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RECYCLING STUDY TARGETING SMALL BUSINESSES IN MECKLENBURG COUNTY

Final Report
RFP#2007-147

Submitted to:
Mecklenburg County Solid Waste
Mecklenburg, North Carolina

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SECTION 1: EXECUTIVE SUMMARY

1.1: Introduction

Mecklenburg County, North Carolina is both a statewide and national leader in its efforts to foster recycling for County residents and businesses. In 2006, the County undertook a Solid Waste Management Plan which identified small businesses as a potential source of additional recyclable material for diversion. A study conducted in 2005 determined the estimated waste characterization of commercial streams for the County, but it did not distinguish between large and small business waste generating activities. The County established a waste reduction goal of 23% per capita by the year 2010 and recognizes that the commercial sector makes up a large portion of the overall waste stream. The County has implemented an aggressive outreach program to spark small business recycling and has, among others:

- Mandatory recycling of certain materials for qualifying businesses
- Free drop-off centers used by both residents and businesses
- Additional free drop-off centers for old corrugated cardboard (OCC) and mixed paper targeting small business recycling

This project analyzed a number of questions concerning small businesses in the County including: the demographics associated with those businesses, estimated recyclable generation, and the potential for diversion of the businesses. In addition, the mandatory source separation ordinance, enacted January, 2002, requiring the separation of OCC from the waste stream of County businesses and contracted pick up of the materials, was assessed. Currently, the threshold level has been set as 16 cubic yards. The study examines whether the threshold should be maintained or adjusted to include a greater number of small businesses in the County. The State recently passed a mandatory recycling bill for ABC permit holders which went into effect in January, 2008. Although this law does affect some small businesses in Mecklenburg County, it was not a focus of this research.

An integral portion of this project rests within the development, distribution, and analysis of a comprehensive small business survey. The survey was used to ascertain:

- current recycling and waste management behaviors/practices;
- wants and needs of small businesses;
- general attitudes and feelings that small businesses have towards recycling;
- willingness-to-pay for additional services, and;
- The most effective means of communicating with businesses.

In order for any recycling program to be successful in a long-term basis, it must be economically sustainable. The SERA team also sought to determine the level of recycling at which the program becomes economically attractive. Finally, this report examines a set of programmatic options for the County to increase small business recycling. These programs are looked at from a practical, a benefit cost, and a long term diversion perspective.

1.2 Small Business Criteria

Before research could be undertaken into small business activities, it was necessary to distinguish between small and large businesses within the County. For the purposes of this project, small businesses were defined as businesses with less than 50 employees. The official definition of a small business, as provided by the US Small Business Administration, is one that:

- Is organized for profit
- Has a place of business in the US
- Pays US taxes, uses US products, materials, and/or labor, and;
- Does not exceed the numerical size standard for its industry.

The following table shows the large industry groups and size standards¹:

Industry Group	Size Standard
Manufacturing	500 employees
Wholesale Trade	100 employees
Agriculture	\$750,000
Retail Trade	\$6.5 million
General & Heavy Construction	\$31 million
Dredging	\$18.5 million
Special Trade Contractors	\$13 million
Travel Agencies	\$3.5 million
Business and Personal Services Except:	\$6.5 million
Architectural, Engineering, Surveying, and Mapping	\$4.5 million
Dry Cleaning and Carpet Cleaning	\$4.5 million

As this definition represents more than 99²% of the 26 million businesses in the US³, it was necessary for the researchers to develop a separate benchmark for delineation.

The County uses a reference point of 16 cu yds of trash generation per week to quantify whether or not a business is subject to the SSO ordinance. This threshold limit is a rough guideline separating small and large commercial trash generators in the County. The focus of this study was to investigate trash and recycling behaviors for small generators, however, it was impossible upfront to define small businesses for a sample study using trash disposal. There were no available records of trash disposal per week for all of the County's businesses. It was decided to use the cutoff of under 50 employees⁴. Using 50 employees as a max allowed the research to cover the vast majority of businesses that generate the threshold amount or less.

¹ Source: US Small Business Administration- Summary of Size Standards

² Source: US Small Business Administration- Summary of Size Standards

³ Source: US Bureau Economic Census

⁴ An explanation of this decision may be seen in Section 3.

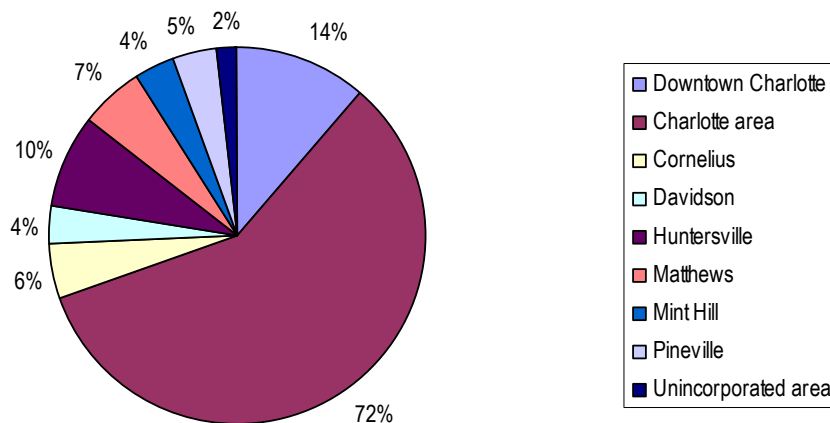
1.3 Small Business Demographics

Two-thirds of the businesses responding to the small business survey are *located* in the Charlotte area (67%) with 14% in Downtown Charlotte⁵. Similarly, the majority of the businesses *conduct* their business in the Charlotte area (72%) followed by Pineville (5%). Only 2% reported that they conduct their business in unincorporated areas. The locations of the surveyed businesses compare closely to the InfoUSA business data for all businesses in the County.

