hh/wk)		$0.65	$0.22
Diversion (5 lbs/hh/wk)		$0.66	$0.23

Notes:
1. Diversion tonnage at 2 lbs/hh/week = 85 tons (17 weeks x 2 lbs/hh/wk x 5,000 cart homes). Diversion tonnage at 5 lbs/hh/week = 213 tons (17 weeks x 5 lbs/hh/wk x 5,000 cart homes).
2. Diversion tonnages are assumed to be the same during the winter months whether collection is performed once per week or once per month. However, diversion may be reduced if collection is provided once per month.
3. Net tipping fee after avoided landfill costs for incremental tonnage diverted = $11.56/ton, based on the commercial tipping rate for food waste charged by WeCare Organics to University of Michigan ($38/ton), less the disposal cost for the same ton of food waste ($12.57/ton transfer and transport + $13.87/ton disposal, based on FY2016 contract costs from ReCommunity for transfer and transport and Waste Management for disposal).
4. Labor costs assume staff providing monthly collection can be allocated to other City operations during non-collection weeks; this may result in cost increases to other operations which have not been evaluated.
5. Current program costs do not include the cost of the fall leaf collection program (Table 7-1).
6. Cost/Ton Diverted (Incremental) based only on incremental costs and tonnage. Cost/Ton Diverted (Total) based on current and incremental costs and tonnage (excluding fall leaf collection).

Based on the costs projected in Table 7-2, the following observations are made:

- The incremental cost per ton for year-round collection is notably higher than the current seasonal organics collection operations. This is due to the increase in fixed capital and operational costs and the significant reduction in tonnage projected to be collected during the winter months.
- The total cost per ton for year-round collection (inclusive of currently diverted tonnage and current organics collection costs) is approximately 2 to 4% greater than current cost per ton diverted when monthly collection is considered. The increase is greater (approximately 13 to 15% per ton) when weekly collection is considered.

- The incremental monthly cost per household on a Citywide basis represents an approximate 5% cost increase if collection is provided monthly during the winter months and an approximate 16% cost increase if collection is provided weekly during the winter months.

- The current compost facility operating contract with WeCare Organics will terminate in January 2018. This may impact tipping fees, pending the pricing secured in the next compost facility operating contract. In addition, the contract does not currently include the acceptance of City-collected organics during the winter months, which would need to be addressed in the next operating contract if year-round collection will be implemented.

- Tipping fees for trash transfer and transport are based on FY16 contracted tipping fees through the City's former operating contract with ReCommunity. Tipping fees for trash disposal are based on current contracted disposal fees through the City's agreement with Waste Management at the Woodland Meadows Landfill. Trash transfer and transport services are currently being provided through an emergency contract. A new consolidated trash transfer, transport, and disposal contract is currently in bidding, with the new contract to be effective July 1, 2017. This may impact disposal tipping fees, pending pricing in the new contract, and therefore also impact the net tipping fee after avoided disposal costs.

- Existing equipment would incur additional use and may accelerate equipment depreciation / replacement. In addition, because the City's collection vehicle fleet is scheduled for maintenance during the winter months, adequate trucks may not be available to provide collection if weekly collection is implemented. The cost impact of this has not been accounted for in Table 7-2, and would result in increased costs for compost collection service.

7.3 Residential Services: Provide Compost Carts to All Homes (Pilot)

A second option to enhance residential organics services is to provide all homes with a compost cart, enabling all households to set out food waste in the compost cart during the seasonal organics collection period April through November. To evaluate the impact of providing all homes with a compost cart, and based on the input of the Residential Advisory Committee, it is suggested that a pilot evaluation of providing carts to select sections of the community be performed.

The pilot is envisioned to be structured as follows:

- Select 3 to 5 existing organics collection routes (approximately 1,500 homes per route) and split each route in half (approximately 750 homes each, with one-half assigned as the "test" area and one-half assigned as the "control" area). Selected routes would be on different days of the week, with pilot collection therefore being performed 3 to 5 days weekly. The 3 to 5 "test" areas of approximately 750 homes each is equal to approximately 2,250 to 3,750 homes, representing 10 to 17% of total households receiving Ann Arbor residential collection.

- Provide all homes in each "test" area with a compost collection cart.

- Continue to provide regular organics collection service to the homes in the "control" areas. It is assumed that the route driver providing regular collection service will be assigned to other department operations when the collection in the "control" area is completed, given that those routes will be reduced by half and completed more quickly than is done currently.

- Provide education materials to homes in the "test" areas to encourage use of the compost cart for both yard waste and food waste.

- Perform the pilot collection program for one collection season (8 months, based on current seasonal compost collection operated from April through November).

- Monitor set-out rates in the "test" areas and "control" areas. Track total tons of organics collected in each area.

- Conduct a survey of homes in the "test" areas at the completion of the pilot to obtain feedback on the program.

- Due to the seasonality of the organics collection program, and given that the 2017 collection season has already commenced, this is anticipated to be a 2018 initiative.

To perform the pilot evaluation of the impact of providing compost carts to all households, the following equipment and infrastructure would be required:

- Compost carts must be purchased and delivered to all homes in the "test" areas. This is estimated to require 2,250 to 3,750 carts[26]. By default, homes will be provided a 32-gallon cart, with the option to request a larger 64-gallon or 96-gallon cart if desired.

- One rental collection truck will be secured to provide collection in the "test" areas for the 8-month pilot period.

- One temporary employee working as a route driver for collection in the "test" areas will be secured for a 9-month period, allowing for one month of employee training prior to the 8-month collection season.

[26] Approximately 20% of the homes Citywide are estimated to currently have a compost cart. However, the current distribution of carts by address is unknown and therefore, while some homes in the "test" areas may already have a compost cart, for planning purposes it is assumed that all homes will require a cart.

- Education will consist of mailed flyers to all "test" area homes, including opt-out instructions. Additional education and outreach will be provided through the City's website.

- Monitoring will include the use of 2 temporary employees performing ride-along assessments on the organics collection trucks operating in the "test" and "control" areas to log participation (i.e., the number of homes with organics set-outs present) in each area. This will provide insight into the relative participation under the current organics program ("control" areas) compared to a cart-based organics program ("test" areas). Ride-along assessments will be conducted over 3 one-week periods during the pilot (initiation, mid-season, end of season) to gauge participation as the pilot matures and to take into account the variation in set-outs through the season due to fluctuating quantities of yard wastes. It is possible that the compost carts may increase household set-outs compared to the current program due to the availability of the cart and ease of setting out small quantities compared to using kraft paper bags in the current program. Additional monitoring will be performed when loads are delivered to the compost facility, including visual inspection and photographic logging of the collected organics to observe the relative presence of food waste and note whether contamination is present.

- Post-pilot evaluation will be performed, and for budgeting purposes this is assumed to be completed by an outside consultant. Performance metrics will be summarized, including participation and set-out rates and tonnage diverted. At a planning level, based on diversion achieved in other communities it is initially projected that diversion from pilot households may increase by an average of 2 to 5 pounds per household per week. This would equate to 79-197 tons per year additional diversion for 3 pilot areas, and 131-328 tons per year for 5 pilot areas. A survey will be developed and mailed to all homes in the "test" areas to obtain feedback on the pilot such as ease of cart use and storage, reported frequency of use of the cart for food waste, and overall satisfaction with the expanded service option, with survey results compiled and summarized as part of the evaluation.

- Project management and administration will be performed by City staff. City staff time and coordination is projected to be equivalent to 10% of the total cost of the pilot.

Based on these operating parameters and existing costs of organics collection operations in the City, the cost of the pilot conducted for 3 and 5 areas of the City are presented in Table 7-3.

TABLE 7-3. RESIDENTIAL CART PILOT COST PROJECTIONS

Cost Category	3 Pilot Areas	5 Pilot Areas
Compost Carts	$135,000	$225,000
Truck Rental	$112,800	$112,800
Truck Labor	$43,524	$43,524
Truck Fuel	$11,240	$11,240
Net Tipping Fees	($704 - $1,760)	($1,173 - $2,933)
Ride-Along Monitoring Labor	$7,449	$7,449
Education and Outreach	$9,000	$15,000
Pilot Evaluation	$11,200	$11,200
Project Management and Administration	$33,021	$42,621
Total	$361,228 - $362,284	$465,491 - $467,251
Benchmark Costs		
Cost/Ton Diverted (Incremental Cost and Tons)	$1,833.65 - $4,585.88	$1,419.18 - $3,566.80
Cost/Ton Diverted (Total Cost and Tons)	$212.20 - $216.07	$223.14 - $229.88
Annual Cost/Cart Pilot Household	$160.55 - $161.02	$124.13 - $124.60

Notes:
1. Collection costs including truck rental, labor, and fuel are assumed to be the same whether 3 or 5 pilot areas are defined because rental charges are applied on a monthly basis and contracted temporary labor is secured on a full-time (40 hours per week) basis. Contracted temporary labor may be assigned to other operations under the 3 pilot area option on days when "test" areas are not collected, but costs are assumed to continue to be allocated to a component of the City's solid waste operations.
2. The net tipping fee considering avoided disposal costs is based on the differential in tipping fees for trash ($26.44/ton; refer to note 3 in Table 7-2) and compost ($17.50/ton for City-delivered mixed residential organics). The net tipping fee is based on the incremental tonnage diversion projected to be observed of 79-197 tons per year for 3 pilot areas and 131-328 tons per year for 5 pilot areas.
3. Cost/Ton Diverted (Total Tons) does not include the cost or tonnage of the fall leaf collection program (Table 7-1).

Based on the costs presented in Table 7-3, the following observations are made:

- The incremental cost per ton projected to be diverted through the pilot is 10 times or more the cost per ton diverted through the current composting program. This is because the cost per ton is calculated for only the incremental diversion through the addition of food waste quantities to homes in the pilot area.

- The cost per ton for the overall compost collection program including current tonnage collected and incremental tonnage projected to be diverted through the pilot is approximately 30 to 40% greater than the current cost per ton diverted. The increase is due to the significantly greater cost per ton to collect the additional tonnage projected to be diverted in the pilot areas.

- The annual cost per cart pilot household (or annual cost per household in the "test" areas) is projected to range from approximately $124 to $161, compared to an annual cost per household Citywide of approximately $60 under the current organics collection program. The increase in the cost per household is due to the decreased number of homes served on each collection route, the cost to provide compost carts to all homes in the "test" areas, and pilot monitoring and evaluation costs.

7.4 Commercial Services: Downtown Restaurant and Public Schools Collection Pilot

In the commercial sector, because an organics collection program is not currently provided, one approach to implementing organics collection service would be to perform a pilot for commercial collection. This option was identified by a group of interested businesses and brought forward to the Ann Arbor Environmental Commission and City Council during Spring 2016. In May 2016, the City Council adopted a budget amendment to establish a commercial organics collection pilot at 10 downtown restaurants and 9 public schools with an allocated budget of $100,000[27]. The objective of the pilot would be to evaluate commercial food waste quantities, participation, contamination, and education effectiveness to inform a further roll-out of services to the broader commercial sector.

This pilot may be structured as follows:

- Solicit participation from 10 downtown restaurants and 9 public schools willing to participate in the pilot program and who are confirmed to have adequate outdoor storage space for additional carts. It is assumed that this level of participation will be obtained from Ann Arbor Public Schools and from the businesses.

- Evaluate container placement and space constraints for inside collection containers (to be provided by the participating restaurants and schools) and for outside collection containers (to be provided by the City).

- Provide orientation and training to restaurant management / supervisory staff and school personnel on how to properly segregate and collect organics.

- Provide 64-gallon carts for exterior storage of collected food wastes. Cart-based collection facilitates the handling of heavy food waste, with operating experience in Ann Arbor and other communities indicating that containers up to, but not larger than, 64 gallons is preferred. Based on a review of commercial account services in the City's commercial waste franchise, the following parameters are summarized:

  <u>Restaurants</u>
  - Approximately 100 restaurant accounts are included in the commercial waste franchise.
  - Service levels show significant variability, both in container size and collection frequency.
  - Approximately 66% of accounts have 6-yd^3 or 8-yd^3 dumpsters, with the remainder of accounts having smaller dumpsters ranging from 2-4 yd^3.
  - Nearly all accounts have a single dumpster.

[27] Enactment No. R-16-201, Resolution to Adopt Ann Arbor City Budget and Related Property Tax Millage Rates for Fiscal Year 2017, Amendment 6, May 16, 2016.

- Approximately 50% of accounts receive collection once per week. The remainder receive collection between 2 and 6 times per week.
- Based on published composition studies, food waste accounts for approximately 50% of disposed waste in restaurants.
- Assuming 80% recovery of available food waste during the pilot (estimated to be 912 pounds per account per week), approximately 8 collection carts per account (on average) would provide capacity for 1 week of food waste. Since waste from restaurants is frequently collected more than once per week, 4 carts per account collected 3 times per week are estimated to provide the required storage capacity for food waste, including surplus capacity for peak storage periods.

Schools

- Approximately 40 school accounts are included in the commercial waste franchise.
- Approximately 80% of school accounts have 6-yd^3 dumpsters.
- Approximately 90% of school accounts have 1 or 2 dumpsters, with the number of accounts split evenly between these.
- Approximately 75% of schools receive once per week collection, and 20% of schools receive twice per week collection.
- Based on published composition studies, food waste accounts for approximately 30% of disposed waste in schools.
- Assuming 80% recovery of available food waste during the pilot (estimated to be 417 pounds per account per week), approximately 4 carts per school (on average) would provide capacity for 1 week of food waste, though final pilot design could include more frequent collection.

- Collect food waste carts from 1 to 3 times per week, with service frequencies finalized based on evaluation of each participant. As part of the pilot collection process, the collection vehicle driver will be responsible for exiting the collection vehicle and inspecting cart contents prior to emptying the carts to visually ascertain whether contamination is present. Excessively contaminated carts would be flagged as trash and not collected by the organics collection truck, and would instead require a return trip to be collected and disposed as trash.

- Provide follow-up monitoring with each participant on a monthly basis during the pilot period to review participation and contamination levels and identify any service modifications required.

- Perform post-pilot evaluation to analyze performance, including quantities collected, collection frequencies, container utilization, and contamination or operational issues. This information can be utilized to assess preliminary costs of rolling out a larger program to more commercial customers.

To perform the restaurant and schools pilot, the following equipment and infrastructure would be required:

- Compost carts must be purchased and delivered to participants. This is estimated to require 100 64-gallon carts.

- One rental collection truck will be secured to provide collection from pilot participants. City staff have indicated that spare equipment or surplus route collection time is not available to provide collection with existing equipment.

- One temporary employee working as a route driver for collection from pilot participants will be secured for the length of the pilot collection period plus an additional 2 weeks for initial training. City staff have indicated that current personnel are not available to provide collection for additional operations such as this pilot.

- Initial planning and orientation as well as follow-up monitoring and program evaluation will be performed by an outside consultant, because the City does not have a permanent education and outreach coordinator for solid waste operations.

- Project management and administration will be performed by City staff. City staff time and coordination is projected to be equivalent to 10% of the total cost of the pilot.

Based on these operating parameters, the cost of the pilot conducted for either a 3-month or 6-month period are presented in Table 7-4.

TABLE 7-4. DOWNTOWN RESTAURANT AND PUBLIC SCHOOLS PILOT COST PROJECTIONS

Cost Category	3-Month Pilot	6-Month Pilot
Orientation and Outreach	$12,800	$12,800
Monitoring	$9,600	$19,200
Compost Carts	$4,800	$4,800
Truck Rental	$42,300	$84,600
Truck Labor	$16,729	$31,226
Truck Fuel	$2,108	$4,215
Net Tipping Fees	$1,168	$3,422
Pilot Evaluation	$7,500	$7,500
Project Management and Administration	$9,700	$16,776
Total	$106,704	$184,539
Benchmark Costs		
Cost/Ton Diverted	$1,056	$623
Monthly Cost/Account	$1,778	$1,538

Notes:
1. Collection costs including truck rental, labor, and fuel include the full cost of truck rental charges and full-time rate for contracted temporary labor, though collection operations may not occur on a full-time basis. The rental truck and contracted temporary labor may be assigned to other operations if pilot collection is not a full-time operation, but costs in that case will continue to be allocated to a component of the City's solid waste operations.
2. Orientation and outreach is estimated at 8 hours per account. Monitoring is estimated at 2 hours per month per account.
3. The net tipping fee considering avoided disposal costs is based on the differential in tipping fees for trash ($26.44/ton; refer to note 3 in Table 7-2) and compost ($38/ton for food waste delivery by the University of Michigan). Potential diversion is estimated at 101 tons during the 3-month pilot and 296 tons during the 6-month pilot.

Based on the costs projected in Table 7-4, the following observations are made:

- Outreach, monitoring, and evaluation are significant cost elements of a pilot program, contributing 20-30% of the costs for the pilot periods assessed. These elements, however, will provide guidance for the outreach and monitoring effort that may be required for a larger program and further inform the design of such a program.

- The budget amendment approved by City Council allocated $100,000 for this pilot effort. A 3-month pilot would approximately meet the budget allocation, exceeding it by approximately 7%. This pilot duration would provide limited operational experience to draw on. A longer 6-month pilot would provide additional time for program development and evaluation, though it would also require additional funding estimated at $185,000 for the full 6-month pilot period.

- With the inclusion of public schools in the pilot, implementation of the pilot may be targeted for Fall 2017 to coincide with school attendance schedules.

7.5 Commercial Services: Commercial Franchise Contract Service

A second option to provide commercial organics collection service to commercial generators in Ann Arbor is to include the service in the City's commercial waste collection franchise agreement. The current agreement will terminate in June 2019. Including commercial organics collection in the commercial waste franchise provides a number of benefits:

- Continued single point of contact for the City for commercial waste collection operations;

- Consistent contracting periods and terms of service;

- Ease of "right-sizing" service[28] for efficient and cost-effective waste and organics management at individual businesses through contact with a single service provider; and

- Competitive pricing accounting for the economies of scale that can be achieved by a single hauler servicing customers Citywide, rather than multiple haulers achieving less route density and therefore providing less efficient collection service.

Commercial franchise contract services may be structured as follows:

- Contract hauler will provide collection containers (assumed to be either 64-gallon carts or 2 cubic yard dumpsters) to each commercial account, with the account holder selecting the container size and service frequency desired.

- Evaluate container placement and space constraints for inside collection containers (to be provided by the generator) and for outside collection containers (to be provided by the hauler). This is assumed to be performed by the City using an outside consultant, and may also include participation by the contracted hauler.

[28] "Right-sizing" refers to adjusting container sizes and collection frequencies to match the needs of the individual generator. When multiple material streams are being managed, such as trash and organics, this can result in changes to either or both container sizes and collection frequencies for each material stream.

- Provide orientation and training to business management / supervisory staff on how to properly segregate and collect organics.

- Collect food waste from commercial generators up to 6 times per week. It is assumed organics will be collected at the same frequency as waste is currently collected from each business.

- Secure and track monthly tonnage data from the City's scalehouse reports and monthly account service data from the contractor. Based on the monthly data, monitor diversion performance on a Citywide and average per-account basis.

To provide service through the commercial waste collection franchise, the following equipment and infrastructure would be required:

- Compost carts (up to 64-gallon size) and dumpsters (2 cubic yard size) must be provided and delivered by the contracted hauler. It is initially estimated, based on the current number of commercial franchise accounts, that organics service could be provided to a total of 807 properties. If service was instead focused on only food-oriented businesses including restaurants, schools, hotels, and grocery stores, organics service could be provided to 180 properties.

- Collection vehicles and route drivers will be provided by the contracted hauler as required based on account locations and service frequencies requested.

- Initial planning and education will be performed by an outside consultant, because the City does not have a permanent education and outreach coordinator for solid waste operations.

For cost projection purposes, two scenarios are considered: 1) provision of organics collection service to all commercial franchise customers, and 2) provision of organics collection service to only food-oriented commercial properties. Under either scenario, for cost projection purposes at the planning level the following assumptions are made:

- Collection costs are based on the provision of 2 cubic yard dumpster service to each property.

- Collection costs are assumed to be equal to the collection cost for trash service under the franchise, because the equipment and service requirements are expected to be generally the same regardless of material being collected.

- Collection frequency is assumed to be the same as current trash collection frequency for each property. As an example, a commercial property with existing 6 cubic yard trash collection 3 times weekly is assumed to receive 2 cubic yards of organics collection 3 times weekly. Similarly, a commercial property with existing 2 cubic yard trash collection 1 time weekly is assumed to receive 2 cubic yards of organics collection 1 time weekly.

Based on the identified operating parameters and cost assumptions, the cost to provide Citywide organics collection service through the commercial waste collection franchise are estimated in Table 7-5.

TABLE 7-5. COMMERCIAL FRANCHISE ORGANICS SERVICE COST PROJECTIONS

Cost Category	All Commercial Accounts		Food-Oriented Accounts	
	Low Diversion	High Diversion	Low Diversion	High Diversion
Education	$258,240	$258,240	$115,200	$115,200
Collection Costs	$874,000	$874,000	$244,000	$244,000
Net Tipping Fees	$20,438	$46,715	$11,531	$26,356
Total	$1,152,678	$1,178,955	$370,731	$385,556
Benchmark Costs				
Cost/Ton Diverted	$652	$292	$372	$169
Monthly Cost/Account	$119	$122	$172	$178
Annual Cost/Account	$1,428	$1,461	$2,060	$2,142

Notes:
1. Education is estimated at 4 hours per account.
2. Collection costs based on current number of accounts and assumed 2 cubic yard service at the same collection frequency as trash for each account.
3. The net tipping fee considering avoided disposal costs is based on the differential in tipping fees for trash ($26.44/ton; refer to note 3 in Table 7-2) and compost ($38/ton for food waste delivery by the University of Michigan).
4. "All Commercial Accounts" based on 807 commercial properties receiving waste collection through the commercial waste franchise. "Food-Oriented Accounts" based on 180 food-oriented properties identified through review of the commercial account list.
5. Food waste assumed to comprise 20% of all commercial waste and 39% of food-oriented commercial waste. "Low Diversion" based on 35% capture of assumed food waste in the disposed waste stream (1,768 tons for all commercial accounts; 997 tons for food-oriented accounts). "High Diversion" based on 80% capture of assumed food waste in the disposed waste stream (5,051 tons for all commercial accounts; 2,850 tons for food-oriented accounts).

Based on the costs projected in Table 7-5, the following observations are made:

- Costs of service to provide organics collection to all commercial accounts are lower on an average monthly or annual basis than the cost of service to only food-oriented accounts. However, food-oriented commercial accounts are likely to generate food waste in larger quantities compared to the average commercial account and therefore may be able to adjust their trash collection container size and/or collection frequency to offset a portion of the cost for organics collection, if such costs are to be borne by the commercial account directly.

- The cost per ton of food waste diverted is approximately 60% lower when considering food-oriented accounts only compared to all commercial accounts. This is due to the greater quantity of food waste per account projected to be diverted when considering only food-oriented accounts, resulting in greater collection efficiency for each collected ton.

- Collection costs and net tipping fees are based on current costs under the commercial waste franchise (expiring in June 2019), transfer and disposal contracts (expiring in June

2017), and compost facility operating contract (expiring in January 2018). Terms and costs of service in each of these new contracts may impact the cost projections presented in Table 7-5.

- The cost projections in Table 7-5 are based on current commercial waste franchise collection costs, which include an expectation of route density because all properties receive waste collection service[29]. If a voluntary organics collection program is instituted, whereby only businesses opting to receive the service are paying for the service, it is likely the collection cost per account would increase due to lower route density and participation rates.

[29] Not all commercial properties receive collection service through the commercial waste franchise. Some properties are served by the City of Ann Arbor through cart-based collection or own their own containers which are collected by the City.

SECTION 8
RECOMMENDED ORGANICS MANAGEMENT PLAN

This section identifies recommendations for Ann Arbor's Comprehensive Organics Management Plan to achieve greater organics diversion from the residential and commercial sectors. Recommendations have been developed based on:

- The data reviewed and compiled in Section 4;
- The review of organics management strategies and benchmark community programs presented in Sections 5 and 6;
- The analysis of operational and logistical needs presented in Section 7;
- The data obtained from the survey of a random sample of 600 Ann Arbor residents, summarized in Section 3;
- The input from stakeholders and interested parties through the Residential Advisory Committee and Commercial Advisory Committee; and
- The input of Ann Arbor's Environmental Commission.

Ann Arbor has historically been a leader in the delivery of solid waste and waste diversion services, and the recommendations contained in this Organics Plan will assist the City in future efforts to achieve continued success. These recommendations reflect the long-term waste and sustainability goals of the City, the input of stakeholders through extensive public engagement during plan development, and the analysis of benchmark communities and local needs. Recommendations have been grouped by sector, including Citywide, Residential, and Commercial.

Identifying specific funding approaches to implement and sustain the recommendations of the Organics Plan were beyond the scope of plan development and will be addressed by the City as recommendations are brought forward for implementation. As recommendations are implemented, it will be important to balance Ann Arbor's objectives of providing high quality service and reducing the quantity of waste disposed in pursuit of the goal of zero waste with the fiscal constraints of local government and willingness of residents and businesses to pay for programs. This was borne out by the resident survey, which indicated that, though residents are interested in diverting more organics from disposal, they are sensitive to costs and would be unwilling to pay more for expanded organics collection service. It was further identified by businesses participating in the Commercial Advisory Committee who cited concerns about cost increases that may result from implementation of organics collection services.

8.1 Citywide Recommendations

Citywide recommendations reflect those recommendations that are not specific to either the residential sector or commercial sector. These include program oversight and administration recommendations. In addition, recommendations for the most preferred options in the food recovery hierarchy, source reduction and donation, are considered Citywide recommendations because they apply broadly to both residential and commercial generators.

Education and Outreach Recommendations

Education and outreach was noted by members of both advisory committees as a clear need for the advancement of organics diversion Citywide. This was also supported by the results of the resident survey, which indicated that there is not Citywide awareness of existing residential organics management opportunities. When asked if they are aware that food waste can be added to City compost carts, 34% of residents were not aware of that option. In addition, of survey respondents who own a compost cart currently, 21% were not aware they can add food waste to the cart.

The City currently provides information about its residential organics collection program on its website and in periodic publications such as the Waste Watcher newsletter. However, a large-scale education and outreach effort for City solid waste operations, or any part thereof, is not currently provided. A broad outreach campaign designed to increase awareness of current organics reduction and composting options within the City is estimated to cost $3 to $4 per household[30], on average, for an annual budget of $67,500 - $90,000. The City currently does not have a dedicated educator on staff, though at one time a full-time education and outreach professional was allocated to solid waste operations. City staff has indicated full-time employee costs may be approximately $110,000; employment of a full-time educator therefore would be a higher cost than projected for the education and outreach envisioned herein and would necessitate additional expenditure for production of education materials and media costs.

Specific education recommendations include:

1. Through the use of City staff and a contracted marketing / public relations agency, develop an immediate, robust outreach and education program providing comprehensive information to residents (as the primary audience, based on current available services) and businesses regarding the environmental benefits of reducing and diverting organic wastes and methods by which they can currently reduce and divert organic wastes. The program is recommended to include an overarching branding and consistent messaging across all materials, with the ability to provide separate information for residents and businesses in the future if a commercial organics program is implemented. Outreach should be performed through a number of methods (e.g., print, online, social media, television, radio) and include direct, personal outreach to community and business groups and through local schools.

2. Provide outreach materials on the City's website or through a dedicated program URL developed specifically for the outreach program. To the extent funding allows, outreach materials are recommended to be tailored to provide specific messaging to different types of households (e.g., families with children, young people without children, older residents) to increase the reach of the outreach effort and applicability to the various generators in the City.

3. Establish the outreach program as an ongoing component of the City's delivery of services to reinforce food waste reduction and compost collection best practices, sustain generator awareness of existing programs and opportunities, and readily communicate program changes as they are planned for implementation.

[30] The City of Minneapolis allocated $315,000 for residential organics outreach and education in 2016, covering 105,000 households ($3 per household). The City of Seattle budgeted $1,200,000 for Citywide outreach and education for recycling and organics diversion requirements in its residential and commercial sectors in 2016; assuming half of this budget is allocated to residential programs, and based on service to 150,000 households, this is equal to $4 per household.

4. Provide additional outreach and implementation support to commercial generators if a large-scale commercial organics collection program is developed, including providing half-day workshops to the business community at-large and one-on-one training and site evaluations to assist businesses in establishing a food waste diversion practice. Cost implications and greater detail of the scope of one-on-one training and site evaluations will be developed through the execution of a commercial organics pilot, if implemented (see Section 8.3).

5. Develop methods by which commercial compost collection program participants are recognized for their participation and provided tools to serve as ambassadors of the program to the broader community.

Reduction and Prevention

Reduction and prevention of food waste is the most preferred option in the Food Recovery Hierarchy and was noted by advisory committee members as well as respondents to the resident survey as an area of interest to reduce organic waste disposal. The resident survey indicated that 78% of residents are interested in reducing the amount of food waste they generate, with 43% of residents saying they would be likely to use a set of tools to track food wasting habits.

The following recommendation is made regarding reduction and prevention; this recommendation would be implemented in conjunction with the education recommendations noted previously and can be completed at virtually no additional cost to the City:

1. Promote food waste reduction practices by sharing published resources and tools available from public sources such as U.S. EPA through the program website and/or Ann Arbor website, supplementing with local information if necessary.

Donation

Donation of surplus food serves to feed hungry people in the local community while reducing the quantity of food waste requiring collection and management. Donation of usable food was supported by members of the advisory committees, and the local non-profit food rescue organization, Food Gatherers, concurred. The following recommendations for food donation have been identified:

1. Promote food donation to non-profit food rescue organizations such as Food Gatherers as part of the outreach and education campaign.

2. Seek a partnership arrangement between the City and Food Gatherers to provide clear guidelines for food donation and establish data tracking and reporting practices. Include consideration of the provision of operational cost support through modified pricing for trash and organics collection services, based on Food Gatherers' current levels of service and quantities of material managed as well as future changes in quantities managed[31].

[31] Review of the commercial waste franchise account information indicates Food Gatherers receives collection of 4 6-yd^3 dumpsters twice weekly, for a monthly trash collection cost of $800. Food Gatherers also currently contracts with a private company for organic waste collection at an undisclosed rate.

Future Organics Plan Updates

1. Review and update the Organics Plan every 5 years to reflect advances in organics management methods, lessons learned through implementation, and update recommendations accordingly.

8.2 Residential Sector Recommendations

The City has an established residential organics program currently available to all households which includes the option of commingling food waste and yard waste in City compost carts. The current program provides for voluntary participation by residents in the diversion of food waste on a seasonal basis April through November. The current residential program is generally available to residents in City households receiving residential waste collection service; this primarily includes single-family households and multi-family properties up to 4 units. Multi-family properties receiving dumpster collection service or served by the City's commercial waste franchise hauler are considered to be commercial properties for purposes of this Organics Plan, despite their housing of residents. Program options specific to multi-family properties are not identified, and multi-family properties instead are proposed to be offered organics collection options based on whether they meet collection criteria as a residential property or commercial property.

Based on organics quantities currently collected, and in comparison to benchmark communities reviewed in this study, the City's residential organics program is performing mid-range with diversion of an average of 62 pounds of organics per household per month. Data from other communities identifies some programs at the high end of the range such as San Francisco, Seattle and Portland achieving between 85 and 100 pounds of organics diversion per household per month; these communities have banned the disposal of food waste (San Francisco, Seattle) or have reduced trash collection to every other week (Portland), thereby driving greater participation and diversion in residential organics programs. Communities on the lower end of the range include those in Texas, where yard waste is not banned from disposal and food waste is just now being incorporated into organics collection on a citywide basis. In all communities, yard waste is the predominant component of the organics stream, and due to climate and vegetation differences it is likely that wide variations in diversion performance measured on a pounds per household basis may be observed even with mature and highly successful programs.

Going forward, options to increase organics diversion from the residential sector are focused towards greater accessibility and use of commingled food waste and yard waste collection for that portion of the organics stream that is not reduced or donated. Sections 7.2 and 7.3 provided operational parameters for two options, including year-round collection and pilot evaluation of expansion of compost carts to all households. These options were identified by members of the Residential Advisory Committee and are consistent with approaches taken in benchmark communities. In addition, the resident survey provided support for these options:

- 48% of respondents indicated they have a need for organics collection on at least a monthly basis during the winter months. However, only 28% of residents indicated they may be willing to pay a supplemental fee to have access to year-round collection service.

- 73% of respondents indicated they would be willing to put food waste in the City compost cart if a cart was provided to them.

Based on this input and the operational evaluation in Section 7, the following residential program recommendations have been identified:

1. Conduct a pilot roll-out of compost carts to all residential properties within 3 to 5 select neighborhoods to assess the impact on resident use of the carts for food wastes, measure diversion impacts, and secure resident feedback. Refer to Section 7.2 for details of the design and operation of the pilot. The cost of the pilot is estimated to be approximately $360,000 to $470,000 depending on the number of pilot areas included. The pilot is recommended to be conducted for one full collection season, and therefore would likely be implemented in 2018.

2. Provide monthly organics collection during winter months for one winter season to assess local participation and quantities diverted. Because of the low projected additional diversion to be achieved through collection in the winter months, and the high cost per ton diverted compared to existing services, this recommendation is targeted for implementation during the December 2018 - March 2019 winter season, after the completion of the compost cart pilot. The cost to provide monthly collection during the winter months to compost cart customers is estimated to be approximately $60,000.

3. Provide guidelines on the City's website and in other educational materials for collecting food wastes with resident-provided small containers in lieu of providing kitchen containers to all households. Contact local businesses to request them to sell kitchen containers and approved compostable liners, and provide a list of participating businesses on the City's website and in published program information.

4. Promote the use of home compost bins, provide educational information to assist residents in bin construction / purchasing and usage, and promote mulching / grass-cycling through educational materials and the City's website.

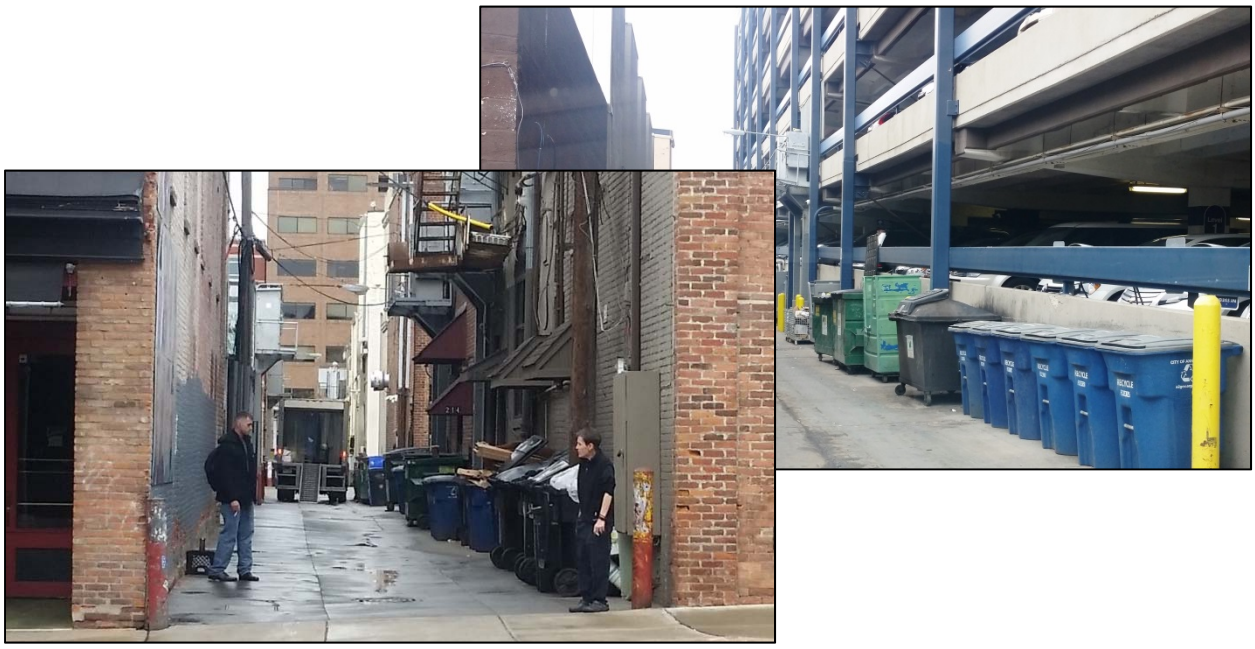
8.3 Commercial Sector Recommendations

Discussion of options for commercial sector organics collection during the Commercial Advisory Committee meetings indicated that there was general consensus among committee members that any commercial organics program would initially need to be a voluntary program serving businesses interested in the service. This will allow for a ramp-up period to gather additional information and provide guidance to businesses based on local experience regarding service levels, operational modifications, and cost impacts. It will also allow for case-by-case evaluation of concerns about space for additional collection containers, particularly in downtown alleys (see Figure 8-1).

Commercial Advisory Committee members also recognized that, though all businesses may potentially generate some amount of organic waste, the larger generators of organic wastes in the commercial sector are the food-oriented businesses such as restaurants, grocery stores, schools, and hotels. These businesses are therefore viewed as the initial target for participation in a commercial organics collection program.

Finally, the Commercial Advisory Committee generally concurred that, if a future policy decision is made by the City requiring organics collection service and/or diversion of organics in the commercial sector, it would be most appropriate for that requirement to be applicable to food-oriented businesses. A mandatory collection or diversion requirement for the commercial sector was considered to be premature to discuss or evaluate prior to establishment of a voluntary collection program.

FIGURE 8-1. CURRENT CONTAINER CONDITIONS IN DOWNTOWN ALLEYS



The budget amendment approved by City Council in May 2016 to allocate funding for a pilot of a limited number of downtown restaurants and public schools provides one approach to further evaluating and implementing a commercial organics collection program. Through the pilot, it is assumed the City would fund the full cost of organics collection for the generators participating in the pilot. However, pilot programs, particularly when limited in size, can result in inefficiencies in service delivery and result in higher costs due to the need to absorb certain fixed costs; the pilot as described in Section 7.4 therefore exceeds the budget allocation established.

Based on the analysis of the pilot as outlined in the City Council budget amendment (see Section 7.4) and existing commercial waste operations Citywide, the following commercial program recommendations have been identified:

1. Secure participation of 10 downtown restaurants and 9 public schools in a 3-month to 6-month pilot collection program to be operated by the City. The 6-month pilot is preferred to allow adequate time to establish service and monitor so as to provide additional operational data upon which to draw conclusions and further formulate a strategy for broader roll-out of commercial organics collection services. This would result in a projected cost of approximately $185,000 including pre-implementation outreach, pilot period monitoring of performance, and post-implementation evaluation.

2. Based on the findings of the pilot program, evaluate the potential costs to expand City-provided collection services to a larger number of participants and offer collection services on a Citywide basis. One method to provide Citywide service, if the City elects not to self-perform the collection of commercial organics, is to include pricing for organics collection in the next commercial waste franchise contract, which will be effective July 1, 2019. This timing enables the findings of the pilot collection program to be incorporated into the bid or proposal process for the commercial franchise.

3. Conduct a survey of businesses Citywide to identify the level of interest in subscribing to food waste collection service. The survey would be executed following the conclusion of the pilot collection program to reflect the findings and feedback from participants in that program. The survey will also provide useful information for incorporation into the commercial waste franchise procurement process, if it is determined that the City will not self-perform commercial organics collection.

4. To obtain greater information on FOG management, develop and implement a licensing or registration requirement applicable to all companies providing used cooking oil collection via City ordinance and through coordination with Washtenaw County Health Department as necessary. As a condition of licensing, require service providers to submit a listing of customers and container locations with the initial license request and all annual renewals.

8.4 Near-Term Implementation Schedule

Based on the recommendations and cost projections presented in this section, Table 8-1 depicts a suggested implementation phasing schedule beginning in July 2017. The actual schedule upon which recommendations are implemented will be determined in part by the ability to identify funding and staffing resources for implementation.

TABLE 8-1. PROPOSED IMPLEMENTATION SCHEDULE FOR SIGNIFICANT RECOMMENDATIONS

	2017		2018				2019			
Recommendation	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**
Citywide Recommendations										
Education and Outreach		$67,500 - $90,000 annually (Ongoing)								
Residential Recommendations										
Compost Cart Pilot				$361,800 - $466,400						
Year-Round Collection						$60,100 - $176,800				
Commercial Recommendations										
Restaurant/Schools Pilot		$106,700 - $184,500								
Commercial Franchise								$378,100 - $1,165,800		
FOG Licensing	(No cost impact projected)									

EDUCATION RESIDENTS BUSINESSES

ATTACHMENT A
PUBLIC ENGAGEMENT MATERIALS

EDUCATION

RESIDENTS

BUSINESSES

ATTACHMENT A.1
PUBLIC ENGAGEMENT STRATEGY

Organics Management Community Engagement Project Plan

PREPARED: Winter 2017

Leads

Name	Affiliation
Christina Gomes	Project Manager, City of Ann Arbor, Systems Planning Unit
Christina Seibert	Consultant Project Manager, CB&I
Charlie Fleetham	Public Engagement Facilitator, Project Innovations Inc.

Level of Impact/Interest

Beginning of the Public Engagement: Moderate level of community interest.

End of the Public Engagement: Increased level of community interest.

Stakeholders

Organization/Group	Name	Describe Involvement
Ann Arbor Resident	Judy Nikolai	Residential Advisory Committee
Ann Arbor Resident	Christopher Pannier	Residential Advisory Committee
Ann Arbor Resident	Ying Lu	Residential Advisory Committee
Ann Arbor School District	Randy Trent	Residential Advisory Committee
Ann Arbor/Ypsilanti Chamber of Commerce	Diane Keller	Commercial Advisory Committee
Argus Farm Stop	Kathy Sample	Commercial Advisory Committee
Brookside Subdivision	John Held	Residential Advisory Committee
Detroit Grease	Gabe Jones	Commercial Advisory Committee
Detroit Grease	Joe McEachern	Commercial Advisory Committee
First Martin	John Teeter	Commercial Advisory Committee
Food Gatherers	John Reed	Commercial Advisory Committee
Food Gatherers	Sebastian Wreford	Commercial Advisory Committee
Food Gatherers	Eileen Spring	Commercial Advisory Committee
Google Inc.	Eric Yuhasz	Commercial Advisory Committee
Interfaith Council for Peace and Justice	Clark McCall	Residential Advisory Committee
Interfaith Council for Peace and Justice	Jan Wright	Commercial Advisory Committee
Interfaith Council for Peace and Justice	Ji Wu	Residential Advisory Committee
Llamasoft	Aaron Burman	Commercial Advisory Committee
Main Street Area Association	Maura Thomson	Commercial Advisory Committee
Main Street Ventures	Kimberly Sheldon	Commercial Advisory Committee
Meijer	Erik Petrovskis	Commercial Advisory Committee
NSF Sustainability/Ann Arbor Environmental Commission	Allison Skinner	Residential Advisory Committee
Old Fourth Ward Association	Christine Crockett	Residential Advisory Committee
Recycle Ann Arbor	Kirk Lignell	Residential Advisory Committee
State Street Area Association	Frances Todoro - Hargreaves	Commercial Advisory Committee
Sunset Hilltop Neighborhood Association	Shelley Steele	Residential Advisory Committee
The Lunch Room	Joel Panozzo	Commercial Advisory Committee
University of Michigan	Caroline LaRose	Residential Advisory Committee
University of Michigan Department of Public Works	Tracy Artley	Commercial Advisory Committee

University of Michigan Department of Public Works	Sam Moran	Commercial Advisory Committee
Waste Management Corp.	Brian Conaway	Commercial Advisory Committee
Washtenaw County	Noelle Bowman	Commercial Advisory Committee
We Care Organics	Dan Butynski	Residential Advisory Committee
Zingermans Bakehouse	Roger Bowser	Commercial Advisory Committee
Zingermans Bakehouse	Mariam Flagler	Commercial Advisory Committee
Zingermans Bakehouse	Andrew Wilhelm	Commercial Advisory Committee

Community Engagement Methods

Engagement Method	Means Used to Communicate or Promote	Outcomes of Engagement Method
Paid Advertising — This project did not include a public hearing so a notice was not required.	No	
Press Release — This project did not require a press release.	No	
City Website News and Homepage Post / Project Page Post — All news releases related to this project are available on the project webpage.	Yes	
Email Distribution — Project lead distributed project information, public meetings, and other project-specific emails.	Yes	
Phone Calls – Made individual calls to all potential participants to gauge their interest in the program.	Yes	Identified 13 Residential Advisory Committee participants. Identified 23 Commercial Advisory Committee participants.
Social Media — Social Media was not used to communicate about this program.	No	
Education Materials — Project materials provided at all public meetings including sign up information and study information and various information packets.	Yes	Handouts distributed at all public meetings.
Project Videos – Wrote and produced an educational video on Organics Management. This is now available on the City of Ann Arbor website.	Yes	Video previewed to both committees and to other stakeholders
Public Meetings – Organized and facilitated a total of (8) public meetings. (4) meetings with Residential Advisory Committee and and (4) meetings Commercial Advisory Committee**.**	Yes	
Public Tour – Organized and conducted two tours of Ann Arbor Compost Facility	Yes	

Third-party communication vehicle	Yes. Many attendees expressed interest in sustained involvement with the implementation of the Organics Management Plan.	
Presentations to Groups — Provided background information on the program and what the implementation of mandatory composting would look like in the City of Ann Arbor.	Yes Yes	Presented project to Environmental Commission
Interviews — This approach may be helpful to gather candid and more detailed feedback.	Yes	**Tracey Pennington, City of Ann Arbor** **Jennifer Hall, Ann Arbor Housing Comm.** **Jen Hein, Ann Arbor Public Schools** **Suzanne Seigle, Concordia University** **Matt Naud, The Environmental Comm.** **Eileen Spring, Food Gatherers** **Sebastian Wreford, Food Gatherers** **Terry Alexander, University of Michigan** **Tracey Artley, University of Michigan** **Mike Nicholson, We Care Organics** **Pat Greve, Wastewater Management** **Keith Sanders, Wastewater Management**

Ann Arbor
Organics Management Plan

Communications and Community Engagement Plan Summary

The Communication and Community Engagement component of the Organics Management Plan will allow the public an opportunity to learn about the project, to provide input to ensure the community interests are taken into consideration, to establish appropriate expectations for potential organics collection and management, and identify alternative collection options.

Project Activities:

1. **Project Working Group**
    - Consisting of the city staff and consultant team.
    - Bi-weekly progress meetings regarding ongoing work, completed milestones and next steps.

2. **Key Stakeholder Interviews -** we will interview stakeholders that are directly affected or have a vested interest in organics collections. These interviewees will include:

    Residential – all day Monday, July 11

    - Jennifer Hall – Executive Director of AAHC - RESIDENT ADVISORY
    - Matt Horning – Customer Service Supervisor
    - Kirk Lignell – CEO of Recycle Ann Arbor – RESIDENT ADVISORY
    - Matt Naud – Environmental Coordinator of the Environmental Commission - RESIDENT ADVISORY
    - Mike Nicholson – We Care Organics Representative
    - Tracey Pennington - City of Ann Arbor

    Commercial – all day Monday, Aug 1 & morning of Tuesday, Aug 2:

    - Terry Alexander – Executive Director of U of M Office of Sustainability - COMMERCIAL ADVISORY
    - Tracy Artley - University of Michigan DPW (request bringing Food Services rep to interview) - COMMERCIAL ADVISORY
    - Pat Greve – Waste Management of Michigan representative - COMMERCIAL ADVISORY
    - Jen Heim – Interim Executive Director of Facilities and Operations of AAPS – COMMERCIAL ADVISORY
    - Keith Sanders – Representative from Ann Arbor's wastewater treatment plant operations
    - Suzanne Siegle – Concordia University (cafeterias)
    - Michigan Restaurant Association representative (Need POC)
    - FOG Hauler (Evergreen, Detroit Grease, Mahoney) (Need POC)

3. **Stakeholder Interview Groups – afternoon of Tuesday, Aug 2:** two group interviews will be conducted:
   - Food Gatherers
   - Grocery stores/hotels/conference centers

4. **Commercial Advisory Committee -** Consultant team will create agendas, presentations, meeting summaries for all meetings. Primary purpose of the committee is to provide input into collection and management processes; it is not a decision making body. Potential members/organizations include:

   - A2Y Chamber – AA/Ypsi Regional Chamber – Diane Keller
   - Ann Arbor Public Schools – Jen Hein
   - Briarwood Mall – Denise Murray
   - DDA – Susan Pollay
   - Environmental Commission – (Matt Naud will forward to Environmental Commission)
   - FOG Hauler (Evergreen/Detroit Grease/Mahoney)
   - Food Gatherers/several churches
   - Grocery Stores/Hotels/Conference Centers – TBD
   - Kerrytown District Association – Irene Bushaw
   - Main Street Area Association – Maura Thompson
   - Main Street Biz – Rob Spears
   - Recyle Ann Arbor – Kirk Lignell
   - S. University Area Association – Maggie Ladd
   - State Street Area Association – Frances Todoro-Hargreaves
   - University of Michigan – Food Services - TBD
   - University of Michigan – DPW – Tracy Artley
   - University of Michigan, Office of Campus Sustainability – Terry Alexander
   - VAMC - TBD
   - Waste Management of Michigan – Pat Greve
   - We Care Organics – Mike Nicholson

5. **Residential Advisory Committee** – Consultant team will create agendas, presentations, meeting summaries for all meetings. Primary purpose of the committee is to provide input into collection and management processes; it is not a decision making body. Potential members/organizations include:

   - Ann Arbor Housing Commission – Jennifer Hall
   - DDA – Susan Pollay
   - Environmental Commission – liaison member
   - Recycle Ann Arbor – Kirk Lignell
   - Residents at large as represented by neighborhood associations – Invite All
   - Washtenaw Area Apartment Association - Alice Ehn
   - Waste Management of Michigan – Pat Greve
   - We Care Organics – Mike Nicholson

6. **Public Opinion Survey** – Consultant team will develop a resident opinion survey to gauge resident attitudes and behaviors related to organic waste management. Primary purpose of the survey is to gather broad resident input beyond the focused information gathered through the advisory committee. Survey questions will be reviewed by city staff prior to survey execution.