Table 1.1: InfoUSA and Survey Business Location Comparison

	Survey response	InfoUSA data
Downtown and Charlotte area	81%	83%
Cornelius	3%	3%
Davidson	1%	1%
Huntersville	7%	4%
Matthews	5%	6%
Pineville	3%	2%
Unincorporated area	1%	N/A

Figure 1.1: Where Surveyed Businesses Conduct Their Business



⁵ Survey respondents self-classified their location. Downtown Charlotte refers to an area self defined by respondents with no firmly established boundaries. Actual physical addresses for survey respondents were not requested.

The average number of full time employees of the businesses was reported as 14 with a median of 10. The maximum size of business was 49 full time employees while the smallest is a single employee.⁶

The five largest business types surveyed were: professional/bank/insurance (19%), non-profit (13%), construction (11%), medical care (11%), and manufacturing (9%). The listing of “other” responses for business activities can be seen in the appendix. A full listing of business types follows:

Table 1.1: Business Sectors

Business Sector	% Reporting
Retail	9%
Manufacturing	9%
Wholesale (trade)	5%
Professional/bank/insurance	19%
Medical care	11%
Hospitality/hotel	2%
Restaurant/bar	4%
Administrative support	1%
Auto repair	1%
Construction	11%
Lawn care/landscape	<1%
Beauty shop/salon/spa	2%
Non-profit	13%
School	3%
Government	4%

1.3 Estimated Recycling Generation

The estimated recycling generation and disposal rate for the small businesses in the County was calculated using a series of responses collected through the statistical survey. The majority of surveyed businesses are unable to report directly what their diversion rate is⁷. The survey asked the small businesses two questions which were analyzed concurrently to estimate material generation and diversion. The two survey questions were:

If you were to place ALL your garbage in a flip-top, 96 gallon container (like you use at home), how many containers would you fill up in ONE WEEK at your business?

- | | |
|---|---|
| <input type="checkbox"/> Less than 1 cart | <input type="checkbox"/> 5 carts |
| <input type="checkbox"/> 1 cart | <input type="checkbox"/> 6 carts |
| <input type="checkbox"/> 1.5 carts | <input type="checkbox"/> 7 carts |
| <input type="checkbox"/> 2 carts | <input type="checkbox"/> 8 carts |
| <input type="checkbox"/> 2.5 carts | <input type="checkbox"/> 9 carts |
| <input type="checkbox"/> 3 carts | <input type="checkbox"/> 10 to 15 carts |
| <input type="checkbox"/> 4 carts | <input type="checkbox"/> Over 15 carts |

⁶ Businesses that reported over 49 employees were not included in the analysis.

⁷ SERA has completed trash and recycling surveys for over two decades and has found that threshold questions are more likely to be answered by respondents.

If you were to place ALL of the recycling material you normally collect in a flip-top, 96 gallon container (like you use at home), how many containers would you fill up in ONE WEEK at your business?

- Less than 1 cart
- 1 cart
- 1.5 carts
- 2 carts
- 2.5 carts
- 3 carts
- 4 carts
- 5 carts
- 6 carts
- 7 carts
- 8 carts
- 9 carts
- 10 to 15 carts
- Over 15 carts

The average generation of both trash and recycling, in gallons, along with the average diversion rate⁸ is displayed in the table below. Note that the median diversion rate is zero, meaning half the businesses report no significant recycling.

Table 1.2: Estimated Recycling and Trash Generation (gallons)

	Trash in gallons	Recycling in gallons	Total Generation in gallons	Diversion rate
Average	493	362	658	22%
Median	336	192	384	0%
Max	1200	1536	2736	
Min	48	48	48	

When converted to cubic yards the estimates are⁹:

Table 1.3: Estimated Recycling and Trash Generation (cubic yards)

	Trash in cubic yards	Recycling in cubic yards	Total Generation in cubic yards	Diversion rate
Average	2.4	1.8	3.3	22%
Median	1.7	1.0	1.9	0%
Max	5.9	7.6	13.5	
Min	.2	.2	.2	

For comparison purposes, the estimated generation and diversion rates were also converted to pounds. Table 1.4 displays the estimates in pounds.

Table 1.4: Estimated Recycling and Trash Generation (pounds)¹⁰

	Trash in lbs	Recycling in lbs	Total Generation in lbs	Diversion rate
Average	360 to 720	390 to 470	750 to 1,190	22%
Median	255 to 510	205 to 252	460 to 762	0%
Max	885 to 1,770	1,651 to 2,017	2,536 to 3,787	
Min	30 to 60	51 to 63	81 to 123	

⁸ Diversion = Reported recycling/Σ(recycling, trash). The displayed average is the average of all individually reported diversion rates.

⁹ 1 cubic yards=201.97gallons

¹⁰ For weight estimates a range of possible weights is displayed. Unlike gallons or cubic yards, weight is not a volumetric measurement and density and mass of the materials determines the weight. Cubic yard and gallon conversions to pounds were calculated using SERA data for various MSW and recycling streams densities. For example, one cubic yard of MSW typically weighs between 150 to 300 pounds depending on the materials in the waste stream.

1.4 Source Separation Threshold

As a means to reach the County's goal of per capita waste reduction of 23% by 2010, the County established a mandatory Source Separation Ordinance (SSO) for businesses in January of 2002. The ordinance states that businesses must separate corrugated cardboard and office paper from their other trash for the purpose of recycling. The ordinance only affects businesses that generate more than 16 cubic yards or greater of trash per week. In addition, the ordinance lays out a number of exemptions for businesses including:

- business that generate less than 500 pounds of cardboard/week
- businesses that generate less than 500 pounds of paper/week
- businesses with temporary locations
- if the ordinance is in violation of any zoning or other ordinances

The County provides businesses with three notices before levying a \$50 per day fine. The County also provides technical assistance for businesses that receive notices of violation to assist the businesses in setting up a source separation and recycling program.

Overall, the SSO ordinance as it stands, affects nearly two-fifths of the small businesses responding to the survey (based on answers to subscription level and frequency of collection). If reported generation is used, *none* of the surveyed businesses reported generating over 16 cubic yards of material per week. If only dumpster size and not frequency is considered, only about 12% of surveyed businesses would be covered under the ordinance. Enforcing the ordinance only through container size (e.g. "windshield" survey observations) would be difficult as only 12% physically subscribe to 16 cubic yard or larger containers. The remaining 28% of the sampled businesses with fewer than 50 employees use smaller dumpsters with more frequent collection and are not easily observable. Data indicates that for the sampled businesses the ordinance increased diversion by about 3% (19% computed diversion for those above the threshold compared to 16% for those below).

The actions to be taken or reformations regarding thresholds may vary depending on the County's primary objectives:

To maximize diversion →

- consider increasing enforcement, including assessing some fines to cause the program to re-energize compliance by those already covered by the program;
- Consider reducing the size of the threshold to bring more firms into recycling.

To make compliance and inspections feasible →

- Consider reducing the threshold for SSO requirements to 8 cubic yards of service weekly. The survey seems to indicate that one-third of businesses subscribing to 16 cubic yards of service are using 16 cubic yard containers collected once weekly, and the remaining two-thirds are collected in 8-cubic yard containers collected twice a week. Those receiving 8 cubic yards of service are mainly using 8 cubic yard containers collected once per week. Therefore, inspecting for 8 cubic yard containers would tend to indicate eligible or "covered" buildings.

Table 1.4 Advantages and Disadvantages of 8 Cubic Yard Threshold for SSO, and Enhanced Enforcement

Advantages	Disadvantages
<ul style="list-style-type: none"> • Re-energize recycling and compliance among 16 cubic yard and larger customers (about 25% of the small businesses, 60% of the small business waste stream) • Bring in extra recycling through extending eligibility to businesses with 8 cubic yards of trash service and more (representing perhaps 40% of the small businesses and 28% of the small business waste stream) • Simplify enforcement, as all businesses with observable 8 cubic yard containers would be covered by the ordinance.¹¹ 	<ul style="list-style-type: none"> • Greater enforcement (expanding percent of “small businesses” covered from 23% of the sector to 60% of businesses) • Economics of recycling less dramatic for lower-generating businesses; may cost businesses more

If the County is interested in expanding diversion, it should→

- At least enforce the ordinance more to re-energize compliance among businesses with 16 or more cubic yards of service;
- Consider expanding eligibility to small businesses with 8 cubic yards of trash service or more¹². This brings the total eligible businesses to more than half (a total of 60%) and encourages (or requires) recycling for businesses generating nearly 90% of the trash stream generated by small businesses.

1.5 Willingness to Pay

The survey queried the businesses on their likelihood to use (and pay for) enhanced recycling opportunities if they were available. Figure 1.2 shows the willingness to pay for expanded services. After weighting the individual likelihood responses,¹³ we found the following results:¹⁴

- Between 62% and 70% of businesses are estimated to sign up for and pay for enhanced services if they cost about \$10 per month;
- 44%-52% will participate at the cost of \$20 extra per month;
- 25%-29% will participate at the cost of \$40 extra per month;
- 18%-21% will participate at the cost of \$50 extra per month;
- 12%-13% will participate at the cost of \$100 extra per month;
- 40%-46% will participate if costs rise 5% per month;
- 20%-23% will participate if costs rise 15% per month¹⁵.

¹¹ Of course, there will be some businesses on 8 cubic yards of service that use 4 or perhaps even 2 cubic yard containers; our survey sample was not large enough to identify a large population of these customers, indicating they may not be common.