7. **Committee Meeting Schedule** (all meetings at Wheeler Center)

- **Residential Advisory Committee Meetings**

  Meeting #1: Wed. July 20, 2016 - 6:00 pm to 8:00 pm

  Meeting #2: Wed., Sept. 21, 2016 6:00 pm to 8:00 pm

  Meeting #3: Wed., Nov. 16, 2016 6:00 pm to 8:00 pm

  Meeting #4: Wed., Jan. 18, 2017 6:00 pm to 8:00 pm

- **Commercial Advisory Committee Meetings**

  Meeting #1: Wed., Aug. 10, 2016 9:00 am to 11:00 am

  Meeting #2: Wed., Oct. 12, 2016 9:00 am to 11:00 am

  Meeting #3: Wed., Dec. 14, 2016 9:00 am to 11:00 am

  Meeting #4: Wed., Jan. 25, 2017 9:00 am to 11:00 am

8. Public Engagement Deliverables:

1. Summary of Stakeholder Interviews - by August 19, 2016
2. Summary of Focus Groups – by August 19, 2016
3. Summary of Residential Advisory Committee meetings – by March 3, 2017
4. Summary of Commercial Advisory Committee meetings - by March 3, 2017
5. Public Survey Results Report - TBD
6. Completed Community Engagement Action Plan - by April 7, 2017

EDUCATION

RESIDENTS

BUSINESSES

ATTACHMENT A.2
ADVISORY COMMITTEE MATERIALS

The City of Ann Arbor
Comprehensive Organics Management Plan
Residential Advisory Committee
July 20, 2016 Meeting Agenda
6:00 – 8:00 p.m.

Meeting #1 - Introduction and Overview

6:00 p.m. - Welcome and Group Introduction

- Introduction of Project Goals and Project Team: Christina Gomes (City of Ann Arbor Systems Planning Unit)
- Desired Outcomes Review and Poll: Charlie Fleetham (Project Innovations)

6:25 - Advisory Committee Update: Charlie Fleetham (Project Innovations)

- Meeting Schedule
- Committee Objectives

6:50 - Ann Arbor Organics Program Presentation: Christina Seibert (CB&I Environmental & Infrastructure)

- What is Organics Management?
- Ann Arbor Background with Organics Management
- Project Overview and Implementation

7:15 - Participant Discussion and Q&A: Charlie Fleetham (Project Innovations)

7:45 – Wrap-Up

- Action Items: Charlie Fleetham (Project Innovations)
- Meeting Close: Christina Gomes (City of Ann Arbor Systems Planning Unit)

Public Comment - 3 minutes maximum per speaker

Organics Management Residential Advisory Committee
July 20, 2016 Meeting Summary
Submitted by Julie Bonenfant, Project Innovations
Next Meeting: Wednesday, September 21st, 2016 from 6 – 8 p.m. Location: Wheeler Center

Participants: See Page 3

Agenda: See Attachment #1

1. **Welcome:** Christina Gomes, Ann Arbor Solid Waste and Recycling Coordinator welcomed the participants, introduced the City Staff and the Project Team, and reviewed the project objectives:
   - Develop a comprehensive Organics Management Plan to identify options for diverting organic wastes from the trash stream.
   - The plan will include input from a diverse range of stakeholders, including residents, businesses, and institutions.
   - When complete, the plan will identify opportunities and needs for organics waste management, evaluate resource and logistic needs for alternative management options, and develop a strategy for implementing selected alternatives.
   - Work on the Organics Management Plan started in April 2016 and will be completed in early 2017.
   - The City has contracted with CB&I Environmental & Infrastructure, Inc., a national waste and recycling consulting firm, to develop the Organics Management Plan, with public engagement support from Project Innovations, Inc.

2. **Participant Desired Outcomes:** Charlie Fleetham, Project Innovations facilitator, polled the participants on their desired outcomes. Committee feedback (by participant) included:
   - Lives downtown and loves to recycle and compost. Wants to learn more about how this works and how it dovetails with other efforts in the Ann Arbor community.
   - Describes herself as a "rabid recycler". Lived on the west side and had a composting program that she was happy with. Is now living in condominiums that do not offer the same type of program and would like to see one implemented there.
   - Appreciative of Germany's composting program. Businesses such as restaurants have not stepped up in the Ann Arbor area. Wants to see how plan will address this.
   - Have been recycling and composting since it has been available. Have been involved with the City for 25 years. Here to learn more and contribute.
   - Would like to learn more about what other communities are doing.
   - Runs the Ann Arbor compost facility. Wants to provide input.

3. **Review/Confirm Objectives of the Residential Advisory Committee:**
   - Current plan is to have 4 residential meetings.

- Committee provides input into plan … no expectation to provide group recommendation to City Council or Staff.
- The group confirmed the committee role and objectives and agreed to participate in the four meetings.

4. **Project Presentation by Christina Seibert, CB&I Project Manager.** The presentation is available online at www.a2gov.org/organicsplan . The desired outcomes of the presentation were:
   - To define organics management.
   - To explain Ann Arbor's history with organics management.
   - To present an overview of the project and its proposed implementation.

   Group Feedback on Presentation:

   - It was very comprehensive; I had no idea of the complexity of the scope.
   - It was a good overview, and the history behind this was very helpful.
   - I liked the explanation of the process and the detailed breakdown of activities.
   - I liked hearing about what other cities are doing and would like to hear more. I am interested to see where this will go.
   - Interested in expansion to year-round composting programs.

   Group Input for the Study:

   - Is part of this project going to be looking at people having composting on their property?
   - What are the pros and cons of using a garbage disposal?
   - What are the cost impacts of the various options?
   - What are we saving or potentially saving in landfill contribution?
   - Where did this study originate?
   - Are there other cities that we should look at?
   - Is a recommendation for a diversion goal going to be a part of this study?
   - Is there anywhere else in Michigan that is doing this?
   - Is a random telephone survey going to be the best approach here? What about having a web based survey instead?

   Closing Discussion Comments:

   - I heard that Minneapolis has an aggressive program, and I'm also curious about what Kalamazoo is doing in this area.
   - I feel I have a very specific goal - to expand composting to condos and apartments. We already have small units for recycling but none for composting.
   - This may be a more commercial focused program since that sector produces more food waste than residents.

- Our relationship with this entire program has been very positive.
- North Campus tends to be more diverse; some students are not used to the idea of recycling and composting.
- I think residents need additional educational information on compostable dinnerware.

All meeting summaries, agendas, and presentations are available at:

http://www.a2gov.org/departments/systems-planning/planning-areas/Pages/Organics-Management-Plan-.aspx

072016 Residential Advisory Participant List		
Last	**First**	**Organization**
Bonenfant	Julie	Project Innovations
Butynski	Dan	We Care Organics
Crockett	Christine	Old Fourth Ward Association
Fleetham	Charlie	Project Innovations
Gomes	Christina	A2 Systems Planning
Lu	Ying	Resident
Maciejewski	Molly	A2 Public Works
Naud	Matt	A2 Systems Planning
Nikolai	Judy	Resident
Steele	Shelley	Sunset Hilltop Neighborhood Association
Skinner	Allison	NSF Sustainability/Environmental Commission
Trent	Randy	Ann Arbor School District/Resident

Residential Advisory Committee
Comprehensive Organics Management Plan
Meeting #1 - July 20, 2016

CB&I Environmental & Infrastructure, Inc.

In association with:

PROJECT INNOVATIONS INCORPORATED

Lake Research Partners

City of Ann Arbor Comprehensive
Organics Management Plan

1. **What is Organics Management?**
2. City of Ann Arbor Organics Management Background / History
3. Project Overview and Implementation

Materials Included in "Organics"

- "Organic": of, relating to, or derived from living matter

- Particular materials of focus for the Organics Management Plan:
  - Yard wastes
    - Grass clippings
    - Tree and bush trimmings
  - Wood
    - Tree limbs and stumps
    - Non-treated lumber
  - Food scraps
    - Food production wastes
    - Food preparation wastes
    - Spoiled/expired food
    - Plate scrapings
  - Fats, oils, and grease ("FOG") from cooking

Sources of Organic Wastes

At home:

- Yard maintenance / landscaping
- Food preparation
- Spoiled or expired food
- Plate scrapings

Primary generators of food wastes:

- Residential properties
- Restaurants
- Grocery stores
- Hospitals

Away from home:

- Property maintenance / landscaping
- Food preparation
- Spoiled or expired food
- Plate scrapings
- Food production and distribution

- Schools
- Institutions
- Food banks / pantries

Steps in Organics Management

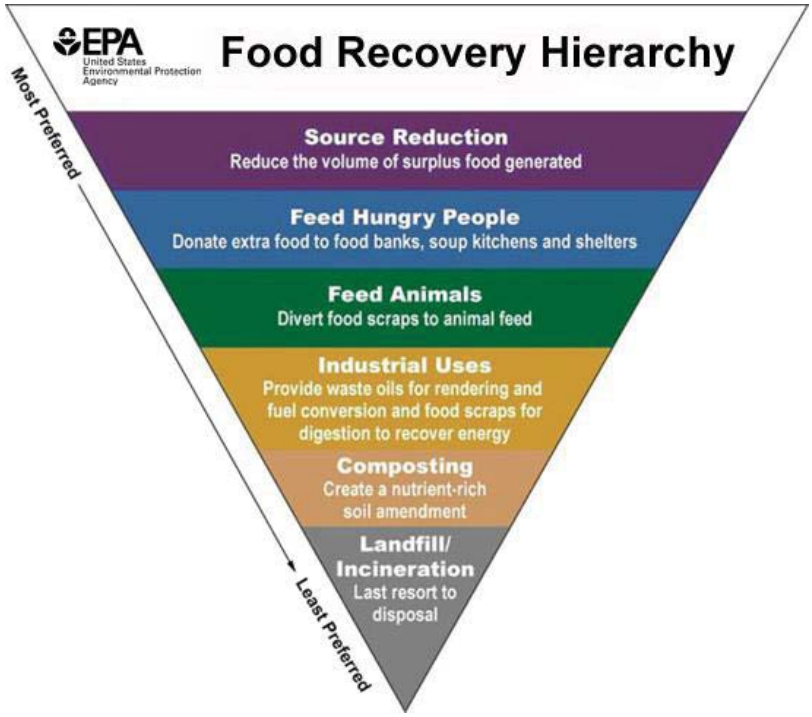
Segregation

Collection

Processing

Marketing / sale of finished products

U.S. EPA Food Recovery Hierarchy



1. What is Organics Management?

2. City of Ann Arbor Organics Management Background / History

3. Project Overview and Implementation

1995
Landscape waste ban implemented in Michigan

2008
Compost carts offered for sale for automated collection

2009
Residential vegetative food waste added to compost collection

2010
Leaf collection added to seasonal compost collection (no more street collection)

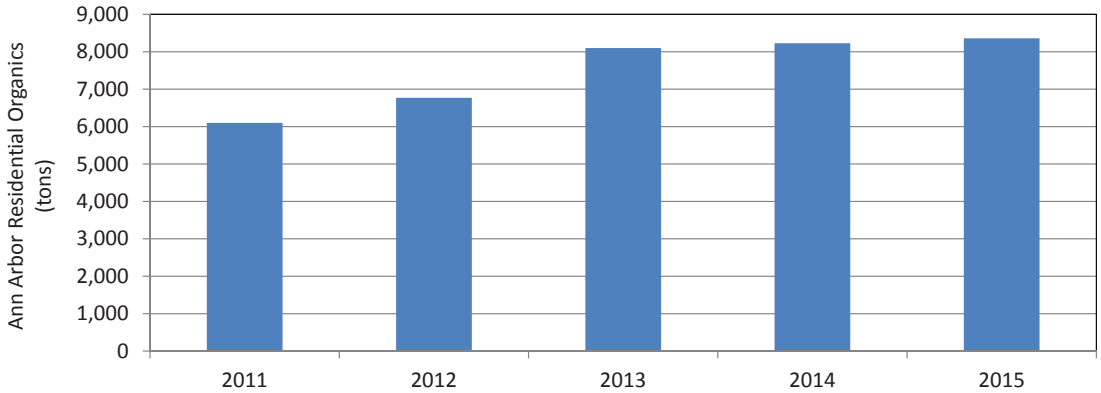
2011
WeCare Organics begins operating compost facility

2014
Residential plate scrapings added to compost collection

Current Operations

- Customers served
  - Single family and multi-family properties
- Collection provided by City of Ann Arbor
  - Seasonal (April through November)
  - 30-gallon kraft paper bags
  - City-provided compost carts
  - Bundled branches / brush
- Materials collected
  - Plate scrapings*
  - Bamboo dinnerware*
  - Grass clippings*
  - Leaves
  - Garden prunings / surplus
  - Unpainted, untreated lumber
  - Brush
  - Weeds
  - Tree branches (up to 6” diameter and 4 feet in length)
  - Pumpkins
  - Christmas trees (cut up)

Organics Program Performance



- Organic materials are a significant fraction of the residential waste stream (20-30% or more, by weight)
- City / WeCare estimate 1,000-1,500 tons of food wastes are collected now from Ann Arbor residents
- Compost is sold by WeCare to wholesale outlets and residents

1. What is Organics Management?
2. City of Ann Arbor Organics Management Background / History

3. Project Overview and Implementation

- Document review - historical context
- Community engagement - stakeholders and public input
  - Interviews
  - Advisory Committees (Residential and Commercial)
  - Random telephone survey of residents
- Opportunities analysis - how much material is available?
- Logistics and resource needs - how can we collect and process it?
- Implementation strategy / recommendations
- Presentation of findings to Environmental Commission and City Council

Plan Development Schedule

- Started work in April 2016
- Advisory Committees will meet every other month
  - Residential: July, September, November, January (2017)
  - Commercial: August, October, December, January (2017)
- Resident survey - projected to be executed in September
- Research and analysis underway now
- Projected presentations:
  - Environmental Commission - February/March 2017
  - City Council - April 2017

Challenges to Consider in Planning Process



- Space and logistics
- Behaviors and attitudes
- Property ownership
- Mixed use properties / areas
- Education and communication
- Enforcement
- Sanitation



For a copy of this presentation and other project updates, visit the project site:

www.a2gov.org/organicsplan

City of Ann Arbor
Comprehensive Organics Management Plan
Residential Advisory Committee
September 21, 2016 Meeting Agenda

Compost Center (Meet at Equipment Yard)
4150 Platt Road, Ann Arbor
6:00 p.m. – 8:00 p.m.

6:00 p.m.	**Welcome and Group Introduction** ▪ Review of Project Goals/Committee Purpose: Christina Gomes, Ann Arbor Solid Waste and Recycling Coordinator ▪ Agenda Review/Desired Outcomes Poll - Charlie Fleetham, Facilitator, Project Innovations, Inc.
6:10 p.m.	**AA Compost Facility Tour – Christina Seibert (CB&I Environmental and Infrastructure)** ▪ Tour Purpose ▪ Points of Interest ▪ Conduct Tour - Don Butynski – WeCare Organics
7:20 p.m.	**Committee Debrief Compost Facility Tour - Charlie Fleetham (Project Innovations)**
7:40 p.m.	**Project Update - Christina Seibert (CB&I)** ▪ Project Status ▪ Comments on Group Input from Meeting #1 ▪ Discussion
7:50 p.m.	**Action Items/Feedback – Charlie Fleetham (Project Innovations)**
7:55 p.m.	**Meeting Close - Christina Gomes (City of Ann Arbor)**
8:00 p.m.	**Public Comment (three-minute limitation per speaker)**

Organics Management Residential Advisory Committee
September 21, 2016 Meeting Summary
Submitted by Charlie Fleetham, Project Innovations
Next Meeting: Wednesday, November 16, 2016 from 6 – 8 p.m. Location: Wheeler Center

Participants: See Page 2

Agenda: See Attachment #1

1. **Welcome:** Christina Gomes, Ann Arbor Solid Waste and Recycling Coordinator welcomed the participants, introduced the City Staff and the Project Team, and reviewed the meeting objective to tour the Compost Center, 4150 Platt Road.

2. **Tour Highlights:** Dan Butynski/Christina Gomes/Matt Naud/Christina Seibert explained various operational and process characteristics of the facility. Highlights included:
   - The City contracts WeCare Organics to operate the center.
   - Two WeCare team members run the facility.
   - WeCare manages marketing and sales of center products – recent efforts have brought in MDOT as a major customer.
   - The machinery to operate the facility includes a windrow turner, a grinder, and a screener.
   - Commercial landscapers drop off significant quantities of green waste.
   - All organic waste is eventually converted into saleable product – including untreated wood pallets and large branches.
   - It takes 6 to 8 months to produce saleable product.
   - Temperatures inside the composting rows are monitored and can reach 150 degrees or more.
   - The composting product is tested for a host of characteristics, including pH, metals, bacteria, and nutrients to meet regulatory and U.S. Composting Council standards.
   - MDEQ reviewed the center facility and indicated it was a model for superior operations.
   - Ann Arbor residents receive free compost in the spring (set quantity) and can purchase more as desired.

3. **Project Update – Christina Seibert**
   - The consultant team continues to collect data on Ann Arbor's organic waste stream.
   - Based on committee requests from the last meeting, Christina provided information about Seattle's organic waste program. It is the largest urban mandatory organic waste collection in the U.S.
   - The residential survey will be administered after the November election.

Note: All meeting summaries, agendas, and presentations are available at:

http://www.a2gov.org/departments/systems-planning/planning-areas/Pages/Organics-Management-Plan-.aspx

092116 Residential Advisory Participant List		
Last	**First**	**Organization**
Butynski	Dan	We Care Organics
Fleetham	Charlie	Project Innovations
Gomes	Christina	A2 Systems Planning
Held	John	Brookside Subdivision
Larose	Caroline	Univ of Michigan
Naud	Matt	A2 Systems Planning
Nikolai	Judy	Resident
Seibert	Christina	CB&I Project Manager
Steele	Shelley	Sunset Hilltop Neighborhood Association
Wu	Ji	Interfaith Council for Peace and Justice

The City of Ann Arbor
Comprehensive Organics Management Plan
Residential Advisory Committee
November 16, 2016 Meeting Agenda
6:00 – 8:00 p.m.

Meeting #3 - Project Update and Input to Preliminary Recommendations

6:00 p.m. - Welcome and Group Introduction

- Review of Project Goals and Project Team: Christina Gomes (City of Ann Arbor Systems Planning Unit)
- Desired Outcomes Review and Poll: Charlie Fleetham (Project Innovations)

6:25 – Review and Follow-up of Community Outreach Efforts - Charlie Fleetham (Project Innovations)

- Recap of September 21 and November 15 Compost Facility Tours
- *Separation Anxiety* - play this podcast and discuss
- Compost program promotion and outreach discussion - target audience / mode / messaging
- November 2 Commercial Advisory Committee Meeting update

7:10 – Organics Management Planning Project Update: Christina Seibert (CB&I Environmental & Infrastructure)

- Project status – key activities accomplished to date and upcoming schedule review
- Residential survey – review questionnaire and survey process
- Preliminary recommendations for Final Report - to be reviewed and discussed at January 18, 2017 meeting

7:45 – Wrap-Up

- Action Items: Charlie Fleetham (Project Innovations)
- Meeting Close: Christina Gomes (City of Ann Arbor Systems Planning Unit)

8:00 - Public Comment - 3 minutes maximum per speaker

Upcoming Meeting:

January 18, 2017 Final meeting of Residential Advisory Committee

- Review outcomes of resident survey
- Review and discuss preliminary recommendations for residential organics management

Organics Management Residential Advisory Committee
November 16, 2016 Meeting Summary
Submitted by Charlie Fleetham, Project Innovations
Next Meeting: Wednesday, January 18, 2017 from 6 – 8 p.m. Location: Wheeler Center

Participants: See Page 3

Agenda: See Attachment #1

1. **Welcome:** Christina Gomes, Ann Arbor Solid Waste and Recycling Coordinator welcomed the participants, introduced the City Staff and the Project Team, and reviewed the project objectives:
   - Develop a comprehensive Organics Management Plan to identify options for diverting organic wastes from the trash stream.
   - The plan will include input from a diverse range of stakeholders, including residents, businesses, and institutions.
   - When complete, the plan will identify opportunities and needs for organics waste management, evaluate resource and logistic needs for alternative management options, and develop a strategy for implementing selected alternatives.
   - Work on the Organics Management Plan started in April 2016 and will be completed in early 2017.
   - The City has contracted with CB&I Environmental & Infrastructure, Inc., a national waste and recycling consulting firm, to develop the Organics Management Plan, with public engagement support from Project Innovations, Inc.

2. **Participant Desired Outcomes:** Charlie Fleetham, Project Innovations facilitator, polled the participants on their desired outcomes. Committee feedback included:
   - How will this program be communicated?
   - Let's improve and expand on our current programs to multi-family and condos.
   - My big concern is how will the City address the new university hi-rises. Composting is not required in these buildings. This is a huge opportunity we are ignoring. I think students would be open to composting.

3. **Feedback on the Compost Facility Tour** – the tour was conducted on November 15 and many of the Advisory Committee members participated. Comments on the tour included:
   - Very appreciative … amazed at how well it operates with two men.
   - This is a showcase for the City.
   - The City should schedule more regular tours and use the Facility to as a branding tool for the City's environmental awareness.
   - Should consider a video or an article in the Observer about the facility.

4. **Separation Anxiety** - we played a podcast provided by Caroline which describes how Taipei, Taiwan, manages its waste. http://99percentinvisible.org/episode/separation-anxiety/ Comments included:
    - Like the fact that their system charges more if you have more trash.
    - San Francisco has a "pay as you throw" program.
    - The Mayor from our sister city in Germany gave a presentation on waste management and the auditorium was packed.
    - Momo, Sweden uses vacuum tubes to remove the organic waste from households and deposits it in a bio-digester.

5. **Promotion/Education** – Christina Seibert led a discussion on how the City might promote expanded composting. Comments included:
    - Why don't people compost? It is universally available, but only 20% of the City residents have carts (according to our best estimates).
    - Could we reduce the cost of the cart?
    - Could we deliver the cart to the residence?
    - We should contact the university coordinators (Molly/Nick) who work very effectively with students on composting.
    - We need some videos that teach middle schoolers about composting. Make it very simple and show the benefits to the environment!

6. **Project/Residential Survey Update** - Christina Seibert updated the committee on the project and survey:
    - Meetings with Commercial Advisory Committee continue.
    - The team is estimating quantities for the financial alternatives.
    - We will be providing preliminary recommendations prior to the January 18 meeting for your comments.
    - Regarding the residential survey – many helpful comments/suggestions were received. The survey contractor will review the feedback and some modifications will be made to the survey. The survey is scheduled to be started November 28.

All meeting summaries, agendas, and presentations are available at:

http://www.a2gov.org/departments/systems-planning/planning-areas/Pages/Organics-Management-Plan-.aspx

11/16/16 Residential Advisory Committee Participant List		
Last	**First**	**Organization**
Crockett	Christine	Old Fourth Ward Association
Fleetham	Charlie	Project Innovations
Gomes	Christina	A2 Systems Planning
Held	John	Brookside Subdivision
Larose	Caroline	University of Michigan
McCall	Clark	ICPJ - Interfaith Council for Peace and Justice
Naud	Matt	A2 Systems Planning
Nikolai	Judy	Resident
Seibert	Christina	CB&I Project Manager
Steele	Shelley	Sunset Hilltop Neighborhood Association

The City of Ann Arbor
Comprehensive Organics Management Plan
Residential Advisory Committee
January 18, 2017 Meeting Agenda
Wheeler Center - 6:00 – 8:00 p.m.

Final Meeting (#4) - Review of Preliminary Plan Recommendations

6:00 p.m. - Welcome and Group Introduction

- Desired outcomes review and poll: Charlie Fleetham (Project Innovations)
- Review of committee input provided to date and role in plan development: Christina Seibert (CB&I Environmental & Infrastructure)
- Review of Commercial Advisory Committee Video: Charlie Fleetham (Project Innovations)

6:20 p.m. - Review of Resident Survey Results

- Summary of survey findings: Christina Seibert (CB&I Environmental & Infrastructure)
- Group discussion regarding findings: Charlie Fleetham (Project Innovations)

6:45 p.m. - Preliminary Organics Management Plan Recommendations

- Presentation of preliminary recommendations: Christina Seibert (CB&I Environmental & Infrastructure)
- Committee feedback on preliminary recommendations: Charlie Fleetham (Project Innovations)

7:40 p.m. - Wrap-Up - Christina Gomes (City of Ann Arbor Systems Planning Unit)

- Schedule of future public meetings and plan presentation
- Expression of appreciation for committee member contribution and service
- Feedback from committee on process: Charlie Fleetham (Project Innovations)
- Meeting close

8:00 - Public Comment - 3 minutes maximum per speaker

The City of Ann Arbor Comprehensive Organics Management Plan
January 18 Residential Advisory Committee Meeting Summary

Participants: See Attachment #1

Desired Outcomes Poll:

- Concerned about bins in parking lot / common areas. Possibility of strong odor and animals getting to it.
- Learn about the City's plan for composting.
- What will the City's next steps be in putting this plan into action?
- Need to address the last 50 ft. problem and implementation details.

Review of Committee Input: See Attachment #2, slides 2-4

- Ann Arbor is the only community doing residential food waste compost collection in Michigan; there are only about 30 total in the U.S. at the scale of Ann Arbor
- Should expand education on what can and cannot be composted.

Review of Survey Results: See Attachment #2, slides 6-8

Committee Takeaways from Survey:

- The older the residents, the less likely they are to pay. Maybe market to them about leaving an environmental legacy for their grandchildren.
- There is concern that no one wants to pay more.
- Did you get Big Government feedback (i.e., is this one more idea from government that is going to cost me more)?
- Shocked that developers don't have to plan for compost collection - this should be a requirement for all new developments.
- Can there be biodegradable / compostable containers provided by our restaurants?
- The educational challenge here must be immense. 83% of these people feel they are well informed about impacts of wasted food but are not interested in workshops to learn to reduce wasted food.

Preliminary Recommendations:

- Preliminary recommendations distributed to committee in advance of meeting - see Attachment #3
- How many households are there? *22,500 based on City data*
- In Seattle, collection cost charged to residents went up 40% once organics collection was mandatory.
- Expand residential compost collection through the year.
- There are questions on frequency of collection in winter months and cost that need to be addressed.

Expansion of Carts to All Residents - Feedback:

- Once you get the cart, the more likely you are to use it.
- In downtown AA people usually don't have room – adding another cart will be a significant issue for those without driveways.
- Should consider modulating cart size for families, with default size being the smallest size offered (32 gallons).
- A phase in plan may be the more practical route. Could consider having targeted neighborhood pilots.

Kitchen Containers/Bags - Feedback:

- Love having it – it sends a positive vibe.
- There should be a free option available. There is no urgency to participate if it is $25 a cart and also need a container to get it there.
- Should offer other options.
- Need a very good argument to counter resistance to cost.

Phase In Mandatory Diversion - Feedback:

- Performance needs to be there.
- Current program isn't bad - the collection / service is there, it is a participation problem.

Education - Feedback:

- What is the time period to tune education program?
- What will enforcement policies look like?

Follow on Schedule:

- February 23rd- Draft recommendations presented to Environmental Commission at City Hall
- March 23rd or April 27th – Final draft of Organics Management Plan presented to Environmental Commission
- Committee members will receive email notices of future presentations to the Environmental Commission

Committee Feedback:

- Learned a lot and feel more positive about the program.
- Does this plan identify any impact on other processes (e.g., landfill tons/costs)?

All meeting summaries, agendas, and presentations are available at:

http://www.a2gov.org/organicsplan

Attachment #1 - Participants

Last	First	Organization	Email
Crockett	Christine	Old Fourth Ward Association	christinecrockett8@gmail.com
Gomes	Christina	A2 Systems Planning	cgomes@a2gov.com
Held	John	Brookside Subdivision	jcheld@gmail.com
Larose	Caroline	University of Michigan	Larosecl@umich.edu
Lignell	Kirk	Recycle Ann Arbor	klignell@recycleannarbor.org
McCall	Clark	ICPJ - Interfaith Council for Peace and Justice	clarkem55@gmail.com
Nikolai	Judy		judynikolai@gmail.com
Pannier	Christopher		christopher.pannier@gmail.com
Seibert	Christina	CB&I Project Manager	christina.seibert@cbi.com
Wu	Ji	ICPJ - Interfaith Council for Peace and Justice	jeffwu800@hotmail.com

Attachment #2 - Presentation Slides - provided as a separate document

Attachment #3 - Preliminary Recommendations - provided as a separate document

Ann Arbor Organics Management Plan
Preliminary Residential Recommendations
For Review and Discussion Only - Subject to Change

The following preliminary recommendations for residential organics management in Ann Arbor have been developed for the Residential Advisory Committee's review and comment.

The preliminary recommendations have been developed based on the research and analysis completed to date, best practices in other high-performing and progressive communities, the input of the committee, and resident feedback secured through the residential survey. Based on the Committee's feedback and the project team's continuing analysis, the recommendations may be modified prior to presentation to the Environmental Commission.

Recommendations are organized by topic / operational area and are numbered in each topic area. Supplementary information is provided in bulleted form following certain recommendations, addressing implementation, costs, or decision points. Further detail and implementation responsibilities will be developed and incorporated in the future Organics Management Plan.

Reduction and Donation

1. Promote food waste reduction practices to residents by sharing the USEPA food waste reduction tools available in its Food: Too Good To Waste Implementation Guide and Toolkit through the A2 website, supplementing with local information if necessary.

2. Provide and maintain a comprehensive listing of food donation outlets and guidelines for food donation on the A2 website and through other outreach materials.

3. Assist food donation outlets to provide incentives or rewards to residents donating unused food, such as discounts at local markets, restaurants, etc. in exchange for food donation.

    - No material cost to the City; envisioned to be broad-based outreach to the business community either by City staff or food donation outlets to request business participation in offering coupons for distribution to food donors

    - Could be conducted as part of a food waste diversion promotion campaign that includes promotion of businesses performing food waste diversion / participating in a future commercial organics collection program

4. Work with food donation outlets to determine whether data tracking and reporting can be provided to measure Ann Arbor resident efforts to reduce disposal of food waste.

Year-Round Collection

1. Provide every-other-week compost collection during the December - March period, when yard waste quantities are reduced. (At this time, a recommendation has not been finalized regarding providing the service on a subscription basis to only interested residents paying for the additional service or on a Citywide basis with costs distributed across all residents.)

    - Approximately 8-9 additional days of collection per premise per year

- Provides ongoing collection of food waste, which has been a request from residents and the advisory committee

- Meets need for occasional winter/early spring yard waste pickup as indicated in the resident survey and by resident calls and emails to City staff

- Service could be provided either on a subscription basis or Citywide

    - If subscription-based, with interested residents paying for the additional service:

        - Cost to be determined, and dependent on whether service is provided by City crews or by a private hauler under contract to the City

        - Subscription basis would be consistent with the low willingness to pay for extended service that was identified in the resident survey

    - If provided to all customers Citywide, with costs distributed across all customers:

        - Cost to be determined, and dependent on whether service is provided by City crews or by a private hauler under contract to the City

        - Expected to result in a lower unit cost per household compared to a subscription service, but a sustainable funding source would need to be identified (not likely financially feasible with funding from solid waste millage assuming all other program/service costs remain unchanged from current conditions)

        - If costs to residents increased to provide this service, it would be inconsistent with resident feedback regarding willingness to pay identified in the resident survey

<u>Compost Carts</u>

1. Require all residential properties to have a compost cart, with the option to select their preferred cart size (32-gallon, 64-gallon, 96-gallon). Continue to allow additional yard waste to be set out in bags or cans and to prohibit food waste from being placed in bags or cans.

    - Default size for residents who don't respond = 64-gallon

2. For residents who do not already have a cart, charge a one-time fee of $25 for the cart, including delivery.

    - This is consistent with current practice for distribution of carts, where residents requesting a cart pay $25

    - This will require the City to subsidize costs of the carts as it has done historically, at a cost of up to approximately $30 per premise (assuming 96-gallon carts at $55 each inclusive of freight based on prior invoices). The City has previously purchased approximately 7,000 compost carts; assuming a portion of these carts remain in the City's inventory currently and that some households have more than one cart, estimate that 5,000 households currently have a compost cart. Based on 22,500 premises,

17,500 carts would be required. Total cost = $962,500; resident payment of $25 each = $437,500; net cost to City = $525,000 (less if smaller carts requested, but may be offset by non-payment of accounts)

- Grant funding should be pursued to cover a portion of the cost

3. Provide delivery of carts to residents using City or City-contracted staff.

Kitchen Containers / Bags

1. Provide guidelines on the A2 website and in other educational materials for collecting food wastes with resident-provided small containers.

2. Make kitchen containers available for all residents on an as-requested basis and provide a "starter set" of kitchen container liners with each container distributed.

    - Projected cost per container = $4.58 if ordered in quantities of 2,400 ($10,992); $4.28 if ordered in quantities of 4,800 ($20,544) (SureClose, 1/10/17 unit pricing estimate)

    - Projected cost for bags = $5 per roll of 25 bags (BioBag, internet search of retail purchase prices)

        - Assuming 2 bags per household per week, this is a 3-month supply

        - Assuming 4,800 kitchen containers purchased and distributed = $24,000 for bags

    - Funding options:

        - Cost passed through to residents ($10, including roll of bags, if City purchases and maintains inventory; higher cost if residents are provided an online order link to purchase directly from vendor)

        - Cost covered by City

        - Grant funding should be pursued to cover a portion of the cost

3. Work with local businesses to sell approved compostable liners, and provide a list of participating businesses on the A2 website and in published program information.

    - No material cost to the City

Mandatory Diversion

1. Routinely evaluate organics diversion performance to begin phasing in mandatory organics diversion for residential customers.

    - Review performance 1 year after cart distribution

        - Collection quantities

        - Household participation and feedback, via online survey and lid-lifting of carts

        - Contamination, via visual observation of incoming material and feedback from compost facility operator on screenings from finished compost

    - Targeted phase-in period of 3 years from date that all premises are provided compost carts

    - Future policy decision / ordinance development dependent on:

        - Available funding

        - Adequate City staffing for inspections/enforcement

        - Compost facility continues to operate without problems / contamination / odor

        - Education of upcoming shift is communicated at least 1 year in advance

Multi-Family

1. Perform an assessment of all multi-family properties to assess available space for compost carts and suitability of truck access or cart staging for collection.

    - City staff (collection operations supervisor or trained designee, possibly in cooperation with City-contracted private hauler) will visit each property to provide visual assessment of the ability to serve the property using compost carts and classify properties for residential or commercial service

2. Properties that are determined to be feasibly served with compost carts will be included in the residential program and provided the same services as single-family and duplex properties.

3. Properties that are determined to not be feasibly served with compost carts will be included in the commercial program and provided the same services as commercial properties.

4. Provide a reference list or look-up option on the A2 website to identify the program (residential or commercial) that each multi-family property is assigned to.

    - List will be developed, maintained, and posted by the City based on the outcome of property assessments; responsible departments to be identified in Plan

Education

1. Develop an immediate, robust education program.

    - Slogan/branding for compost collection

    - Highlight environmental benefits of waste reduction and compost

    - Develop comprehensive website

    - Food waste reduction workshops

    - Consider need for multiple languages for education materials

- Promotion through direct mailings, social media, newspaper, radio, television

2. Tailor the education program to provide specific messaging to different types of households; for example, families with children, young people without children, older residents.

3. Develop educational materials to be provided by the City and/or downloadable from the A2 website for posting or distribution by neighborhood associations and at multi-family properties receiving residential service.

    - Common area signage for multi-family properties

    - Container labels identifying acceptable materials

    - Tips for organics management

4. Provide ongoing education as program changes are approved for implementation.

    - Community meetings if citywide cart distribution is decided

    - Ordinance requirement and penalties for not participating if going to mandatory diversion

<u>Home Composting</u>

1. Promote mulching / grass-cycling through educational materials and the A2 website.

2. Promote the use of home compost bins and provide educational information to assist residents in bin usage.

    - Tools and information to use home compost bins and/or build your own

    - Education (Master Composter) workshops offered by Washtenaw County and partners

    - Build awareness of proper materials to manage and use of City compost collection for materials that can't be composted at home

Residential Advisory Committee
Comprehensive Organics Management Plan
Meeting #4 - January 18, 2017

CB&I Environmental & Infrastructure, Inc.

In association with:

PROJECT INNOVATIONS INCORPORATED

Lake Research Partners

City of Ann Arbor Comprehensive
Organics Management Plan

1. Committee Input and Desired Outcomes Review

2. Resident Survey Results Summary

3. Ann Arbor Residential Organics Management

4. Preliminary Recommendations

Organics Management Options of Interest

- Expanding to year-round collection
- Composting at home
- Pros and cons of using a garbage disposal
- Drop-off option
- Improvement / more options for:
  - Condos / multi-family
  - Student high-rises

Education Interests / Needs

- Where does food waste go and what happens to it?
  - Ann Arbor Compost Center needs to be highlighted, have tours
- Residents don't associate compost carts with food waste or know City wants food waste to be composted
- Identify how program will be communicated
- Residents need additional information about compostable dinnerware
- Some students not used to idea of recycling and composting
- With high student turnover, education needs to be continuous

- Learn more about how this study originated and how it ties to other A2 community efforts
- Learn about what other communities are doing
  - Is anyone else in Michigan doing this?
- What are the cost impacts?
  - Cost to implement options
  - Landfill savings
- Will there be a recommendation for a diversion goal?
- How does this tie to businesses?
  - Wants businesses to step up and to see how plan addresses businesses
  - Overall program may be more commercially focused because of more food waste there

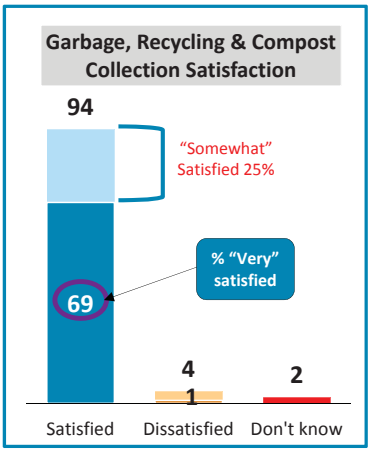
1. Committee Input and Desired Outcomes Review

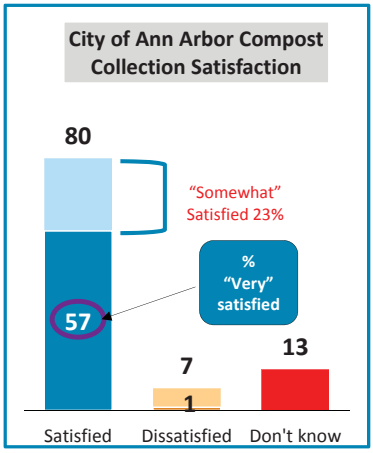
2. Resident Survey Results Summary

3. Ann Arbor Residential Organics Management
4. Preliminary Recommendations

Resident Satisfaction and Awareness

- High resident satisfaction with overall waste-related services and compost services specifically

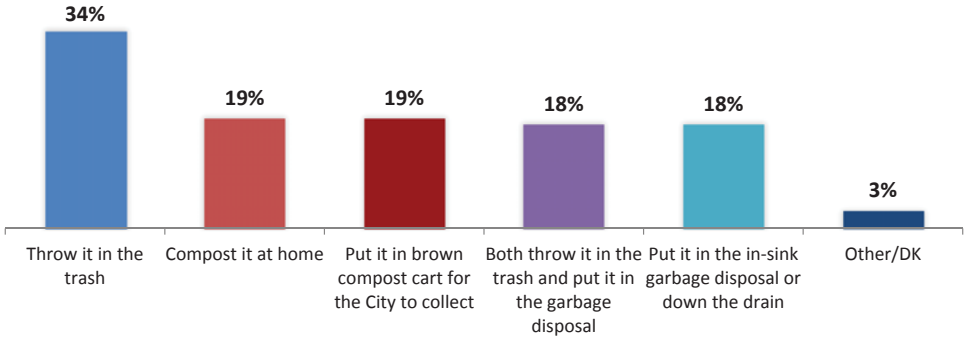




- Broad awareness of the compost program and the ability to include food waste in the compost cart
- High interest in reducing wasted food

Compost Carts & Food Waste Management

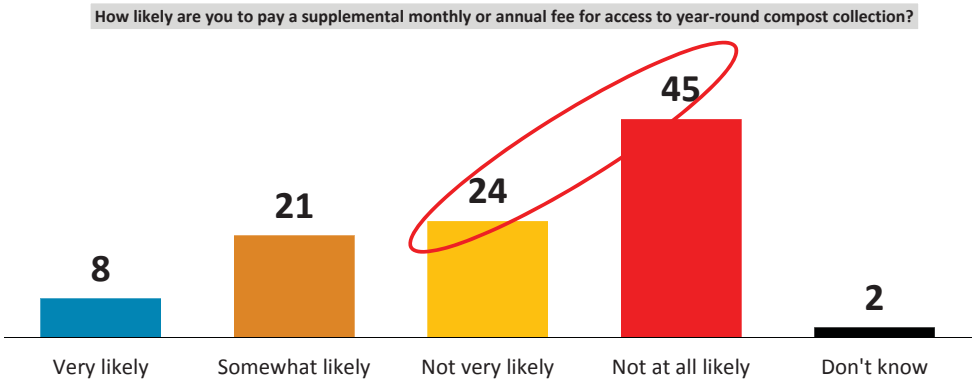
- 62% of respondents have a compost cart
- Primary reason to purchase the cart was to cut down on the number of yard waste bags needed
- Current food waste management practices:



- Significant driver for putting food waste in the compost cart is environmental
- High willingness among those without a compost cart to put food waste in the cart if the cart is provided at no cost

Expanded Collection Service

- Factors that would increase satisfaction with current service:
  - Year-round collection
  - City-provided kitchen containers and compostable bags
  - 32% want services to stay as they are
- Nearly half of respondents indicated need for compost collection during winter months
- Limited willingness to pay for more service:

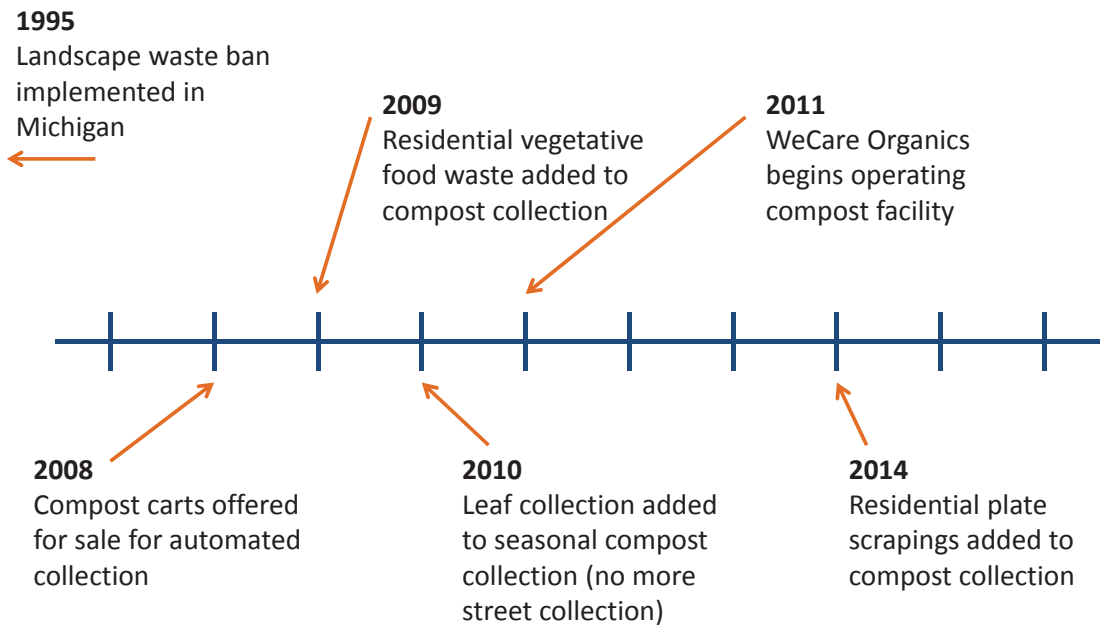


1. Committee Input and Desired Outcomes Review
2. Resident Survey Results Summary

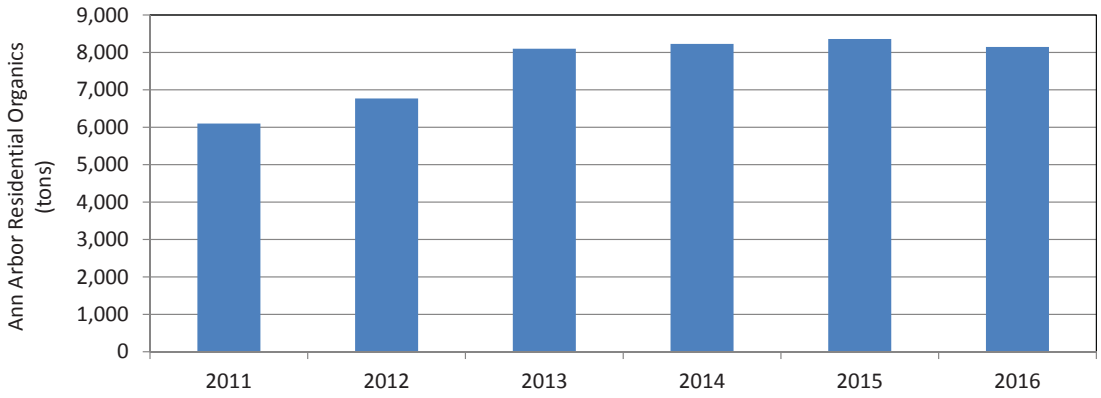
3. Ann Arbor Residential Organics Management

4. Preliminary Recommendations

Ann Arbor Organics Program Timeline



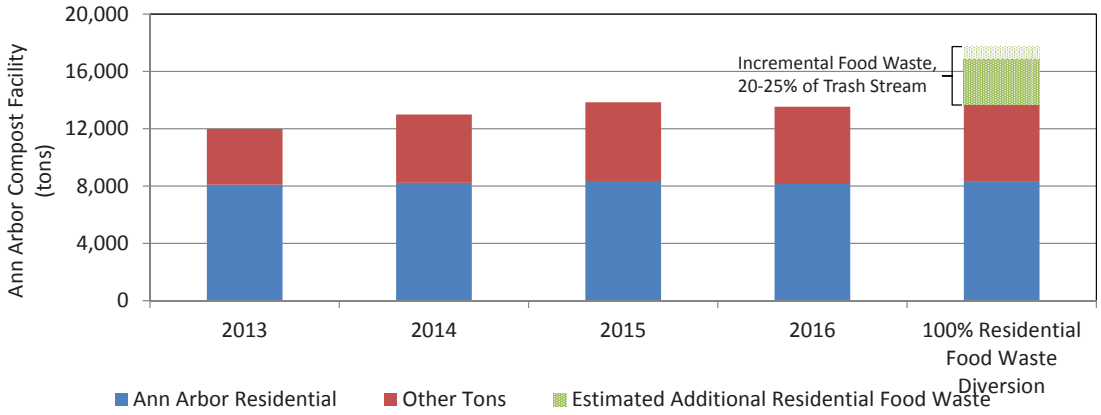
Organics Program Performance



- Average A2 residential organics = 61 pounds / household / month
- Organics collection in other communities:
  - Seattle, WA = 50 lbs/hh/mo
  - Portland, OR = 90 lbs/hh/mo
  - Berkeley, CA = 87 lbs/hh/mo

Potential Future Food Waste Diversion

- City / WeCare estimate 1,000-1,500 tons of food wastes are collected currently from Ann Arbor residents
- Food waste in residential trash estimated to be 20-25%, by weight
  - Average annual A2 residential trash = 16,200 tons
  - 3,240 - 4,050 tons estimated to be food waste

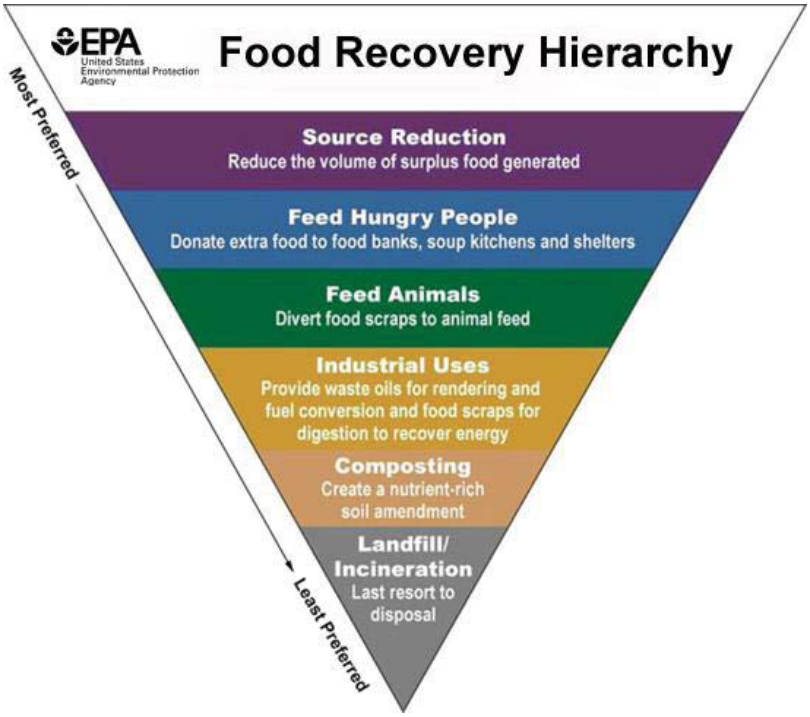


Residential Survey Responses

- High satisfaction: 80% satisfied with current compost services
  - One-third wouldn't change the current program
  - Changes: year-round collection, City-provided kitchen containers and bags
- Strong awareness: 63% aware food waste can go in compost cart
  - 19% say they put food waste in the cart now (about one-third of those with a cart)
- High interest in diverting food waste: 78% interested in reducing the amount of food wasted
  - 73% of residents without a compost cart would be willing to put food waste in the cart if it was provided at no cost
- Cost sensitive: 69% not likely to pay for access to year-round collection
  - 45% were not at all likely to pay
  - 29% were likely to pay

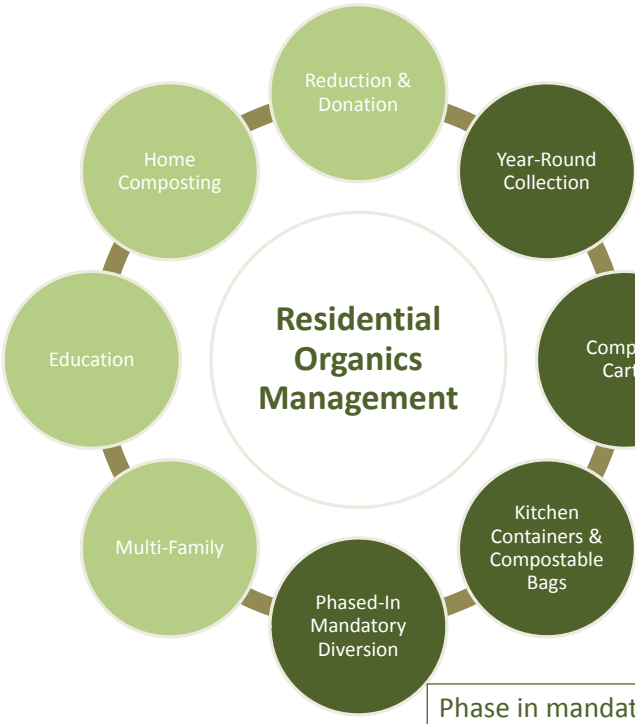
1. Committee Input and Desired Outcomes Review
2. Resident Survey Results Summary
3. Ann Arbor Residential Organics Management

4. Preliminary Recommendations



Key Recommendation Focus Areas

Recommendations are preliminary for discussion and subject to change



Expand residential compost collection to year-round service

Deliver compost carts to all residential properties

Make kitchen containers and compostable bags available to residents

Phase in mandatory residential organics diversion (if key performance / operational requirements are met)

Preliminary Residential Recommendations

Reduction and Donation

- Promote food waste reduction practices to residents by sharing the USEPA food waste reduction tools available in its *Food: Too Good To Waste Implementation Guide and Toolkit* through the A2 website, supplementing with local information if necessary.

- Provide and maintain a comprehensive listing of food donation outlets and guidelines for food donation on the A2 website and through other outreach materials.
- Assist food donation outlets to provide incentives or rewards to residents donating unused food, such as discounts at local markets, restaurants, etc. in exchange for food donation.
- Work with food donation outlets to determine whether data tracking and reporting can be provided to measure Ann Arbor resident efforts to reduce disposal of food waste.

Year-Round Collection

- Provide every-other-week compost collection during the December - March period, when yard waste quantities are reduced.
  - Provide service on a subscription basis, with only interested residents paying for the additional service

    - OR -
  - Provide service on a Citywide basis, with costs distributed across all residents.

Compost Carts

- Require all residential properties to have a compost cart, with the option to select their preferred cart size (32-gallon, 64-gallon, 96-gallon). Continue to allow additional yard waste to be set out in bags or cans and to prohibit food waste from being placed in bags or cans.

- For residents who do not already have a cart, charge a one-time fee of $25 for the cart, including delivery.
  - Will require the City to fund a portion of the cart cost
- Provide delivery of carts to residents using City or City-contracted staff.

Kitchen Containers / Bags

- Provide guidelines on the A2 website and in other educational materials for collecting food wastes with resident-provided small containers.

- Make kitchen containers available for all residents on an as-requested basis and provide a "starter set" of kitchen container liners with each container distributed.
  - Provide at no direct cost to residents

    - OR -
  - Offer for resident purchase (estimated at $10 each, if stocked by City; higher cost if online order link provided to order from vendor)

- Work with local businesses to sell approved compostable liners, and provide a list of participating businesses on the A2 website and in published program information.

Phased-In Mandatory Diversion

- Routinely evaluate organics diversion performance to begin phasing in mandatory organics diversion for residential customers.
  - Review performance 1 year after cart distribution
    - Collection quantities
    - Household participation and feedback, via online survey and lid-lifting of carts
    - Contamination, via visual observation of incoming material and feedback from compost facility operator on screenings from finished compost
  - Future policy decision / ordinance development dependent on:
    - Available funding
    - Adequate City staffing for inspections/enforcement
    - Compost facility continues to operate without problems / contamination / odor
    - Community feedback
    - Education of upcoming shift is communicated at least 1 year in advance

  - Targeted phase-in period of 3 years from date that all premises are provided compost carts

Multi-Family

- Perform an assessment of all multi-family properties to assess available space for compost carts and suitability of truck access or cart staging for collection.
  - Properties that are determined to be feasibly served with compost carts will be included in the residential program and provided the same services as single-family and duplex properties.
  - Properties that are determined to not be feasibly served with compost carts will be included in the commercial program when developed and provided the same services as commercial properties.

- Provide and maintain a reference list or look-up option on the A2 website to identify the program (residential or commercial) that each multi-family property is assigned to.

Education

- Develop an immediate, robust education program.
- Tailor the education program to provide specific messaging to different types of households; for example, families with children, young people without children, older residents.
- Develop educational materials to be provided by the City and/or downloadable from the A2 website for posting or distribution by neighborhood associations and at multi-family properties receiving residential service.
- Provide ongoing education as program changes are approved for implementation.

Home Composting

- Promote mulching / grass-cycling through educational materials and the A2 website.
- Promote the use of home compost bins and provide educational information to assist residents in bin usage.



- Questions
- Comments
- Changes suggested
- Priorities

For a copy of this presentation and other project updates, visit the project site:

www.a2gov.org/organicsplan

The City of Ann Arbor
Comprehensive Organics Management Plan
Commercial Advisory Committee
August 10, 2016 Meeting Agenda
9:00 – 11:00 a.m.

Meeting #1 - Introduction and Overview

9:00 a.m. - Welcome and Group Introduction

- Introduction of Project Goals and Project Team: Christina Gomes (City of Ann Arbor Systems Planning Unit)
- Desired Outcomes Review and Poll: Charlie Fleetham (Project Innovations)

9:25 - Advisory Committee Update: Charlie Fleetham (Project Innovations)

- Meeting Schedule
- Committee Objectives

9:50 - Ann Arbor Organics Program Presentation: Christina Seibert (CB&I Environmental & Infrastructure)

- What is Organics Management?
- Ann Arbor Background with Organics Management
- Project Overview and Implementation

10:15 - Participant Discussion and Q&A: Charlie Fleetham (Project Innovations)

10:45 – Wrap-Up

- Action Items: Charlie Fleetham (Project Innovations)
- Meeting Close: Christina Gomes (City of Ann Arbor Systems Planning Unit)

Public Comment - 3 minutes maximum per speaker

The City of Ann Arbor's Organics Management Plan
Commercial Advisory Committee
August 10, 2016 Meeting Summary
Submitted by Julie Bonenfant of Project Innovations

Participants: See Page 4

Agenda: See Attachment #1

1. **Welcome:** Christina Gomes, Ann Arbor Solid Waste and Recycling Coordinator, welcomed the participants, introduced the City Staff and the Project Team, and reviewed the project objectives:
   - Develop a comprehensive Organics Management Plan to identify options for diverting organic wastes from the trash stream.
   - The plan will include input from a diverse range of stakeholders, including residents, businesses, and institutions.
   - When complete, the plan will identify opportunities and needs for organics waste management, evaluate resource and logistic needs for alternative management options, and develop a strategy for implementing selected alternatives.
   - Work on the Organics Management Plan started in April 2016 and will be completed in early 2017.
   - The City has contracted with CB&I Environmental & Infrastructure, Inc., a national waste and recycling consulting firm, to develop the Organics Management Plan, with public engagement support from Project Innovations, Inc.

2. **Participant Desired Outcomes: Charlie Fleetham, Project Innovations facilitator, polled the participants on their desired outcomes. Committee feedback (by participant) included:**
   - To be more educated on what is going on and how this process will develop.
   - To take an active role in creating the program by having a hand in policy creation/decisions.
   - Explore options for food utilization.
   - Take a more holistic approach - upstream and downstream.
   - Learn more strategies regarding waste streams.
   - To learn what roles we can play in the creation of this program.
   - To see how this plan will fit in with alley management.
   - To learn what/how other communities are participating in waste management.
   - To learn what the overall plan for Ann Arbor will be.
   - To identify incentives that could get businesses to embrace waste management.
   - To identify ways to expand composting.
   - Address lapses in compost/recycling pickup in the winter season.

3. **Review/Confirm Objectives of the Commercial Advisory Committee:**
   - Current plan is to have four commercial meetings.
   - Committee provides input into plan … no expectation to provide group recommendation to City Council or Staff.
   - The group confirmed the committee role and objectives and agreed to participate in the four meetings.

4. **Project Presentation by Christina Seibert, CB&I Project Manager.** The presentation is available online at www.a2gov.org/organicsplan . The desired outcomes of the presentation were:
   - To define organics management.
   - To explain Ann Arbor's history with organics management.
   - To present an overview of the project and its proposed implementation.

5. **Group input for the Study:**
   - Need to effectively communicate that this current investment will provide future reward. Need to demonstrate future value, not just current cost.
   - Need to identify effective ways of managing enforcement.
   - Need to identify which area would be a more effective use of resources, Commercial vs. Residential, and find the correct balance.
   - Need to have a shared community vision and effective communication.
   - Identify all current costs, both obvious and hidden.
   - Ask those that are already composting in Ann Arbor to be ambassadors for the program.
   - Study the possibility of consolidating composting bins by having people share them.
   - Determine the level of support.
   - How to gain entry into the business (i.e. food waste inspection).
   - Determine how this will impact food safety.
   - Study how other municipalities have successfully implemented these programs.
   - Get the younger generation more involved.
   - Address technical opportunities.
   - Use social media sites like 'Next Door' to help communicate this effort.

6. **Closing Discussion Comments:**
   - We have been providing a zero cost waste reduction method since 1988. This has been providing a valuable service to the county. We want people to understand if food is still edible it should be donated to us first.
   - Believe that the greatest opportunity for opt in will be from our stores and restaurants.
   - I'm curious to see how this could work with a restaurant like ours.
   - I'd like to see the issues of compostable utensils will be addressed.
   - How far back are you willing to go with these outreach approaches?
     - Response: We are going all the way back to the generator.
   - How are elected City officials being engaged in this process?
     - Response: Allison Skinner, Environmental Commission Liaison, is a member of both Commercial and Residential Advisory Committees. The current goal is to bring a cohesive strategy back to City Council for their review.
   - It may be good to have a go to City Hall person as an advocate. It can be difficult in Ann Arbor to reach consensus on projects.

Attachment #1

Commercial Advisory Participant Roster: August 10, 2016			
Last	**First**	**Organization**	**Email**
Artley	Tracy	U of M DPW + Include U of M Food Services Rep	artleyt@umich.edu
Bonenfant	Julie	Project Innovations Coordinator	julie@projectinnovations.com
Bowman	Noelle	Washtenaw County	bowmann@ewashtenaw.org
Flagler	Miriam	Zingermans	mflagler@zingermans.com
Conaway	Brian	Waste Management	bconaway@wm.com
Fleetham	Charlie	Project Innovations Public Engagement Facilitator	charlie@projectinnovations.com
Gomes	Christina	Ann Arbor Solid Waste and Recyling Coordinator	cgomes@a2gov.org
Jones	Gabe	Detroit Grease	detroitgrease@gmail.com
Keller	Diane	A2Y Chamber	diane@a2ychamber.org
Lignell	Kirk	Recycle Ann Arbor	klignell@recycleannarbor.org
McEachern	Joe	Detroit Grease	detroitgrease@gmail.com
Moran	Sam	U of M DPW + Include U of M Food Services Rep	smoran@umich.edu
Panozzo	Joel	The Lunch Room	thelunchrooma2@gmail.com
Petrovskis	Erik	Meijer	erik.petrovskis@meijer.com
Sample	Kathy	Argus Farm Stop	kathy@argusfarmstop.com
Seibert	Christina	CB&I Project Manager	christina.seibert@CBI.com

Commercial Advisory Committee
Comprehensive Organics Management Plan
Meeting #1 - August 10, 2016

CB&I Environmental & Infrastructure, Inc.

In association with:

PROJECT INNOVATIONS INCORPORATED

Lake Research Partners

City of Ann Arbor Comprehensive
Organics Management Plan

1. **What is Organics Management?**
2. City of Ann Arbor Organics Management Background / History
3. Project Overview and Implementation

Materials Included in "Organics"

- "Organic": of, relating to, or derived from living matter

- Particular materials of focus for the Organics Management Plan:
  - Yard wastes
    - Grass clippings
    - Tree and bush trimmings
  - Wood
    - Tree limbs and stumps
    - Non-treated lumber
  - Food scraps
    - Food production wastes
    - Food preparation wastes
    - Spoiled/expired food
    - Plate scrapings
  - Fats, oils, and grease ("FOG") from cooking

Sources of Organic Wastes

At home:

- Yard maintenance / landscaping
- Food preparation
- Spoiled or expired food
- Plate scrapings

Primary generators of food wastes:

- Residential properties
- Restaurants
- Grocery stores
- Hospitals

Away from home:

- Property maintenance / landscaping
- Food preparation
- Spoiled or expired food
- Plate scrapings
- Food production and distribution

- Schools
- Institutions
- Food banks / pantries

Steps in Organics Management

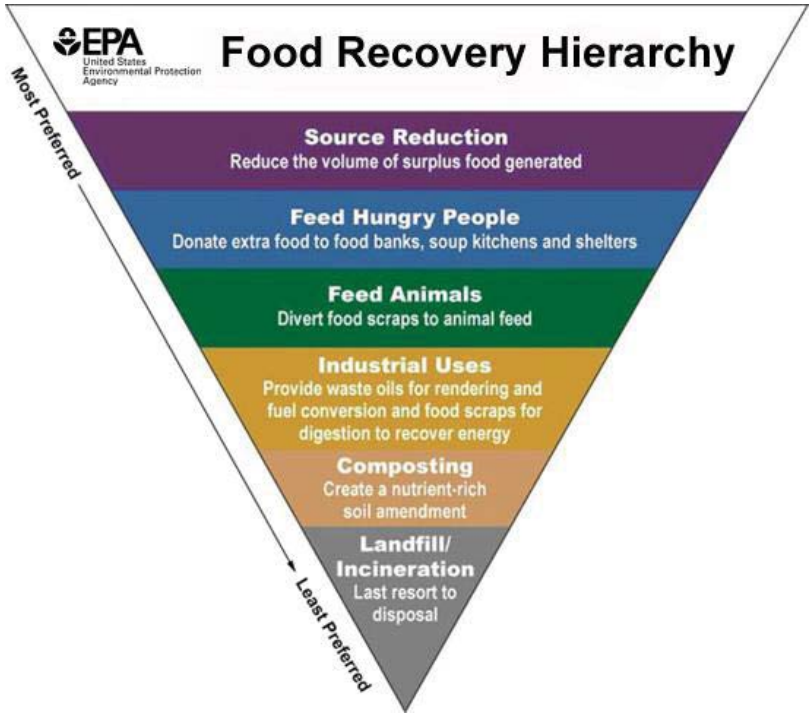
Segregation

Collection

Processing

Marketing / sale of finished products

U.S. EPA Food Recovery Hierarchy



1. What is Organics Management?

2. City of Ann Arbor Organics Management Background / History

3. Project Overview and Implementation

1995
Landscape waste ban implemented in Michigan

2008
Compost carts offered for sale for automated collection

2009
Residential vegetative food waste added to compost collection

2010
Leaf collection added to seasonal compost collection (no more street collection)

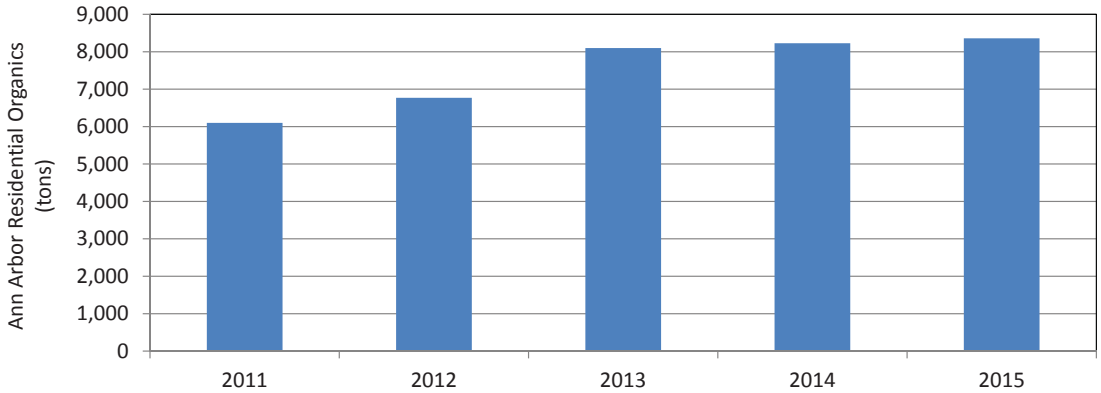
2011
WeCare Organics begins operating compost facility

2014
Residential plate scrapings added to compost collection

Current Operations

- Customers served
  - Single family and multi-family properties
- Collection provided by City of Ann Arbor
  - Seasonal (April through November)
  - 30-gallon kraft paper bags
  - City-provided compost carts
  - Bundled branches / brush
- Materials collected
  - Plate scrapings*
  - Bamboo dinnerware*
  - Grass clippings*
  - Leaves
  - Garden prunings / surplus
  - Unpainted, untreated lumber
  - Brush
  - Weeds
  - Tree branches (up to 6” diameter and 4 feet in length)
  - Pumpkins
  - Christmas trees (cut up)

Organics Program Performance



- Organic materials are a significant fraction of the disposed waste stream (20-30% or more, by weight)
- City / WeCare estimate 1,000-1,500 tons of food wastes are collected now from Ann Arbor residents
- Compost is sold by WeCare to wholesale outlets and residents

1. What is Organics Management?
2. City of Ann Arbor Organics Management Background / History

3. Project Overview and Implementation

- Document review - historical context
- Community engagement - stakeholders and public input
  - Interviews
  - Advisory Committees (Residential and Commercial)
  - Random telephone survey of residents
- Opportunities analysis - how much material is available?
- Logistics and resource needs - how can we collect and process it?
- Implementation strategy / recommendations
- Presentation of findings to Environmental Commission and City Council

Plan Development Schedule

- Started work in April 2016
- Advisory Committees will meet every other month
  - Residential: July, September, November, January (2017)
  - Commercial: August, October, December, January (2017)
- Resident survey - projected to be executed in September
- Research and analysis underway now
- Projected presentations:
  - Environmental Commission - February/March 2017
  - City Council - April 2017

Questions to be Addressed by the Plan

- Can organics collection be provided year-round?
- How much capacity does the compost facility have for added food waste?
- What are the costs?
- Who will provide services (collection, processing)?
- What are the logistical issues?
- Will the community and businesses be broadly accepting?
- Do residents support expanded collection? (public opinion survey)
- What is the timing of rolling out a new program or a pilot program?
- Is there support from staff and elected officials?
- What materials should be included (pre-consumer, post-consumer, compostable serviceware)?

Challenges to Consider in Planning Process

- Space and logistics
- Behaviors and attitudes
- Property ownership
- Mixed use properties / areas
- Education and communication
- Enforcement
- Sanitation

Recommended Role of Advisory Committee

- Share individual experiences
- Identify priorities and principal requests
- Provide feedback on alternatives discussed
- Provide connections to other stakeholders - spread the word to maximize feedback and participation
- Not reaching group consensus on a single approach or shaping a final recommendation to council - informing and discussing only

For a copy of this presentation and other project updates, visit the project site:

www.a2gov.org/organicsplan

City of Ann Arbor
Comprehensive Organics Management Plan
Commercial Advisory Committee
November 2, 2016 Meeting Agenda

8:30 a.m. – 10:30 a.m.

Meeting #2: Brainstorming Options and Gathering Input

8:30 a.m.	**Welcome and Desired Outcomes** ▪ Brief Review of Project Goals and Project Team: Christina Gomes, City of Ann Arbor Systems Planning Unit ▪ Desired Outcomes Review and Poll - Charlie Fleetham, Facilitator, Project Innovations, Inc.
8:45 a.m.	**Review of Aug. 10 Meeting Summary – Charlie Fleetham (Project Innovations)**
8:50 a.m.	**Waste Stream Life Cycle Cost Exercise - Christina Seibert (CB&I Environmental and Infrastructure)** ▪ Introduction to Life Cycle Data Scroll ▪ Small Group Exercise Instructions o Discuss Data Scroll o Identify Questions/Adds o Place stickies on scroll
9:20 a.m.	**Alley Blue Sky Brainstorming – Charlie Fleetham (Project Innovations)**
9:45 a.m.	**Service Level "Polarity" Exercise - Christina Seibert (CB&I Environmental and Infrastructure)** ▪ Introduction to Service Level "Polarity" Diagram ▪ Small Group Discussion ▪ Debrief
10:20 a.m.	**Wrap-Up - Christina Gomes (City of Ann Arbor Systems Planning Unit)** ▪ Action Items: Charlie Fleetham, Project Innovations ▪ Participant Feedback on Meeting
10:30 a.m.	**Public Comment (three-minute limitation per speaker)**

City of Ann Arbor
Comprehensive Organics Management Plan
Commercial Advisory Committee
November 2, 2016 Meeting Summary

Participant List – see Attachment #1

Small Group Exercise 1: Cost Impact

- Attendees were split into 2 groups to identify cost impacts (increases and decreases)
- Cost impacts were considered from the perspective of the generator (e.g., restaurant, grocer) and the collector / processor (e.g., waste and organics collection companies, compost facility, landfill)
- See Attachment #2 for comprehensive input from the groups

Takeaways (debriefing from exercise)

- *Education/outreach will be needed (collectors/facility) from "Zero" waste point of view, and collectors need to understand facility requirements*
- *Need to show cost impact – going from higher cost to get started, cost declines when program is well-established, then back up as Zero waste vision is achieved because quantities are low*

Small Group Exercise 2: Alley Brainstorming

- Attendees were split into 2 groups to brainstorm what alleys would look like if they were planned from a fresh start
- See Attachment #3 for comprehensive input from the groups

Takeaways (debriefing from exercise)

- *Business owners need incentives; put someone in charge; don't forget enforcement*
- *Broad vision needs to occur that incorporates all user needs*
- *Better containers are needed and should be explored*
- *Alley logistics must be considered*
- *Shared users (2 tenants using same alley)*

Small Group Exercise 3: Service Level

- Attendees were split into 3 groups to identify benefits and disadvantages of different service levels for organics, including status quo / no organics collection program; voluntary organics collection; and mandatory organics collection
- See Attachment #4 for comprehensive input from the groups

Takeaways (debriefing from exercise)

- *Focus on high-volume streams*
  - *Mandatory ensures high-volume generators are captured but can be a challenge for low-volume generators*
  - *Voluntary can miss high-volume generators not interested in participating*
- *Mandatory – focuses change; must be phased in*
- *Status quo/voluntary – don't force change, would require enforcement*
- *Could be voluntary to start with - mandatory could be selective and scaled*

Like Best/Need Next Feedback Closing Comments (by breakout group):

Liked Best about Meeting:

- Great process – talking through ideas
- Different points of view (facilities/generators/trans)
- High level engagement cross section

Need for Next Meeting – More details on how any cost structure changes would impact property owners, businesses, etc.

Attachment #1

Nov. 2, 2016 Commercial Advisory Committee Meeting Participant List

Last	First	Organization	Email
Artley	Tracy	U of M DPW + Include U of M Food Services Rep	artleyt@umich.edu
Bowman	Noelle	Washtenaw County	bowmann@ewashtenaw.org
Burman	Aaron	Llamasoft	aaronrburman@gmail.com
Conaway	Brian	Waste Management	bconaway@wm.com
Fleetham	Charlie	Project Innovations	charlie@projectinnovations.com
Gomes	Christina	A2 Systems Planning	cgomes@a2gov.org
Keller	Diane	A2Y Chamber	diane@a2ychamber.org
Lignell	Kirk	Recycle Ann Arbor	klignell@recycleannarbor.org
Moran	Sam	UM DPW/Waste Management	smoran@umich.edu
Panozzo	Joel	The Lunch Room	thelunchrooma2@gmail.com
Reed	John	Food Gatherers	john@foodgatherers.org
Seibert	Christina	CBI	Christiana.seibert@cbi.com
Teeter	John	First Martin	jteeter@firstmartin.com
Thomson	Maura	Main Street Area Association	maura@mainstreetannarbor.org
Todoro-Hargreaves	Frances	State Street Area Association	frances@a2state.com
Wreford	Sebastian	Food Gatherers	sebastian@foodgatherers.org
Wright	Jan	ICPJ	janwrigh@umich.edu
Yuhasz	Eric	Google	eyuhasz@google.com

ATTACHMENT #2

Ann Arbor Commercial Organics Collection: Cost Impacts to Generators to Divert More Organics

	On-Site Segregation of Organics from Waste Stream	Collection / Removal of Organics and Trash	Procurement / Purchasing Practices / Habits
Cost Increases ↑	Service Changes Energy Unpackaging of Materials Collection Containers (Inside) Storage Space Collection Containers (Outside) Employee Training Education Compostable Can Liners Food Serviceware	Property Redesign or Reconfiguration to Create Space Service Charge for Pickup Collection Containers (Outside) Shared Users Additional Staff Service Oversight / Contract Administration	Compostable Serviceware Compostable Can Liners
+ OR -	Food Donation		
Cost Decreases ↓	Trash Quantity Reduced / Service Reduced Tax Benefit	Food Donation	Reduce Food Packages Improved Purchasing Practices to Reduce Food Loss Incentives for Business

Ann Arbor Commercial Organics Collection:
Cost Impacts to Collectors and Processors to Divert More Organics

	Collection from Generators	Transportation to Destination Facility	Destination Facility (Compost Facility, Landfill, Etc.)
Cost Increases	Multiple Visits to Generator Collection Containers Source Separation Contamination Waste Material Types Education	Trucks Vehicle Maintenance Multiple Visits to Generator Labor / Drivers Service Frequency	Operating - Turning Compost Piles Early Change in Technology / Indoor Operation Contamination Potential Noxious Odors Increased Liability Staging / Initial Handling Permitting & Compliance Waste & Material Type / Composition
+ OR -	Tipping Fees	Haul Distance / Time	
Cost Decreases			End Product (Compost) Sales Compost Delivery Food Not Purchased Because Recovered Increased Waste Disposal Costs

ATTACHMENT #3

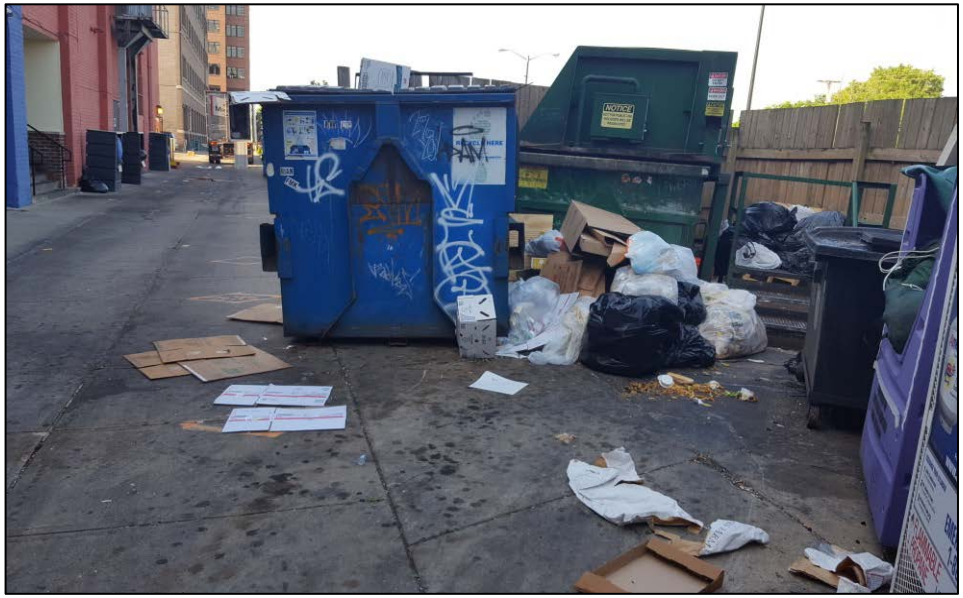
Ann Arbor Commercial Organics Collection: Alley "Blue Sky" Brainstorming

Big-picture redesign:
- "Big Dig" / underground storage
- Facility within buildings for sorting, etc.
- Pedestrian
- Consolidate or "hub" in central location
- Urban goats & pigs
- Lighting

Incentives:
- Adopt-An-Alley program
- Alley user cooperation
- Alley "captain" - reduced cost in bill for service
- "Pretty Alley" contests
- Tax credit for "neat" alleys

Cleaning:
- Design for easy cleaning
- Assessment to businesses for cleaning
- Regular cleaning schedule
- Alley clean-up days /events

Enforcement / funding:
- Community standards tickets
- Capital improvement funds / standard
- "Community Values" fund
- Alley app (e.g., NextDoor)
- Illegal dumping

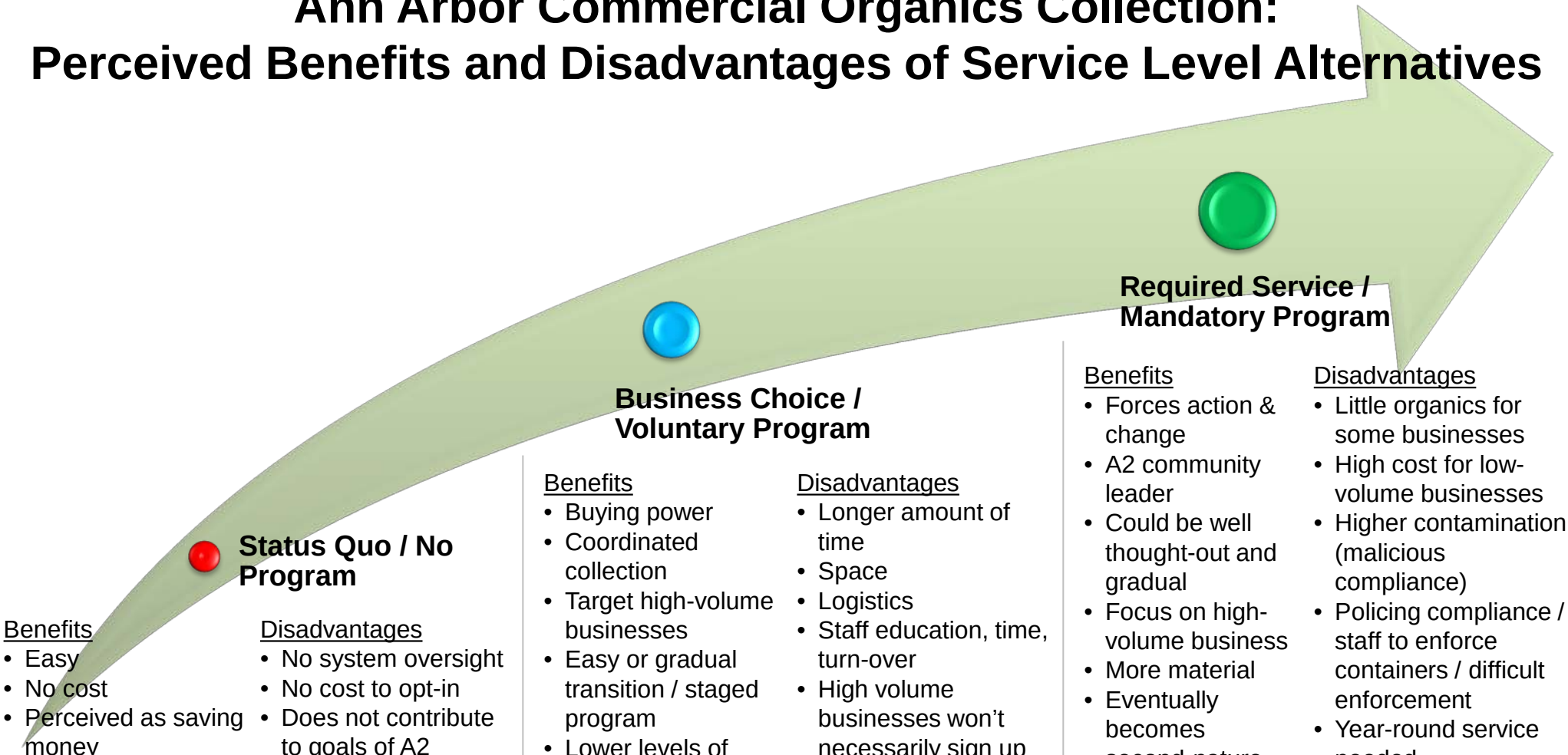


Trash/recycling/organics collection:
- Smaller or standardized container size & frequent service
- Shared containers - everyone must pay their share
- Container selection size & access
- Just-in-time pick-up
- Pick-up at night
- 24-hour compactor repair service

Alley management / oversight:
- One group or person in charge of alley enforcement
- Alley parking not to interfere with delivery trucks & trash collection
- One group for oversight
- Ownership of alleys needs to be clearly defined

ATTACHMENT #4

Ann Arbor Commercial Organics Collection: Perceived Benefits and Disadvantages of Service Level Alternatives



Status Quo / No Program

Benefits
- Easy
- No cost
- Perceived as saving money
- Avoids angry citizenry
- Supply of food donations

Disadvantages
- No system oversight
- No cost to opt-in
- Does not contribute to goals of A2
- A2 not a leader
- Bad image for A2 "brand"
- Environmental effects
- Public health & safety
- Odors
- Rats
- Limited vision of future benefits

Business Choice / Voluntary Program

Benefits
- Buying power
- Coordinated collection
- Target high-volume businesses
- Easy or gradual transition / staged program
- Lower levels of contamination
- Clear champions
- Environment of collaboration
- Doesn't require enforcement costs
- Consistent, reliable service
- Incentives
- Time to educate / identify best way to separate

Disadvantages
- Longer amount of time
- Space
- Logistics
- Staff education, time, turn-over
- High volume businesses won't necessarily sign up
- No consistency
- No sense of urgency
- Lose economies of scale

Required Service / Mandatory Program

Benefits
- Forces action & change
- A2 community leader
- Could be well thought-out and gradual
- Focus on high-volume business
- More material
- Eventually becomes second-nature
- Fines generate revenue
- Clean alleys

Disadvantages
- Little organics for some businesses
- High cost for low-volume businesses
- Higher contamination (malicious compliance)
- Policing compliance / staff to enforce containers / difficult enforcement
- Year-round service needed
- Container weight issues
- Who provides start-up containers?
- Specialized trucks for leakage
- Resistance to mandatory participation
- Could be an expensive flop

City of Ann Arbor
Comprehensive Organics Management Plan
Commercial Advisory Committee
December 14, 2016 Meeting Agenda

9:00 a.m. – 11:00 a.m.

Meeting #3: Project Update and Input to Recommendations

9:00 a.m.	**Welcome and Desired Outcomes** ▪ Brief Review of Project Goals and Project Team - Christina Gomes (City of Ann Arbor Systems Planning Unit) ▪ Organics Management Plan Development Approach - Christina Seibert (CB&I) ▪ Desired Outcomes Review and Poll - Charlie Fleetham (Project Innovations)
9:15 a.m.	**Review of November 2 Meeting Summary and Video – Charlie Fleetham (Project Innovations)**
9:30 a.m.	**Consulting Perspective on November 2 Meeting Exercises – Christina Seibert (CB&I)** ▪ Cost impacts ▪ Service levels ▪ Alley concerns (with an update from Ryan Doty, City of Ann Arbor Systems Planning Unit, on the Downtown Alleys Program)
10:00 a.m.	**Committee Feedback on Potential Plan Recommendations - Christina Seibert (CB&I)** ▪ Identification of potential recommendations - Christina Seibert (CB&I) ▪ Facilitated committee discussion and feedback - Charlie Fleetham (Project Innovations)
10:40 a.m.	**Project Status Update - Christina Seibert (CB&I)** ▪ Residential survey preliminary response data ▪ Remaining activities and upcoming schedule review
10:50 a.m.	**Wrap-Up - Christina Gomes (City of Ann Arbor Systems Planning Unit)** ▪ Action Items - Charlie Fleetham (Project Innovations) ▪ Participant Feedback on Meeting
11:00 a.m.	**Public Comment (three-minute limitation per speaker)**

City of Ann Arbor
Comprehensive Organics Management Plan
Commercial Advisory Committee
December 14, 2016 Meeting Summary

Participant List – see Attachment #1

1. **Project Update –** Christina Gomes (City of Ann Arbor Systems Planning Unit) thanked the participants for attending the meeting and noted that the project was on schedule to complete in January as well as performing within budget.

2. **Presentation of Video of Nov 2 Meeting -** Charlie Fleetham (Project Innovations Public Engagement Facilitator) played the highlights video of the November 2, 2016 Commercial Advisory Committee meeting. The feedback was positive and the video will be loaded on the project website.

3. **Consulting Perspective on November 2 Meeting Exercise -** Christina Seibert (CB&I Project Manager) provided her insights on the results of the November 2 brainstorming exercises (see attached slides). Breakout discussions were conducted, and discussion highpoints are noted below:

   - The city needs a much clearer statement regarding its "Zero Waste" vision…what is the city really prepared to do to achieve it?
   - We would like more knowledge on how to waste less food – before it can even go to compost. How do we connect restaurant customers to the composting process? It is relatively easy to control waste in a kitchen, but much harder to do so in the dining room.
   - Establishing a composting culture and providing training throughout the city will be required for any significant expansion of composting collection.
   - Number One Fear – all compostable cups / serviceware look the same! It will be very difficult for drivers to discern different types of serviceware and determine if they are compostable and have the proper certification.
   - Without new procurement standards regarding compostables, it will be very difficult to segregate the waste stream in places where people eat. Note – Michigan legislators recently banned communities from legislating local plastic bag bans and other containers (SB 853).
   - How does Seattle enforce mandatory organic waste collection … through "garbage police" and an escalating enforcement policy that starts with education and concludes with fines.
   - If the city expands collection, can the composting facility handle the volume? (Response from WeCare representative was positive … the facility has expanded its marketing program and could handle significantly more volume.)

4. **Downtown Alleys Program –** Ryan Doty (City of Ann Arbor Systems Planning Unit) provided an update on the Downtown Alley Program (see attached). Highlights included:

   - The project is focused on alleys within the DDA boundaries.
   - Community involvement has been significant … over 50 participants in a day long alley tour.
   - Alley space challenges are significant, especially in the winter. If businesses don't shovel, trucks can't navigate in the alleys.

5. **Preliminary Review of Plan Recommendations –** Christina Seibert highlighted the recommendations that are emerging as the planning process nears a conclusion:

   a) Promote source reduction through education and outreach.
   b) Implement expanded collection service on a voluntary basis.

c) If voluntary program is overwhelmingly successful, move to mandatory program that includes a food based ordinance.

d) Prior to developing an ordinance, it will be essential to develop a realistic and effective enforcement policy.

Feedback from Committee:

- I support immediate mandatory collection for the largest producers.
- The plan should harness the power of Ann Arbor people who want to do the right thing.
- The plan needs a much bigger education component!
- Make sure you link the plan with a comprehensive plan to manage the alleys.
- Don't hold back progress while you negotiate waste hauling contracts.
- Ann Arbor needs to brand its composting program … now and into the future.
- **Based on individual poll, overall support on a 1 to 5 scale: 3.7**

What specific topic should the final report address:

- Alley management.
- Lead with the mandatory (don't start voluntary… will take too long).
- Be creative with your educational recommendations … how will we change behavior?
- Address climate change and the impact on organic waste management.
- Identify the pivot point for our City to become a national leader.

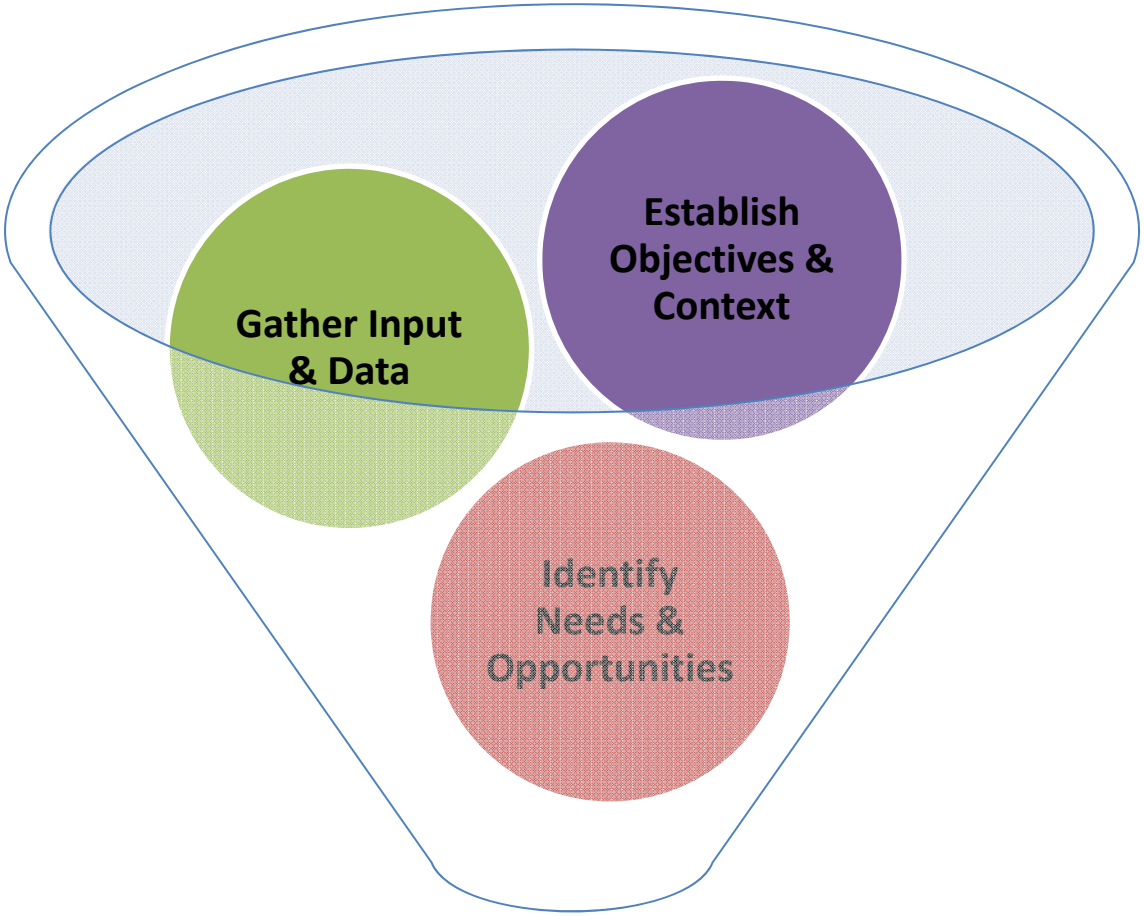
6. **Summary of Residential Survey –** Christina Seibert provided a high-level review of results of the resident survey, which indicated significant resident satisfaction with current services and high awareness of the option to place food waste in a compost cart. It is also indicated that about 70% of residents are not willing to pay more for collection to expand the program to winter months. The full survey results and report will be shared at the next meeting.

7. **Wrap Up –** Christina Gomes thanked the participants for attending the meeting and noted that the final meeting will occur Wednesday, January 25th from 9:00 to 11:00 am at the Wheeler Center.