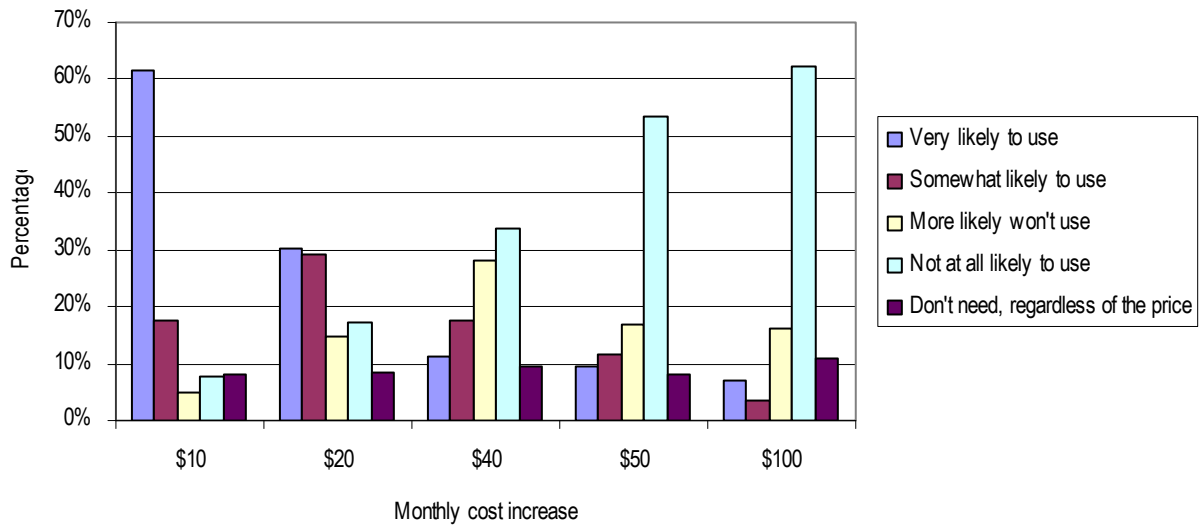
¹² At the 8 cubic yards level, the ordinance would be estimated to cover between 20,800 and 25,200 of the businesses identified through InfoUSA with less than 50 employees in the County, compared to the current estimates of 13,900 to 18,100 at the 16 cubic yards threshold level.

¹³The survey answer categories assigned 85% likelihood to “very likely to use”; 50% to 85% to “somewhat likely to use”; less than 50% to “more likely won’t use”, and there were no percentages applied to “not at all likely” or “don’t need”, both of which were assigned a 0% likely to pay or use. We ran scenarios assuming the low end of the percentage likelihoods, and another assuming the midpoints, and those are the reported percent of businesses likely to use and pay for the service at each cost increment. For the “more likely won’t use, we assigned 25% for both scenarios. To stay conservative, no scenarios were run using the “high end” of the participation percentages.

¹⁴ We also examined an “open-ended” response, asking businesses to state how much, in dollar terms, they would be willing to pay for the enhanced services. A relatively small number replied to this question (20%), and even fewer provided estimated trash bills to allow percentage comparisons). On average, they said about 27%. The average dollar amount represented by this response was about \$55.70 per month (the median was \$20/month), and included the wide range of small to large businesses.

- Only 71%-78% said they would participate, even if the programs were available at no extra cost.

Figure 1.2: Willingness to Pay for Expanded Services



The results indicate that there is likely to be high participation if the County introduces programs, initiatives, regulations, or services that cost the average business on the order of \$10-20/month; or if bills rise by only about 5% (which, expressed as a percent of average trash bill, is \$13/month).

1.6: General Attitudes of Businesses

Diversion Wants and Needs

- The most often recycled material by all businesses was reported as paper document shredding, followed by cardboard and plastic bottles. Food waste and plastic packaging materials are the least often recycled materials.
- When asked what materials they would most like to recycle at their business, the overwhelming majority of businesses indicated paper, cardboard, and plastic bottles. Low on their lists were bulky items, building materials, yard waste, and clothing/fabric.
- The most important program that is currently offered by the County was reported to be the “free” recycling dumpsters for OCC. The businesses also reported that their hauler provided services were very important to them. On the other hand, very few businesses reported that technical assistance to set up recycling programs was important to them.

¹⁵ In all our surveys, we find respondents more nervous about expressing willingness to pay increases in percentage terms; dollars seem to be less of a barrier or interim computation for respondents. As a result, we usually find the percentages lower or more conservative for what should be similar numbers when expressed in dollar terms.

.However, this could be due to the fact that many of the reporting businesses were unaware of this program.

- The most common barrier to regular recycling was that collection for the items they generate isn't available, or the hauler doesn't offer collection. Nearly one-quarter of the businesses reported that they were unaware of any recycling options. Cost is a barrier to slightly less than one fifth of the businesses and 10% reported that they did not have room for containers.