Attachment 1 - Participant List

Last	First	Organization	Email
Artley	Tracy	U of M DPW	artleyt@umich.edu
Bowman	Noelle	Washtenaw County	bowmann@ewashtenaw.org
Burman	Aaron	Llamasoft	aaronrburman@gmail.com
Butynski	Dan	We Care Organics	dbutynski@wecareorganics.com
Conaway	Brian	Waste Management	bconaway@wm.com
Gomes	Christina	A2 Systems Planning	cgomes@a2gov.org
Doty	Ryan	A2 Systems Planning	rdoty@a2gov.org
Hall	Jennifer	Zingermans	jhall@zingermans.com
Lignell	Kirk	Recycle Ann Arbor	klignell@recycleannarbor.org
Moran	Sam	UM DPW/Waste Management	smoran@umich.edu
Sample	Kathy	Argus Farm Stop	kathy@argusfarmstop.com
Sheldon	Kimberly	Main Street Ventures	ksheldon@msventures.net
Thomson	Maura	Main Street Area Association	maura@mainstreetannarbor.org
Wreford	Sebastian	Food Gatherers	sebastian@foodgatherers.org
Wright	Jan	ICPJ	janwrigh@umich.edu

Approach to the Plan



Develop Strategy Recommendations (Plan)

Ann Arbor Commercial Organics Collection: Cost Impacts to Generators to Divert More Organics

	On-Site Segregation of Organics from Waste Stream	Collection / Removal of Organics and Trash	Procurement / Purchasing Practices / Habits
Cost Increases ↑	Service Changes Energy Unpackaging of Materials Collection Containers (Inside) Storage Space Collection Containers (Outside) Employee Training Education Compostable Can Liners Food Serviceware	Property Redesign or Reconfiguration to Create Space Service Charge for Pickup Collection Containers (Outside) Shared Users Additional Staff Service Oversight / Contract Administration	Compostable Serviceware Compostable Can Liners
+ OR -	Food Donation		
Cost Decreases ↓	Trash Quantity Reduced / Service Reduced Tax Benefit	Food Donation	Reduce Food Packages Improved Purchasing Practices to Reduce Food Loss Incentives for Business

Ann Arbor Commercial Organics Collection:
Cost Impacts to Collectors and Processors to Divert More Organics

	Collection from Generators	Transportation to Destination Facility	Destination Facility (Compost Facility, Landfill, Etc.)
Cost Increases	Multiple Visits to Generator Collection Containers Source Separation Contamination Waste Material Types Education	Trucks Vehicle Maintenance Multiple Visits to Generator Labor / Drivers Service Frequency	Operating - Turning Compost Piles Early Change in Technology / Indoor Operation Contamination Potential Noxious Odors Increased Liability Staging / Initial Handling Permitting & Compliance Waste & Material Type / Composition
+ OR -	Tipping Fees	Haul Distance / Time	
Cost Decreases			End Product (Compost) Sales Compost Delivery Food Not Purchased Because Recovered Increased Waste Disposal Costs

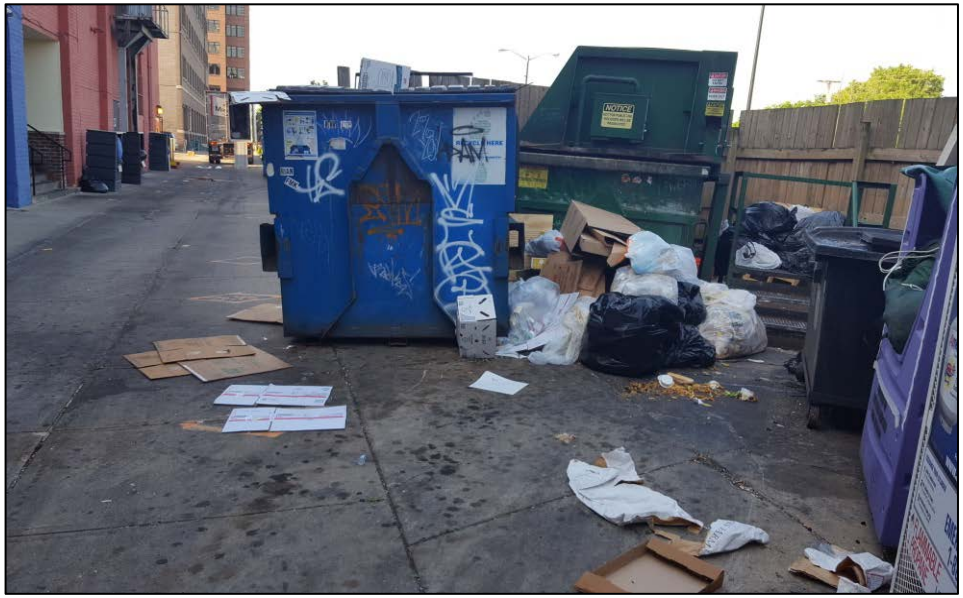
Ann Arbor Commercial Organics Collection: Alley "Blue Sky" Brainstorming

Big-picture redesign:
- "Big Dig" / underground storage
- Facility within buildings for sorting, etc.
- Pedestrian
- Consolidate or "hub" in central location
- Urban goats & pigs
- Lighting

Incentives:
- Adopt-An-Alley program
- Alley user cooperation
- Alley "captain" - reduced cost in bill for service
- "Pretty Alley" contests
- Tax credit for "neat" alleys

Cleaning:
- Design for easy cleaning
- Assessment to businesses for cleaning
- Regular cleaning schedule
- Alley clean-up days /events

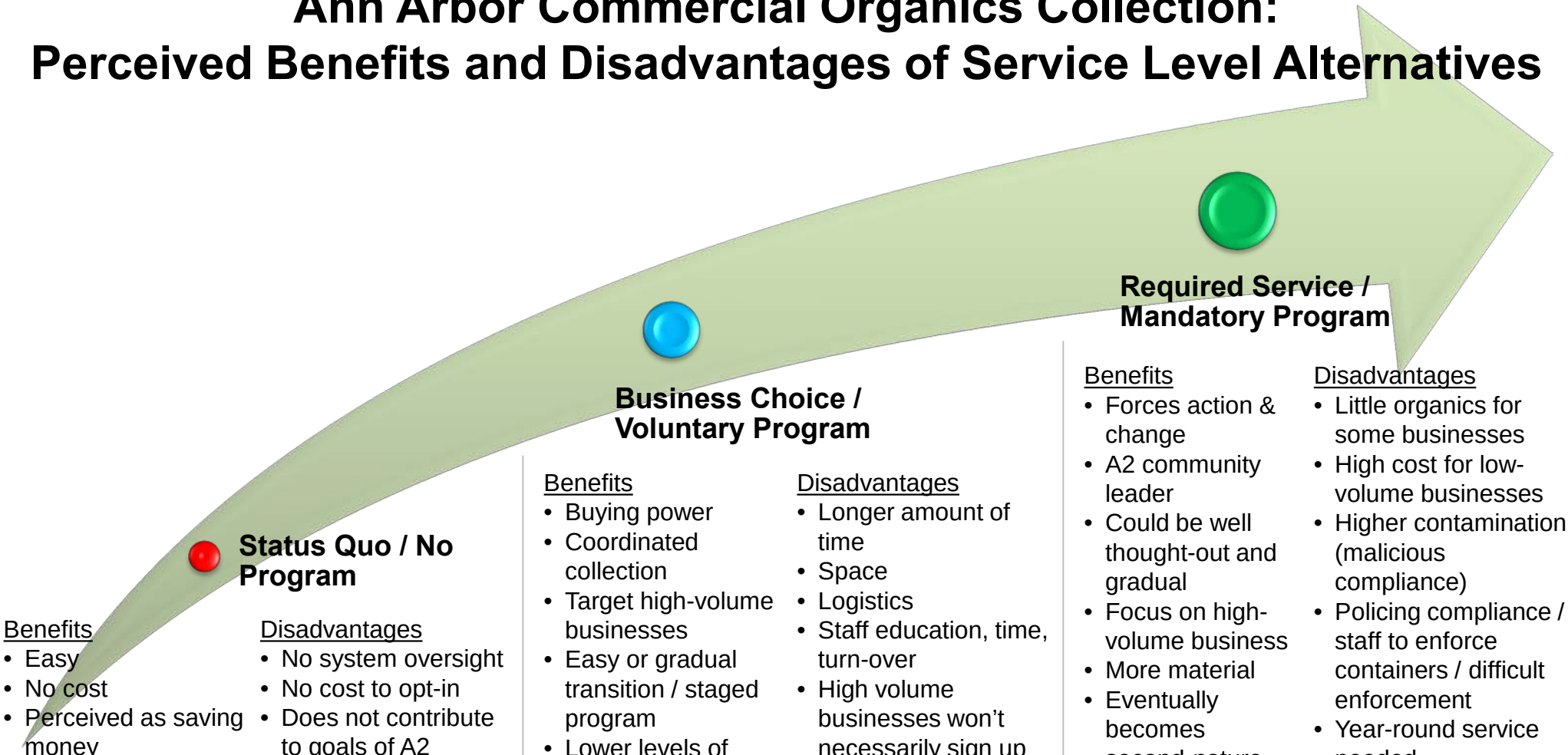
Enforcement / funding:
- Community standards tickets
- Capital improvement funds / standard
- "Community Values" fund
- Alley app (e.g., NextDoor)
- Illegal dumping



Trash/recycling/organics collection:
- Smaller or standardized container size & frequent service
- Shared containers - everyone must pay their share
- Container selection size & access
- Just-in-time pick-up
- Pick-up at night
- 24-hour compactor repair service

Alley management / oversight:
- One group or person in charge of alley enforcement
- Alley parking not to interfere with delivery trucks & trash collection
- One group for oversight
- Ownership of alleys needs to be clearly defined

Ann Arbor Commercial Organics Collection: Perceived Benefits and Disadvantages of Service Level Alternatives



Status Quo / No Program

Benefits
- Easy
- No cost
- Perceived as saving money
- Avoids angry citizenry
- Supply of food donations

Disadvantages
- No system oversight
- No cost to opt-in
- Does not contribute to goals of A2
- A2 not a leader
- Bad image for A2 "brand"
- Environmental effects
- Public health & safety
- Odors
- Rats
- Limited vision of future benefits

Business Choice / Voluntary Program

Benefits
- Buying power
- Coordinated collection
- Target high-volume businesses
- Easy or gradual transition / staged program
- Lower levels of contamination
- Clear champions
- Environment of collaboration
- Doesn't require enforcement costs
- Consistent, reliable service
- Incentives
- Time to educate / identify best way to separate

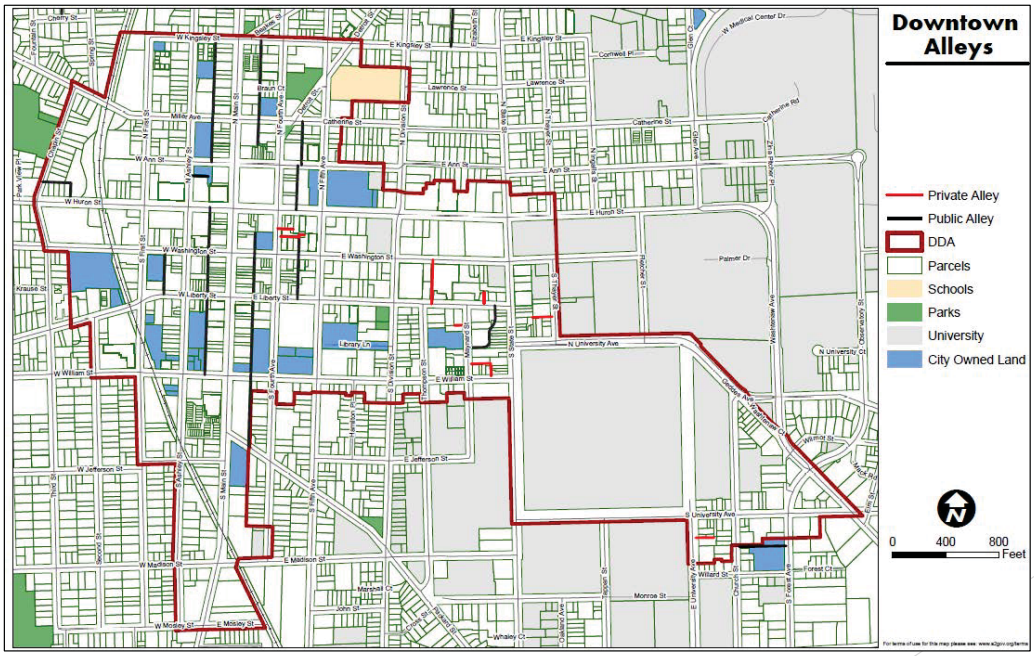
Disadvantages
- Longer amount of time
- Space
- Logistics
- Staff education, time, turn-over
- High volume businesses won't necessarily sign up
- No consistency
- No sense of urgency
- Lose economies of scale

Required Service / Mandatory Program

Benefits
- Forces action & change
- A2 community leader
- Could be well thought-out and gradual
- Focus on high-volume business
- More material
- Eventually becomes second-nature
- Fines generate revenue
- Clean alleys

Disadvantages
- Little organics for some businesses
- High cost for low-volume businesses
- Higher contamination (malicious compliance)
- Policing compliance / staff to enforce containers / difficult enforcement
- Year-round service needed
- Container weight issues
- Who provides start-up containers?
- Specialized trucks for leakage
- Resistance to mandatory participation
- Could be an expensive flop

DOWNTOWN ALLEYS PROGRAM



Purpose

- Improve operations in alleys
  - Services
  - Atmosphere
- Address issues
  - Waste management
  - Maintenance
  - Water quality
  - Safety

E. William Alley

Staff Workgroup

- Kayla Coleman – Project Manager, Systems Planning Analyst
- Ryan Doty – Solid Waste Assistant
- Christina Gomes – Solid Waste/Recycling Coordinator
- Jennifer Lawson – Water Quality Manager
- Molly Maciejewski – Public Works Manager
- Amber Miller – Planner, Downtown Development Authority
- Tracy Pennington – Public Works Supervisor
- Cresson Slotten – Systems Planning Manager

Church Street Alley

Stakeholders

City Staff

- Attorney's Office
- Communications
- Customer Service
- Public Works
- Finance
- Planning and Development
- Project Management, Traffic Engineering
- Safety Services and Community Standards
- Systems Planning

Downtown Community

- Merchant associations
- Neighborhood groups
- Restaurants
- Retail
- Property Management
- Residents

Service Providers, Non-profits and Public agencies

- Waste, Recycling and Organics collection
- Grease collection services
- Service and Delivery Vehicles
- Other utility/service providers
- Huron River Watershed Council
- Washtenaw County Office of Environmental Health
- Washtenaw County Water Resources Commission
- City Commissions

Project Timeline

September 2016	TODAY		Anticipated September 2017	Ongoing
Program Initiation + Issues and Opportunities Analysis	Alternatives Analysis	Implementation Strategy	Implementation	Oversight and Monitoring

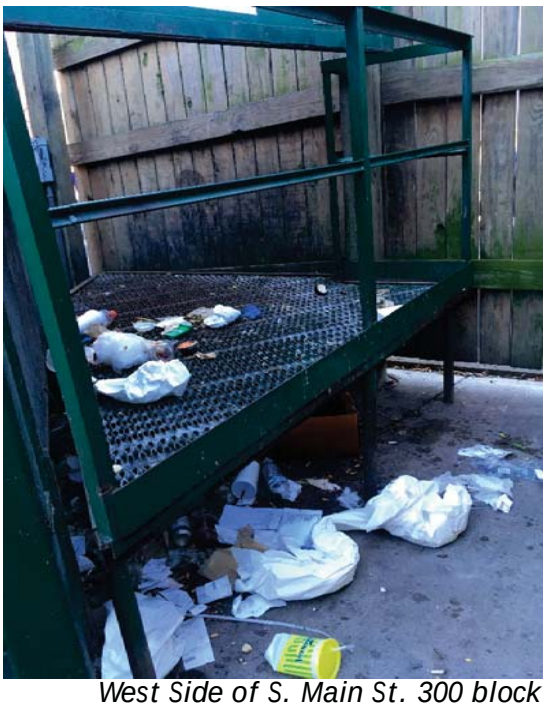
NOTE: This draft project timeline is an estimate. Subject to change.

Existing Issues and Challenges

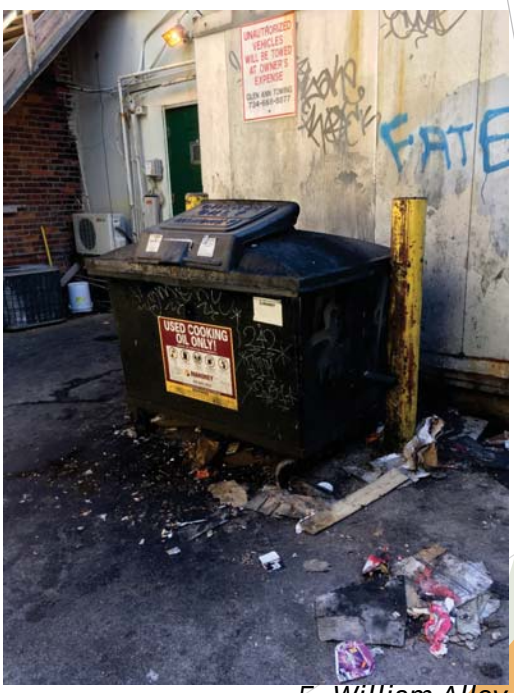
Cleanliness/maintenance

Bell Tower Alley

Cleanliness/maintenance



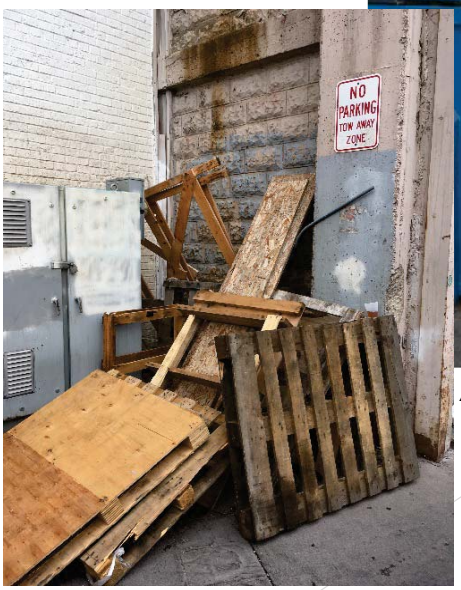
West Side of S. Main St. 300 block



E. William Alley

Unauthorized dumping/abandoned items

West Side of S. Main St. 300 block



Ant/Red Hawk Alley

Parking and delivery vehicle challenges

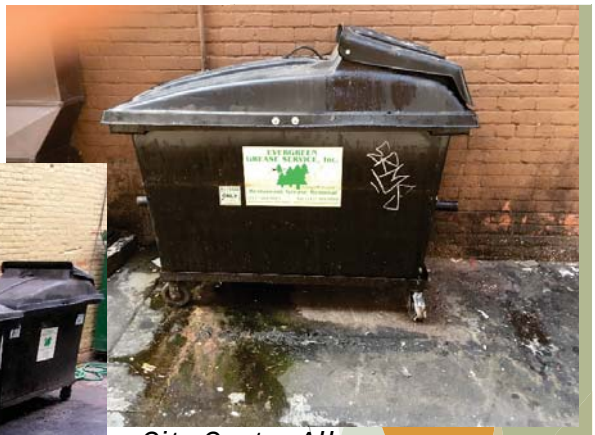
Bell Tower Alley

Ant/Red Hawk Alley

East Side of S. Main St. 300 block

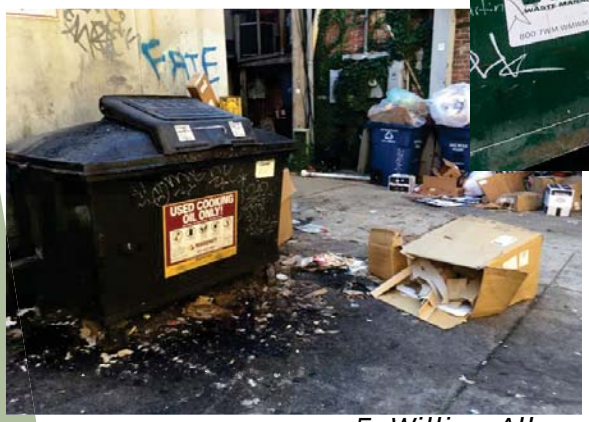
Grease container cleanliness/leakage

Stormwater issues



City Center Alley

East Side of S. Main St. 300 block



E. William Alley

Container overflow and appropriate use/practices

E. William Alley

Red Hawk/Ant Alley

Michigan Theater Alley

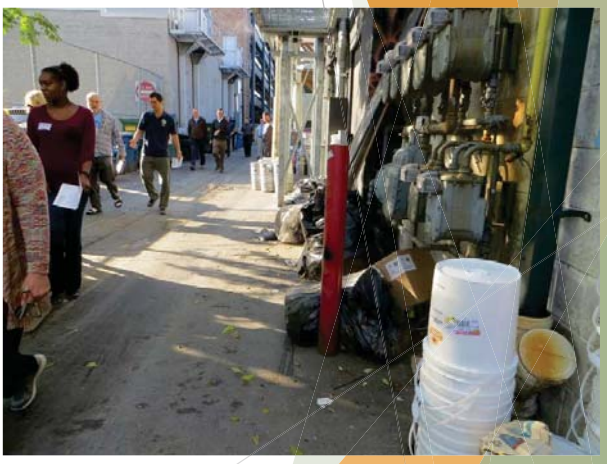
Alley Tour

- 50+ public attendees
- 10 staff
- 13 alleys visited

Existing Issues and Challenges

Public Input De-brief

- Cleanliness
- Capacity
- Public vs. Private ownership
- Enforcement
- Safety
- Access/Parking
- Communication barriers
- Illegal Dumping
- Fats, Oils, & Greases



Next steps

- Issue prioritization and potential solutions
- Recommended alternatives
- Implementation of pilot programs
- For more information, please visit a2gov.org/alleys

City of Ann Arbor
Comprehensive Organics Management Plan
Commercial Advisory Committee
January 25, 2017 Meeting Agenda
Wheeler Center - 9:00 a.m. – 11:00 a.m.

Final Meeting (#4): Review of Preliminary Plan Recommendations

9:00 a.m.	**Welcome and Desired Outcomes** ▪ Brief Review of Project Goals and Project Team - Christina Gomes (City of Ann Arbor Systems Planning Unit) ▪ Desired Outcomes Review and Poll - Charlie Fleetham (Project Innovations) ▪ Review of committee input to date and role in plan development - Christina Seibert (CB&I)
9:20 a.m.	**Review of Biodigester Feasibility Study and Preliminary Findings - Matt Naud (City of Ann Arbor Systems Planning Unit)**
9:35 a.m.	**Preliminary Organics Management Plan Recommendations** ▪ Presentation of preliminary recommendations - Christina Seibert (CB&I) ▪ Committee feedback on preliminary recommendations - Charlie Fleetham (Project Innovations)
10:40 a.m.	**Wrap-Up - Christina Gomes (City of Ann Arbor Systems Planning Unit)** ▪ Schedule of future public meetings and plan presentation ▪ Expression of appreciation for committee member contribution and service ▪ Feedback from committee on process -Charlie Fleetham (Project Innovations) ▪ Meeting close
11:00 a.m.	**Public Comment (three-minute limitation per speaker)**

City of Ann Arbor
Comprehensive Organics Management Plan
Commercial Advisory Committee
January 25, 2017 Meeting Summary

Participant List – see Attachment #1

Desired Outcomes: The facilitator polled the participants regarding their desired outcomes from the meeting. Most of the comments concerned the preliminary Commercial Organics Management Plan recommendations which were distributed prior to the meeting.

- The City needs to address the outcomes of the Alley Task Force. All alley issues need to be worked out and ironed out before going forward with any organics management plan. (Several participants agreed with this comment.)
- Agree with the pre-implementation commercial survey. Need to allow businesses to explain why they wouldn't want to participate in a voluntary compost collection program.
- Like the education and branding components.
- How does Biodigester facility integrate into this plan?
- Can the compost facility handle the increased amount of food waste?
- How would implementation be phased in? How will you address move from voluntary to mandatory? What is overall cost of plan?
- How do we get to the mandatory program - the report is not specific about process or time?
- Likes food donation and container sharing strategy in small spaces.
- Very excited about where report is going.
- Report should address food waste in public schools - need educational component in schools.
- We want more specificity regarding food donation outlets. If food is donated to non-profit hunger relief agency, there are tax benefits and food safety benefits. Not sure about broad based outreach and implementation of coupons (seems nebulous). Regarding guidelines, the City should work with agencies that manage food relief. Food Gatherers willing to work with the City measuring waste. This would require more resources/could be option that City would want to consider.
- If program results in increases in donation, we need to think through the impact - more usable donations but also more waste to send to compost (which is a cost).
- We need evaluation of feasibility of a mandatory program which addresses cost. Businesses don't want to spend resources and only catch minimal waste.

Review of Committee Input: See Attachment #2, slides 2-4

Update on Ann Arbor Biodigester Project – Matt Naud provided an update on the City's Biodigester project. Highlights included:

- What is a biodigester? It's a place where you bring organic wastes, principally residual solids from WWTP/FOG/depackaged food. Yard waste is not good material in a biodigester.
- WWTP spends $1M a year for land application (during warm-weather, drier months) and disposal (remainder of year) – solids are clean and good for land application but there are limits on the types of fields and quantity that can be applied.
- In the biodigester, organics are cooked in anaerobic (no oxygen) process, methane gas is created and stored in tanks. Gas can be converted to electricity (City currently collects methane from closed landfill and power goes to DTE), or the gas can be cleaned and put into natural gas grid or to power vehicles.
- Best option is putting natural gas into grid; federal credits are available but don't want to count on those credits to make facility financially viable.

- Initial design requested an overbuilt system – key systems will be redundant. Current estimated cost is $27M - doesn't make economic sense, but looking at possible cost reductions by moving centrifuges from WWTP to biodigester facility, reallocating personnel to reduce costs of staffing, possibly reducing redundancies.
- Will meet with contractor this month to continue refining study.
- Regarding mandatory element – can't do it until we can handle all materials. WeCare can take more material – handling everything fine now, but there is a limit to how much can be composted without a change in technology.
- Cautionary with biodigester – in Lowell, MI a biodigester began to leak waste and gas almost caused it to blow up.
- Biodigester would still have waste to manage (though much smaller volume); since it has human waste it can't go to compost facility without much more stringent testing / quality control.
- Tipping fees – it's actually cheaper to landfill in Michigan than to compost; landfill cost is about $14/ton in Michigan, compared to about $90/ton in Portland, Oregon.

  Committee Member Comments:
  - Is there estimated annual operating cost? *Yes, about $1M a year.*
  - Are there significant costs to get material from WWTP to biodigester facility? *The cost is minimal as we are already trucking waste now from the plant to more distant fields / landfill. (Biodigester would likely be located on Wheeler Center complex; similar uses, compost facility, required utilities all present.)*
  - Will it just include AA waste? *We are only looking at City now . . . would need long term contracts with other entities . . . we are also thinking about City managed vs. County managed.*
  - When will the project be discussed with the public? *There will be a presentation at the February Environmental Commission meeting.*

Background Information Regarding Recommendations - See Attachment #2, slides 10-11

Breakout Groups Discussion on Preliminary Recommendations: Strengths/Concerns and Questions/Priorities: The facilitator established breakout groups to discuss the presentation on the preliminary Commercial Organics Management Plan recommendations. Comments included:

- Strengths
  - You included food donation as significant portion.
  - More food we can take out of waste stream the better.
  - Like the fact that plan is being developed.
- Questions and Concerns:
  - Sharing alley space concept: is the one-person accountability proposal feasible? Solving alley situation is biggest downtown issue. Will someone step up to run alleys?
  - Need priorities broken out. Reduction and Donation should be split out. Both are difficult, and approach to each is different.
  - Regarding donation: seems like residential recommendations got mixed into the commercial side. Small scale residential recommendation doesn't necessarily support large scale commercial needs.
  - Doesn't address costs of food gathering operations. If we are increasing donations, need to address cost to entities managing donations.
  - Providing incentives and awards to residents, doesn't support commercial strategy.
  - Alleys need to be addressed first. When will alley report be submitted?
  - Mandatory collection has a lot of challenges – difficult for business owners to hire extra staff to separate/to get waste to the curb.
  - Mandatory collection also impacts processes that business already have in place.
  - Regarding commercial bins: you are talking about dumping waste into the bins, need to identify who is going to clean bin. If you just hose it out, waste goes into storm sewer and is not appropriate. Shared spaces make it even more difficult. The cleaning option/solution is very important.

- Regarding cost structure: would be helpful to see scenarios of costs. Businesses are paying millage and also have to pay garbage collection. You might have lack of interest in the voluntary portion if business costs increase further. Cost tolerance should be part of the survey to businesses in advance of an RFP.

Follow on Schedule:

- Provide any additional comments in writing to Christina S. / Charlie / Christina G.; requested by 2/3/17 to allow time to consider before moving forward
- February 23rd- Draft recommendations presented to Environmental Commission at City Hall
- March 23rd or April 27th – Final draft of Organics Management Plan presented to Environmental Commission
- Committee members will receive email notices of future presentations to the Environmental Commission

All meeting summaries, agendas, and presentations are available at:
http://www.a2gov.org/organicsplan

Attachment #1: January 25, 2017 Meeting Participant List

Last	First	Organization	Email
Artley	Tracy	U of M DPW + Include U of M Food Services Rep	artleyt@umich.edu
Bowman	Noelle	Washtenaw County	bowmann@ewashtenaw.org
Bowser	Rodger	Zingermans	rbowser@zingermans.com
Butynski	Dan	We Care Organics	dbutynski@wecareorganics.com
Conaway	Brian	Waste Management	bconaway@wm.com
Doty	Ryan	A2 Systems Planning	rdoty@a2gov.org
Gomes	Christina	A2 Systems Planning	cgomes@a2gov.org
Hall	Jennifer	Zingermans	jhall@zingermans.com
Lignell	Kirk	Recycle Ann Arbor	klignell@recycleannarbor.org
Naud	Matt	A2 Systems Planning	mnaud@a2gov.org
Pollay	Susan	Ann Arbor DDA	spollay@a2dda.org
Reed	John	Food Gatherers	john@foodgatherers.com
Sample	Kathy	Argus Farm Stop	kathy@argusfarmstop.com
Sheldon	Kimberly	Main Street Ventures	ksheldon@msventures.net
Teeter	John	First Martin	jteeter@firstmartin.com
Thomson	Maura	Main Street Area Association	maura@mainstreetannarbor.org
Todoro-Hargreaves	Frances	State Street Area Association	frances@a2state.com
Wilhelme	Andrew	Zingermans	awilihelme@zingermans.com
Wreford	Sebastian	Food Gatherers	sebastian@foodgatherers.com
Wright	Jan	ICPJ	janwrigh@umich.edu

Attachment #2: Presentation Slides - provided as a separate document

Attachment #3: Preliminary Recommendations - provided as a separate document

Ann Arbor Organics Management Plan
Preliminary Commercial Recommendations
For Review and Discussion Only - Subject to Change

The following preliminary recommendations for commercial organics management in Ann Arbor have been developed for the Commercial Advisory Committee's review and comment.

The preliminary recommendations have been developed based on the research and analysis completed to date, best practices in other high-performing and progressive communities, and the input of the committee. Based on the Committee's feedback and the project team's continuing analysis, the recommendations may be modified prior to presentation to the Environmental Commission.

Recommendations are organized by topic / operational area and are numbered in each topic area. Supplementary information is provided in bulleted form following certain recommendations, addressing implementation, costs, or decision points. Further detail and implementation responsibilities will be developed and incorporated in the future Organics Management Plan.

<u>Reduction and Donation</u>

1. Promote food waste reduction practices by sharing the USEPA food waste reduction tools available in its *Food: Too Good To Waste Implementation Guide and Toolkit* through the A2 website, supplementing with local information if necessary.

2. Provide and maintain a comprehensive listing of food donation outlets and guidelines for food donation on the A2 website and through other outreach materials.

3. Assist food donation outlets to provide incentives or rewards to residents donating unused food, such as discounts at local markets, restaurants, etc. in exchange for food donation.

    - No material cost to the City; envisioned to be broad-based outreach to the business community either by City staff or food donation outlets to request business participation in offering coupons for distribution to food donors

    - Could be conducted as part of a food waste diversion promotion campaign that includes promotion of businesses performing food waste diversion / participating in a future commercial organics collection program

4. Work with food donation outlets to determine whether data tracking and reporting can be provided to measure Ann Arbor resident efforts to reduce disposal of food waste.

<u>Collection</u>

1. Survey businesses to determine their preliminary interest in subscribing to a food waste collection service provided by a hauler contracted by the City, with cost to be paid by participating businesses.

    - A subset of businesses consisting of food-centric businesses such as restaurants/bars, catering businesses, grocery stores, and farmer's markets could be targeted for this initial survey as they are the most relevant audience.

- Information received in response to the survey will be incorporated into the collection RFP (see Collection Recommendation 2) as a guideline for responding haulers, with the qualification that the number of subscribing businesses may be more or less than indicated by the survey and may change over the term of the contract as businesses add or drop the service.

2. Develop and distribute a Request for Proposals to secure a private hauler to provide food waste collection on an exclusive basis to participating businesses and multi-family properties not eligible for residential collection service.

    - Business and multi-family participation will be voluntary, on a subscription basis.

    - Participating businesses will pay for the service at the rate established in the contract.

    - Securing a single hauler to provide collection service ensures a single point of contact for the City and pricing consistency and transparency to businesses.

    - The selected hauler will provide exterior collection containers, with sizes, number, and collection frequency selected by the business and approved by the hauler/City.

    - The hauler will be responsible for all billing to participating businesses and providing customer service; note this is different from the commercial waste collection program and reflects lessons learned through that program.

        - City to evaluate whether the City can sustainably fund a portion of the costs related to collection (e.g., the tipping fee at the compost facility) from existing solid waste program funding.

    - Contract term must be sufficient to ensure hauler can cost-effectively serve businesses and recover investment in equipment and labor; suggested contract term of 5 years, with one 5-year renewal option

3. Provide implementation oversight to participating businesses, including identifying or reviewing organics container size, location, and service frequency needs and waste service modifications.

    - Implementation oversight required for all businesses prior to the start of service

    - All containers and placement must comply with City code and be approved by the City prior to implementation

    - Implementation oversight should be provided by one or more dedicated City staff members

    - For businesses in the DDA with alley service or other properties with significant space constraints, the contracted hauler should also participate in the space / service review to identify particular constraints that may need to be addressed to provide adequate service without impeding other alley or property operations

    - Encourage businesses to partner to share containers where feasible

- Shared containers recommended only if businesses mutually agree to sharing the container and with prior approval by the city (this is critical when it comes to thinking about space, billing and code)

- With shared containers, billing and enforcement should be allocated to a single business per container (i.e., if 3 businesses agree to share service, only 1 is named on the account and is responsible for payment and compliance with set-out requirements / cleanliness around the container in the eyes of the contractor)

Education and Promotion.

1. Develop a robust education program to promote food waste reduction, modify operations to allow for separation of food wastes, and prepare for participation in a City-contracted food waste collection program.

    - Slogan/branding for compost collection

    - Highlight environmental benefits of waste reduction and compost

    - Develop comprehensive website

    - Consider need for multiple languages for education materials

    - Promotion through direct mailings, social media, newspaper, radio, television

    - Education roll-out when City is prepared to begin the process of procuring a hauler for the commercial collection program

2. Develop educational materials to be provided by the City and/or downloadable from the A2 website for posting or distribution by businesses and at multi-family properties classified for commercial service who have subscribed for commercial collection service.

    - Common area signage

    - Back-of-house signage

    - Container labels identifying acceptable materials

    - Tips for organics management

3. Offer one-on-one training / site evaluations to assist businesses in establishing a food waste diversion practice following establishment of the commercial collection program.

    - Optional training / evaluation service for participating businesses focusing on segregation methods, employee training, performance monitoring, kitchen container selection and management, etc.

4. Provide half-day workshops to the business community to promote and facilitate implementation of the commercial collection program.

5. Develop and provide promotional materials to businesses participating in a City-organized commercial compost collection program to denote their participation and serve as ambassadors of the program to the broader community.

    - Materials may include “A2 Compost Partner”-type decals or badges to be displayed at participating businesses.

6. Provide ongoing education to reinforce food waste reduction and compost collection best practices.

    - This will be important for businesses where employee turnover impacts performance and quality of compost set-outs

7. Provide ongoing education as program changes are approved for implementation.

    - Business association / Citywide meetings to provide feedback on program performance, review lessons learned, and reinforce best management practices

    - Communicate ordinance requirement and penalties for not participating if going to mandatory collection service

<u>Performance Monitoring</u>

1. Routinely evaluate commercial sector organics diversion performance.

    - Review performance annually during initial term of collection contract

        - Collection quantities via scalehouse records and/or hauler reports

        - Business participation and feedback, via hauler reports, online survey, and lid-lifting of carts/containers

        - Contamination, via visual observation of incoming material and feedback from compost facility operator on screenings from finished compost

        - Compost facility operation, including ability to manage food waste as an increased proportion of incoming organics

    - Prepare a performance summary prior to renewal or re-procurement of collection contract to assess program performance and identify the need for possible program changes

2. Prepare case studies of successful collection implementation at various types of properties in the City to serve as models for other properties.

    - Downtown alleys

    - Strip malls

    - Multi-building multi-family complexes

- High-rise apartments
- Mixed use buildings with consolidated collection
- Shared containers
- Restaurants
- Grocery stores

Future Phased-In Mandatory Collection Service for Food-Centric Businesses

1. Following implementation of the subscription-based collection program and based on the performance of the program, conduct a future evaluation of the feasibility of mandatory organics collection service for food-centric commercial properties (restaurants/bars, catering, grocery stores, farmers markets)
    - Future policy decision / ordinance development for mandatory collection dependent on:
        - Available funding and staffing for City contract administration and inspections / enforcement
        - Specific and proven solutions available for space-constrained properties, including alleys
        - Compost facility continues to operate without problems / contamination / odor
        - Education of upcoming shift is communicated at least 1 year in advance, and possibly phased based on business size over a multi-year implementation period
    - Until mandatory collection service is established and successfully implemented, mandatory diversion of food waste / organics from the commercial sector should not be pursued.

Fats, Oils, and Grease Management

1. Develop and implement a licensing or registration requirement applicable to all companies providing used cooking oil collection via City ordinance. As a condition of licensing, require service providers to submit a listing of customers and container locations with the initial license request and all annual renewals.
    - This would need to be coordinated with the Washtenaw County Health Department.

On-Site Composting

1. Require businesses engaging in on-site food waste management (such as on-site composting, food slurrying to send to wastewater treatment, individual digesters) to register their operation with the City.
    - Tracking tool for use in monitoring diversion quantities

- Provide potential information for use in identifying alternative management options in the future

- Provide basis for evaluating future criteria that may be used to exempt businesses from a mandatory collection requirement

Multi-Family

1. Perform an assessment of all multi-family properties to assess available space for compost carts and suitability of truck access or cart staging for collection.

    - City staff (collection operations supervisor or trained designee, possibly in cooperation with City-contracted private hauler) will visit each property to provide visual assessment of the ability to serve the property using compost carts and classify properties for residential or commercial service

    - Properties that are determined to be feasibly served with compost carts will be included in the residential program and provided the same services as single-family and duplex properties

    - Properties that are determined to not be feasibly served with compost carts will be included in the commercial program and provided the same services as commercial properties

2. Provide a reference list or look-up option on the A2 website to identify the program (residential or commercial) that each multi-family property is assigned to.

    - List will be developed, maintained, and posted by the City based on the outcome of property assessments; responsible departments to be identified in Plan

Commercial Advisory Committee
Comprehensive Organics Management Plan
Meeting #4 - January 25, 2017

CB&I Environmental & Infrastructure, Inc.

In association with:

PROJECT INNOVATIONS INCORPORATED

Lake Research Partners

City of Ann Arbor Comprehensive
Organics Management Plan

1. Committee Input and Desired Outcomes Review

2. Resident Survey Results Summary
3. Ann Arbor Organics Management
4. Preliminary Recommendations

Planning Process and Background Knowledge

- Planning process
  - Understand and engage in the process
  - Develop / clarify community vision for organics and Zero Waste
  - Secure political support for implementation
  - Ann Arbor as a national leader

- Background knowledge
  - What are other communities doing, and how do we learn from that?
  - Services available - collection, management
  - Operational needs - year-round collection, shared bins
  - Compost facility must be able to handle increased food waste quantities

Implementation Strategies, Costs, Challenges

- Implementation strategies
  - Prevention
  - Donation
  - Target audience - high-volume generators (restaurants, grocery stores)
  - How to get to mandatory collection / diversion
  - Need enforcement

- Cost awareness
  - Identify all costs and future value / reward
  - Where should resources be allocated - residential or commercial programs?

- Specific challenges
  - Alleys
  - Compostable serviceware
  - Connecting customers (particularly in restaurants) with food waste reduction

Communication and Outreach

- Need effective communication
  - At every level of process - generators (both customers and businesses), collectors, processors
  - Establish compost culture
  - Tie to Zero Waste perspective
- Appeal to businesses
  - Incentives
  - Environmental awareness
  - Program ambassadors
- Training and ongoing communication needed

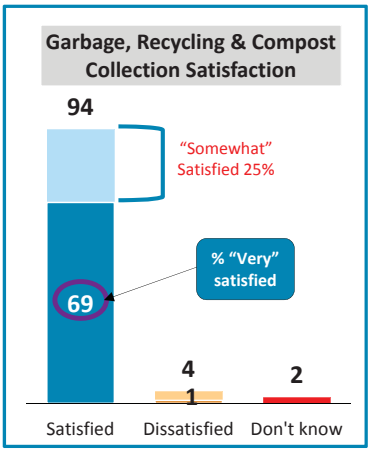
1. Committee Input and Desired Outcomes Review

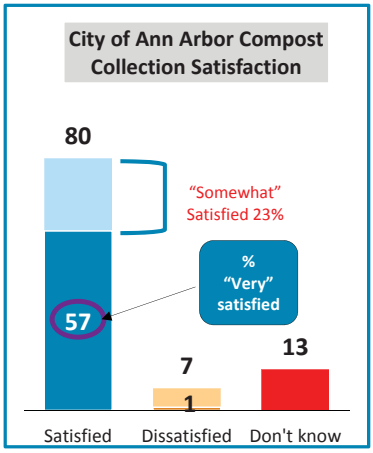
2. Resident Survey Results Summary

3. Ann Arbor Organics Management
4. Preliminary Recommendations

Resident Satisfaction and Awareness

- High resident satisfaction with overall waste-related services and compost services specifically

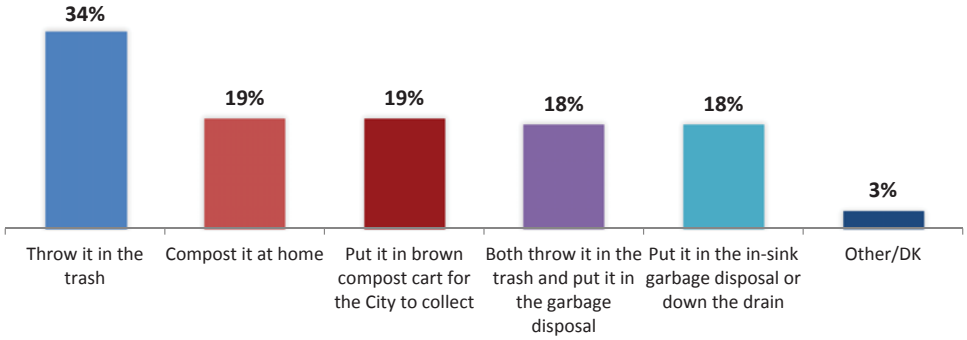




- Broad awareness of the compost program and the ability to include food waste in the compost cart
- High interest in reducing wasted food

Compost Carts & Food Waste Management

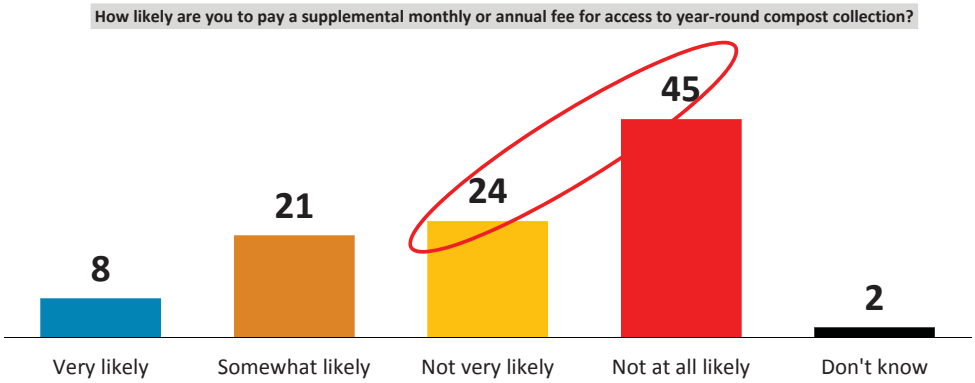
- 62% of respondents have a compost cart
- Primary reason to purchase the cart was to cut down on the number of yard waste bags needed
- Current food waste management practices:



- Significant driver for putting food waste in the compost cart is environmental
- High willingness among those without a compost cart to put food waste in the cart if the cart is provided at no cost

Expanded Collection Service

- Factors that would increase satisfaction with current service:
  - Year-round collection
  - City-provided kitchen containers and compostable bags
  - 32% want services to stay as they are
- Nearly half of respondents indicated need for compost collection during winter months
- Limited willingness to pay for more service:

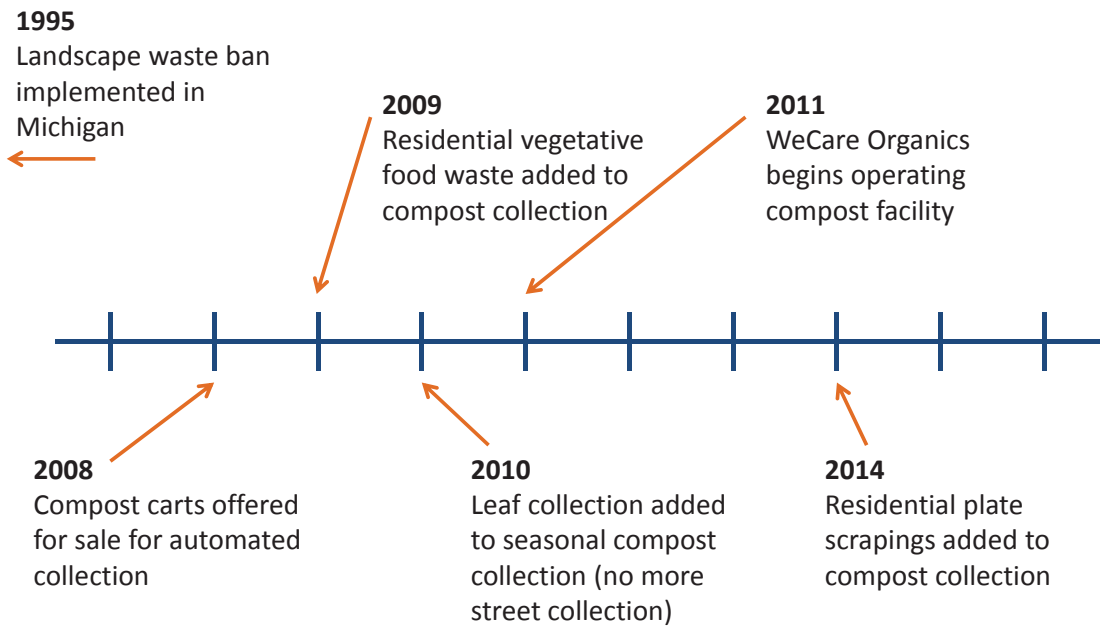


1. Committee Input and Desired Outcomes Review
2. Resident Survey Results Summary

3. Ann Arbor Organics Management

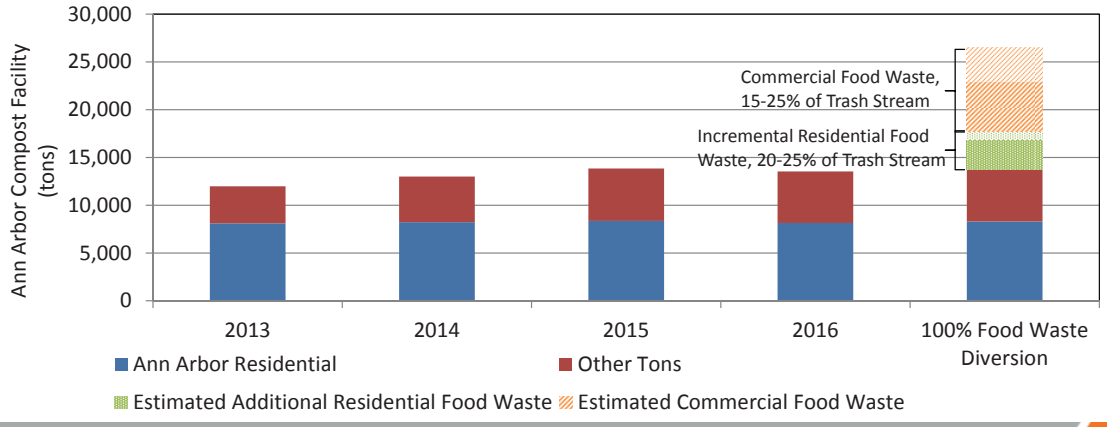
4. Preliminary Recommendations

Ann Arbor Organics Program Timeline



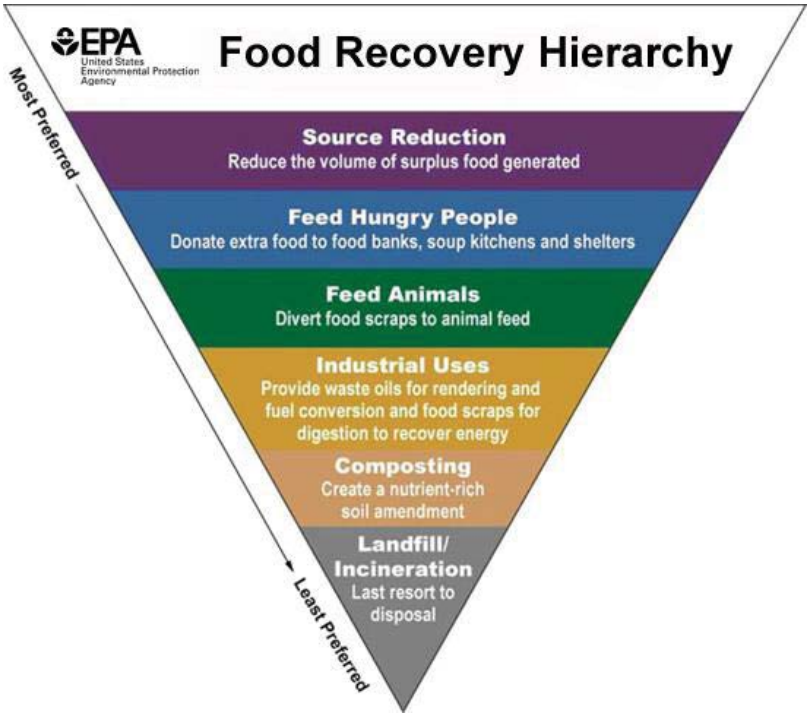
Potential Future Food Waste Diversion

- Current food waste quantities:
  - City / WeCare estimate 1,000-1,500 tons of food wastes are collected from Ann Arbor residents
  - Approximately 500-550 tons of food wastes are delivered by U of M
- Future food waste collection quantities could exceed operational capacity of Ann Arbor Compost Facility, if 100% diversion achieved



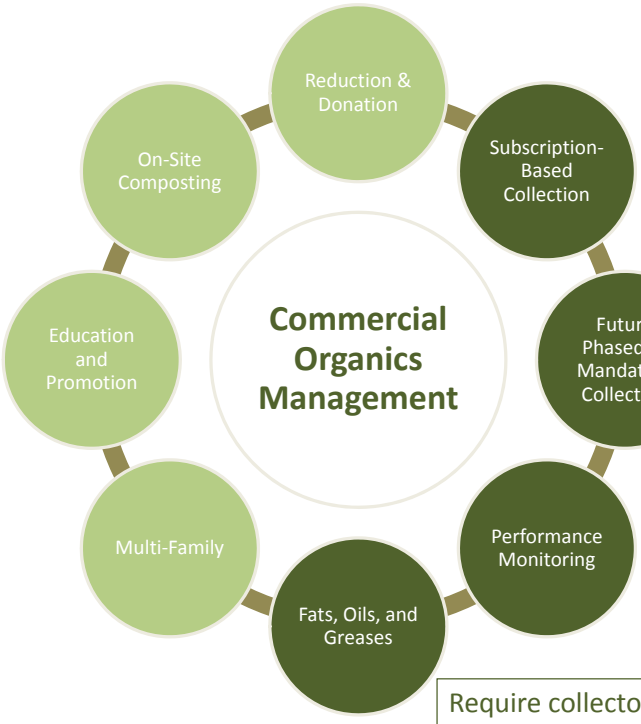
1. Committee Input and Desired Outcomes Review
2. Resident Survey Results Summary
3. Ann Arbor Organics Management
4. **Preliminary Recommendations**

U.S. EPA Food Recovery Hierarchy



Key Recommendation Focus Areas

Recommendations are preliminary for discussion and subject to change



Contract for commercial compost collection for subscribing businesses

Phase in mandatory commercial organics collection for food-centric businesses (if key performance / operational requirements are met)

Annually review program performance to track service, quantities, compost quality, customer satisfaction; develop case studies of collection successes

Require collectors of yellow grease to register and identify container locations

Preliminary Commercial Recommendations

Reduction and Donation

- Promote food waste reduction practices to residents by sharing the USEPA food waste reduction tools available in its *Food: Too Good To Waste Implementation Guide and Toolkit* through the A2 website, supplementing with local information if necessary.

- Provide and maintain a comprehensive listing of food donation outlets and guidelines for food donation on the A2 website and through other outreach materials.
- Assist food donation outlets to provide incentives or rewards to residents donating unused food, such as discounts at local markets, restaurants, etc. in exchange for food donation.
- Work with food donation outlets to determine whether data tracking and reporting can be provided to measure Ann Arbor resident efforts to reduce disposal of food waste.

Subscription-Based Collection

- Survey businesses to determine their preliminary interest in subscribing to a food waste collection service provided by a hauler contracted by the City, with collection cost to be paid by participating businesses.

- Develop and distribute a Request for Proposals to secure a private hauler to provide food waste collection on an exclusive basis to participating businesses and multi-family properties not eligible for residential collection service.

- Provide implementation oversight to participating businesses, including identifying or reviewing organics container size, location, and service frequency needs and waste service modifications.

Education and Promotion

- Develop a robust education program prior to start of collection services.
- Develop educational materials for business use.
- Offer one-on-one training / site evaluations to assist in establishing food waste diversion within businesses.
- Provide half-day workshops to promote and facilitate commercial collection.
- Develop methods to recognize businesses participating in a City-organized commercial compost collection program.
- Provide ongoing education to reinforce reduction and compost collection best practices, communicate program changes.

Performance Monitoring

- Routinely evaluate commercial sector organics diversion performance.
- Prepare case studies of successful collection implementation at various types of properties in the City to serve as models for other properties.

Future Phased-In Mandatory Collection for Food-Centric Businesses

- Following implementation of the subscription-based collection program and based on the performance of the program, conduct a future evaluation of the feasibility of mandatory organics collection service for food-centric commercial properties (restaurants/bars, catering, grocery stores, farmers markets).
  - Future policy decision / ordinance development dependent on:
    - Available funding
    - Adequate City staffing for inspections/enforcement
    - Proven solutions for space-constrained properties / alleys
    - Compost facility continues to operate without problems / contamination / odor
    - Education of upcoming shift is communicated at least 1 year in advance , may be phased by business size over a multi-year period

Multi-Family

- Perform an assessment of all multi-family properties to assess available space for compost carts and suitability of truck access or cart staging for collection.
  - Properties that are determined to be feasibly served with compost carts will be included in the residential program and provided the same services as single-family and duplex properties.
  - Properties that are determined to not be feasibly served with compost carts will be included in the commercial program when developed and provided the same services as commercial properties.

- Provide and maintain a reference list or look-up option on the A2 website to identify the program (residential or commercial) that each multi-family property is assigned to.

Fats, Oils, and Grease Management

- Develop and implement a licensing or registration requirement applicable to all companies providing used cooking oil collection via City ordinance. As a condition of licensing, require service providers to submit a listing of customers and container locations with the initial license request and all annual renewals.

On-Site Composting

- Require businesses engaging in on-site food waste management (such as on-site composting, food slurrying to send to wastewater treatment, individual digesters) to register their operation with the City.



For a copy of this presentation and other project updates, visit the project site:

www.a2gov.org/organicsplan

EDUCATION RESIDENTS BUSINESSES

ATTACHMENT A.3
ADVISORY COMMITTEE COMMENTS ON PRELIMINARY RECOMMENDATIONS

Seibert, Christina

From: Jan Wright <janwrigh@umich.edu>
Sent: Tuesday, January 31, 2017 9:50 PM
To: Charlie Fleetham; Seibert, Christina
Cc: Jane Pacheco; Chuck Warpehoski; Gomes, Christina
Subject: Feedback on Commercial Organics Plan

Hi Charlie and Christina,

Putting a couple of thoughts from last week's meeting in writing...

A. Under the heading Future Phased-In Mandatory Collection Service for Food-Centric Businesses (p.5)

> 1. [Currently reads:] Following implementation of the subscription-based collection program and based on the performance of the program, conduct a future evaluation of the feasibility of mandatory organics collection service for food-centric commercial properties (restaurants/bars, catering, grocer stores, farmers markets)

My understanding is that this would take place after a five-year period of voluntary commercial organics collection or possibly two five-year such periods. While I understand that we are currently in early stages, "just crawling" (i.e., not yet even walking) as I think Christina put it, this seems to me too slow a progression--to just begin to consider an evaluation of feasibility five or ten years out.

From our point of view, the commercial organics program can be a significant step in reducing green house gases and helping to slow climate change, and there is time pressure to move more quickly than we might if the predictions about climate change were not so serious. I agree with the bullet points under this item and understand that a number of pieces would have to be put together including education and efforts to create buy-in, but I think the current wording of #1. above is too iffy and the timing is too far out.

B. Under the same heading, last point, I think it would help if you could word this more clearly for those who aren't up on the technical language.

> [Currently reads:] Until mandatory collection service is established and successfully implemented, mandatory diversion of food waste/organics from the commercial sector should not be pursued.

If I understood Christina's explanation after the meeting, "mandatory collection service" means collection will happen with all relevant businesses and "mandatory diversion" means the businesses would be required to put their food waste in the collection, but I certainly did not get that meaning from it before her explanation.

C. Under Reduction and Donation (p. 1) I am very supportive of the recommendation to support donation of food so it stays entirely out of not only landfills but out of composting as much as possible.

Since as I understand it, Ann Arbor already has a well-established network of food donation/collection and distribution, I think this should be taken into account in your wording.

I think that the idea of providing incentives to residents for donating unused food seems complicated and maybe not worth the effort. I would trust Food Gatherers' suggestions on that.

Thanks again for all your work. ICPJ will continue to follow this process and do what we can to encourage the adoption and implementation of a strong plan, both Residential and Commercial.

Jan

Seibert, Christina

From: Eileen Spring <eileen@foodgatherers.org>
Sent: Wednesday, February 01, 2017 8:13 AM
To: Charlie Fleetham; Seibert, Christina
Subject: feedback on draft recommendations

Hello Charlie and Christina,

Thank you so much for your hard work on this and the opportunity to participate.

As mentioned at the meeting, I think the first section Reduction and Donations need to be split into two categories because they are quite distinct. I also think this section blurs lines between large commercial and smaller household waste which is a bit confusing.

There is an underlying assumption in the document that collecting food for donations is a "soft" small-scale activity. It isn't. Also, if we are encouraging the city to promote the best practices expressed in the USEPA guide and toolkit, rescuing food from the waste stream for human consumption is the first priority which I feel should be affirmed in the committee's recommendations.

I encourage you to treat food rescue work with the same lens and language as you do for composting in the recommendations.

For example, the recommendations affirm the value of a "single hauler" for composting but not for food rescue. Indeed the entire section on food donation does not acknowledge Food Gatherers is already active in this realm and has been doing this work in Ann Arbor for nearly thirty years. We are already serving as the "food donation outlet." We already have the "donation guidelines" and "data collection capacity" called out in the recommendations.

Rather than re-write the section on food donations, I recommend language along these lines:

As part of the city's organics management plan, we recommend that the city formally recognizes the role of Food Gatherers as a food rescue organization in managing millions of pounds of the waste stream for the purpose of hunger relief. The amount of food rescued from Ann Arbor businesses should be explicitly recognized as part of the community-wide waste diversion calculation.

The city should consider savings associated with food rescue efforts and, at a minimum, financially support this effort based on the amount of material diverted from landfills. The city should also consider amending its current exemption policy to exempt Food Gatherers from disposal fees associated with material that cannot be safely repurposed for meals.

Perhaps the advisory committee should suggest that the Environmental Commission (?) work with FG to better understand the current infrastructure associated with the re-use of surplus food for human consumption and our community's capacity to expand this work.

I am happy to discuss this further. You can best reach me at 734-646-2389.

Thanks again. It's been a pleasure working with you on this project.

Forever gathering,
Eileen
--
Eileen Spring
President/CEO
Food Gatherers

Washtenaw Reads is a library initiative that invites us to read and discuss a chosen book each year. Featured for 2017 is *$2 a Day: Living on Almost Nothing in America* by Kathryn J Edin, and H Luke Shaefer, Ph.D. Join us at upcoming library events to discuss the book and learn how Food Gatherers addresses issues of hunger and poverty.

- January 26: Ypsilanti District Library. Discussion panel includes Food Gatherers' Markell Miller
- February 16: Saline District Library. Food Gatherers Markell Miller presents.

Zingerman's DELICATESSEN

January 30, 2017

RE: Preliminary Commercial Recommendations for the Ann Arbor Organics Management Plan

Zingerman's Delicatessen would like to lend our STRONG support moving forward on the implementaion of an Organics Management Plan for the City of Ann Arbor. Zingerman's Delicatessen is very committed to reducing our waste stream, starting with reducing food and packaging before it even can become waste and ending with putting as much waste as we can into recycling or compost instead of the landfill. Having a reliable, affordable, municipal service for compost collection will greatly aid our business in achieving our zero waste goals.

Overall, we support the preliminary recommendations that were presented on January 25, 2017 to the commercial advisory committee. We have been asking the city for several years for expanded organic collection, so more than any specific details of this plan, we promote moving forward with ANY plan.

However, we do have some specific comments that we encourage you to consider when preparing the next version of these recommendations:

- We do have concerns about how much more a voluntary or mandatory collection service would cost our business. We already spend about $17,000 per year to manage our waste. That includes about $5000 in city taxes for the solid waste millage, $9000 in dumpster fees to the city designated hauler, and $3000 per year for private compost collection during the winter months when the city isn't picking up our compost. It would be helpful to our annual planning to know how much more our costs will increase.
- Currently, there is NO cost to businesses for recycling collection, a pricing decision that motivates us to divert our waste from our landfill dumpster to save us tipping fees. Having a cost for organics collection does not offer businesses this same incentive. We are concerned that the absence of a cost incentive will hinder the success of the program.
- While we support the reliability that a city-contracted hauler might provide to businesses, we also feel that it removes the ability for a business to seek out competitive service and pricing from other haulers.

Zingerman's Delicatessen • 422 Detroit St. • Ann Arbor MI 48104
734-926-4000 • fax 734-769-1235

- We support the inclusion of reduction and donation in the recommendations, but would like to see them separated into two distinct sections. There is an opportunity in the plan for more education and sharing of best practices through purchasing and operations decisions that would reduce waste before it becomes something that needs to be put into a compost bin.
- Zingerman's has a long history and partnership with Food Gatherers in helping them promote and achieve their mission as a food rescue organization. We support the recommendation that donation is a critical step in the food waste reduction hierarchy. We would like to see the recommendations more specifically call out Food Gatherers as the only organization in our area that is equipped to receive and manage these donations. Additionally, we think that as a non-profit partner of the City in these effort, Food Gatherers should be provided with additional resources to handle these increased donations, as well as no or low cost collection of their own organic waste. If the donations are not able to be utilized by this organization, they should not be penalized by having to pay the City to come and collect the materials once they become waste.

We are very excited about the possibility of expanded organics collection in the City of Ann Arbor. Thank you very much for the opportunity to be a part of the planning process.

Sincerely,

Bowser

Rodger Bowser, Chef and Managing Partner
Zingerman's Delicatessen

EDUCATION RESIDENTS BUSINESSES

ATTACHMENT A.4
RESIDENT SURVEY QUESTIONNAIRE

Survey of 600 Residents of Ann Arbor, MI
Timing: 14 minutes

Hello. My name is _____. I'm calling from Michigan Opinion Surveys. We are conducting a public opinion survey, and I would like to ask you some questions. We are not selling anything, and I won't ask you for a contribution or donation. Your responses are confidential, and we are looking for your candid feedback. Could I please speak with [**ASK FOR NAME ON LIST**]?

Q1. Do you make all of your calls on a landline, all calls on a cell phone, or does your household use both?

All landline 1
All cell 2
Both 3
(Don't know/Refused) TERMINATE 4

Q2. Are you involved with and aware of the household bills or dealing with recycling or garbage disposal in your household, or may I speak with the person responsible for these things?

Yes 1
No [**TERMINATE**] 2

Q3. What town do you live in?

Ann Arbor 1
(Other) [**TERMINATE**] 2
(REFUSED) [**TERMINATE**] 3

Q4. Do you have a City of Ann Arbor trash or recycling container at your property?

Yes 1
No [**TERMINATE**] 2
(Don't know) 3
(Refused) [**TERMINATE**] 4

Q5. [**IF Q4 = 3 (Don't know**] It says here that an Ann Arbor trash or recycling container is either a wheeled cart or dumpster, and it is dark blue for trash or blue for recycling with the City of Ann Arbor logo on it. Hearing that, do you have an Ann Arbor trash or recycling container at your property?

Yes 1
No **[TERMINATE]** 2
(Don't know) [**TERMINATE**] 3

Q6. Do you live in a single-household dwelling; a building with 2, 3, or 4 units; an apartment or condo building with 5 or more units, a college or university dormitory, or something else?

Single-household dwelling 1
Building with 2, 3, or 4 units 2
Apartment/condo with 5 units or more 3
College/University Dormitory..... 4
Something else - RECORD 5
(Don't know/refused) 6

I am going to start by asking some general questions about waste management services provided by the City of Ann Arbor, principally focused on compost collection. Compost collection in Ann Arbor is the collection of organic materials such as yard waste - including leaves, grass clippings, and tree and brush trimmings - and food waste - including fruit and vegetable peelings, meat and bones, and leftover or spoiled food.

Q7. How satisfied are you with your household's current garbage, recycling, and compost collection service overall? Are you VERY satisfied, SOMEWHAT satisfied, SOMEWHAT dissatisfied, or VERY dissatisfied?

Very Satisfied 1
Somewhat Satisfied 2
Somewhat Dissatisfied 3
Very Dissatisfied 4
(Don't know) 5

Q8. Specifically considering the City's compost collection services, how satisfied are you with your current service? Are you VERY satisfied, SOMEWHAT satisfied, SOMEWHAT dissatisfied, or VERY dissatisfied?

Very Satisfied 1
Somewhat Satisfied 2
Somewhat Dissatisfied 3
Very Dissatisfied 4
(Don't know) 5

Q9. Do you currently have a brown City of Ann Arbor compost cart?

Yes 1
No 2
(Don't know) 3
(Refused) 4

Q10. **[ASK IF Q9 = 1]** If you have a brown compost cart, what was the primary reason you purchased it?

For yard waste / to cut down number of yard waste bags needed 1
To be able to compost food waste 2
(I didn't purchase it, it was provided by the property owner / landlord) 3
(Other - record response) 4
(Don't know) 5
(Refused) 6

Q11. What do you currently do with your yard waste such as leaves, grass clippings, and tree or brush trimmings?

Leave it on the lawn or compost it at home 1
Throw it in the trash..... 2
Put it in paper yard waste bags or the brown compost cart for the City to collect 3
Both set it out for City collection and leave it on the lawn or compost it at home..... 4
My landscaper takes care of it 5
Not responsible for yard waste where you live 6
(Other - record response) 7
(Don't know) 8

Q12. During the winter months of December through March when yard waste is not collected by the city, how often do you find that you have yard waste that you would like to have collected?

Once per week during the winter months 1
Once per month during the winter months 2
One or two times during the winter months 3
Never 4
(Don't know) 5
(Refused) 6

Q13. What do you currently do with food waste such as vegetable peelings, leftover food, or plate scrapings in your household? **[ALLOW FOR MULTIPLE RESPONSES]**

Throw it in the trash 1
Put it in the brown compost cart for the City to collect 2
Compost it at home 3
Put it in the in-sink garbage disposal or down the drain 4
Both throw it in the trash and put it in the garbage disposal 5
(Other - record response) 6
(Don't know) 7
(Refused) 8

Q14. Are you aware the City of Ann Arbor allows residents to add food wastes such as vegetable peelings and plate scrapings with yard waste in the brown compost cart?

Yes 1
No 2
(Don't know) 3
(Refused) 4

Q15. **[ASK IF Q13 = 2]** If you currently place food waste in a brown compost cart, what is the primary reason you include your food waste in your compost cart?

I already have the cart for yard waste, so might as well include food waste 1
It is good for the environment 2
It reduces my trash that I set out 3
(I don't place food waste in the brown compost cart) 4
(I don't have a brown compost cart)..... 5
(Other - record response) 6
(Don't know) 7
(Refused) 8

Q16. **[ASK IF Q13 DOES NOT = 2]** If you currently don't place food waste in a brown compost cart, what is the primary reason?

Need more information about how to participate 1
Not aware of the program before now 2
Landlord or property manager chooses the trash and recycling services and does not include a compost cart 3
Already put it in an in-sink garbage disposal 4
Already compost at home 5
Don't want an extra container in the kitchen or outside 6
Can't afford the $25 charge for the cart 7
Think it will be messy, cause odors, and attract bugs or rats 8
Think it is unnecessary and belongs in the trash 9
I do place food waste in a brown compost cart..... 10
(Other - record response) 11
(Don't know) 12
(Refused) 13

The next few questions are being asked specific to disposed or wasted food.

Q17. How informed do you feel you are about the impact of wasted food on a social and environmental level? Very informed, somewhat informed, Not very informed, or Not at all informed

Very informed 1
Somewhat informed 2
Not very informed 3
Not at all informed 4
(Don't care) 5
(Don't know) 6
(Refused) 7

Q18. How interested are you in reducing the amount of wasted food – including uneaten and spoiled food – that your household produces? Very interested, somewhat interested, Not very interested, or not at all interested?

Very interested 1
Somewhat interested 2
Not very interested 3
Not at all interested 4
(Don't know) 5
(Refused) 6

Q19. How likely are you to use a checklist or set of educational tools in your household to track your food wasting and disposal habits, with the goal of reducing the amount of food you send for disposal or composting? Very likely, somewhat likely, Not very likely, or not at all likely?

Very likely 1
Somewhat likely 2
Not very likely 3
Not at all likely 4
(Don't know) 5
(Refused) 6

Q20. How likely would you be to participate in a food waste education workshop to learn tools and techniques to reduce wasted food and manage food discards? Very likely, somewhat likely, Not very likely, or not at all likely?

Very likely 1
Somewhat likely 2
Not very likely 3
Not at all likely 4
(Don't know) 5
(Refused) 6

The next few questions are being asked to assist the City in evaluating possible changes to its existing compost collection program. Recall that the City's compost collection program includes both yard waste and food waste.

Q21. What would increase your satisfaction with the City of Ann Arbor's compost collection services? [**RECORD MULTIPLE RESPONSES**]

Year-round collection 1
Having a compost cart 2
Periodic cart cleaning service 3
Smaller container 4
Access to cheaper compostable bags 5
City-provided kitchen containers and compostable bags 6
Nothing, satisfied with services as they are 7
(Other - record response) 8
(Don't know) 9
(Refused) 10

Q22. **[ASK IF Q9 = 1]** If you currently have a brown compost cart, how likely would you be to schedule and pay for periodic cleaning of the cart by the City if the service was an option? Very likely, somewhat likely, Not very likely, not at all likely

Very likely 1
Somewhat likely 2
Not very likely 3
Not at all likely 4
(Don't know) 5
(Refused) 6

Q23. [ASK IF Q9 = 2-4] If a brown compost cart was provided at no cost to your household to collect yard and food waste year-round, how likely would you be to put your food waste in the cart? Very likely, somewhat likely, Not very likely, not at all likely

Very likely 1
Somewhat likely 2
Not very likely 3
Not at all likely 4
(Already have a cart and put food waste in it) 5
(Don't know) 6
(Refused) 7

Q24. Considering that the City currently does not provide collection of yard and food waste from December through March, how likely are you to pay a supplemental monthly or annual fee for access to year-round compost collection? Very likely, somewhat likely, Not very likely, not at all likely?

Very likely 1
Somewhat likely 2
Not very likely 3
Not at all likely 4
(Don't know) 5
(Refused) 6

Q25. **SSA:** How much would you be willing to pay per month over a 12-month period as a supplemental charge from the City for year-round compost collection service? [**DO NOT READ OPTIONS, RECORD DOLLAR FIGURE OR MATCH RESPONSE WITH PRE-CODED CATEGORIES**] **[PUSH FOR $ FIGURE]**

(Nothing)..... 0
(1-99) ..... (Record amount)
(100 or more) 100
(Less than 1 dollar) 101
(Just a few dollars) 102
(Don't know) 103
(Refused) 104

Q26. **SSB:** How much would you be willing to pay per year as a supplemental charge from the City for year-round compost collection service? [**DO NOT READ OPTIONS, MATCH RESPONSE WITH PRE-CODED CATEGORIES**] **[PUSH FOR $ FIGURE]**

(Nothing)..... 0
(1-999)..... (Record amount)
(1000 or more) 1000
(Less than 1 dollar) 1001
(Just a few dollars) 1002
(Don't know) 1003
(Refused) 1004

Q27. **[ASK IF Q9 = 2-4]** It says here that a brown compost cart is currently available to your household for a one-time cost of $25, allowing you to set out both yard and food waste for composting. With this information, how likely are you to purchase the cart? Very likely, somewhat likely, Not very likely, not at all likely?

Very likely 1
Somewhat likely 2
Not very likely 3
Not at all likely 4
(Already have a cart) 5
(Don't know) 6
(Refused) 7

Q28. **SSA:** Considering your other household expenses, how likely are you to pay a supplemental fee of about $5 to $7 every month over a 12-month period, if it enabled the City to provide compost collection from December through March, given that this is not a current service offered by the City? Very likely, somewhat likely, Not very likely, or not at all likely?

Very likely 1
Somewhat likely 2
Not very likely 3
Not at all likely 4

(Don't know) 5
(Refused) 6

Q29. **SSB:** Considering your other household expenses, how likely are you to pay a supplemental fee of $60 to $80 per year, if it enabled the City to provide compost collection from December through March, given that this is not a current service offered by the City? Very likely, somewhat likely, Not very likely, or not at all likely?

Very likely 1
Somewhat likely 2
Not very likely 3
Not at all likely 4
(Don't know) 5
(Refused) 6

Q30. Now, I'm going to read you a couple brief statements people have made about the benefits of year-round compost collection including yard and food waste. Please tell me whether each statement is a VERY convincing, SOMEWHAT convincing, NOT TOO convincing, or NOT AT ALL convincing reason to support the city providing year-round compost collection. If you are not sure how you feel about a particular item, please say so.

[**PROMPT EVERY THIRD STATEMENT:**] Is that VERY convincing, SOMEWHAT convincing, NOT TOO convincing, or NOT AT ALL convincing reason to support the city providing year-round compost collection? RANDOMIZE LIST

Very convincing 1
Somewhat convincing 2
Not too convincing 3
Not at all convincing 4
(Don't know) 5
(Refused) 6

a. It would reduce the amount of waste sent to landfills, preserving valuable landfill capacity.
b. It would reduce the levels of methane gas generated in landfills thereby reducing greenhouse gas emissions in our local environment.
c. It would allow Ann Arbor to manage yard and food waste at a local, City-owned compost facility rather than sending waste to a more distant, privately-owned landfill.
d. It would allow for increased production of valuable compost that can be used by residents and local businesses, returning nutrients to the soil, increasing water retention of soil, and reducing the need for use of commercial fertilizers.

Sometimes over the course of a survey like this people change their minds.

Q31. **[ASK IF Q9 = 2-4]** If a brown compost cart was provided to your household at no cost to collect your yard and food waste year-round, how likely are you to put your food waste in the cart? Very likely, somewhat likely, Not very likely, not at all likely

Very likely 1
Somewhat likely 2
Not very likely 3
Not at all likely 4
(Already have a cart and put food waste in it) 5
(Don't know) 6
(Refused) 7

Q32. **SSA:** Considering your other household expenses, how likely are you to pay a supplemental fee of about $5 to $7 every month over a 12-month period, if it enabled the City to provide compost collection from December through March, given that this is not a current service offered by the City? Very likely, somewhat likely, Not very likely, or not at all likely?

Very likely 1
Somewhat likely 2
Not very likely 3
Not at all likely 4
(Don't know) 5
(Refused) 6

Q33. **SSB:** Considering your other household expenses, how likely are you to pay a supplemental fee of $60 to $80 per year, if it enabled the City to provide compost collection from December through March, given that this is not a current service offered by the City? Very likely, somewhat likely, Not very likely, or not at all likely?

Very likely 1
Somewhat likely 2
Not very likely 3
Not at all likely 4
(Don't know) 5
(Refused) 6

The remaining questions are for statistical purposes only

Q34. Are you currently a student or employee of the University of Michigan?

Yes, employed by the university 1
Yes, student attending the university 2
Yes, both a student and employee 3
No 4
(Don't know) 5
(Refused) 6

Q35. Do you own or rent your current residence?

Own 1
Rent 2
(Other – live in a dorm) 3
(Other) 4
(Don't know) 5
(Refused) 6

Q36. Do you have any children under the age of 18 living at home with you?

Yes 1
No 2
(Refused) 3

Q37. Just to make sure we have a representative sample, could you please tell me whether you are from a Hispanic, Latino, or Spanish speaking background? [IF "NO", ASK:] What is your race - white, black, Asian, or something else?

White 1
Black/African American 2
Spanish speaking/Latino (Puerto Rican, Mexican, etc.) 3
Asian 4
Native American 5
Pacific Islander 6
Arab American 7
(Other) 8
(Don't know / Refused) 9

Q38. What is the last year of schooling that you have completed?

1 - 11th Grade 1
High School Graduate 2
Non-College Post H.S. 3
Some College 4
College Graduate 5
Post-Graduate School 6
(Refused) 7

Q39. What is your age? _____ _____

Q40. [**IF AGE IS REFUSED**]: I am going to read you some categories. Please stop me when we get to your category.

18-24 years 1
25-29 years 2
30-34 years 3
35-39 years 4
40-44 years 5
45-49 years 6
50-54 years 7
55-59 years 8
60-64 years 9
65-69 years 10
70-74 years 11
Over 74 years 12
(Refused) 13

EDUCATION

RESIDENTS

BUSINESSES

ATTACHMENT A.5
RESIDENT SURVEY REPORT

Assessing Public Opinion on Residential Organics Management in Ann Arbor: Existing Services and Potential Improvement

Performed on behalf of: City of Ann Arbor, Michigan

Daniel Gotoff and Corey Teter

Washington, DC | Berkeley, CA | New York, NY

LakeResearch.com

202.776.9066

February 10th, 2017

LRP LAKE RESEARCH PARTNERS

Strategy · Precision · Impact

Methodology

- Lake Research Partners designed and administered this survey, which was conducted by phone using professional interviewers. The survey secured responses from a total of 601 adults in Ann Arbor, Michigan who are involved with household bills and/or in charge of dealing with recycling/ garbage disposal in their household.

- The survey was conducted November 28th through December 5th, 2016. Data were weighted by gender, age, region, education level, and race.

- The cooperation rate for this survey (i.e. completed interviews as a percentage of total potential respondents reached) is 10.5%. Out of a total of 26,805 calls made, 5,740 potential respondents were reached. Of those reached, 2,044 declined to participate, 130 had a language barrier preventing them from participating, 274 were unable (i.e. unavailable) to participate during the period in which the survey fielded, and 2,691 had their interviews terminated based on the selection criteria for the survey (as outlined in the first bullet on this slide).

- The margin of error for the full sample is +/-4.0%. In interpreting survey results, all sample surveys are subject to possible sampling error; that is, the results of a survey may differ from those that would be obtained if the entire population were interviewed. The size of the sampling error depends upon both the total number of respondents in the survey and the percentage distribution of responses to a particular question. For example, if 50% of respondents in the total sample answered "yes" to a particular question, we can be 95% confident that the true percentage will fall within +/- 4 percentage points of this percentage or between 46% and 54%.

Demographics of the Sample

By definition, the population of respondents that fit this screening criteria skews slightly older than the overall adult population of Ann Arbor and more towards homeowners than renters due to a sizeable transient student population affiliated with the University of Michigan. Figures in parentheses represent the proportions of each demographic group of the total population of adults over the age of 18, as indicated by Census counts.

GENDER/AGE

Men under 50	21% (37%)
Men 50+	29% (34%)
Women under 50	19% (13%)
Women 50+	31% (16%)

HOMEOWNERS/RENTERS

Homeowners	82% (46%)
Renters	16% (54%)
Other	2%

RACE

White	77% (76%)
Non-white	23% (24%)

CITY COMPOST CART OWNERSHIP

Own cart	62%
No cart	37%

PARENTAL STATUS

Households with children under 18	29% (15%)
Non-children under 18	70% (95%)

Ward 1	12% (21%)
Ward 2	17% (19%)
Ward 3	24% (20%)
Ward 4	20% (21%)
Ward 5	27% (19%)

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Strategy Precision Impact

Key Findings: Attitudes on Ann Arbor's Current Waste Collection Services

- With virtual unanimity (94%), Ann Arbor residents who are involved with their household's waste collection decisions are satisfied with recycling, garbage disposal, and compost collection services. This includes more than two-thirds of residents (69%) who are *very* satisfied.
  - These high levels of satisfaction span across multiple regional and demographic lines, with seniors (74% very satisfied), and residents of Wards 4 (73% very satisfied) and 3 (71% very satisfied) among the most satisfied. Moreover, they suggest a level of trust in the City—at least on these matters—that is uncommon in the current environment of heightened skepticism towards government.

- There is only a slight drop-off in satisfaction levels when residents are asked just about the city's compost collection services. Eight-in-ten (80%) residents are satisfied with this particular service, including a solid majority (57%) who is "very satisfied".
  - Those who are most satisfied with the city's compost collection services tend to be residents in Wards 3 (61% very satisfied) and 4 (63% very satisfied), older men (63% very satisfied), and parents of school-aged children (61% very satisfied).

- Over six-in-ten (62%) residents say they have a brown city of Ann Arbor compost cart, including majorities of every major subgroup in the data. A majority of residents, regardless of whether or not they have a cart, also says they are aware that the city allows for food waste to be placed in the cart.
  - Among residents who do own a cart, a majority (61%) says the primary reason they purchased the cart was to manage their household's level of yard waste and cut back on the amount of yard waste bags they need.
  - Only one-in-ten residents (10%) with a cart say they purchased the cart in order to compost food waste.
  - Residents between the ages of 40-49 (21%) residents of Wards 5 (15%), women under 50 (16%), men under the age of 50 (15%), renters (15%), and parents of school-aged children (14%) are all more likely than residents overall to have purchased a cart to compost food waste.

Key Findings: Reported Behaviors Regarding Yard and Food Waste

- Residents handle the yard waste their households produce in a variety of different ways. Most (41%) place their yard waste in paper waste bags or their brown compost carts and set them out for the city to collect. Roughly one-in-five (19%) use some combination of the city collection services and leaving their yard waste on their lawn/composting it at home. Residents who use this combination tend to be older homeowners, particularly older women.

- When it comes to food waste, a majority of respondents throw their food waste in the trash, place it in the garbage disposal, or some combination of the two. Nearly two-in-five (38%) compost waste at home or put it in the brown compost cart for the city to collect (19% compost at home, 19% place in cart for city to collect).
  - Among residents who use the brown compost cart for food waste, most (46%) say they do so for environmental reasons, though another one-in-five (20%) do so as a matter of convenience considering they are already using the cart for yard waste.
  - Residents who do not use the brown compost cart for food offer a mix of reasons as to why, including that they compost at home (15%), were not aware that placing food waste in the cart was permitted (12%), or that they are afraid doing so would be messy and attract pests (9%).

- Regardless of how they dispose of their food waste, the vast majority (83%) of residents say they feel informed with regard to the impact of wasted food at the social and environmental level, though more feel *"somewhat"* (47%) informed than *"very" (36%)* informed, suggesting the opportunity for further education on this front.
  - Men under the age of 50 (88%), older women (83%), white residents (86%), and residents living in Ward 5 (92%) are among the residents who feel the most informed. Non-white residents (28%) and residents of Ward 2 (21%) are among the residents who feel the least informed.

Key Findings: Opportunities and Barriers to Service Improvements

- Despite residents' positive levels of satisfaction with regard to the city's compost collection services, many still offer ideas for improvement, the most common of which include city-provided kitchen containers and compostable bags (21%) and year round collection (20%).
  - Residents between the ages of 30-39 (27%), parents of children under 18 (27%), younger (i.e. under 50), college educated women (24%), residents of Ward 5 (24%), and residents who have some form of affiliation with the University of Michigan (24%) are the most likely to offer the suggestion of year-round collection.

- After asking specifically about the prospect of extended yard waste collection during the winter months—a service not currently offered—nearly half (48%) of all residents say they find themselves in need of such services, including one-in-five (20%) who say they experience this need on a weekly or monthly basis.
  - Younger women (i.e. under 50) and residents living in Wards 2 and 3 are among the most likely to say they are in need of such a service.

- Many residents balk, however, when asked about their willingness to pay a supplemental monthly or annual fee for access to this service. Approximately three-in-ten (29%) say they would be likely to pay for year round collection. Fully 69% of residents say they are either "not very" (24%) or "not at all" (45%) likely to pay a fee.
  - Younger residents (i.e. under 50), particularly women (45%), parents of school-aged children (38%), renters (35%), and residents of Ward 3 (36%) are the most likely groups to say they would pay an unspecified fee for year round compost collection.
  - Willingness to accept increased fees increases slightly when those fees are specified as either $5 to $7 a month (35% likely, 63% not likely), or $60 to $80 a year (33% likely, 66% not likely).

Key Findings: Opportunities and Barriers to Service Improvements (continued)

- More than three-quarters (78%) of residents express interest in reducing the amount of wasted food their household produces, including a near majority (47%) who say they are very interested.
  - Residents who are most interested in reducing the amount of food waste their households produce include residents under the age of 50, parents of school-aged children, and residents living in Ward 5.

- Many of these groups, especially younger residents, parents, and residents of Ward 5 are the most likely to say they would use a set of educational tools to track their food waste and disposal habits, and/or attend a food waste education workshop, reinforcing their status as prime educational targets. However, overall interest in using a checklist or set of educational tools, or attending a food waste education workshop to learn tools and techniques to reduce food waste, is somewhat limited.
  - Just 43% of residents say they are "very" (15%) or "somewhat" (28%) likely to use a checklist or set of tools; just 29% of residents say they are "very" (8%) or "somewhat" (21%) likely to participate in a food waste education workshop.

- Interest in reducing levels of food waste extends to residents who do not currently possess a brown compost cart. A majority (73%) of these residents say they would be willing to put their food waste in a cart *if they were provided one at no cost*.
  - This is especially true among younger residents (90%), parents of school-aged children (84%), renters (83%), and residents living in Wards 2 (82%), 3 (80%), and 4 (80%).

Key Findings: Assessing the Impact of Education on Attitudes and Cost Sensitivity

- Large majorities of residents find statements about the benefits of year-round compost collection including yard and food waste convincing, including significant pluralities who find the statements *very* convincing. The most compelling statements are those that frame increased production of compost as beneficial to residents and local businesses (41% very convincing), as well as those that focus on reducing the amount of waste going into landfills (39% very convincing) ***and*** the levels of methane gas generated in landfills (40% very convincing).
  - Younger residents (especially younger women), parents of school-aged children, white residents, renters, and residents of Wards 3, 4, and 5, are the groups of residents likely to find these statements most persuasive. This is particularly true with the arguments that highlight how increased compost production benefits residents and small businesses.
  - Younger residents (i.e. under 50) are also drawn to the argument about reducing methane emissions from landfills which fits the environmental frame that is particularly resonant with this group.

- After hearing these statements, residents' levels of interest and likelihood to pay a supplemental fee for this service increases slightly from where it starts out earlier in the survey.
  - When it comes to the likelihood to pay a monthly supplemental fee, the most noticeable shifts occur with younger men (i.e. under 50), parents of school-aged children, residents who do not possess a brown city compost cart, and residents living in Ward 4.
  - When it comes to the likelihood to pay an annual supplemental fee, the most noticeable shifts occur with older women (i.e. over 50), non-white residents, renters, and residents living in Ward 2 and Ward 4.

Targeting Considerations

- Most likely to compost: Younger residents, especially younger, college educated women, and parents of school-aged children are among the most likely composters. These groups are the most likely to already own a brown compost cart, be aware that they can use the cart for food waste in addition to yard waste, and, indeed, the most likely to already be composting food to some degree (typically in their homes).
  - Among those without a compost cart, parents, younger residents (especially college educated and white), renters, and residents in Wards 2, 3, and 4 are among the most likely to use a compost cart for food waste *if they are provided a cart at no cost*.

- Education program targets: Residents who express the greatest willingness to participate in educational programs with the aim of managing and reducing food waste include younger residents (particularly women), parents of school-aged children, and residents living in Ward 5.

- Residents with greatest collection needs: Women in Wards 2 and 3 are among the most likely to say they need yard waste collected on a weekly basis during December through March. Each of these groups, as well as parents and residents of Ward 5, are the most likely to suggest year round collection as a way to improve the city's compost collection services.

- Most open to fees: The groups most willing to pay a fee for year-round collection services tend to be residents under 50, college-educated women, and parents of school-age children. Still, there remains considerable resistance even among these groups to paying increased fees. One way to engage these groups further may be to put even greater emphasis on the environmental benefits of these service enhancements given their positive reactions toward such arguments; indeed, after those statements we see an increased willingness to pay slightly more among parents and Ward 4 residents.

- Cost-sensitive targets: Although older residents express high levels of satisfaction with regard to the city's current garbage, recycling, and compost collection services, they are also among the most resistant of groups when it comes to willingness to pay any fees for additional services.
  - Still, older residents, particularly older women, express strong levels of interest in reducing the amount of wasted food their households produce, and do become more open to fees after hearing the positive statements about year-round collection. This suggests the potential utility of a communications strategy geared towards older residents, especially older women, that emphasizes how increased composting would help residents and local businesses, improve the local environment, and reduce the need for commercial fertilizers.

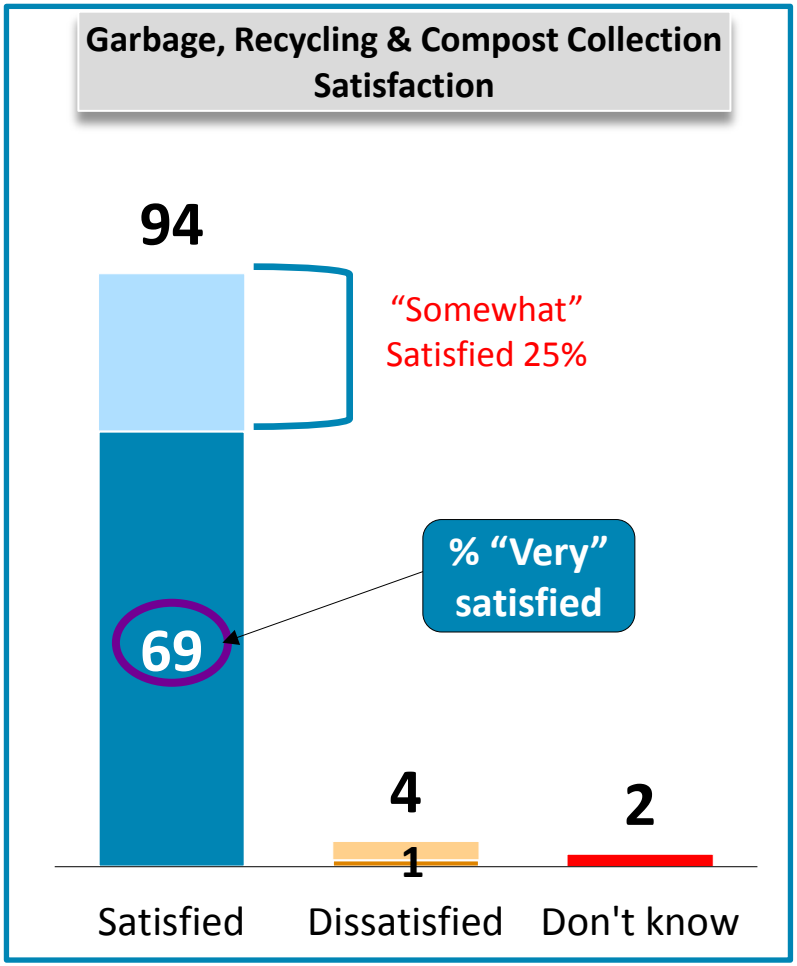
Satisfaction with and Reported Use of Current Waste Collection and Recycling Services

Solid majorities of Ann Arbor residents are highly satisfied with their household's current garbage, recycling, and compost collection services, affording the City a level of trust on these matters that is rare in the current environment. While a majority report having purchased a City-issued compost cart, there appears to be ample opportunity to expand ownership and usage—for yard as well as food waste.

With near unanimity, Ann Arbor residents who are involved with household bills and/or in charge of dealing with recycling and garbage disposal in their household are satisfied with their household's current garbage, recycling, and compost collection service, including more than two-thirds who are *very* satisfied. Seniors, residents of Ward 4, and older, blue-collar residents are the most satisfied.

Those who are disproportionately 'Very Satisfied' with collection services
Total (69%)
Non-college men (83%)
65+ (74%)
Non-college 50+ (74%)
Ward 1 (74%)
Ward 4 (73%)

Those who are disproportionately 'Somewhat Satisfied' with collection services
Total (25%)
Women < 50 (31%)
Non-college women (33%)
Affiliated with University (33%)
Ward 2 (33%)
Non-white (31%)
Ward 5 men (30%)
Ward 2 50+ (30%)
Households with children under 18 (30%)
College men (29%)

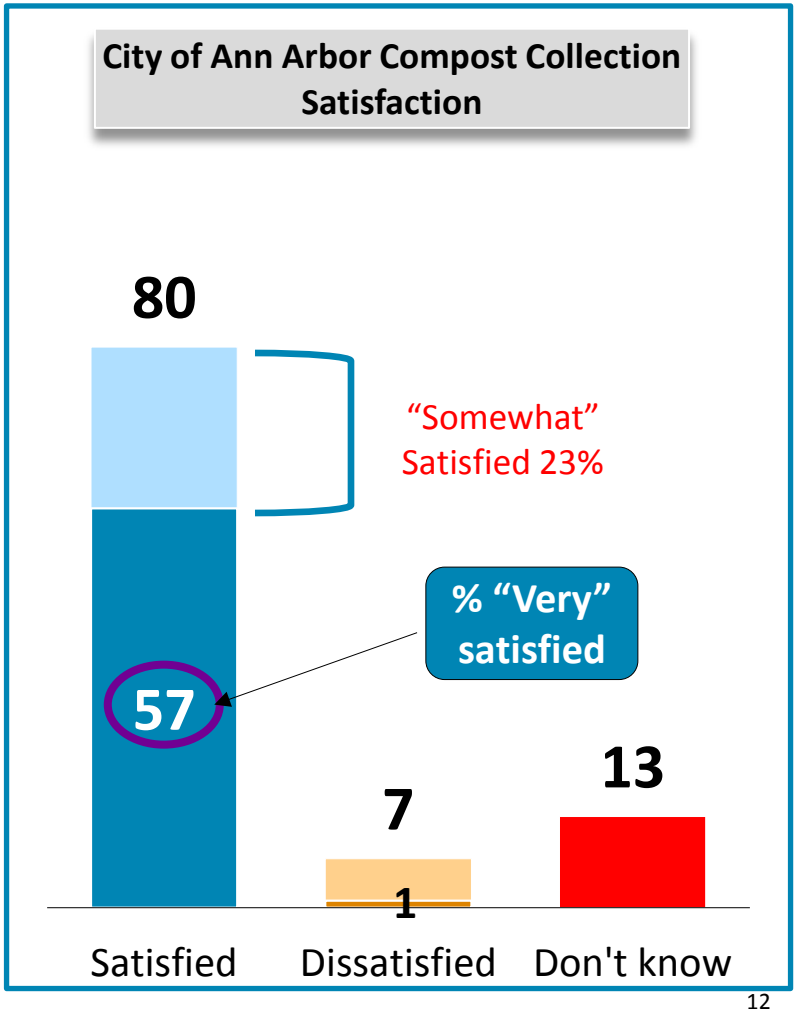


Q7: How satisfied are you with your household's current garbage, recycling, and compost collection service overall? Are you VERY satisfied, SOMEWHAT satisfied, SOMEWHAT dissatisfied, or VERY dissatisfied?

There is only modest drop-off in satisfaction when it comes to residents' assessments of the city's compost collection services, with 8 in 10 expressing satisfaction, including a solid majority who are very satisfied. Looking at just those who have a City-issued compost cart, levels of satisfaction jump by double digits (93% satisfied among residents who own a cart, including 67% "very" satisfied). Those who are most satisfied tend to be residents in Wards 3 and 4, men over 50, and parents of school-age children.