Program Preferences

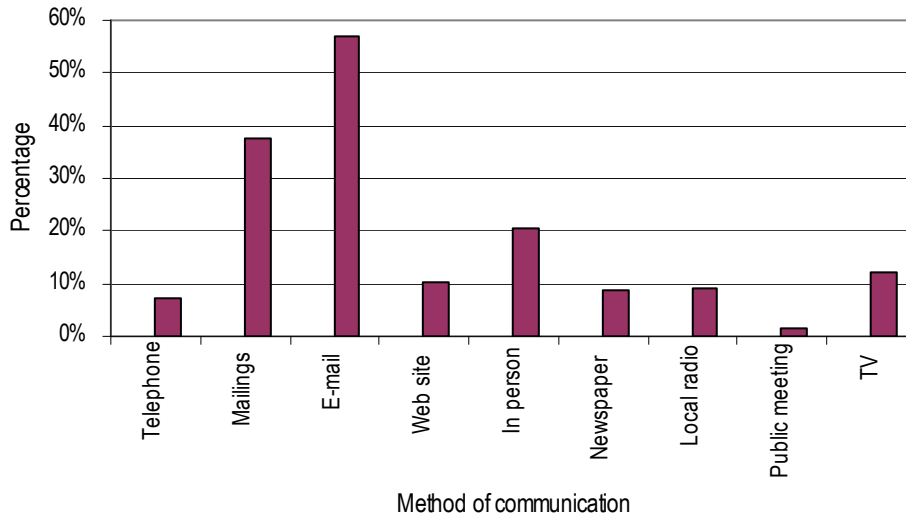
Based on business responses, the following program preferences can be noted:

- Continue the 'free' recycling pick up for businesses. This is a very popular program and the businesses rank it as being the most important program in the County. The County should also continue to foster relationships between businesses and private haulers for recycling collection.
- Programs that increase recycling garnered the highest support among respondents. Businesses voiced support for programs that require haulers to offer recycling and "free" recycling for small businesses. Interestingly, the surveyed businesses also supported mandatory bottle and can recycling.
- The businesses did not support programs that increased fees or costs for services. Also, businesses did not support programs that require businesses recycling plans to be filed or business code revisions.
- When asked what materials they would most like to recycle at their business, the overwhelming majority of businesses indicated that recycling programs addressing paper, cardboard, and plastic bottles were those that they would most like to see implemented in the County. Low on their lists were bulky items, building materials, yard waste and clothing/fabric. There was mild interest in recycling the following materials: electronics, Styrofoam, batteries, food waste, and packaging materials.

1.7: Effective Communication

The most effective way of communicating information regarding recycling with small businesses in Mecklenburg County is through e-mails to the business owners/managers. Mailings and in-person contact were reported as the second and third most effective way of communicating. Public meetings, television, and radio were all reported as less effective ways to contact business decision-makers regarding their trash and recycling services.

Figure 1.3: Best Methods of Communication



Mecklenburg County has several current recycling outreach campaigns. Nearly three-quarters of the businesses responding to the survey were aware of the Solid Waste and Recycling Website while about one-third knows about the Swat-A-Litter Bug campaign. The resource guide, business recycling hotline, and C&D programs are not widely known among the majority of businesses in the County.

Table 1.5: Business Awareness

Recycling Outreach Campaign	Percent Aware of Program
Solid waste and recycling website www.wipeoutwaste.com	76%
Business recycling info-line	8%
Swat-A-Litter bug	33%
Resource guide for commercial waste reduction and recycling	5%
Construction and Demolition waste reduction and recycling	8%
Wipe Out Waste guidebook	11%

1.8 Comparison of Sub Groups

Businesses with four or fewer employees were compared to businesses with five or more employees. Although the two sub-groups were similar in many categories, they did differ in their recycling and trash behaviors/services. The table below displays the main differences between the two groups:

Table 1.7: Comparison of 4 or fewer and 5 or more Employee Firms

4 or fewer Employees	5 or more Employees
Demographics	
<ul style="list-style-type: none"> • 2.27 employees average • More often located outside of the Charlotte area 	<ul style="list-style-type: none"> • 17.9 employees average • More often located in Charlotte area
Recycling	
<ul style="list-style-type: none"> • Hauler collects recycling more often • 18-gallon open topped bins • Generate less materials • Pay an average of \$95.60/month for recycling • Pay on average, <i>more</i> for recycling services than trash service 	<ul style="list-style-type: none"> • Self haul more often • 96 gallon flip top containers • Generate more recyclables • Pay an average of \$252/month for recycling • Pay on average, <i>less</i> for recycling services than trash service
Trash	
<ul style="list-style-type: none"> • Trash service often included in lease • City collects/paid in taxes more often than for larger sized businesses • On average, contract for 1 96-gallon container per week • Average monthly service fee of \$85.57 	<ul style="list-style-type: none"> • Contract directly with haulers for service • Generate higher amounts of e-waste and building materials • On average, contract for 1 4-cubic yards container • Average monthly service fee \$299.91

SECTION 2: GAP ANALYSIS/PERFORMANCE ASSESSMENT

2.1 Gap Analysis

Before recommendations could be made for possible programmatic options in the County it was important to complete a “gap” analysis of the current small business diversion options. The goal of the analysis was to understand the current system and program options for small commercial businesses in Mecklenburg County – communities, generation, waste streams, programs, haulers, facilities, policies, and so on. We reviewed and analyzed the current diversion programs and options to identify outstanding program features, existing shortfalls, and opportunities for recycling and reduction for the small commercial sector. This work was conducted through a thorough review of the available programs and services for the businesses. The gap analysis, combined with the results of the detailed business survey, is used to identify a set of cost-effective strategies for the County’s small business sector in Section 4.

The following summarizes the results of the gap analysis (the results are described in detail in table 2.2):

- In general, solid waste and recycling services for the small commercial sector are handled by the private sector, not the County. There are exceptions to this rule; City of Davidson, some small businesses in Charlotte, and the “free” cardboard/paper recycling drop-offs. Small businesses are responsible for contracting both waste and recycling haulers, however, many have no control over this process. If the account is handled by a property management company or included in their lease, the small generator may be unable to control their rates.
- There are many opportunities for the small business sector to recycle any number of various materials in the County. This includes conventional recyclables, HHW, e-waste, yard waste, and C&D.
- There are strong ordinances and bans in place in Mecklenburg County and statewide to encourage and mandate recycling and diversion.
- Mecklenburg County has an outstanding education and outreach program that has been recognized throughout the Country and the State. The County uses web, TV, radio, PSAs, print, surveys, and others to educate the sector about diversion. However, many of the small business generators may be falling through the cracks as much of the outreach is geared toward larger businesses, the residential sector, or those that can control their trash collection rates and options.
- There is not a large economic incentive for small businesses to divert waste. Rates are set by the private sector and are not necessarily crafted to encourage diversion and/or source reduction.
- Haulers have little incentive to increase diversion or decrease waste collection. County permitting does not include hauler incentives.
- Opportunities exist to define different levels of small businesses and allow the smallest to qualify for residential services including curbside recycling, HHW drop-offs, and e-waste drop-offs.

There are a number of program opportunities uncovered during the analysis. Not all of the opportunities revealed through the gap analysis will be applicable to Mecklenburg County but all have been used by other communities and counties throughout the Country to some extent. The summary of the strengths and weaknesses (gaps) of the County's small business waste and diversion system are displayed in the table below.

Table 2.1: Strengths and Opportunities (Gaps) of the County Waste Management System

Strengths	Opportunities
<ul style="list-style-type: none"> • Education and outreach program that has been recognized both nationally and on a State level. • Drop-off programs- many locations and the “free” dumpster for cooperating small businesses is an innovative and successful program • There are multiple private collectors offering recycling. • Mandates and bans- Together, the ABC bill, the SSO mandate in the County, the Statewide bans, and the space for recycling ordinance address many issues that other counties/communities are struggling with • Diversion opportunities abound- the County has facilities available for a wide variety of recyclable materials including HHW, e-waste, C&D, and yard waste among others 	<ul style="list-style-type: none"> • Increased economic incentives for small generators to recycle. There is a barrier in the sector in that many small generators cannot control their trash rates or they are already on the lowest level of service and recycling will not realize any monetary savings but is instead a cost • Consider embedding recycling rates in trash fees. • Consider changing the threshold of the Source Separation ordinance from 16 cubic yards to another level to include more generators. • Consider enhanced public/private partnerships in E-waste and special events • Consider hauler incentives in the permitting process for commercial haulers. These incentives could both encourage diversion and discourage over collection of MSW • Consider conditionally exempt drop-offs of HHW for small businesses under a threshold level. • Consider defining the smallest businesses as residential and allow them to qualify for curbside recycling, e-waste, and other diversion programs

Table 2.2: Gap Analysis

Element	Facilities	Barriers/Incentives	Gaps/Opportunities
Trash collection	County has 28 permitted haulers. The majority of businesses contract directly with haulers for waste services. However, the City of Charlotte and the Town of Davidson service some small business accounts directly. Several landfills and transfer stations both within and outside of the County.	Businesses must contract themselves and may not be able to negotiate the best rates or appropriate size to encourage diversion. Some small businesses may have no control over their rates if they pay a property mgmt company or lease their facility.	MSW collection in the County is well covered by the private sector. The County could work to offer residential collection for more small businesses, work with haulers to offer smaller sizes, less frequent collection, encourage "sharing" of solid waste services to reduce costs, increase collection efficiencies, and help businesses realize savings through diversion.
Fees and incentives	Waste contracts and associated fees are determined by the size of the container and the number of pick-ups. Recycling service is not included in the cost of trash collection, although in some cases a business may reduce trash costs by recycling.	Not all small businesses have control over what they pay. For these businesses, there may not be any incentive to reduce waste. Others may already be on the lowest level of commercial service and can not realize savings by reducing waste and diverting.	Offer smaller sizes of collection to allow smallest service level customers to save money by reducing waste. Embed recycling fees with trash rates for a PAYT style collection program. Set rate structures to encourage diversion.