Those who are disproportionately 'Very Satisfied' with collection services
Total (57%)
Ward 4 50+ (68%)
40-49 (64%)
Men 50+ (63%)
Ward 4 (63%)
Non-college grad (62%)
Ward 3 (61%)
Households with children under 18 (61%)

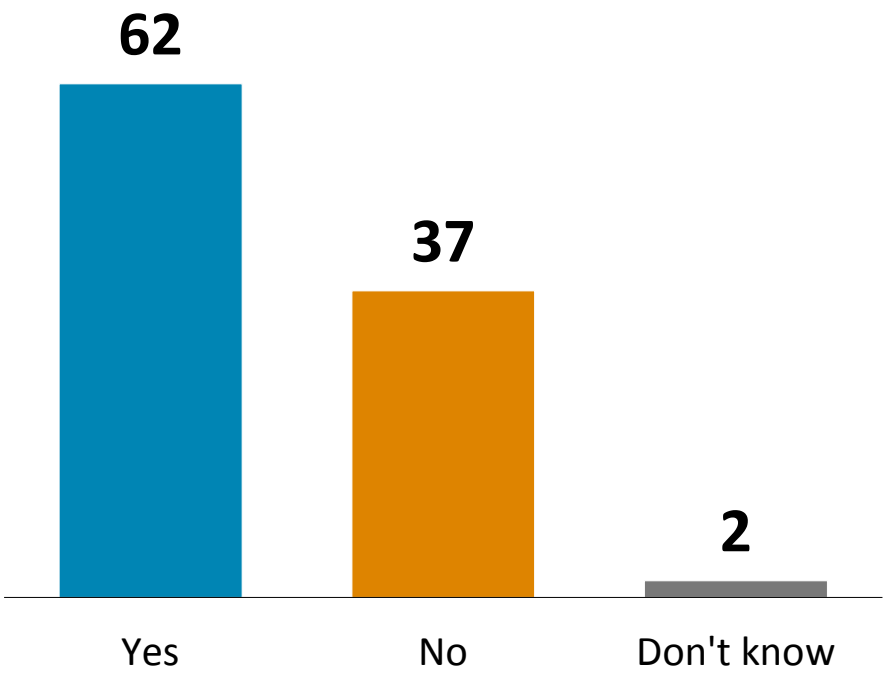
Those who are disproportionately 'Somewhat Satisfied' with collection services
Total (23%)
Ward 2 women (39%)
Ward 2 (35%)
Ward 2 50+ (31%)
30-39 (27%)
Women < 50 (27%)
College grad (27%)

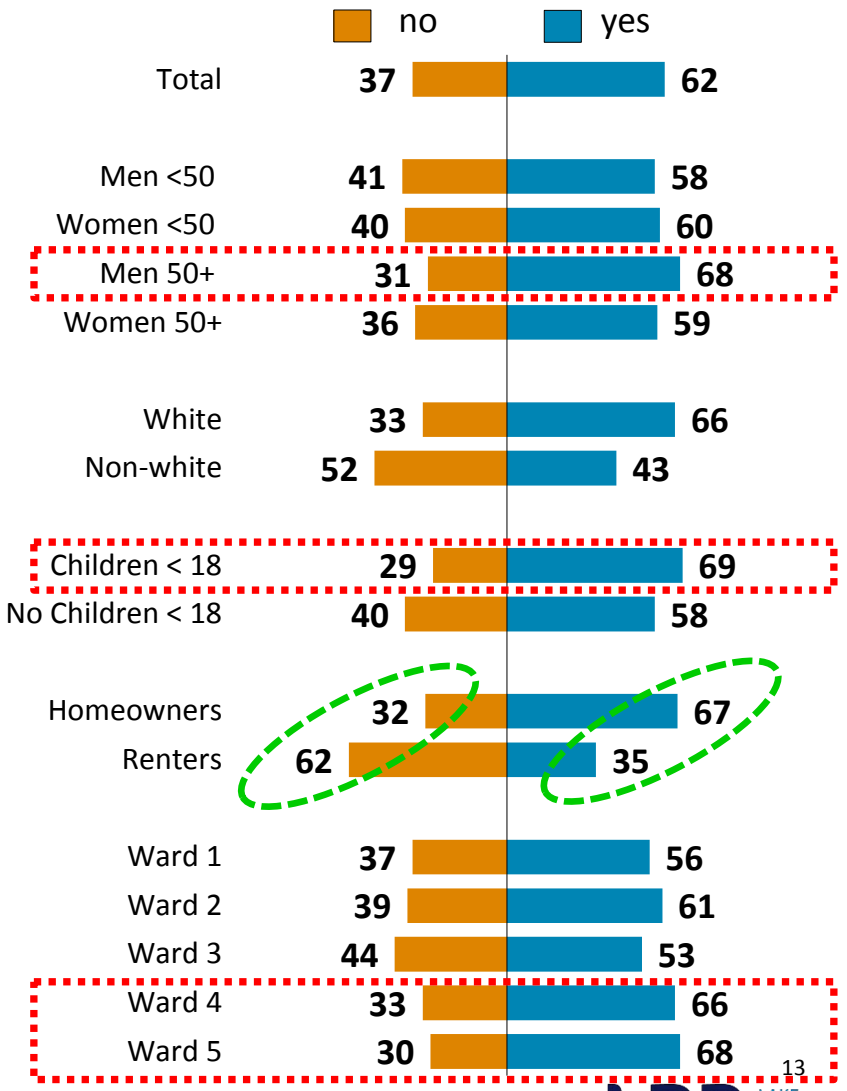


Q8: Specifically considering the City's compost collection services, how satisfied are you with your current service? Are you VERY satisfied, SOMEWHAT satisfied, SOMEWHAT dissatisfied, or VERY dissatisfied?

Over six-in-ten residents say they have a brown city of Ann Arbor compost cart, including majorities of every major subgroup in the data. Among the most likely groups to possess a cart are men over age 50, residents of Wards 4 and 5, and households with children under the age of 18. In addition, homeowners are far more likely to own a compost cart than renters.

Do you currently have a brown City of Ann Arbor compost cart?





Q9: Do you currently have a brown City of Ann Arbor compost cart?

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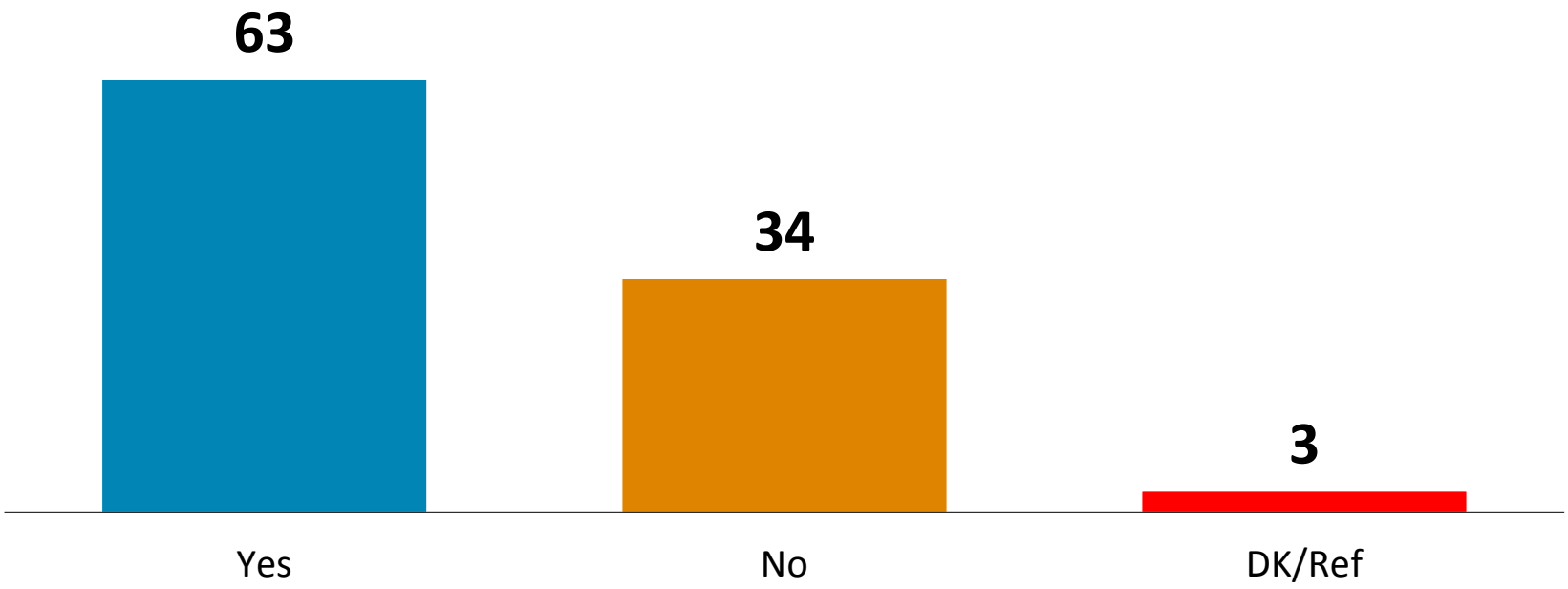
Nearly two-thirds of residents say they are aware the City allows residents to add food waste, such as vegetable peelings and plate scrapings, with yard waste in the brown compost cart. However, that leaves over one-third who are currently unaware, including 32% of those who are interested in reducing the amount of food waste in their households and 21% of those who currently have a cart.

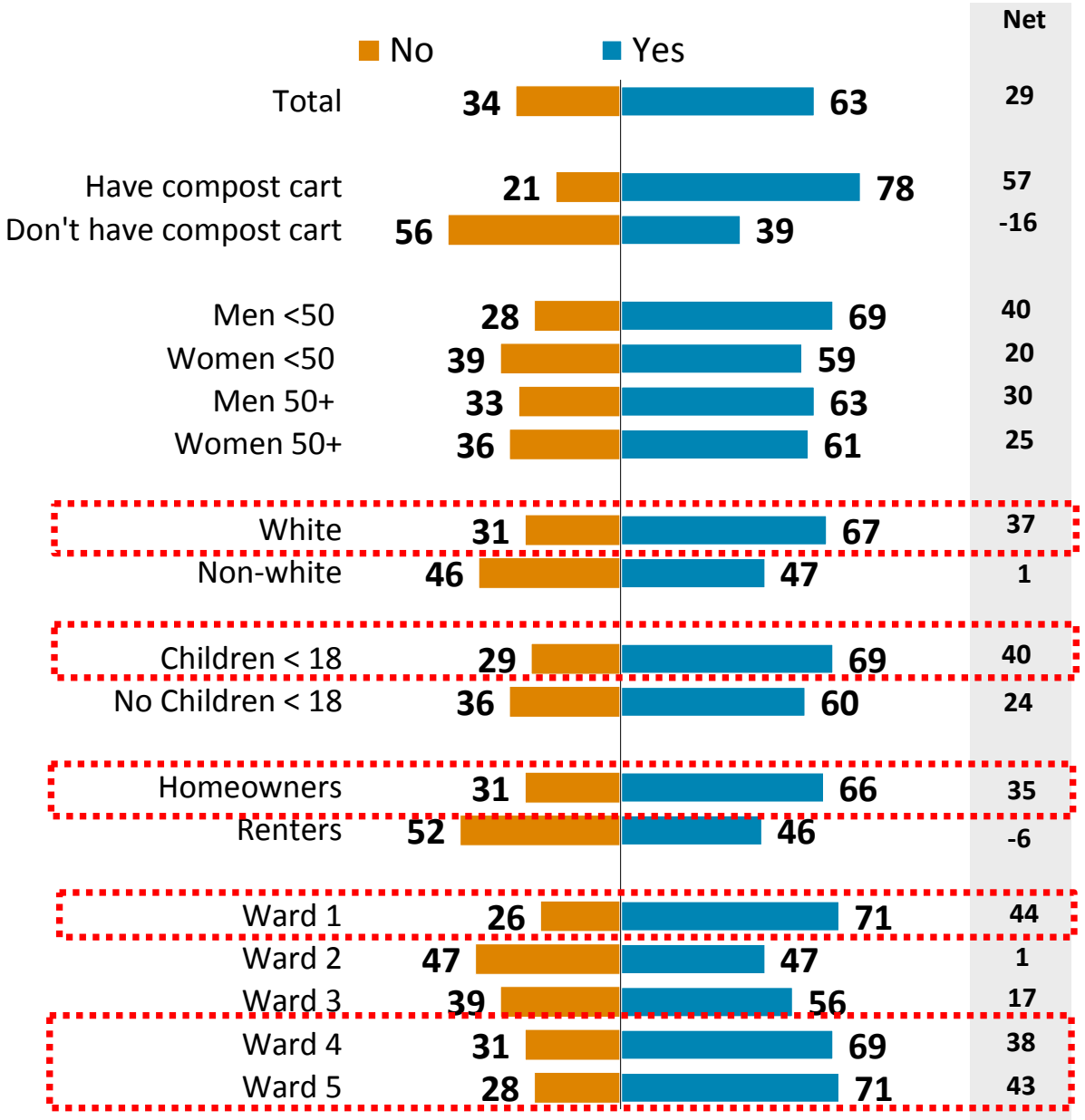
Are you aware that the City of Ann Arbor allows residents to add food wastes such as vegetable peelings and plate scrapings with yard waste in the brown compost cart?



Q14: Are you aware that the City of Ann Arbor allows residents to add food wastes such as vegetable peelings and plate scrapings with yard waste in the brown compost cart?

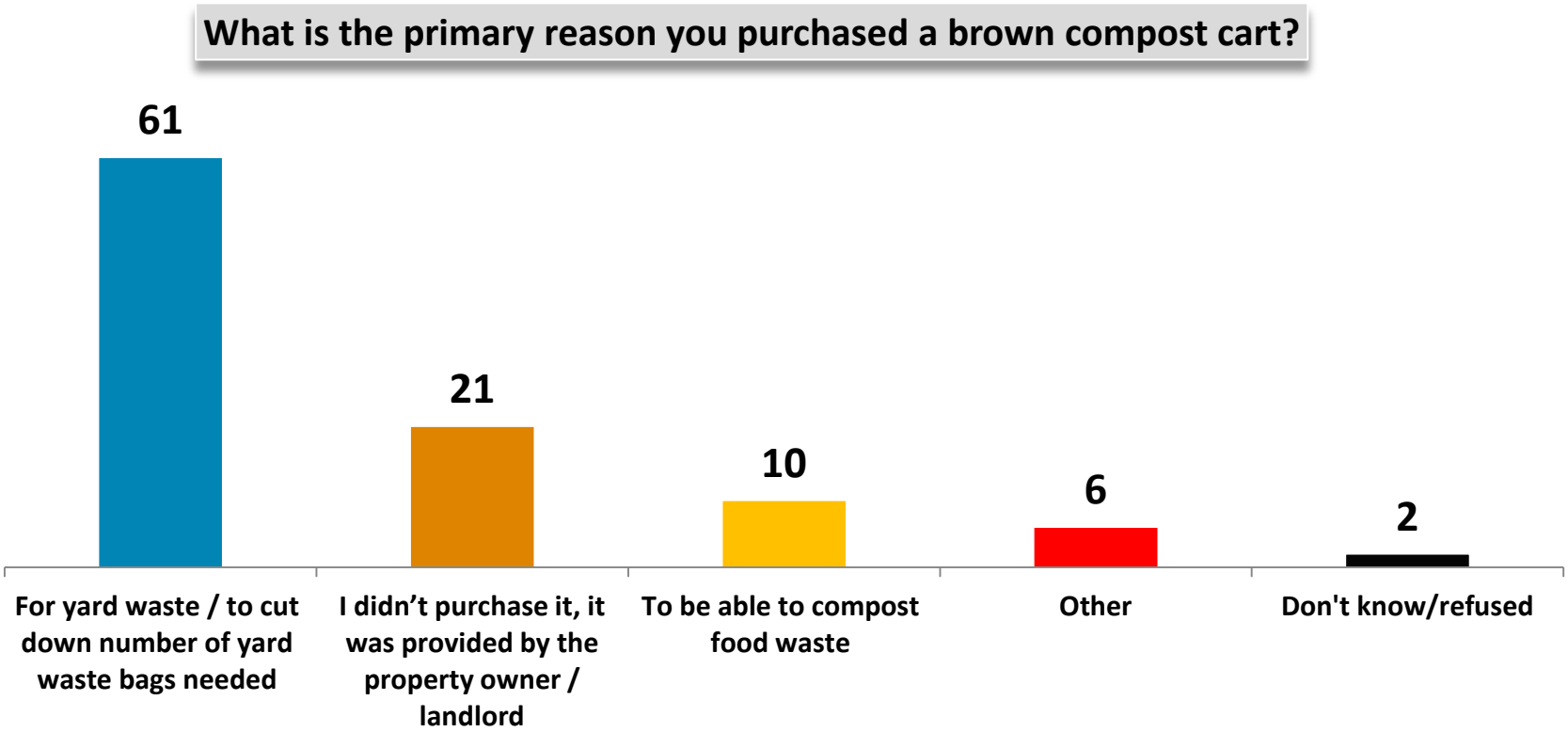
Men are more likely to say they are aware that the city allows residents to throw food waste in the brown compost cart than women. Other groups that are disproportionately aware of this particular function of the cart include white residents, parents of children under the age of 18, homeowners, and residents in Wards 1, 4, and 5.

Groups that are *less* likely to be aware include renters, residents of color, and residents living in Ward 2.



Q14: Are you aware that the City of Ann Arbor allows residents to add food wastes such as vegetable peelings and plate scrapings with yard waste in the brown compost cart?

Among residents who have a brown compost cart, most say the primary reason for the purchase was to manage yard waste and cut down on the number of yard waste bags they need. Only one-in-ten say they purchased the cart in order to be able to compost food waste.



Q10:If you have a brown compost cart, what was the primary reason you purchased it?
Asked only of respondents who answered yes to question #9: "Do you currently own a brown city of Ann Arbor Compost Cart"
(N=370 Respondents)

While a significant majority of residents (particularly older, white men, and residents of Wards 1 and 3) say they purchased their compost carts chiefly to cut down on yard waste bags, certain groups are more likely to have purchased the cart to compost food, including residents between the ages of 40-49, households with children under the age of 18 (particularly mothers), residents of Wards 5 and 2, women under 50, and renters.

Disproportionately - to cut down on Yard Waste bags
Total (61%)
Ward 1 (75%)
Ward 3 (72%)
Men 50+ (69%)
White 50+ (67%)
Non-college (67%)
Post-graduate (65%)

Disproportionately – didn't purchase/provided by landlord
Total (21%)
Renters (62%)
Women <50 (32%)
University affiliation (29%)
Non-college women (27%)
Ward 4 (27%)
College women (25%)

Disproportionately – to compost food waste
Total (10%)
40-49 (21%)
Women <50 (16%)
Men <50 (15%)
Ward 5 (15%)
Ward 2 women (15%)
Renters (15%)
University affiliation (15%)
30-39 (14%)
Households with children under 18 (14%)

Q10:If you have a brown compost cart, what was the primary reason you purchased it?
Asked only of respondents who answered yes to question #9: "Do you currently own a brown city of Ann Arbor Compost Cart" (N=370 Respondents)

A plurality of residents say they put yard waste in paper yard waste bags or the brown compost cart for the City to collect while another nearly one-in-five use some combination of the city and leave it on their lawn or compost it at home. These residents tend primarily to be older homeowners.

What do you currently do with your yard waste such as leaves, grass clippings, and tree or brush trimmings?

Disproportionately put in paper yard waste bag/brown compost cart
- *Ward 2 (48%)*
- *Men 50+ (46%)*
- *Non college grad (46%)*
- *40-49 (45%)*
- *65+ (45%)*
- *Homeowners (45%)*

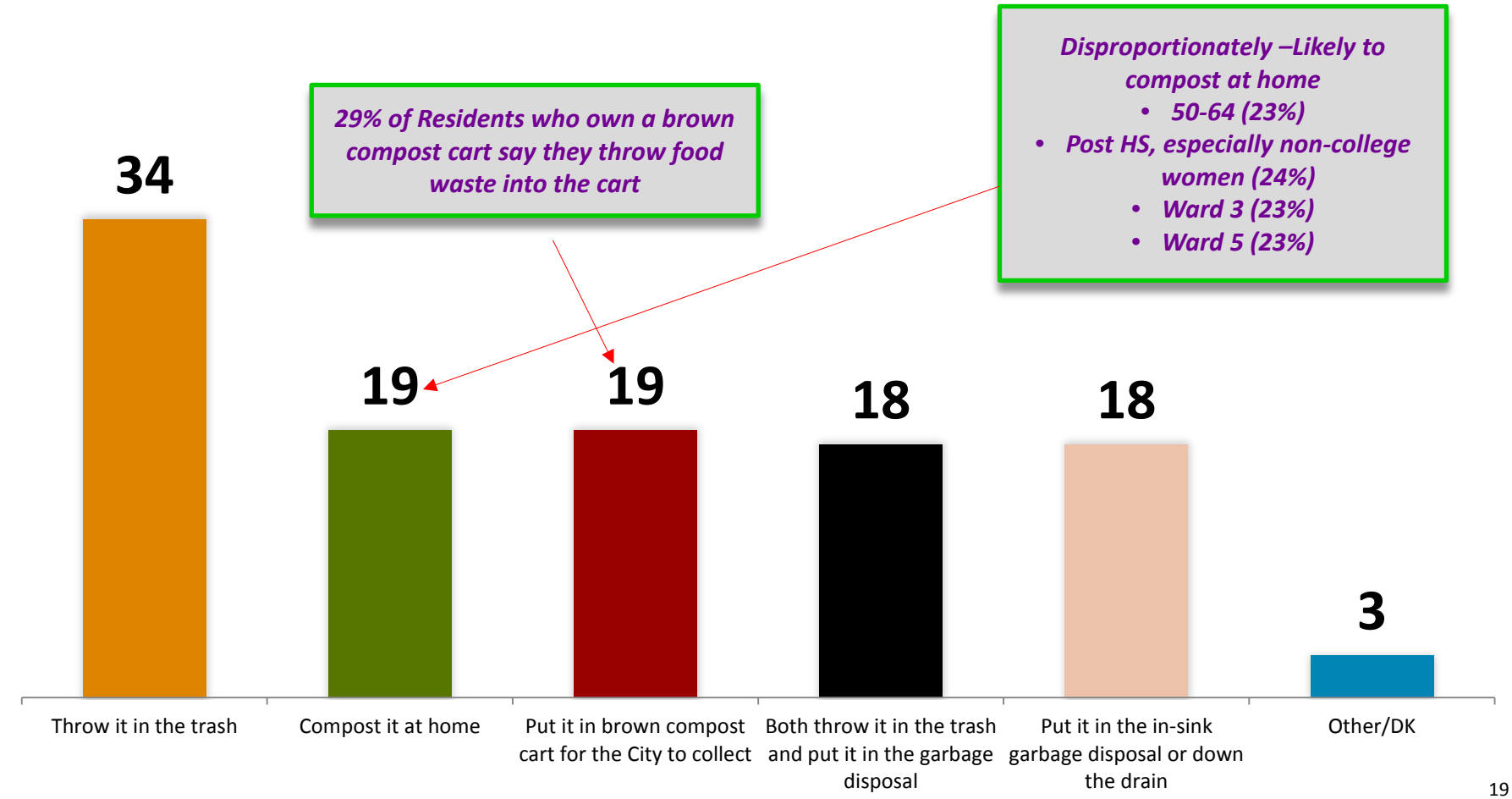
Disproportionately –city collection & leave on lawn/compost at home
- *Ward 3 women (30%)*
- *Ward 4 women (25%)*
- *40-49 (24%)*
- *50-64 (24%)*
- *Women 50+ (24%)*
- *College 50+ (24%)*

Disproportionately –leave on lawn or compost at home
- *Ward 1 (25%)*
- *Households with children under 18 (20%)*

Q11: What do you currently do with your yard waste such as leaves, grass clippings, and tree or brush trimmings?

*When it comes to food waste, a majority of respondents throw it in the trash, put it in the garbage disposal, or some combination of the two. Nearly two-in-five compost waste at home or put it in the brown compost cart for the City to collect. Composters tend to be pre-retirement, non-college educated white residents, and residents in Wards 3 and 5.

What do you currently do with food waste such as vegetable peelings, leftover food, or plate scrapings in your household?



Q13:What do you currently do with food waste such as vegetable peelings, leftover food, or plate scrapings in your household?
*Note that percentages exceed 100% because respondents were allowed to offer multiple responses.

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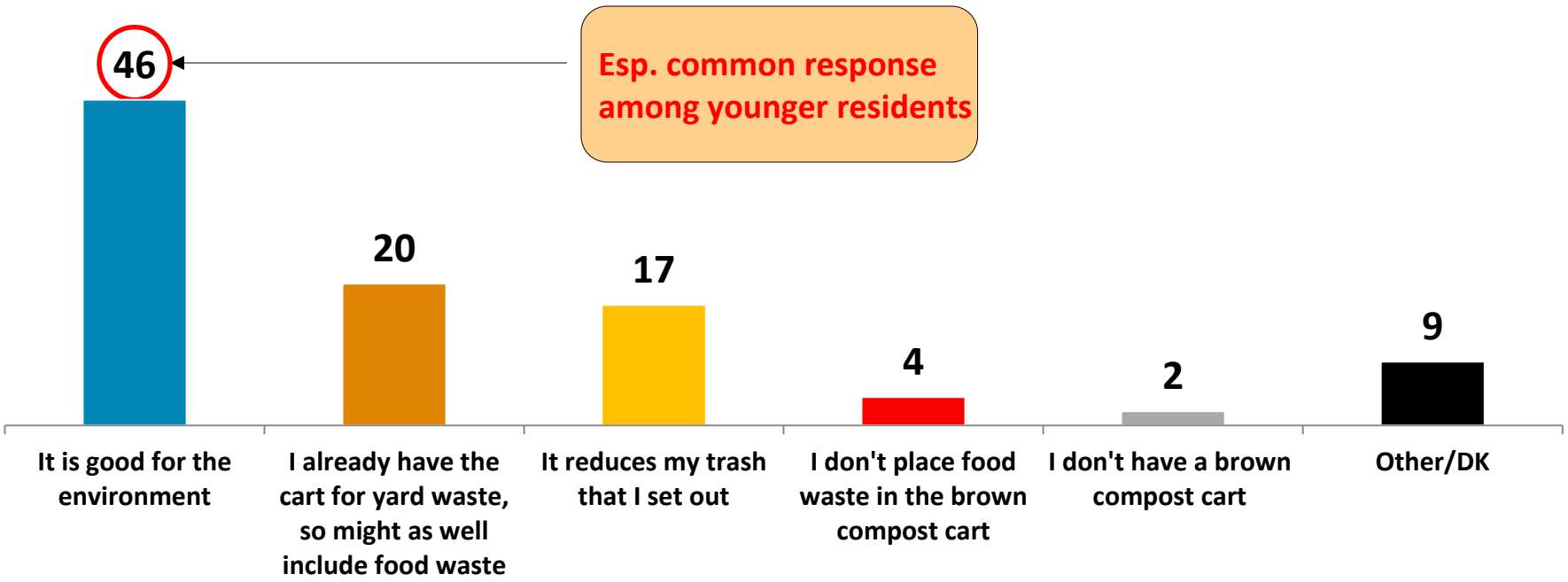
Residents who use the compost cart for food waste tend to do so primarily for environmental reasons. Another one-in-five do so as a matter of convenience since they are already using the cart for yard waste.

If you currently place food waste in a brown compost cart, what is the primary reason you include your food waste in your compost cart?



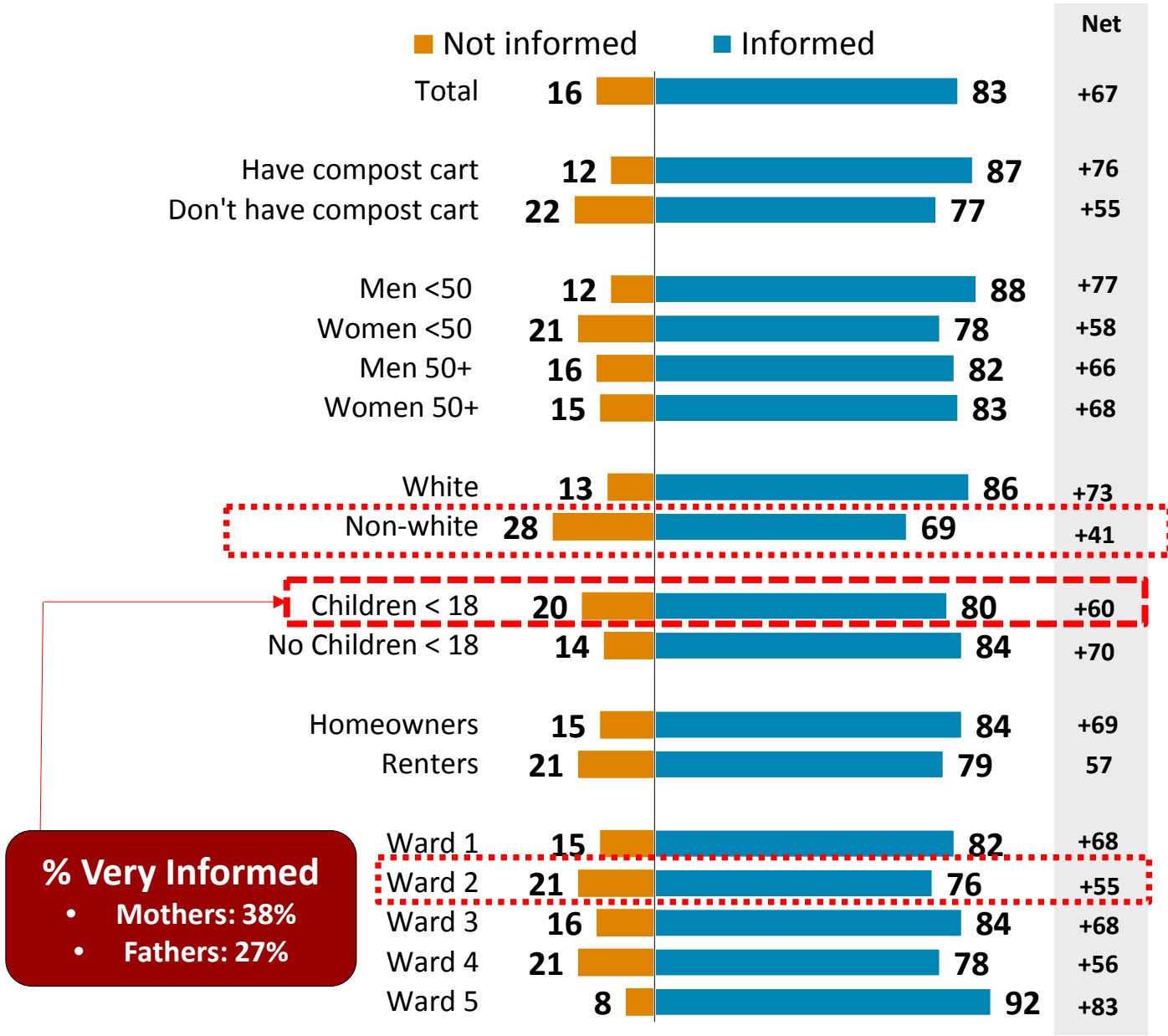
Q15: If you currently place food waste in a brown compost cart, what is the primary reason you include your food waste in your compost cart?

The vast majority of residents say they feel informed with regard to the impact of wasted food at the social and environmental level, though more feel “somewhat” informed than “very” informed.

Q17. How informed do you feel you are about the impact of wasted food on a social and environmental level? Very informed, somewhat informed, Not very informed, or Not at all informed.

Men under the age of 50, older women, white residents, and residents living in Ward 5 are among the residents who feel most informed when it comes to the impact of food waste on a social and environmental level.

Among the residents who feel least informed are non-white residents, and residents of Ward 2. Additionally, mothers are more aware than fathers, making the latter group a potential education target.



% Very Informed
- **Mothers: 38%**
- **Fathers: 27%**

Q17. How informed do you feel you are about the impact of wasted food on a social and environmental level? Very informed, somewhat informed, not very informed, or not at all informed?

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Those who do not use the compost cart for food waste offer a mix of reasons, with no single reason representing a majority.

If you currently don't place food waste in a brown compost cart, what is the primary reason?

Already compost at home 15%

Not aware of the program before now 12%

I do place food waste in a brown compost cart 10%

Think it will be messy, cause odors, and attract bugs or rats 9%

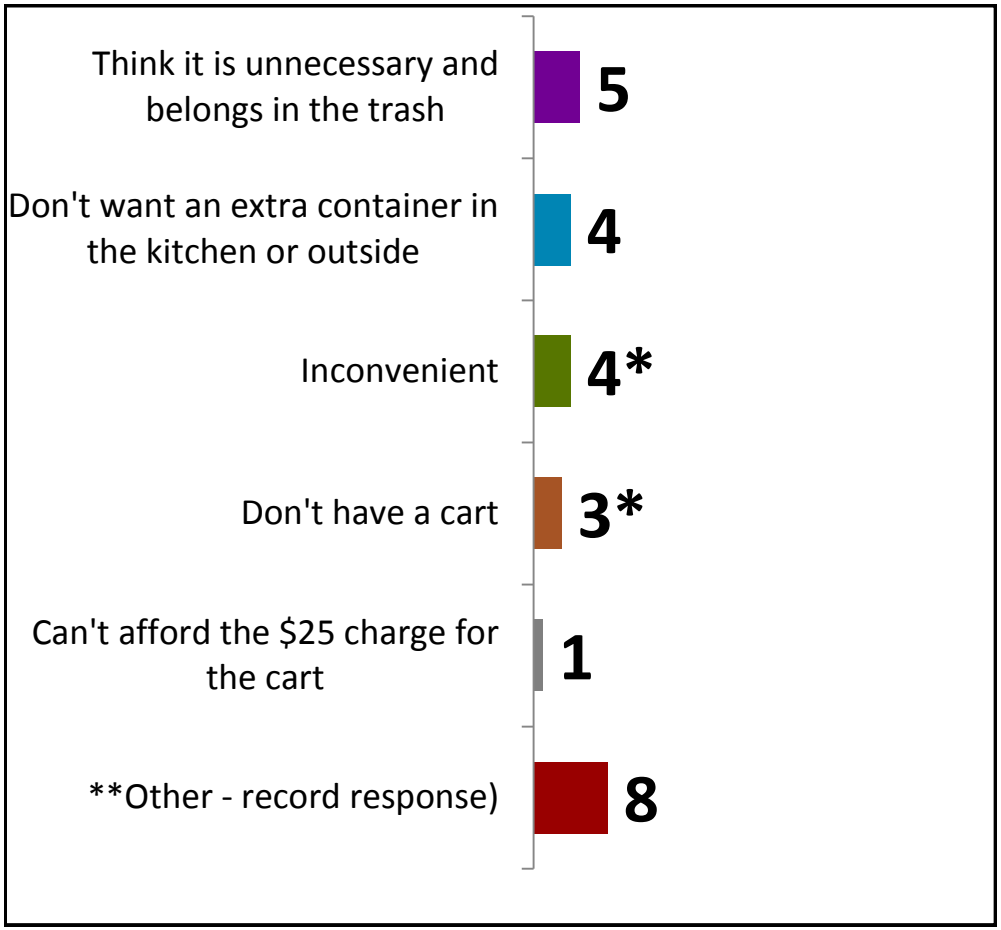
Need more information about how to participate 9%

Already put it in an in-sink garbage disposal 9%

Landlord/property manager chooses the trash/recycling services and does not include a compost cart 8%

Q16: If you currently don't place food waste in a brown compost cart, what is the primary reason?
Asked only if respondents did not answer question #13 with response code 2: "compost at home" (N=488)

Less cited reasons include resident's lack of general knowledge about the program, not wanting to have extra containers, general perceptions composting being inconvenient, and not possessing a cart.



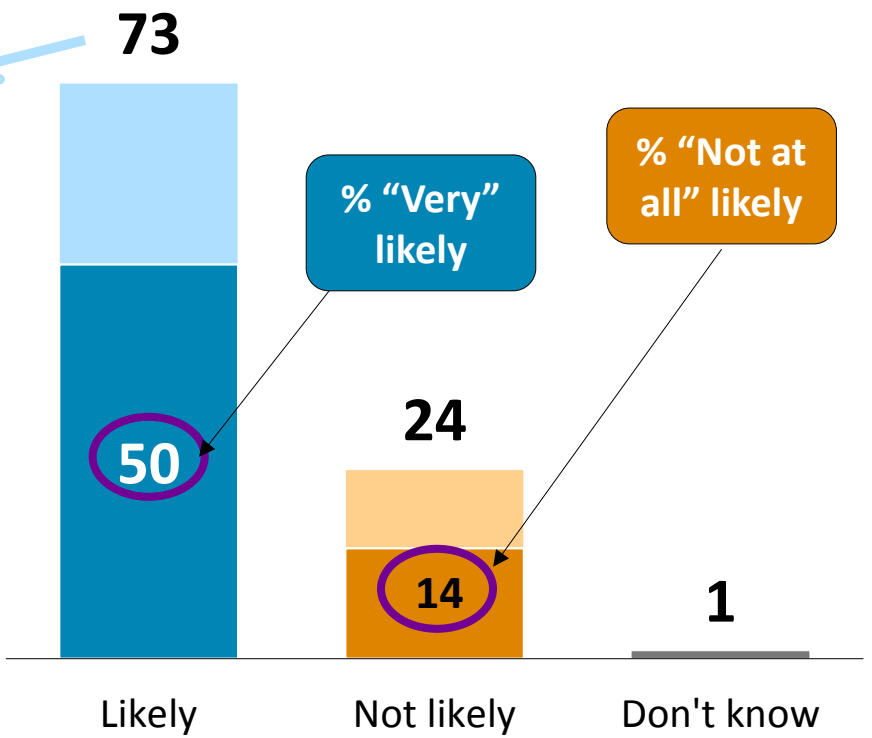
Q16: If you currently don't place food waste in a brown compost cart, what is the primary reason?
Asked only if respondents did not answer question #13 with response code 2: "compost at home" (N=488)

* Initially, 16% (78 cases) of the 488 respondents who were asked Q16 gave "other" as a response. Of those 78 cases, we further coded another 4% of responses under the category of "Inconvenient" and 3% under "Don't have cart". This leaves 8% of cases that are too diffuse to group into additional categories.

The overwhelming majority of residents who do not have a brown compost cart say they would be willing to put their food waste in the cart were a cart provided to them **at no cost**. Parents, younger residents (especially college educated and white), renters, and residents in Wards 2, 3, and 4 are among the most likely to use a compost cart for food waste under such conditions.

Those who are disproportionately likely to use cart
Under 50 (90%) – mostly 40-49, women
College under 50 (88%)
White under 50 (85%)
Households with children under 18 (84%)
Renters (83%)
*Ward 2 (82%)
Ward 3 (80%) – especially women
*Ward 4 (80%)
University affiliation (80%)

Likelihood to use brown compost cart if provided at no cost



Q23: If a brown compost cart was provided at no cost to your household to collect yard and food waste year-round, how likely would you be to put your food waste in the cart? Very likely, somewhat likely, Not very likely, not at all likely

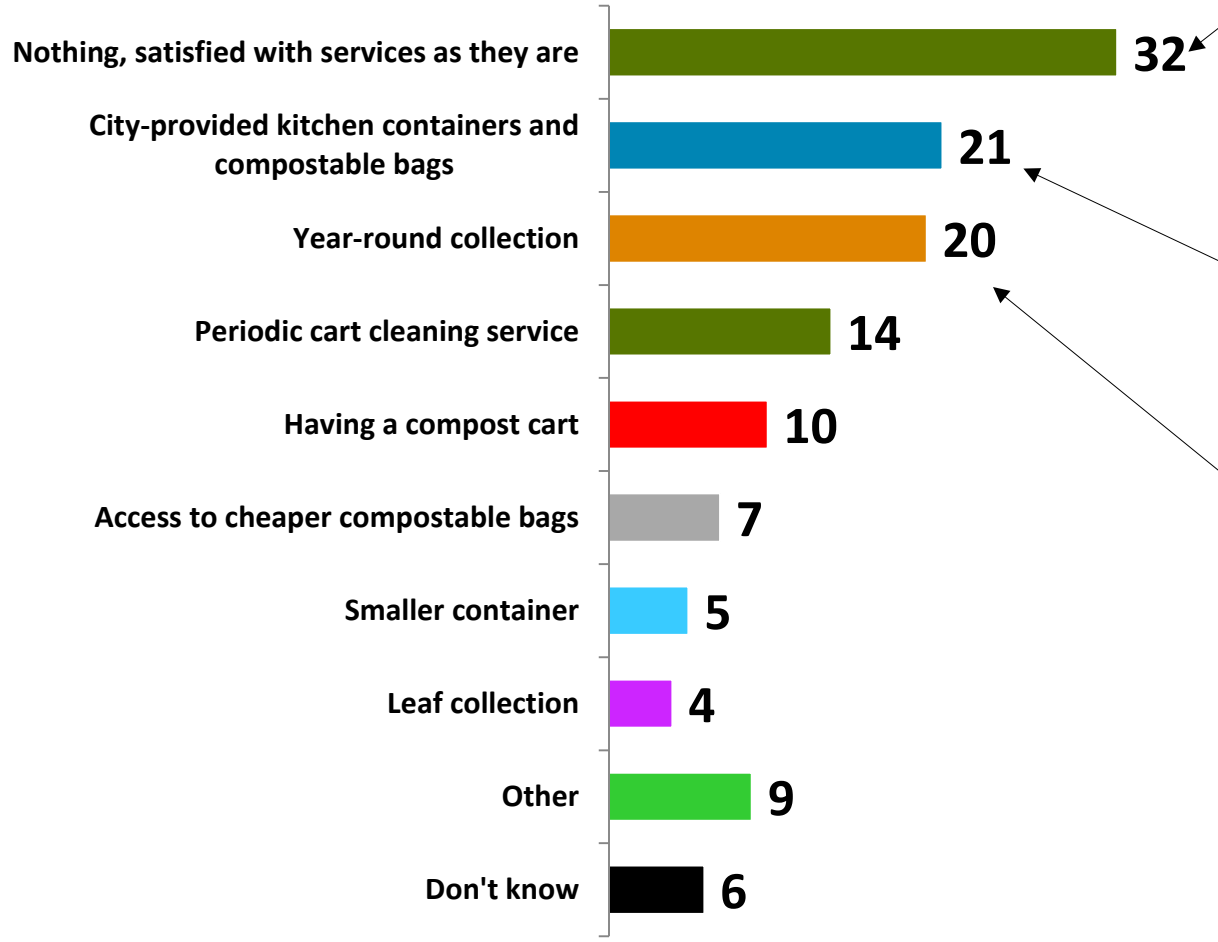
* Small n size (Ward 2: n = 40) (Ward 4: n = 41)

Interest in Service Improvements and Willingness to Support Cost Increases

Nearly half of residents offer ideas for increasing their (already elevated levels of) satisfaction with the City's compost collection services, including significant numbers who have need of yard waste collection during the winter months; would like to see city-provided kitchen containers and compostable bags; and would like periodic cart cleaning. That said, willingness to pay for such enhancements is fairly limited. Similarly, most residents are interested in reducing their households' food waste, but limited numbers say they would be likely to use a checklist or set of educational tools in their household to track their food wasting and disposal habits, or to participate in food waste education workshops.

A majority of residents offer ideas for increasing satisfaction with the city's compost collection services. The most common suggestions include city-provided kitchen containers and compostable bags and year round collection.

What would increase satisfaction with Compost Collection Services:



Disproportionately Satisfied As Is
- *65+ (45%)*
- *Men 50+ (39%)*
- *Non college (38%) – particularly older men in Wards 2 & 4*
- *Women 50+ (36%)*

Disproportionately – City provided containers/compostable bags
- *30-39 (39%)*
- *Women under 50 (34%)*
- *Ward 2 women (34%)*
- *Ward 4 men (28%)*
- *University affiliation (28%)*
- *Post graduate (27%)*
- *Households with children under 18 (26%)*
- *Men under 50 (25%)*
- *Ward 3 men (25%)*

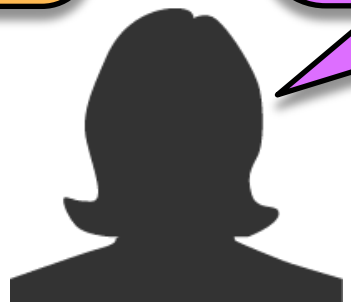
Disproportionately – Year-round collection
- *30-39 (27%)*
- *Households with children under 18 (27%)*
- *Women under 50 (26%)*
- *40-49 (25%)*
- *Have cart (25%)*
- *Post graduate (24%)*
- *College women (24%)*
- *Ward 5 (24%)*
- *University affiliation (24%)*

Q21. What would increase your satisfaction with the City of Ann Arbor's compost collection services [Multiple Responses Allowed]

Residents who offered other suggestions tend to volunteer ideas about curbside leaf collection, accounting for approximately 4% of all responses.

"I WOULD LOVE TO BE ABLE TO LEAVE THEM ON THE STREET IN ORDER FOR THE CITY TO COME AND PICK THEM UP"

"IF WE COULD RAKE OUR LEAVES, AWAY FROM THE CURB SO IT WOULDN'T GET INTO THE SEWER. AND THEY WOULD PICK IT UP. IT'S REALLY HARD FOR US TO PICK UP THE LEAVES."

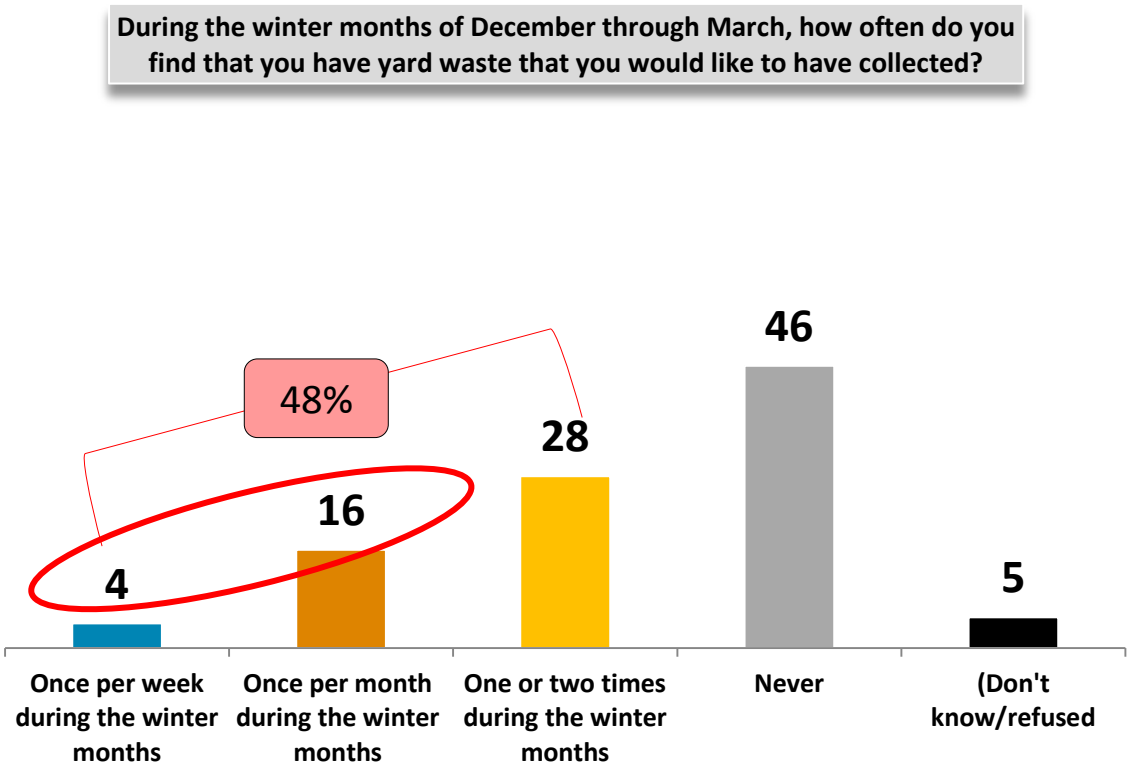


"I REALLY WOULD LIKE FOR THE CITY TO DO A BETTER JOB AT COMING AROUND AND TAKING THE LEAVES OUT OF THE GUTTERS. I FEEL LIKE THEY USED TO DO THIS BUT DON'T ANYMORE"

"IT WAS A LOT EASIER WHEN WE COULD RAKE IT INTO THE STREET...AND NOW THEY DON'T PICK IT UP AT ALL IN THE STREET. AND WE LIVE ON A STREET WITH A LOT OF OLD TREES."

Q21. What would increase your satisfaction with the City of Ann Arbor's compost collection services [Multiple Responses Allowed]
*75 respondents offered an "other" response, including 25 who volunteered a response concerning leaf collection.

When asked specifically about the prospect of extended yard waste collection during the winter months—a service not currently offered—nearly half of residents say they find themselves in need of such services, including one-in-five who say they experience this need on a weekly or monthly basis. Women in Wards 2 and 3 are among the most likely to say they need yard waste collected on a weekly basis during the December through March period.

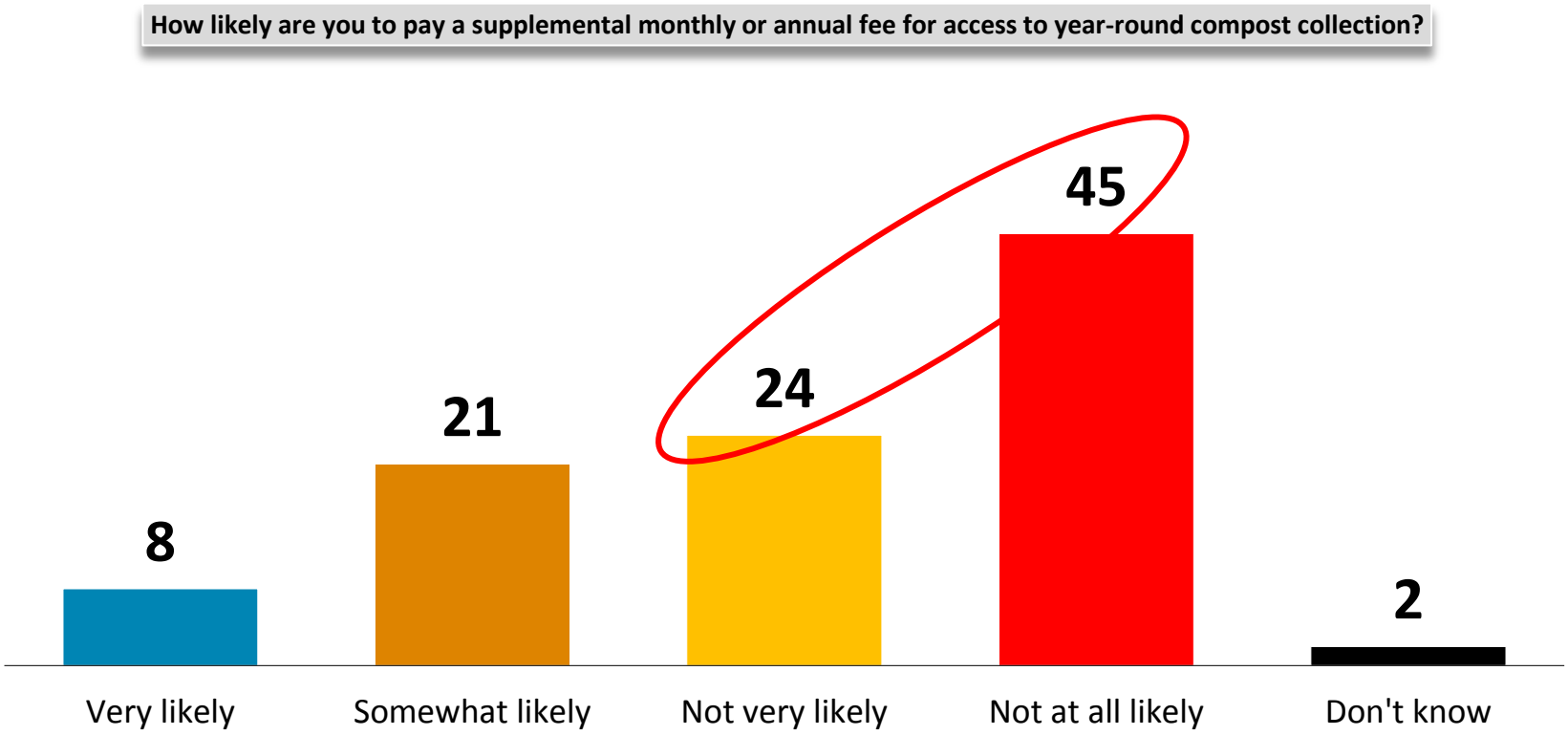


Disproportionately - have yard waste they would like collected once per month
Women < 50 (20%)
White 50+ (21%)
Ward 2 Women (25%)
Ward 3 Women (21%)
Ward 3 Men (24%)
Ward 3 50+ (25%)

Most likely to have waste in need of collecting weekly

Q12: During the winter months of December through March when yard waste is not collected by the city, how often do you find that you have yard waste that you would like to have collected?

However, only 28%* of residents say they would be likely to pay a supplemental monthly or annual fee for access to year-round compost collection. Roughly one-quarter of residents say they are “not very” likely to pay any sort of fee for such access, while nearly half say they are “not at all” likely.

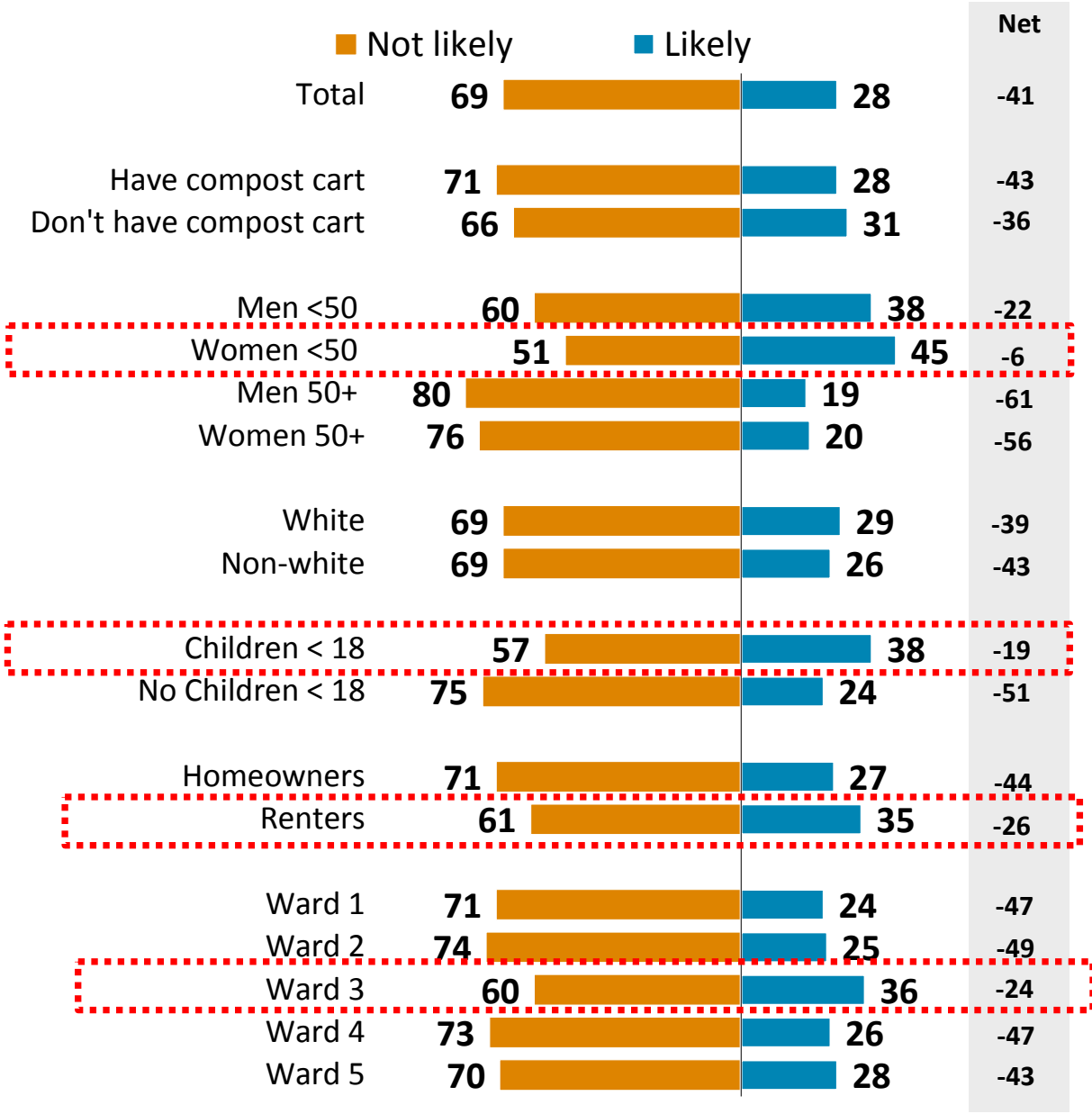


Q24: Considering that the City currently does not provide collection of yard and food waste from December through March, how likely are you to pay a supplemental monthly or annual fee for access to year-round compost collection? Very likely, somewhat likely, Not very likely, not at all likely?

*Difference is due to rounding when segregating the “very likely” and “somewhat likely” responses.

Currently, no groups have a majority of respondents who say they would be likely to pay a supplemental fee for year round access to compost collection. Younger residents, particularly women, parents of children under the age of 18, renters, and residents of Ward 3 are the most likely groups to say they would pay a fee.

Older residents, particularly older men, are the most resistant.

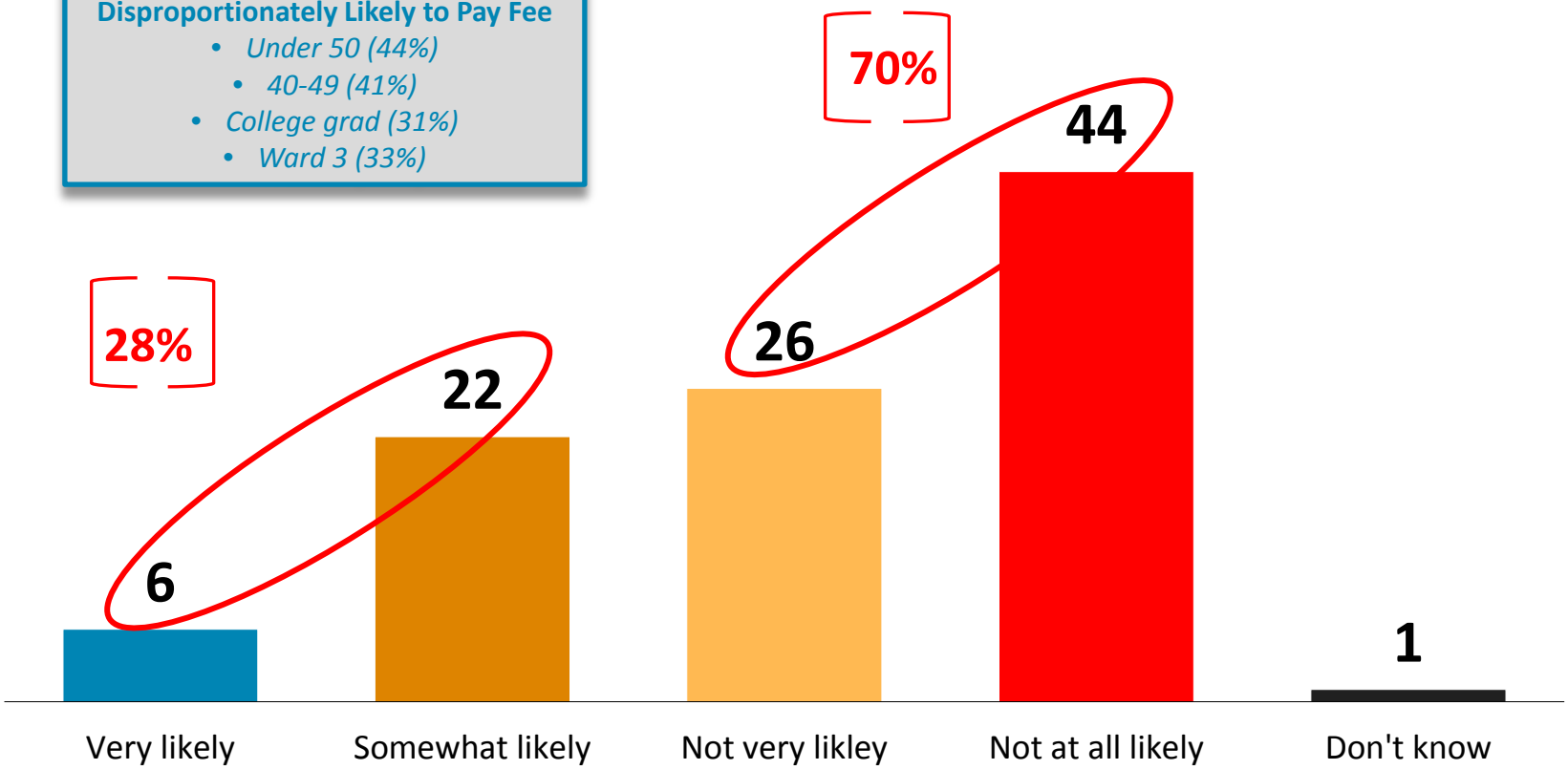


Q24: Considering that the City currently does not provide collection of yard and food waste from December through March, how likely are you to pay a supplemental monthly or annual fee for access to year-round compost collection? Very likely, somewhat likely, Not very likely, not at all likely?

Considering only residents who own a city compost cart, there is similar lack of willingness to pay a supplemental fee for year round access to compost collection, with a strong majority (70%) "not very" or "not at all" likely to pay. Just over one-fourth of these residents say they would be willing to pay a fee.

***Likelihood to pay a supplemental fee among residents who own a brown compost cart?**

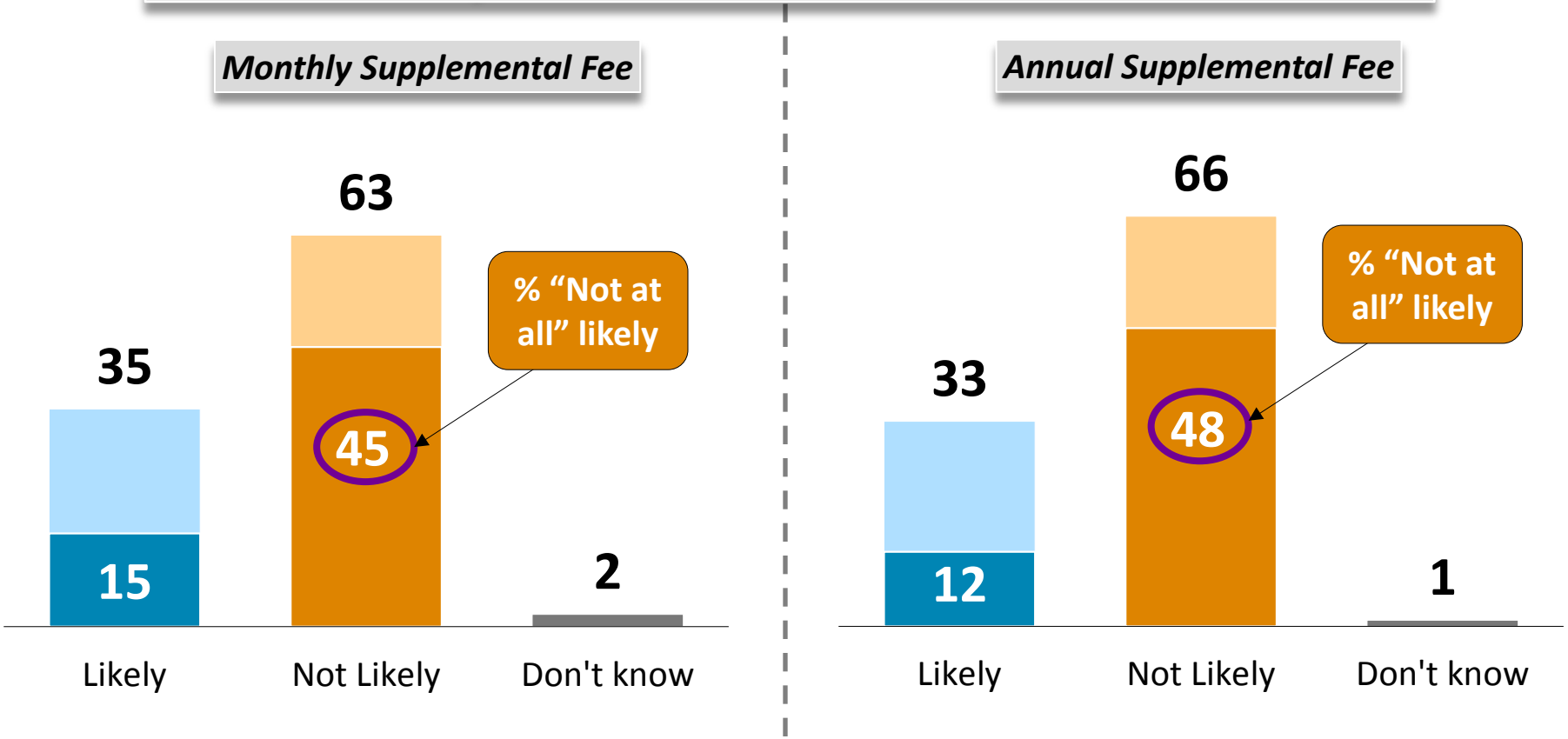
Disproportionately Likely to Pay Fee
- *Under 50 (44%)*
- *40-49 (41%)*
- *College grad (31%)*
- *Ward 3 (33%)*



Q24: Considering that the City currently does not provide collection of yard and food waste from December through March, how likely are you to pay a supplemental monthly or annual fee for access to year-round compost collection? Very likely, somewhat likely, Not very likely, not at all likely?
*respondents who answered yes to question #9: "Do you currently own a brown city of Ann Arbor Compost Cart" (N=370 Respondents)

When a supplemental fee increase for compost collection from December through March *is specified*, the percentage of respondents willing to pay ticks up slightly to around one-third, whether it is characterized as about $5 to $7 every month over a 12-month period, or $60 to $80 per year. Another 1-in-6 residents say they would not be very likely to pay such a fee (monthly or annually), but do not foreclose on the notion entirely. In both cases, however, nearly half say they would not be at all likely to pay a supplemental fee.

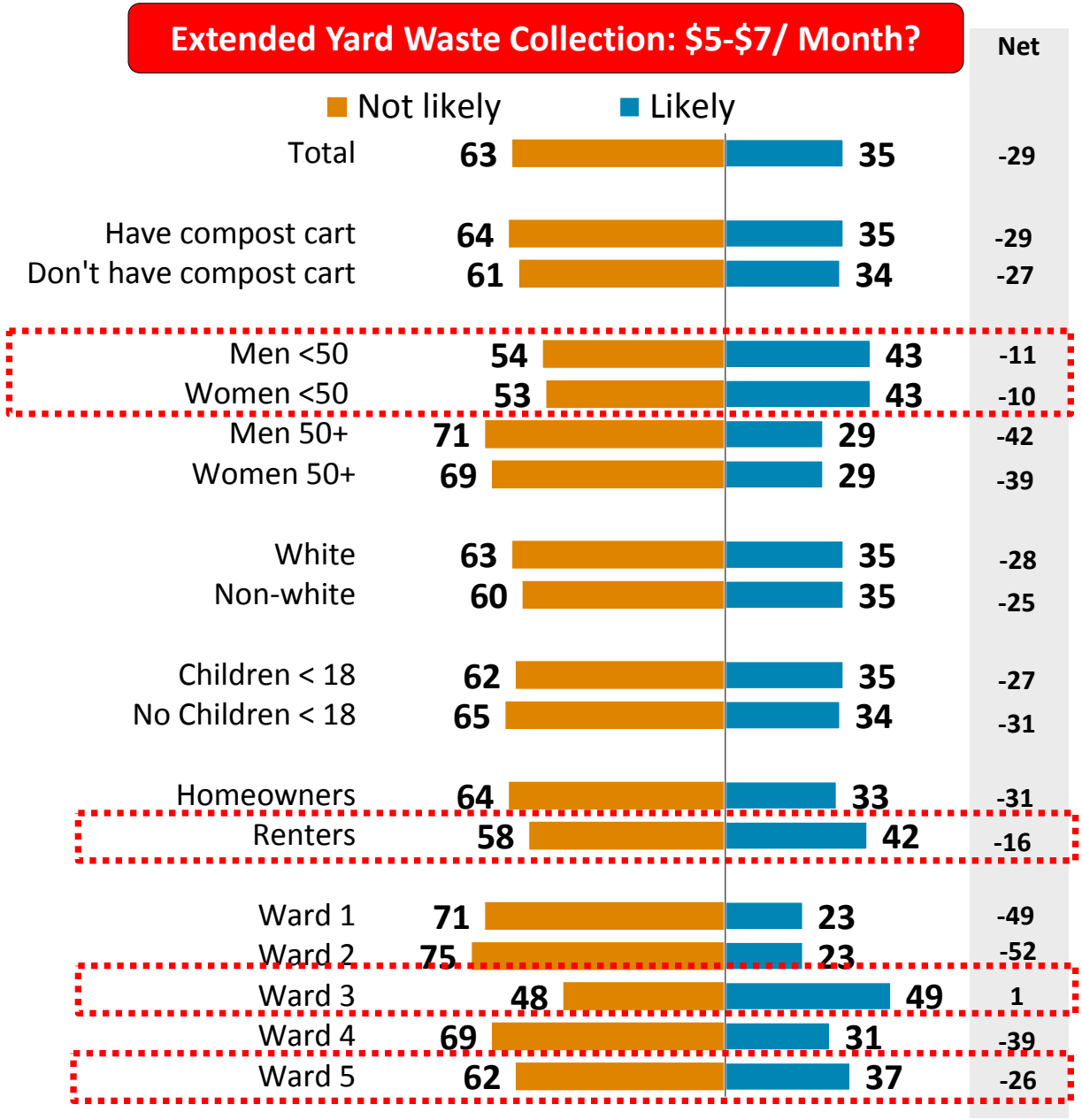
Likelihood to Pay for Winter Month Yard Waste Collection Service



*Darker colors indicate intensity

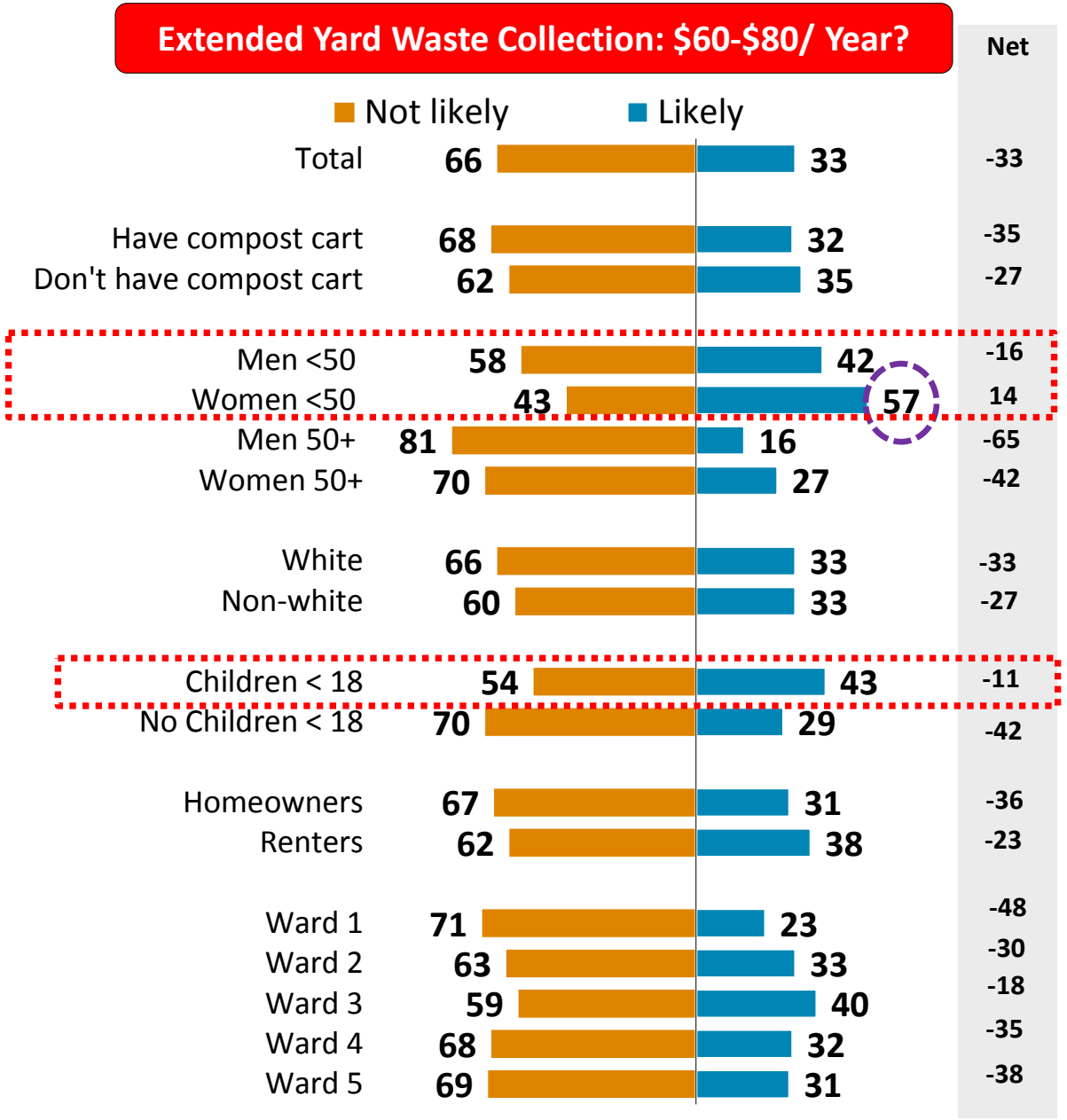
Q28: Considering your other household expenses, how likely are you to pay a supplemental fee of about $5 to $7 every month over a 12-month period, if it enabled the City to provide compost collection from December through March, given that this is not a current service offered by the City?
Q29:Considering your other household expenses, how likely are you to pay a supplemental fee of $60 to $80 per year, if it enabled the City to provide compost collection from December through March, given that this is not a current service offered by the City?

Of the groups who are most likely to say they would pay a supplemental fee, younger residents, residents of Ward 3 and renters are more likely to prefer a monthly fee to an annual fee. Residents of Ward 5 are also more amenable to this option.



Q28: Considering your other household expenses, how likely are you to pay a supplemental fee of about $5 to $7 **every month** over a 12-month period, if it enabled the City to provide compost collection from December through March, given that this is not a current service offered by the City?

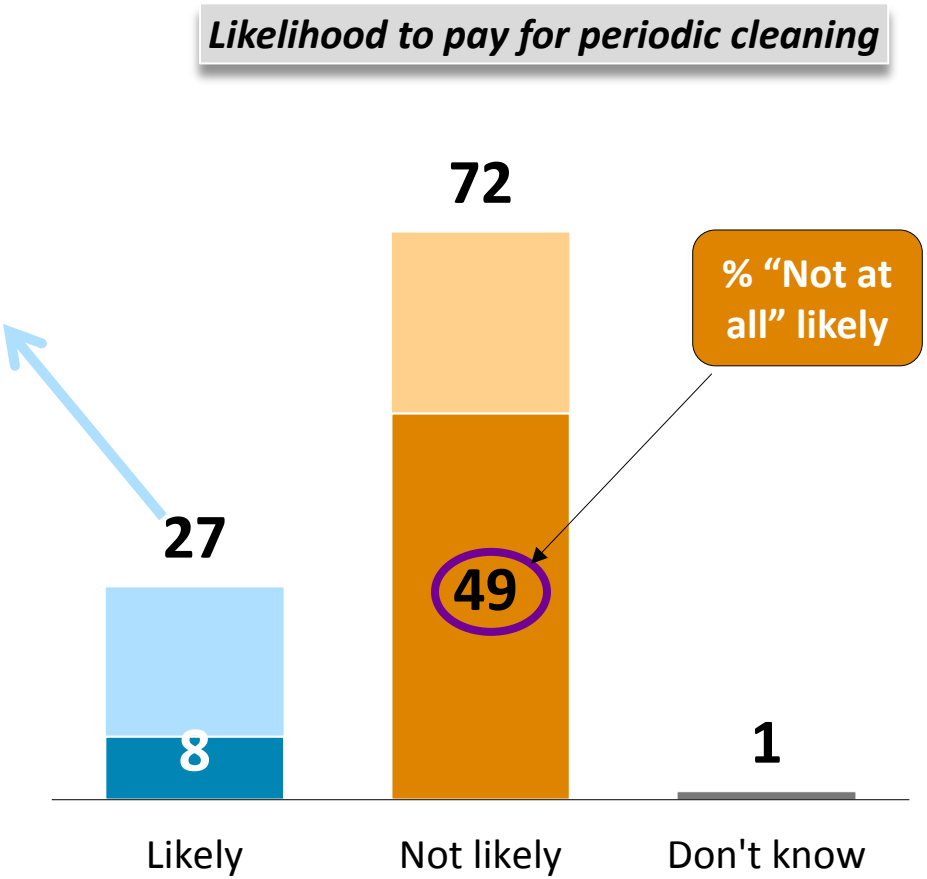
An annual supplemental fee is the preferred option among parents of children under 18, residents of Ward 2, and younger residents, particularly younger women – the only group with a majority saying they would be likely to pay the annual fee.



Q29:Considering your other household expenses, how likely are you to pay a supplemental fee of $60 to $80 **per year**, if it enabled the City to provide compost collection from December through March, given that this is not a current service offered by the City?

Just over one-in-four residents who have a brown compost cart say they would be likely to schedule and pay for periodic cleaning of the cart by the City if such a service were an option. Younger residents (both men and women under 50) with college degrees, residents with an affiliation with the University of Michigan, and renters are the most likely to pay for this service.

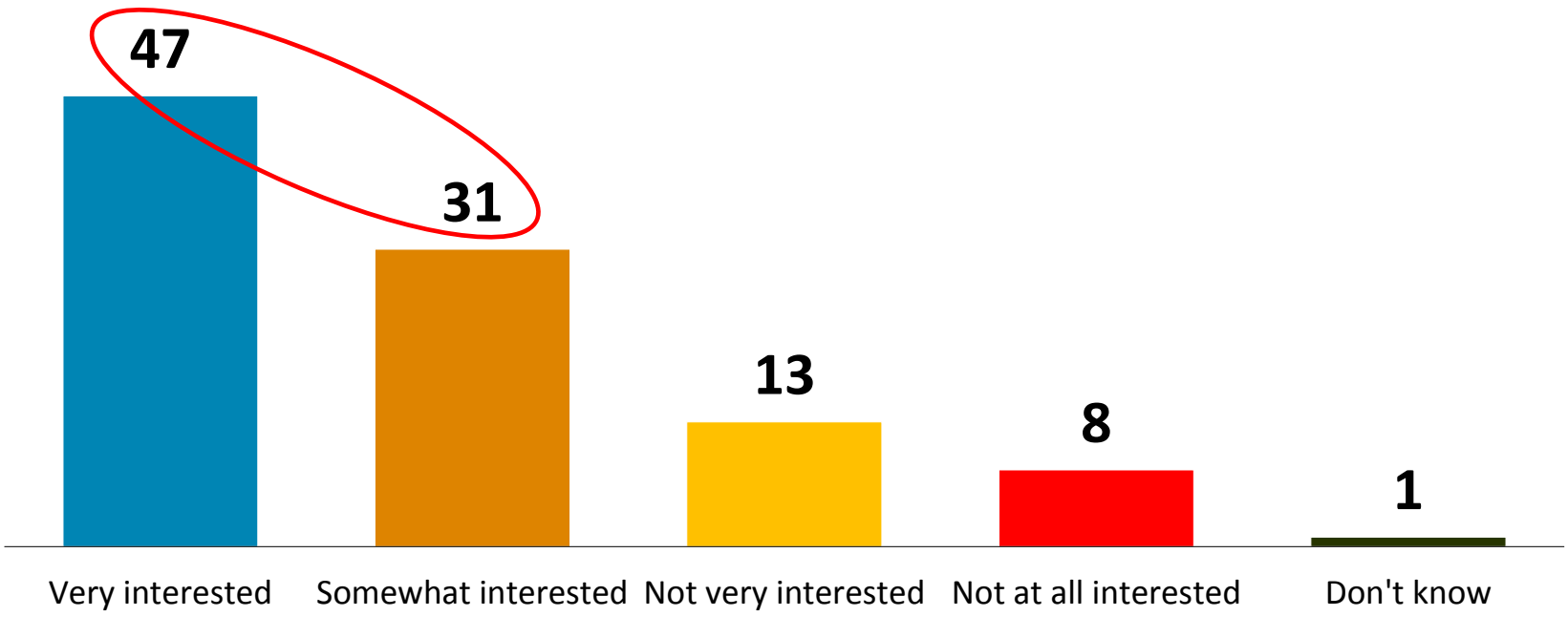
Those who are disproportionately likely to pay
College under 50 (43%)
White <50 (39%)
Under 50 (38%) – mostly 30-39
University affiliation (37%)
*Renters (36%)
Post graduate (34%)
Ward 4 (31%)



Q22: If you currently have a brown compost cart, how likely would you be to schedule and pay for periodic cleaning of the cart by the City if the service was an option? Very likely, somewhat likely, Not very likely, not at all likely
*Small n size (n=33)

More than three-quarters of residents say they are *interested* in reducing the amount of wasted food – including uneaten and spoiled food – that their household produces, including a near majority of residents who say they are "very" interested.

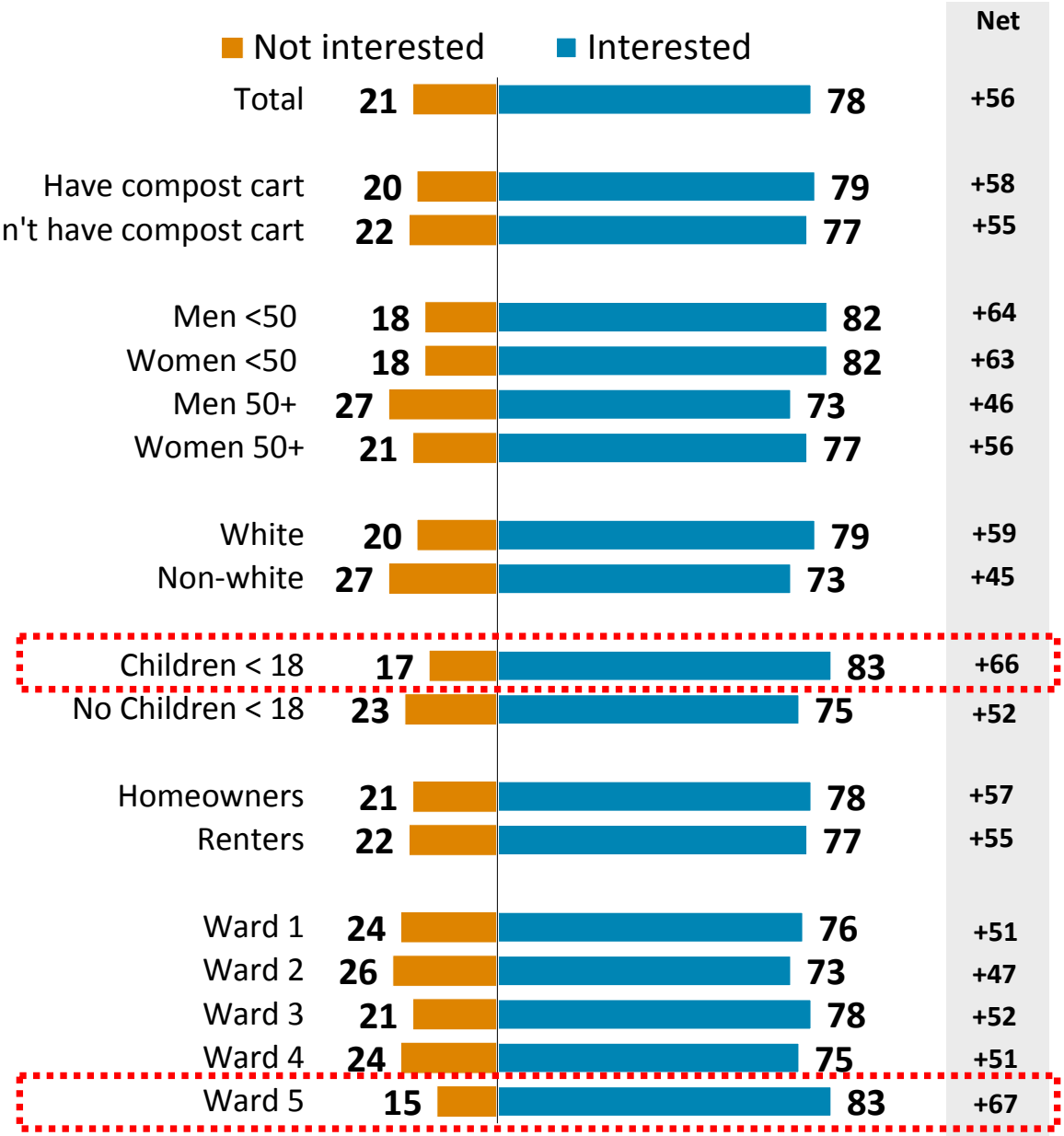
How interested are you in reducing the amount of wasted food – including uneaten and spoiled food – that your household produces?



Q18: How interested are you in reducing the amount of wasted food – including uneaten and spoiled food – that your household produces? Very interested, somewhat interested, not very interested, or not at all interested?

Residents who are most interested in reducing the amount of food waste their households produce – representing solid educational targets moving forward – include residents under the age of 50, parents of children under the age of 18, and residents living in Ward 5.

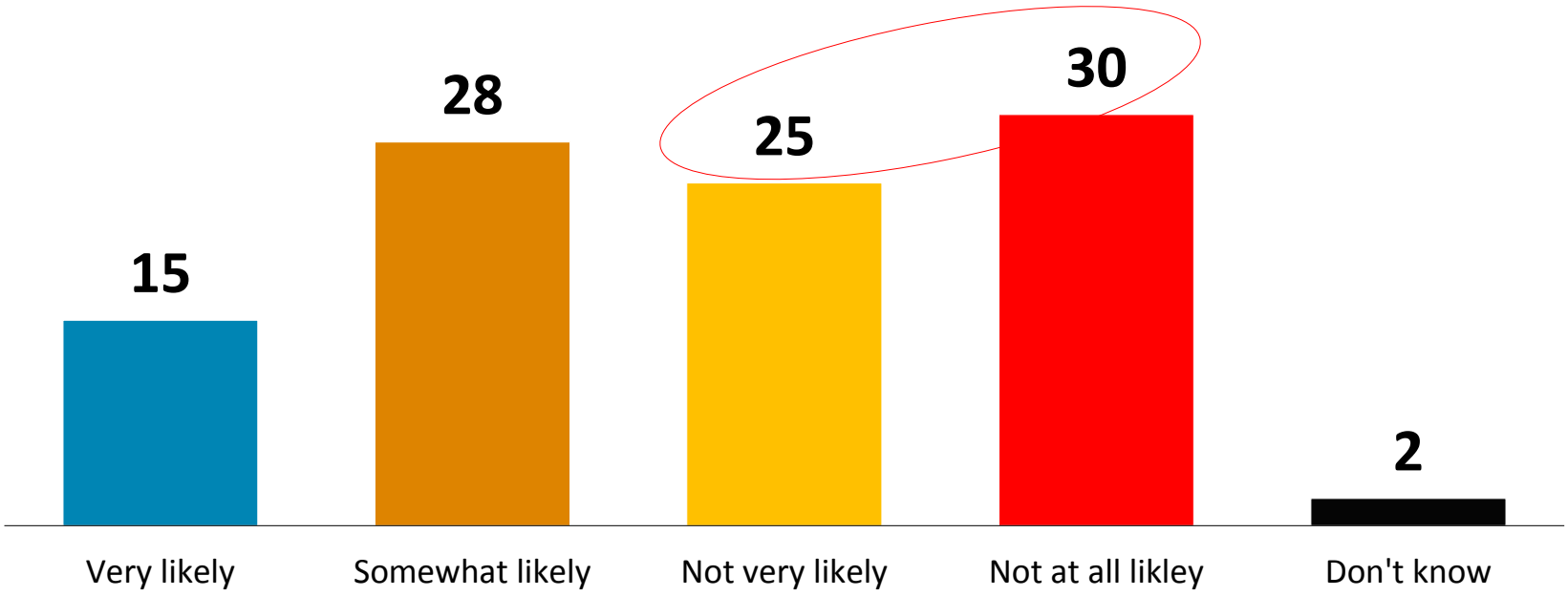
Only about one-in-five residents in total say they are "not very" or "not at all" interested. The most likely groups to say this are non-white residents and older men, though significant majorities of each still express overall interest.



Q18: How interested are you in reducing the amount of wasted food – including uneaten and spoiled food – that your household produces? Very interested, somewhat interested, not very interested, or not at all interested?

Despite strong levels of interest in reducing food waste, fewer residents say they are likely to use a checklist or set of educational tools in their household to track their food wasting and disposal habits, with the goal of reducing the amount of food they send for disposal or composting. In fact, a majority of residents say they are "not very" or "not at all" likely to use such a list.

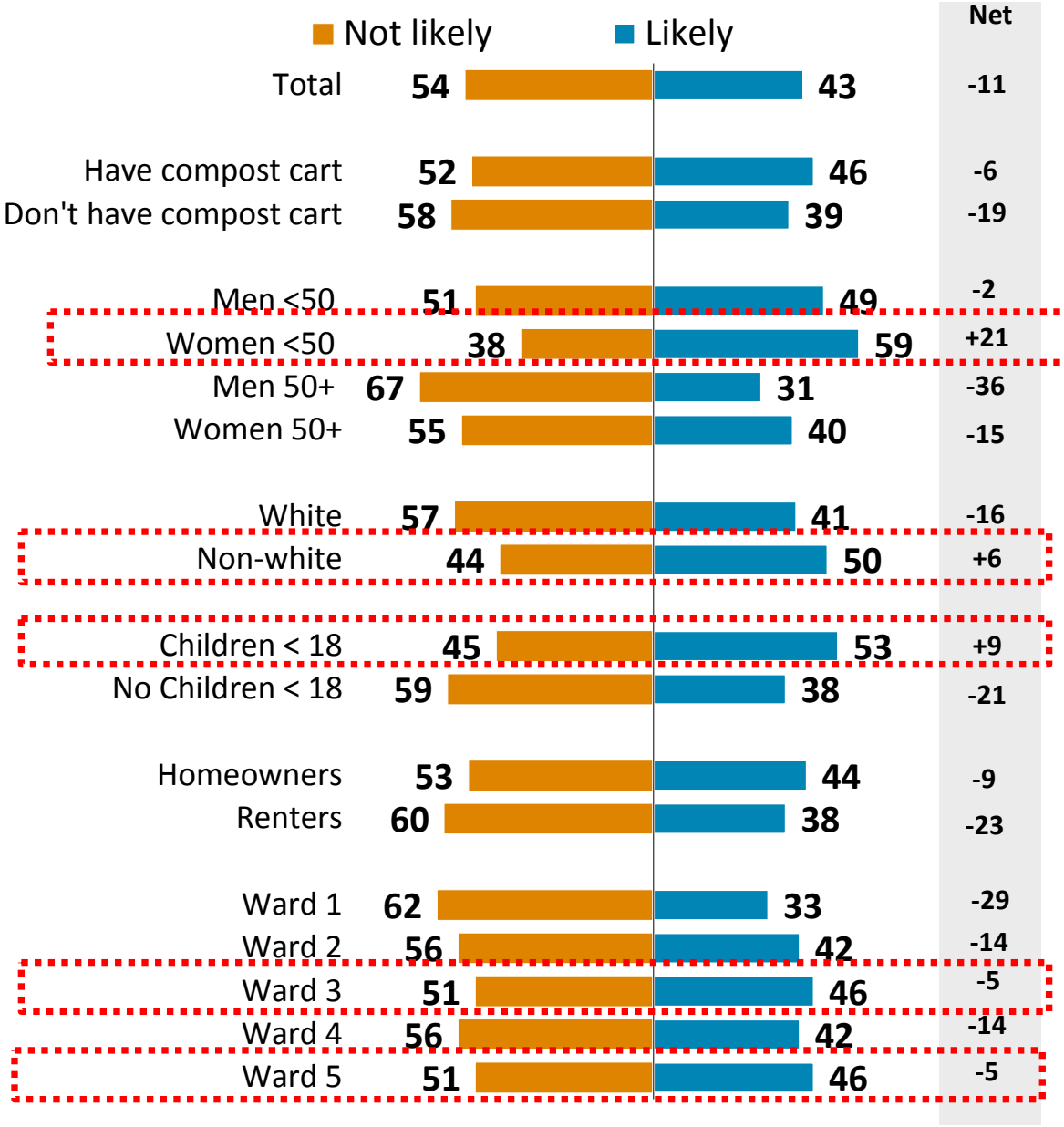
How likely are you to use a checklist or set of educational tools in your household to track your food wasting and disposal habits?



Q19: How likely are you to use a checklist or set of educational tools in your household to track your food wasting and disposal habits, with the goal of reducing the amount of food you send for disposal or composting? Very likely, somewhat likely, not very likely, or not at all likely?

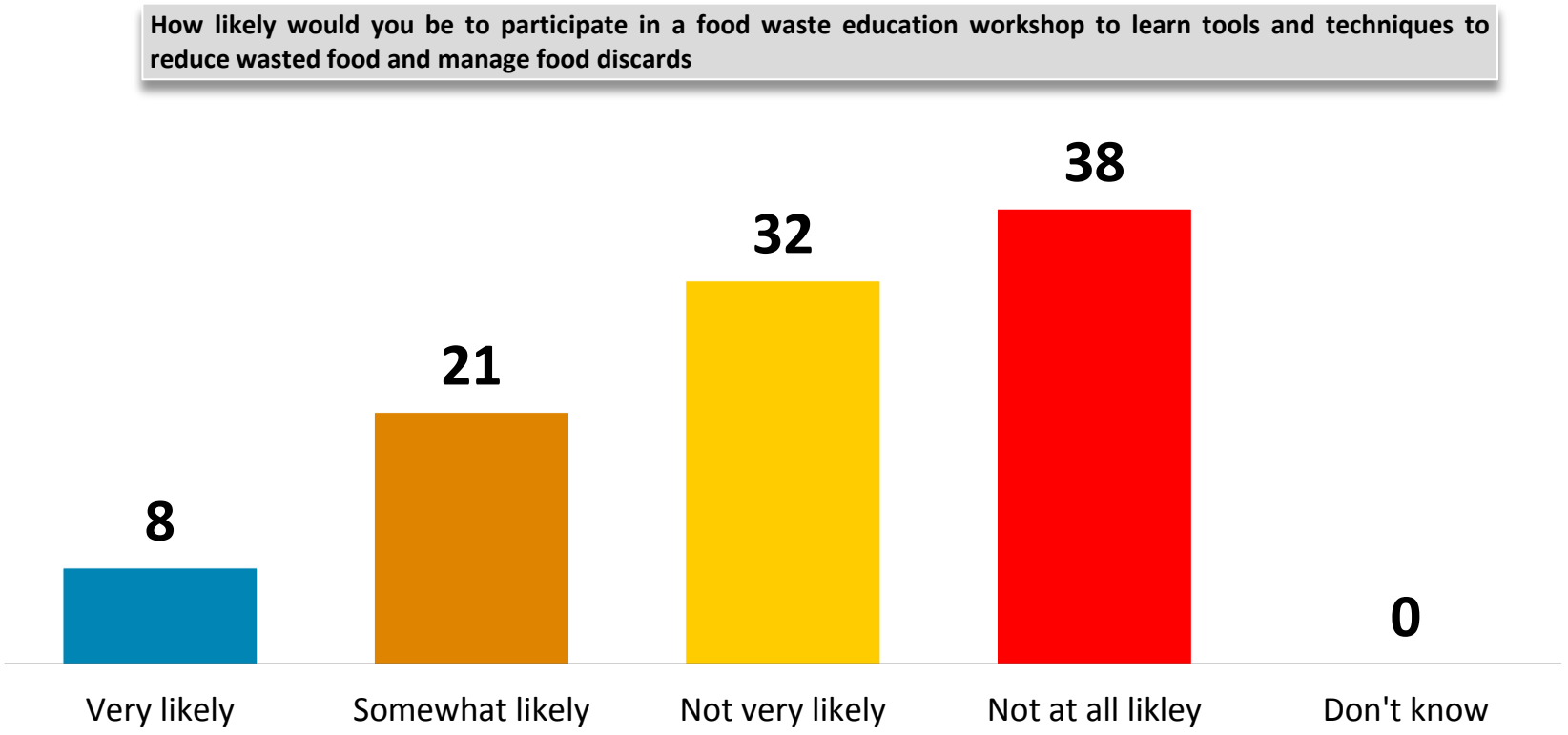
Residents who say they are most likely to use a checklist to track and reduce the amount of food waste their households produces include parents of children under the age of 18, younger women, non-white residents, and residents living in Wards 3 and 5.

Continuing a trend evident throughout the data, older men are among the least likely to say they would avail themselves of these additional services. Residents of Ward 1 are also more resistant to the idea than residents of other wards.



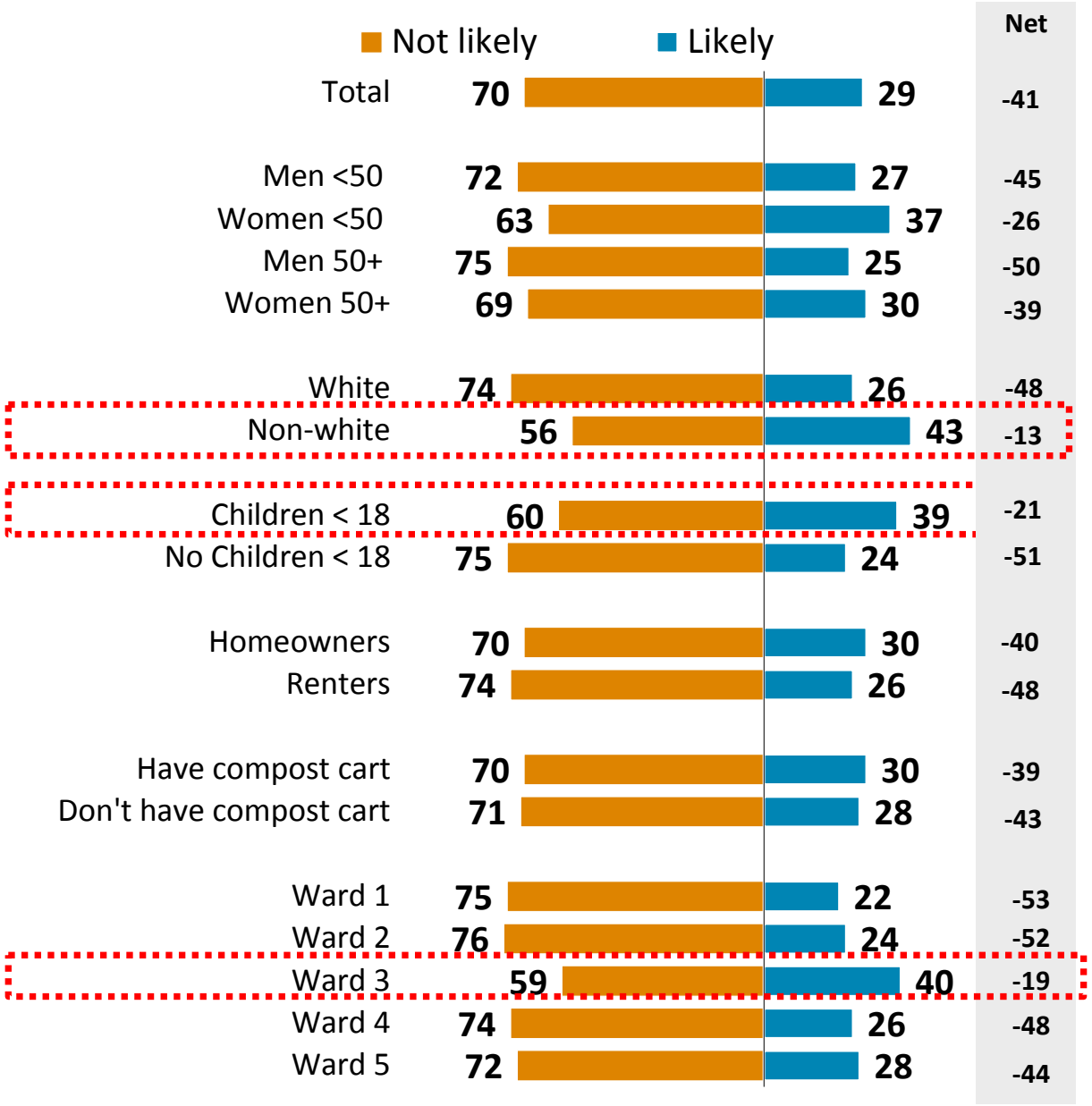
Q19: How likely are you to use a checklist or set of educational tools in your household to track your food wasting and disposal habits, with the goal of reducing the amount of food you send for disposal or composting? Very likely, somewhat likely, Not very likely, or not at all likely?