Element	Facilities	Barriers/Incentives	Gaps/Opportunities
Drop-off recycling	The County has 4 full service drop-off centers and 9 self service drop-offs for free recycling. There are 46 additional commercial recycling drop-off centers offering free recycling drops for businesses only. The County operates a program to place free recycling drop-offs for groups of small businesses.	County is doing an excellent job in offering recycling drop-offs. However, it is often only the most motivated of recyclers that participate in drop-off programs.	Continue the program with increased education/outreach for eligible businesses.
Recycling collection	Municipalities in the County do not have recycling programs dealing with the commercial sector directly. Businesses contract directly with recycling haulers and processors. There are multiple haulers in the County ranging in the variety of materials they collect and process. The County also has Motrolina Recycling, a full scale MRF.	The service is not included with solid waste services. Instead of representing a monetary savings for all businesses, some small businesses see a cost increase when they sign up for service because they can not reduce their trash rates. Additionally, not all small businesses contract for their services but have a property manager/lease agreement that does it.	Embed fees in trash rates. Set rate structure where recycling fees are significantly below those of trash rates. Allow smallest businesses to be on residential service structure.
Composting- yard waste	The County has 4 compost/yard waste drop-off areas available to commercial self haul. There are also private processors and collectors in the County.	Private sector is available but not always utilized, however bans of yard waste do exist Statewide.	Consider seasonal collection, discounted rates and tipping fees for source separated materials, there is a large potential for diversion in yard waste. County or Muni contracting for business collection with a hauling company might be an option.
Composting- food waste	County has completed studies and a pilot program to research the feasibility of commercial food waste collection but has not implemented a program to date.	Cost of program, odors and mess, difficulty in collection and lack of interest among businesses. However, as cities like Toronto, San Fran, and Boulder, CO show there is potential for significant waste diversion.	Consider working with a few, select large generators such as grocery stores and food producers. If the program is successful economies of scale could make it feasible for small businesses in the future. Consider investigating an Earthtub program similar to cardboard drop-off for study.
Education/outreach	Large education and outreach campaign including a comprehensive website, PSAs, TV, newspaper, surveys, radio, workshops and mailers. The program has been recognized on a National and State level for its efforts.	County is doing an excellent job with their outreach. The barriers are the same for Mecklenburg as any other successful program, it is difficult to reach all businesses, language barriers, and lack of interest among businesses in diversion.	Continue the already successful program. There is a potential "gap" in small business outreach, especially for cottage and at home businesses.

Element	Facilities	Barriers/Incentives	Gaps/Opportunities
Hazardous waste	County offers free HHW drop-off to all residents. There are specialized private haulers that may be contracted to handle the materials as well.	Some small businesses may utilize the residential drop-offs, for others, the added cost of the service is a barrier.	Expand the HHW collection site to allow for small business collection for a fee and conditionally exempt small business for no fee to encourage utilization.
Electronic waste	Handled by the private sector and residential drop-off available at the 4 full service recycling centers. There are 17 haulers/drop-offs/ processors in the County.	There are ample opportunities for businesses to recycle their e-waste however little incentive for them to do so at this point.	Possibility for special e-waste events geared to small businesses.
Ordinances/mandates	County has Business Recycling ordinance requiring businesses generating more than 16 cubic yard/week to source separate OCC and paper. Several exemptions exist. Some of the towns in the County have "space for recycling" ordinances but not all. There is also a State-wide ABC law, HB 1518 applicable to all holders of ABC permits, about 1,400 businesses in Mecklenburg hold these permits.	Many of the small businesses do not fall under the 16cubic yards threshold. The ABC law does not address large portions of the commercial sector but is an innovative step to increase diversion. Enforcement of the ordinances is a possible barrier.	Look at the threshold of the SSO ordinance. Determine if it should be moved to cover more/less businesses. The County could also consider ordinances to include recycling clauses in lease agreements. Expand space for recycling to significant remodels and entire County. Increase materials covered by the SSO ordinance.
Ordinances/bans	A number of bans exist in NC including used oil, appliances, yard waste, anti freeze, aluminum cans, scrap tires, lead-acid batteries, beverage containers from ABC holders (Jan 2008), oil filters (2009), plastic bottles (2009), wood pallets (2009)	Enforcement and education about the bans.	Multiple bans already in place. Enforcement issues can be examined closer.
Hauler incentives	None to date	Do not exist at this time in the County. There is little incentive for haulers to decrease the collection of MSW and increase recycling in the permitting structure for the County.	Change commercial permitting process to include hauler incentives for diversion. Set goals for hauler diversion with permit fees dependant on diversion levels or bonuses for exceeding pre-determined diversion rates.
Source Reduction	In use among the County Government, recommendations and information provided for businesses.	County has little to no control over purchasing and procurement patterns in the commercial sector.	Continue encouraging EPP, work with producers to encourage product stewardship. Increased education. Source reduction presents a large opportunity to reduce "upstream" and indirect effects and carbon emissions.
Other programs	The County has a successful technical assistance/waste audit program and business recognition awards, commercial mail reduction program.	Waste audits can be expensive and difficult to implement County wide	Consider a one to two page recycling "form" that all businesses must complete and file with the County. Consider multi-resource audits.

2.2 Communities

The County seat and undeniable population center of the County is Charlotte. Charlotte contains 78% of the County's total population. In addition to Charlotte, there are a number of smaller individual towns in the County including Huntersville and Davidson. The County Solid Waste Department has a number of interlocal agreements with the governments of towns within the County. Five towns, Cornelius, Davidson, Huntersville, Mint Hill, and Pineville are required through these agreements to deliver materials/waste to County facilities and the County must provide those facilities for the towns to use¹⁶. The populations and business statistics of these five towns and Charlotte are displayed in the tables below. Two tables are used to display the economic data for the County. The first includes all businesses by NAICS code with employees, however, as this study is focusing on small businesses, non-employer statistics are also included. These are businesses with no employees such as a one person, home based business.