About three-in-ten residents say they would be likely to participate in a food waste education workshop to learn tools and techniques to reduce wasted food and manage food discards.



Q20. How likely would you be to participate in a food waste education workshop to learn tools and techniques to reduce wasted food and manage food discards? Very likely, somewhat likely, Not very likely, or not at all likely?

The groups of residents most likely to express a willingness to participate in a food waste education workshop to learn the tools and techniques to reduce and manage food waste include parents of children under the age of 18, non-white residents, and residents living in Ward 3.



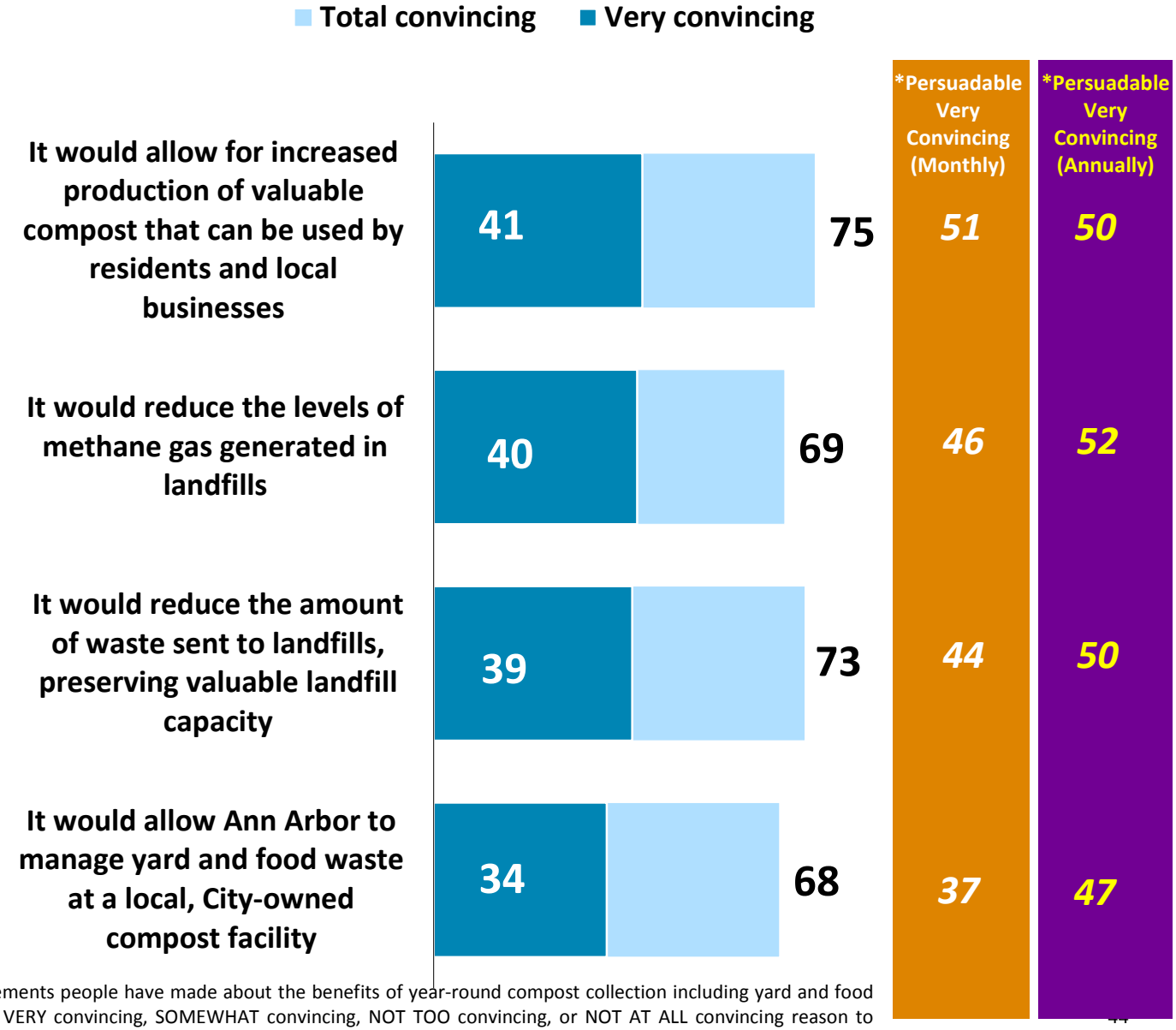
Q20. How likely would you be to participate in a food waste education workshop to learn tools and techniques to reduce wasted food and manage food discards? Very likely, somewhat likely, Not very likely, or not at all likely?

Assessing the Impact of Messaging on Residents' Attitudes and Cost Sensitivity

Overwhelming majorities of residents find statements about the benefits of year-round compost collection including yard and food waste convincing. The most convincing messages in particular are those that frame increased production of compost as helping residents and local businesses, as well as those that focus on reducing the amount of waste going to landfills ***and*** the levels of methane gas generated in landfills. After hearing these statements, residents' levels of interest and likelihood to pay a supplemental fee for this service increases modestly from where it starts out earlier in the survey.

Pro-Year Round Collection Statements

Residents respond very positively to a series of statements in support of the city providing year-round compost collection, especially those that emphasize helping residents and local businesses and residents through increased compost production;
reducing the amount of waste going to landfills; ***and*** reducing the levels of methane gas generated in landfills. Residents are slightly less persuaded by a message that focuses on how this program would allow Ann Arbor to manage yard and food waste at a local, City-owned compost facility rather than sending waste to a more distant, privately-owned landfill, though this remains a very convincing message overall.



Q30. Now, I'm going to read you a couple brief statements people have made about the benefits of year-round compost collection including yard and food waste. Please tell me whether each statement is a VERY convincing, SOMEWHAT convincing, NOT TOO convincing, or NOT AT ALL convincing reason to support the city providing year-round compost collection.

*Persuadable columns represent respondents who say they are not likely to pay a fee or don't know on questions 28 or 29, but then say they are likely to pay a fee after hearing the statements when re-asked on questions 32 or 33. (Monthly Cost: 59 respondents) (Annual Cost: 54 respondents)

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Younger residents, especially younger women, parents of children under the age of 18, and white residents are among the most likely to find the pro- year-round compost collection statements persuasive. They especially respond to arguments that highlight how increased compost production can help residents and local businesses and the goal of reducing methane emissions from local landfills. The latter in particular fits the environmental frame that other data points show to be particularly resonant among younger residents.

% Very Convincing	Total	Men < 50	Women < 50	Men 50+	Women 50+	White	Non-white	Children < 18	No children
It would allow for increased production of valuable compost that can be used by residents and local businesses	41	48	52	33	37	42	39	44	40
It would reduce the levels of methane gas generated in landfills	40	46	59	28	36	40	39	43	38
It would reduce the amount of waste sent to landfills, preserving valuable landfill capacity	39	47	50	33	33	41	34	40	39
It would allow Ann Arbor to manage yard and food waste at a local, City-owned compost facility	34	33	39	30	35	34	34	33	35

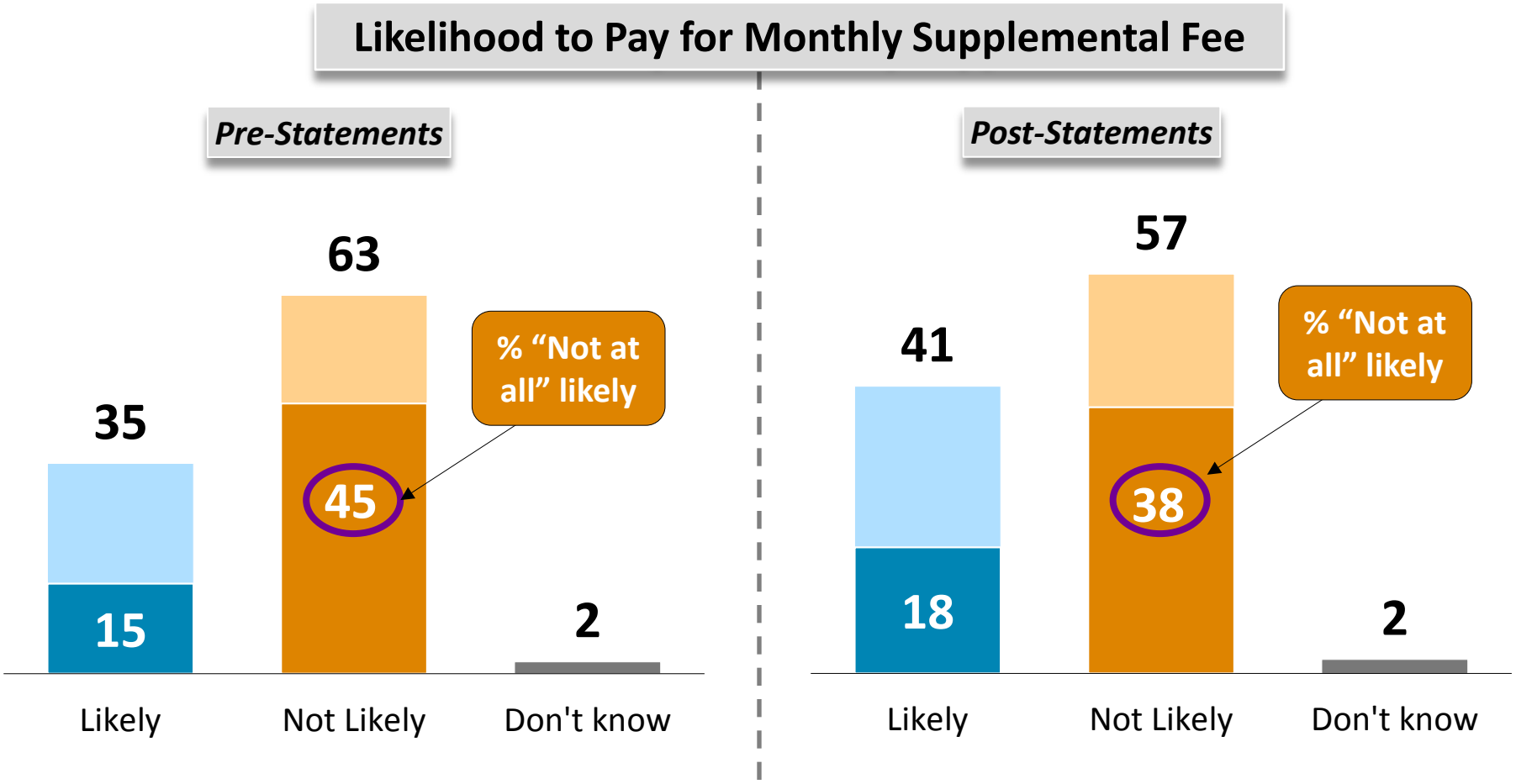
Q30. Now, I'm going to read you a couple brief statements people have made about the benefits of year-round compost collection including yard and food waste. Please tell me whether each statement is a VERY convincing, SOMEWHAT convincing, NOT TOO convincing, or NOT AT ALL convincing reason to support the city providing year-round compost collection. If you are not sure how you feel about a particular item, please say so.

Renters and residents of Wards 3, 4, and 5 are additional groups that respond extremely positively to the statements in support of year-round compost collection. Meanwhile, residents of Ward 2 are more muted in their reaction to each statement.

% Very Convincing	Total	Owners	Renters	Have Cart	No Cart	Ward 1	Ward 2	Ward 3	Ward 4	Ward 5
It would allow for increased production of valuable compost that can be used by residents and local businesses	41	36	62	39	45	40	25	47	43	45
It would reduce the levels of methane gas generated in landfills	40	37	53	39	43	35	33	45	40	40
It would reduce the amount of waste sent to landfills, preserving valuable landfill capacity	39	37	50	38	42	29	25	48	45	40
It would allow Ann Arbor to manage yard and food waste at a local, City-owned compost facility	34	33	40	34	35	25	20	42	35	39

Q30. Now, I'm going to read you a couple brief statements people have made about the benefits of year-round compost collection including yard and food waste. Please tell me whether each statement is a VERY convincing, SOMEWHAT convincing, NOT TOO convincing, or NOT AT ALL convincing reason to support the city providing year-round compost collection. If you are not sure how you feel about a particular item, please say so.

After hearing these statements, residents' interest and likelihood to pay a monthly supplemental fee for this service increases slightly from where it starts out earlier in the survey.



*Darker colors indicate intensity

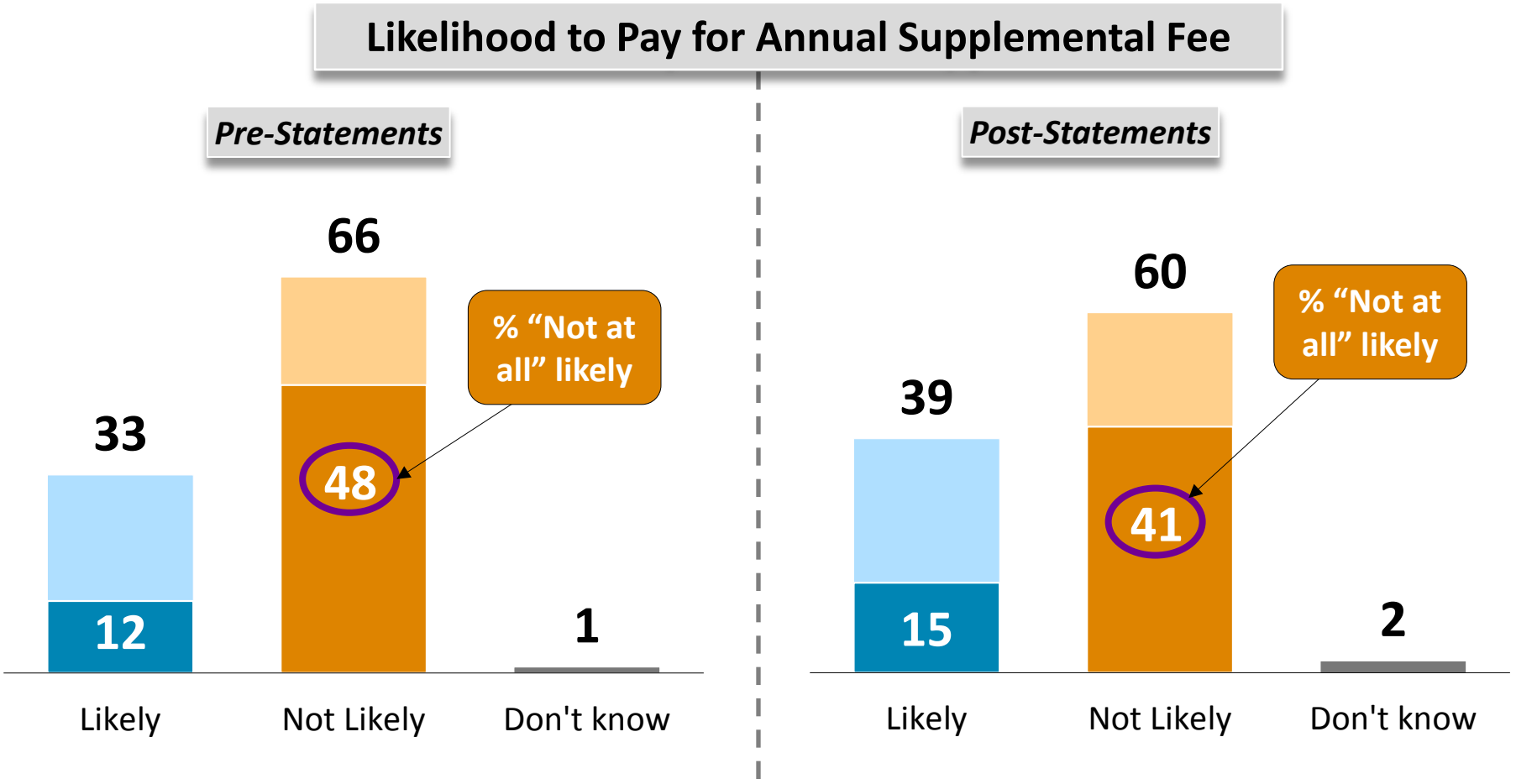
Q 28 (Pre-statement) & Q32 (Post-statement): Considering your other household expenses, how likely are you to pay a supplemental fee of about $5 to $7 every month over a 12-month period, if it enabled the City to provide compost collection from December through March, given that this is not a current service offered by the City?

The most noticeable shifts in willingness to pay a monthly supplemental fee occur with younger men, parents of children under the age of 18, and residents living in Wards 2 and 4.

% Likelihood to Pay Monthly Supplemental Fee			
Demographic	Pre Message	Post Message	Shift
Total	**35**	**41**	**+6**
Have cart	35	41	**+6**
No cart	34	43	**+9**
Men < 50	43	55	**+12**
Women < 50	43	52	**+9**
Men 50+	29	33	**+4**
Women 50+	29	33	**+4**
White	35	41	**+6**
Non-white	35	42	**+7**
Children < 18	35	47	**+13**
No Children	34	38	**+4**
Homeowners	33	39	**+6**
Renters	42	49	**+7**
Ward 1	23	27	**+4**
Ward 2	23	33	**+10**
Ward 3	49	52	+3
Ward 4	31	42	+11
Ward 5	37	42	+5

Q 28 (Pre-statement) & Q32 (Post-statement): Considering your other household expenses, how likely are you to pay a supplemental fee of about $5 to $7 every month over a 12-month period, if it enabled the City to provide compost collection from December through March, given that this is not a current service offered by the City?

There is a similar slight increase in resident's willingness to pay an *annual* supplemental fee following the supportive statements of year-round compost collection.



*Darker colors indicate intensity

Q 29 (Pre-statement) & Q33 (Post-statement): Considering your other household expenses, how likely are you to pay a supplemental fee of $60 to $80 per year, if it enabled the City to provide compost collection from December through March, given that this is not a current service offered by the City? Very likely, somewhat likely, Not very likely, or not at all likely?

The most noticeable shifts in willingness to pay an annual supplemental fee occur with older women, non-white residents, renters, and residents living in Ward 2.

% Likelihood to Pay Annual Supplemental Fee			
Demographic	Pre Message	Post Message	Shift
Total	**33**	**39**	**+6**
Have cart	32	39	+7
No cart	35	40	+5
Men < 50	42	43	+1
Women < 50	57	62	+5
Men 50+	16	24	+8
Women 50+	27	37	+10
White	33	39	+6
Non-white	33	42	+9
Children < 18	43	50	+7
No Children	29	35	+6
Homeowners	31	37	+6
Renters	38	49	+11
Ward 1	23	29	+6
Ward 2	33	43	+10
Ward 3	40	45	+5
Ward 4	32	39	+7
Ward 5	31	37	+6

Q 29 (Pre-statement) & Q33 (Post-statement): Considering your other household expenses, how likely are you to pay a supplemental fee of $60 to $80 per year, if it enabled the City to provide compost collection from December through March, given that this is not a current service offered by the City? Very likely, somewhat likely, Not very likely, or not at all likely?

LRP LAKE RESEARCH PARTNERS

Strategy • Precision • Impact

Washington, DC | Berkeley, CA | New York, NY
LakeResearch.com
202.776.9066

Daniel Gotoff
dgotoff@lakeresearch.com

Corey Teter
cteter@lakeresearch.com

EDUCATION

RESIDENTS

BUSINESSES

ATTACHMENT B
BENCHMARK COMMUNITY CASE STUDIES

ATTACHMENT B
BENCHMARK COMMUNITY CASE STUDIES

B.1 City of Seattle, Washington

The City of Seattle has implemented mandatory diversion requirements for organic wastes (including yard waste and food waste) from both the residential and commercial waste streams. Mandatory organics diversion was implemented January 1, 2015, representing the culmination of an extended and gradual process of increasing efforts to divert organic wastes:

- 1989: Yard waste banned from residential garbage
  Voluntary subscription collection available to residents on a bi-weekly basis
- 2005: Food waste able to be added to compost carts
  Provided 90-gallon compost carts at no extra cost for yard waste collection subscribers
- 2009: Organics collection service mandatory for single-family residences
  Collection frequency increased from bi-weekly to weekly collection
  Offered 3 different can sizes (90-gallon, 32-gallon, 12-gallon mini can) and prices
- 2011: Organics collection service mandatory for multi-family residences
- 2015: Food waste banned from residential and commercial garbage

Information provided by Seattle Public Utilities (SPU), the City department which manages solid waste operations) indicates that the recent ban on food waste in residential and commercial garbage resulted from stagnation in the City's diversion rate and a continued high proportion of the waste stream comprised of food waste and compostable paper.

The City of Seattle contracts with two private haulers for the collection of all residential and commercial waste generated in the City. The private haulers have assigned service areas within the City, and residents and businesses select the garbage service level that they desire through the City. Residents also select their desired recycling and organics service levels. Residents can request an exemption from organics service if they perform backyard composting of food waste; currently approximately 3% of households receive an exemption. Recycling and organics services through the City's private hauler contracts are optional for businesses, as Washington law prohibits local governments from implementing exclusive collection rights for diverted materials. Businesses therefore are able to contract with another hauler of their choosing at rates established by those haulers if they wish.

City-contracted haulers are responsible for providing all collection carts, dumpsters, and collection services. For residents, indoor collection containers, including kitchen containers and compostable bags, are available upon request and based on availability. Kitchen containers are often available for pickup at community centers or given out at public events; kitchen containers are not provided to all customers, as this was determined to not be cost-effective. Compostable bags are periodically available for residents to pick up as well, when bag manufacturers looking to gain market interest offer large quantity samples to the City. In general, SPU encourages residents to use their own container to collect food waste in the kitchen and provides guidance on its website to assist residents in managing food wastes. For businesses, SPU regularly distributes indoor cans for collection of food waste to assist businesses to establish organics diversion operations and overcome barriers related to the perception that segregating food wastes will create odor or vermin issues and be dirty (the "yuck" factor).

Multi-family properties are provided organics collection service under the City collection contracts. Multi-family properties typically utilize 96-gallon carts for collection, and the contract specifies the hauler will place a clean compostable can liner in the cart with each collection to maintain cleanliness. As an added incentive to engage multi-family properties in the City's organics program, a designated resident advocate at the property (referred to as Friend of Recycling and Composting, or FORC) can register with the City to help educate residents and monitor containers. In exchange, SPU provides a one-time $100 bill credit to the property.

In certain areas of the City, traditional cart or dumpster collection service is challenging due to narrow and congested alleys. In 2009, the City implemented its Clear Alleys Program, which prohibits permanent placement of garbage and recycling containers in the public way in alleys. The Clear Alleys Program requires businesses and multi-family properties in designated business districts to either store collection containers on private property (such as within their business), obtain a street use permit, or utilize a prepaid bag service for garbage and recycling collection. Bags or containers stored on private property can then be set out overnight or within 3 hours of the scheduled pickup time.

Haulers bill the City for collection services rendered in accordance with the established contract rates. SPU then bills customers based on their selected service levels and SPU's published rates for each service. SPU's rates are inclusive of costs for contracted collection and disposal / processing costs, as well as costs associated with contract administration, education and outreach, customer service, billing, and enforcement. This structure enables SPU to establish service rates that result in an economic incentive for residents and businesses to divert recyclables and organics. Garbage rates subsidize the costs of recycling and organics collection.

As reported by SPU, collection costs increased an estimated 20-30% in 2009, when mandatory collection requirements were implemented for residents. This was due to a combination of factors, including increasing organics collection frequency from every other week to weekly and a market price adjustment after expiration of the prior collection contracts which had low inflation rates over an extended period of time.

Current SPU service rates charged to residential and commercial customers are reflected in Table B-1. Residential organics rates are significantly lower than the same volume of garbage service. Commercial organics rates are set 32% lower than equivalent garbage rates[32]. As indicated by SPU, cost incentives are not enough to drive participation in organics collection programs when the program is voluntary, because even when organics collection service is lower than garbage collection costs to the business continue to be neutral or increased with the added service. Instead, businesses were more likely to participate when service was voluntary because they believed they were "doing the right thing", supporting sustainability and waste diversion goals. Now, with mandatory diversion, businesses participate because it is the law.

[32] SPU indicates that the contracted collection cost for commercial organics is greater than for commercial garbage. Garbage collection fees therefore subsidize organics collection. This is also true for recycling, which is provided at no added cost for a base level of service.

TABLE B-1. MONTHLY COLLECTION RATES (SEATTLE, WASHINGTON)

Container Size	Garbage Rate	Organics Rate
Residential Collection Rates		
12-gallon micro-can	$22.85	$6.05
20-gallon mini-can	$28.00	Not offered
32-gallon cart	$36.45	$9.10
64-gallon cart	$72.90	Not offered
96-gallon cart	$109.35	$11.65
Commercial Collection Rates		
Base account fee	$27.00	Not applicable
32-gallon cart	$49.58	$30.74
64-gallon cart	$96.78	$60.00
96-gallon cart	$113.45	$70.34
1 cy dumpster	$172.82	$107.15
1.5 cy dumpster	$205.03	$127.12
2 cy dumpster	$269.43	$167.05
3 cy dumpster	$462.66	$286.85
4 cy dumpster	$591.48	$366.72
5 cy dumpster	$720.30	$446.59
6 cy dumpster	$849.11	$526.45
8 cy dumpster	$1,106.75	$686.19

Source:
1. Seattle Public Utilities website. Rates are effective as of April 1, 2017.

Notes:
1. Commercial organics collection rates reflect a 32% decrease from trash collection rates for each container size.
2. Residents are provided recycling collection with no added service fee.
3. Commercial customers are provided up to two (2) 64-gallon carts collected weekly for recycling with no added service fee.

With respect to organics collection, because businesses are able to select an organics hauler of their choosing and not restricted to services provided by the City's contracted garbage haulers, third-party providers currently provide collection service to approximately 55% of all commercial generators, collecting nearly 95% of commercial organics tonnage. Pricing in the City collection contracts provides a cap on market pricing from competing haulers, and competing haulers therefore offer pricing at or below SPU's quoted service cost. SPU indicates that businesses requiring a base level of service (i.e., weekly collection of a single collection cart) are most likely to select collection service from the City's contracted haulers, consistent with the reported data indicating the 45% of commercial generators served by the City's haulers contribute only about 5% of diverted organics.

Currently, SPU estimates that 50-60% of food waste generated is being diverted and that approximately 80% of generators in both the residential and the commercial sector are complying with the ordinance. SPU does not anticipate that 100% diversion of all organics from the waste stream will ever be achieved, even with the ban on disposal; for planning purposes, SPU is targeting diversion of 80% of organics when the program is mature.

Organics collection quantities per residential account have increased over time as Seattle's program has evolved:

- In 2004, prior to allowing food waste to be added to organics carts, organics diversion averaged 69 pounds per household per month.
- In 2008, prior to implementation of mandatory residential organics collection service and conversion from bi-weekly to weekly collection, organics diversion averaged 87 pounds per household per month.
- In 2014, prior to implementation of mandatory organics diversion, organics diversion averaged 93 pounds per household per month.
- In 2015, the first year of implementation of mandatory organics diversion, organics diversion averaged 100 pounds per household per month.

In the commercial sector, organics collection accounts (including both City-contract customers and businesses selecting their own provider) have increased significantly over time. However, average diversion per account has declined, indicating that businesses subscribing to organics collection service in early years of the program were likely larger food waste generators. With the implementation of mandatory diversion in 2015, smaller generators are now being served, which reduces the average diversion per account. Diversion per account has declined from 29 tons per commercial account in 2008 to 14 tons per commercial account in 2015, while the total number of accounts has increased from 930 in 2008 to 4,124 in 2015.

Since implementation of the mandatory diversion requirements in 2015, SPU has opted to utilize intensive outreach and education in lieu of penalty-based enforcement. Annual education budgets in 2015 and 2016 were $1.6 million and $1.2 million respectively, providing ongoing outreach and education regarding both recycling and organics diversion requirements. SPU indicated that education has been critical to the success of its program, and that significant time and funding should be allocated to outreach. Traditionally underserved portions of the community have required greater outreach effort, with education materials translated to a number of languages and focusing on a variety of values reflecting cultural differences.

With the implementation of mandatory collection and diversion for organics, the commercial compost facilities accepting organics from the City have implemented pre-processing steps and installed additional equipment to inspect and remove contaminants and unacceptable materials from incoming organics loads. SPU indicates these steps have been necessary in order to ensure production of quality compost.

Sources:

1. Hans Van Dusen, Solid Waste Contracts Manager, Seattle Public Utilities, personal correspondence, March 2017.
2. Seattle Public Utilities website, www.seattle.gov/util, accessed March 2017.
3. Business & Organics Recovery: A Love/Mandate Relationship, presentation to Association of Oregon Recyclers, June 10, 2016.
4. SPU Quarterly Organics Report, 3rd Quarter 2016, December 1, 2016.

B.2 City of Portland, Oregon

Beginning in October 2011, the City of Portland implemented every-other-week trash collection and weekly recycling and organics collection for its residents. At the same time, Portland allowed residents to begin adding food wastes to their yard waste carts. In the first year of the program, collected organics increased by nearly 55,000 tons, from 30,600 tons in the prior year to 85,400 tons in the first year of the program. At the same time, trash tonnages declined nearly 36,000 tons, indicating a significant shift of material from trash to diverted organics.

Portland contracts with 14 private haulers to provide trash, recycling, and organics collection, with each hauler assigned an exclusive collection zone. Haulers provide residents with a 65-gallon recycling roll cart, 65-gallon composting roll cart, and 14-gallon glass bin. In addition, haulers offer residents a number of options for trash container sizes, including 20-gallon and 32-gallon cans and 35-gallon, 60-gallon, and 90-gallon roll carts serviced every-other-week. Residents may also elect to receive 32-gallon can or 35-gallon roll cart collection every four weeks, or to receive composting and recycling collection only.

Service rates are set by the City and represent weighted average rates of the individual private haulers. Rate components are built up based on trash, recycling, and organics collection charges, general and administrative charges, roll cart depreciation, maintenance and interest charges, operating margin, franchise fees, and adjustments from the sale of recyclables. Individual rate components for 35-gallon every-other-week roll cart trash service (including weekly recycling and organics collection in 65-gallon roll carts) are identified in Table B-2. Based on the rates in Table B-2, the total organics management rate is $6.92 per month compared to a trash management rate of $5.96 per month for every-other-week service and a recycling management rate of $5.25 per month.

TABLE B-2. RATE BUILD-UP, 35-GALLON TRASH ROLL CART SERVICE (PORTLAND, OREGON)

Rate Component	Rate ($/month)
Solid Waste Collection Charge	$3.14
Solid Waste Disposal Charge	$2.82
Recycling Collection Charge	$5.25
Organics Collection Charge	$4.06
Organics Tipping Charge	$2.86
General and Administrative Charge	$6.35
Roll Cart Depreciation, Interest and Maintenance	$0.34
Less, Sale of Recyclables	$0.24
Operating Margin	$2.63
Franchise Fee	$1.46
Total Rate	$29.15

The City offers kitchen containers for resident purchase for $8 as well as backyard composter for resident purchase for $49. A portion of the costs of kitchen containers and backyard

composters is subsidized by the City from revenues received from residential collection services.

Participation in the organics diversion program is voluntary; however, due to the reduced collection of trash and the universal distribution of organics collection carts, the City estimates that 90% of organics carts contain food scraps. As the City's organics program has developed, significant increases in organics diversion have been observed:

- Through 1993, organics collection was provided monthly. In 1993, residents diverted only 100 pounds of yard waste per household per year (8 pounds per household per month).
- From 1994 to 2010, organics collection was provided every-other-week. In 2010, residents diverted 523 pounds of yard waste per household per year (44 pounds per household per month).
- In 2015, with weekly organics collection the City experienced diversion of 1,016 pounds of organics per household per year (85 pounds per household per month).

Multi-family properties up to 4 units are served as part of the City's residential collection program and are provided trash, recycling, and organics collection. Multi-family properties of 5 units or more are served as part of the City's commercial collection program; at these properties, trash and recycling collection must be provided but organics collection is an optional service.

Commercial properties in Portland are provided services from private companies operating in an open-market system. A total of 35 licensed haulers provide collection services to Portland businesses. Organics collection service is available to all businesses but is not a required service except for larger commercial properties. This requirement is not currently enforced; the City is developing an enforcement strategy that will include routine inspections to increase participation. Organics collection is limited to food waste (and yard waste to the extent it is present at commercial properties), with no compostable paper or serviceware able to be included in collection currently due to processing facility limitations. Collection tonnages are not reported by the City for the commercial sector. In addition, information on service rates is not available, as haulers individually negotiate and set rates with businesses in the competitive market.

Portland employs 22 full-time staff to manage its trash and diversion programs. Staffing includes two managers, one communications professional, five customer service and regulatory staff, three policy and planning staff, seven business outreach staff, and four residential educators.

Residential education services include twice per year newsletters and hundreds of outreach events and presentations or booths at local festivals. The City has also established a Master Recycler Program, an 8-week training for community members to raise awareness of waste and diversion practices and serve as waste reduction and diversion ambassadors within the community. For multi-family properties, the City provides a range of free education materials, including door hangers, magnets, guides, and signage. City staff are available to provide delivery of outreach materials to individual units and provide presentations and site visits to motivate diversion behavior.

In the commercial sector, Sustainability at Work advisors provide business outreach to an average of 1,000 businesses annually. Advisors come on-site to complete a comprehensive sustainability assessment, highlighting opportunities for more efficient commuting and energy

and water use as well as increased sustainable purchasing, waste prevention, recycling, and food scrap collection.

Sources:
1. Amanda Romero, Conservation Program Coordinator, Bureau of Planning & Sustainability, personal correspondence, March 2017.
2. Bureau of Planning and Sustainability, *City of Portland 2016 Recycling Program Summary*, September 9, 2016.
3. Bureau of Planning and Sustainability, *New Curbside Collection Service Year One Report*, December 5, 2012.
4. Bureau of Planning and Sustainability, *Residential Curbside Collection Service Rate Study for Rates Effective July 1, 2016*, June 2016.

B.3 City of San Francisco, California

The City of San Francisco has contracted with a private company, Recology, to provide residential and commercial trash, recycling, and organics collection services since the 1930s. Because of the long-time partnership between the City and Recology, innovative and unique programs have developed and been implemented to support the City's efforts to achieve aggressive diversion goals.

With respect to organics, the City implemented requirements for mandatory participation and diversion in 2009, requiring all residents and businesses to divert their organic wastes for composting. Residents are currently provided default weekly collection of 32-gallon carts for trash, recycling, and organics[33]. Recology has submitted a proposed rate adjustment for 2018 which is currently under review, under which residents would be provided a smaller 16-gallon trash container, larger 64-gallon recycling container, and continued 32-gallon organics service as the default service. Table B-3 provides a summary of customer rate components under the current and proposed default services. The proposed service will result in a 16.4% rate increase in 2018 if approved, with reduced trash capacity and increased recycling capacity. Recology indicates that the proposed rate adjustment better reflects its true costs, with approximately half of its costs being fixed costs that are not impacted by the volume of material collected. It also continues to incentivize residents to select smaller trash collection containers to maintain a reduced rate.

TABLE B-3. RESIDENTIAL COLLECTION RATES (SAN FRANCISCO, CALIFORNIA)

	Current Service		Proposed Service	
Component	**Gallons**	**Monthly Rate**	**Gallons**	**Monthly Rate**
Unit Charge	--	$5.16	--	$20.00
Trash	32	$25.90	16	$5.22
Recycling	32	$2.06	64	$10.44
Organics	32	$2.06	32	$5.22
Total	96	$35.18	112	$40.88

[33] Residents may also select smaller or larger containers with correspondingly lower or higher service costs.

Commercial generators are provided a range of service options, including choices of container size and collection frequency. Typical commercial service includes one or more 64-gallon carts due to cart weight issues if a larger 96-gallon cart is used. Collection can be provided from one to seven days weekly. The City currently estimates that about 99% of businesses are participating. When participation became mandatory in 2009, the City worked with Recology to obtain a list of commercial properties not participating and personally contacted and/or met with them to educate them on the program. Initially, of the approximately 16,000 commercial properties in the City, it was estimated that 25% (4,000) were not participating. Over four years of direct outreach resulted in the current high level of participation. The City now performs audits to monitor participation and has the ability to ticket and fine non-participating businesses (though it is more common for the City and business to work together to achieve compliance without ticketing).

Current diversion performance is estimated at an average of 650 tons of organics per day. Current diversion by sector is presented in Table B-4 based on tonnage data provided in Recology's rate adjustment proposal.

TABLE B-4. ORGANICS DIVERSION BY SECTOR (SAN FRANCISCO, CALIFORNIA; 2016 DATA)

Sector	Units Served	Tons Diverted (tons/year)	Average Diversion per Unit (lbs/month)
Residential	140,781	63,615	75
Commercial	16,171	95,533	985
Total	156,952	159,148	169

Education is provided on a continual basis by the City's Department of Environment and an outside contractor. Specific staffing and budget information was not provided by the City, but the staff representative indicated that education is allocated a large budget annually. The program has been highly successful in producing a high quality compost product, which staff attributes largely to the extensive education effort expended. Staff management and oversight of contracted services includes approximately 10 personnel at Department of Environment, with an additional 10 personnel employed by Recology to provide reporting, billing, and customer service for the City's services.

Sources:
1. Alex Dmitriew, Commercial Recycling Assistant Coordinator, San Francisco Department of Environment, personal correspondence, March 2017.
2. Recology, *2017 Refuse Rate Application*, February 10, 2017.

B.4 City of Boulder, Colorado

The City of Boulder passed its Universal Zero Waste Ordinance (UZWO) in 2015, with implementation commencing in June 2016. Through the UZWO, all residential properties are required to subscribe to waste collection service; all haulers operating in the City are also required to offer recycling and organics collection services to all waste collection customers. All commercial properties are required to provide waste, recycling, and organics collection service, with recycling and organics collection at least as convenient and prevalent as waste service.

Collection services to both residents and businesses is provided on an open-market basis with no contracts for service executed by the City. Residents and businesses instead select the hauler of their choosing and select their desired services. Pricing is established by the private haulers and is not reported by the City. Haulers are required to offer pricing on a pay-as-you-throw rate schedule to incentivize diversion efforts.

Enforcement and penalties for non-compliance with the UZWO has not yet commenced. The current focus is on providing outreach and education to increase resident and business awareness of the UZWO requirements, with five or six City staff members focused largely on this outreach. The City also has not collected data on participation rates or diversion quantities, but indicates that current residential participation is low and participation in the commercial sector is notably higher.

Multi-family properties are a unique challenge for Boulder. City staff are currently providing significant focus to outreach and education at multi-family properties, working to recruit "eco leaders" to serve as long-term advocates and experts in the City's diversion operations. These may include maintenance staff, building owners, or long-term tenants. The temporary or short-term nature of rental residents further challenges awareness of the City's diversion programs. The City plans to continue its outreach to the multi-family sector, with a goal of 85% diversion of waste from multi-family properties by 2025.

Source:

1. Sandy Briggs, Climate and Sustainability Division, City of Boulder, personal correspondence, March 2017.

B.5 City of Austin, Texas

The City of Austin has provided residential organics collection including food waste and yard waste through its municipal collection operations on a pilot basis since 2013 to approximately 14,000 households. A 2014 study of residential diversion performance indicated that organics quantities from households in the pilot were approximately 4.2 pounds per week greater than households setting out only yard waste. Considering only the households in the pilot area reportedly placing food waste in their compost carts, average household setouts were 9 pounds of food waste per week. On a citywide basis, organics diversion in 2014 averaged 29 pounds per household per month, with a higher diversion rate of 40 pounds per household per month in the expanded organics collection pilot area.

The City is currently planning to roll the pilot program out on a Citywide basis beginning in fall 2017, providing collection carts to all residents. Costs are projected to increase $4 - $5 per household per month with the expanded service. Austin charges residents for garbage, recycling, and organics collection services based on a fixed base service rate and a variable per-gallon garbage service rate; a service charge is not allocated to recycling and organics collection services on customer bills. The City has indicated that a portion of the cost increase for expanded organics service will be allocated to the base rate, and the remainder will be allocated to the per-gallon garbage rate.

Within the commercial sector, Austin has implemented its Universal Recycling Ordinance (URO) establishing requirements for businesses and institutions to provide recycling and organics collection services. URO implementation first focused on recycling operations; implementation of organics requirements under the URO began in October 2016. URO requirements for organics diversion apply only to food-oriented businesses such as grocery stores, restaurants, and food processing facilities. Implementation will be phased over a 3-year period based on business size, with the largest businesses (greater than 15,000 square feet) currently required

to comply. Businesses greater than 5,000 square feet will be required to have organics collection service beginning in October 2017, and all other applicable businesses will be required to have service beginning in October 2018. The City believes that compliance with the ordinance in its current implementation phase is high; the first 6-month reports under the program were due to the City in February 2017, and approximately 75% of businesses subject to the URO organics requirements had submitted reports by the end of February.

Austin does not contract for commercial waste or diversion collection services. Businesses are instead able to select a hauler of their choosing, with haulers operating in the City required to be licensed. Because there are a large number of haulers operating in the City, costs of service are considered to be highly competitive (though the City does not have specific data on rates). The large number of haulers also creates challenges for City staff to develop education and outreach materials, because requirements and services provided by the haulers can be highly variable. Education materials are therefore broad-based and provide limited direction to businesses, and businesses are encouraged to talk to their service providers regarding organics collection services and requirements.

A significant effort has been made by Austin staff to ensure the business community is aware of requirements under the URO. The City's Business Outreach Program includes 2 staff members dedicated to policy development and oversight of ongoing services, 9 staff members for outreach and implementation assistance, and 1 staff manager. The Business Outreach Program has a budget of $2.15 million in 2017 including labor and outreach / advertising expenses for URO implementation, a significant portion of which will be directed to organics outreach.

Sources:
1. Aiden Cohen, Business Outreach Program Manager, City of Austin, personal correspondence, February 2017.
2. CB&I, City-Serviced Residential Waste Characterization Study, March 2015.

B.6 City of San Antonio, Texas

The City of San Antonio implemented a subscription curbside organics collection program for its residents in 2013 following a pilot of the program in 2011 and 2012. During the pilot, the 30,000 homes in the pilot area diverted 5,322 tons of organics from disposal, equating to a diversion rate of 30 pounds per household per month and increasing the City's overall diversion rate by 1.1%. Residents subscribing to organics collection service beginning in 2013 were provided an organics collection cart at a cost of $3 per month.

The City is now rolling out organics collection citywide and replacing the previous monthly subscription fee with a new pay-as-you-throw rate structure. Under the new rate structure, three sizes of waste containers will be offered with rates designed to incentivize diversion and use of smaller waste containers. Residents will be provided an organics collection cart as well as a kitchen container to promote the organics service. Roll-out commenced in September 2015; full roll-out is expected to be completed in Spring 2017. Service is limited to single-family and small multi-family properties receiving City collection service; larger multi-family properties and businesses are not provided City collection.

Currently, the City estimates that approximately 24% of residents are placing food waste in their organics collection cart in the areas of the City where service is available. Some routes have higher participation of up to 30%. Barriers to participation are primarily related to the concerns residents have about the food waste making their organics carts dirty or smelly. Initial focus is now principally on directing residents to place their yard waste in the organics carts (Texas does not have a ban on disposal of yard waste, and yard waste can therefore be placed in the trash).

Routine inspections are being performed of cart materials to minimize contamination, with approximately 50% of loads rejected at the compost facility; plastic bags are the predominant contaminant noted, which the City is addressing through ongoing education. City staff noted that more time should have been allocated to education in advance of Citywide roll-out of the program, because there is a lot of confusion about what materials should be composted versus recycled.

Sources:
1. Erika Phillips, Senior Management Analyst, City of San Antonio, personal correspondence, March 2017.
2. City of San Antonio Solid Waste Management, *Recycling and Resource Recovery Plan: 2013 Update*, undated.

B.7 Lake County, Illinois

The Solid Waste Agency of Lake County (SWALCO) represents 43 communities in Lake County, Illinois, providing solid waste planning and program implementation assistance. SWALCO has adopted a goal of reducing its waste disposal by 60%, and organics diversion is an important component of achieving that goal. Through SWALCO's assistance to its member communities, it has helped a number of members to secure organics collection services through its residential collection contracts and commercial waste franchises.

In the residential sector, 14 SWALCO member communities have the option of diverting food waste in addition to yard waste through their organics collection services. Twelve of the communities have contract provisions which allow residents to add food waste to their yard waste carts during the seasonal yard waste collection period with no increase in service fees. This "ride along" option is similar to current residential service provided in Ann Arbor. Two communities have implemented year-round collection service for mixed organics, and a third has the option of including the service if a threshold level of residents sign up for it:

- The Village of Lake Bluff has historically provided year-round collection of yard waste. Residents provide their own containers or utilize kraft paper bags to set out yard waste. The program has recently been expanded to allow food waste to be included with yard waste. Waste, recycling, and organics collection service is provided at a cost of $18.25 per household per month, paid by the resident. The Village owns and operates a compost facility; compost tip fees are not included in service costs and are instead paid from the general fund.

- The Village of Highwood's contracted hauler will implement year-round collection of yard waste and food waste beginning May 1, 2017. Residents have historically purchased stickers for yard waste bags for seasonal yard waste collection service. Under the new program, all residents will be provided a 35-gallon organics cart. Garbage carts will be reduced from 96-gallon to 64-gallon size to offset a portion of the cost increase for the organics service and encourage greater diversion. Provision of year-round organics collection service with 35-gallon carts and the reduction in garbage cart size resulted in an increase in collection costs of $3.90 per household per month.

- The Village of Grayslake has a contract provision with its residential hauler that will provide for year-round collection of organics at a cost of $4.25 per household per month, provided that 175 households (15% of households served through the contract) sign up for the service. The contract was effective in 2014; to date, year-round service has not been provided because of a lack of subscriptions by residents.

In the commercial sector, 7 member communities with commercial waste collection franchises have incorporated pricing for organics collection service in their contracts. Businesses have not widely utilized the services that are available, though the option has been available in some contracts since 2013.

Three separate service providers are providing services under the various commercial franchises. Contract pricing for organics service from 2 of the haulers is established on a cost per-pull basis for various container sizes, as shown in Table B-5. The third hauler provides 65-gallon cart service once per week at a rate of $42.66 per month, compared to $29.12 per month for garbage collection at an equivalent level of service. Organics collection service to businesses in Lake County as offered through the commercial franchises is therefore 50% to more than 300% more costly than equivalent garbage collection service.

TABLE B-5. COMMERCIAL ORGANICS COLLECTION RATES (LAKE COUNTY, ILLINOIS)

Container Size	Cost per pull	Monthly Cost Assuming 1x Weekly Collection	Comparable Garbage Collection Service Cost
65-gallon cart	$14.11 - $15.30	$61.14 - $66.29	$17.38 - $20.40
95-gallon cart	$16.64 - $20.40	$72.10 - $88.39	$17.38 - $22.44
1 cy dumpster	$20.45 - $30.60	$88.61 - $132.59	$27.61 - $32.64
1.5 cy dumpster	$22.50 - $35.70	$97.49 - $154.69	$31.70 - $38.76

Due to the recent establishment of service in the residential sector, estimates of diversion performance under residential collection programs in place in SWALCO member communities is not available.

Similarly, estimates of diversion performance under commercial collection programs offered in SWALCO member communities are not available because few businesses have elected to receive organics collection service through the franchise agreement. Data on the number of subscribing and participating businesses has not been provided to SWALCO, and haulers providing collection services under the franchise agreement have indicated to SWALCO anecdotally that only a handful of businesses are utilizing the service.

Source:
1. Walter Willis, Executive Director, Solid Waste Agency of Lake County, personal correspondence, March 2017.