Table 2.3: Mecklenburg County Populations

Area	Population	Percent of Total
Mecklenburg County Total	827,445	100%
Charlotte	648,387	78.4%
Cornelius	11,969	1.4%
Davidson	7,139	0.8%
Huntersville	24,960	3.0%
Mint Hill	14,922	1.8%
Pineville	3,449	0.4%
Other/Unincorporated	116,619	14.1%

Table 2.4: Economic Census Statistics by NAICS Sector (Businesses with Employees)

	Manufacturing	Wholesale trade	Retail trade	Information	Real estate/rental/leasing	Professional/scientific/technical services	Administrative support/waste management/remediation service	Educational services	Health care/social assistance	Arts/entertainment/recreation	Accommodation/food services	Other services	Total
County wide	939	2,507	3,150	545	1,260	3,124	1,456	207	1,728	319	1,869	1,466	18,570
Charlotte	756	2,067	2,298	459	1,038	2,553	1,125	156	1,377	238	1,469	1,164	15,000
Cornelius	-	57	98	17	49	100	44	7	52	10	66	43	543
Davidson	-	10	23	6	11	48	14	4	12	6	17	19	170
Huntersville	25	46	108	13	41	92	65	4	58	15	63	30	560
Mint Hill	-	44	43	7	16	41	26	4	21	4	23	29	258
Pineville	26	32	202	3	16	37	22	3	68	6	57	43	515

¹⁶ The surveys and the majority of the study were conducted/completed prior to the Town of Matthews joining the interlocal agreement.

Other	132	251	378	40	89	253	160	29	140	40	174	138	1524
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Table 2.5: Economic Census Non-Employer Statistics¹⁷

Industry and Mecklenburg County Statistics	
Forestry, Fishing & hunting	98
Mining	-
Utilities	-
Construction	4389
Manufacturing	581
Wholesale trade	1,371
Retail trade	4,599
Transportation/warehousing	1,892
Information	783
Finance/insurance	2,621
Real estate/rental leasing	7,208
Professional/scientific/technical services	7,979
Administrative/support/waste management	3,954
Educational services	985
Health care/social assistance	2,538
Arts/entertainment/recreation	2,549
Accommodation/food services	542
Other	6,714

2.3 Waste Disposal and Streams

Combined, the commercial waste stream and the C&D waste stream made up 72% of the total waste stream in 2007. The commercial sector alone accounted for nearly half of the total, while the residential sector was only 25% of the total waste stream. These percentages bolster the premise of this project (and many others) that the commercial sector is an under addressed waste sector when it comes to diversion programs. Although commercial waste generally makes up a much larger portion of the waste stream than the residential, commercial programs are often implemented after residential with a lower level of support. The commercial sector is a more difficult sector to address. As the tables above and below show, the commercial sector does not produce a homogeneous waste stream like the much of the residential sector. There are various commercial waste producers ranging from manufacturers to hospitals to office buildings, and each has a different waste stream. While a bar or restaurant will produce bottles, cans and organics, an office building will generate paper, cardboard and electronics, making a one size recycling program, like those generally used in the residential sector, ineffective in the commercial sector.

The following tables present the waste disposal and waste stream characterizations for the County. The waste stream characterizations and generation will be used in conjunction with the survey data collected in the project to design the appropriate program options for Mecklenburg's small commercial sector.

¹⁷ Data for non-employer statistics only available at county level.

Table 2.6: Mecklenburg County Waste Disposal¹⁸

Waste Stream	2005	2006	2007
Residential Waste	348,939	347,460	388,151
Commercial Waste	548,338	570,665	773,106
C&D Debris	388,212	397,232	377,120
Total Waste Disposed	1,285,489	1,315,357	1,538,377

Table 2.7: Estimate Commercial Waste Characterization¹⁹

Material Categories	Estimated Tonnage
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Paper

Newsprint	15,762
High Grade Office	21,520
Magazines/Catalogs	7,994
Uncoated OCC- recyclable	54,448
Uncoated OCC-non-recyclable	2,887
Coated OCC	484
Boxboard	6,093
Mixed Paper-recyclable	29,957
Mixed Paper- non-recyclable	43,133
Total Paper	182,278

Plastic

PET Bottles	2,769
HDPE Bottles	2,970
PVC	58
Polystyrene	2,968
Film-transport packaging	1,202
Other film	30,884
Other Containers	1,984
Other Non-Containers	34,313
Total Plastic	77,148

Metals

Aluminum Beverage Containers	3,046
Other Aluminum	1,808
Ferrous Containers	4,573
Other Ferrous	30,909
Other Non-Ferrous	5,035
Total Metals	45,371

Glass

Clear	6,038
Green	2,478
Brown	3,536
Other	4,106
Total Glass	16,158

Organic Materials

¹⁸ Mecklenburg County, NC, Generation, Recycling and Disposal Analysis of Wood Pallets and Untreated Wood Waste in the Commercial and C&D Sectors, Mid Atlantic Solid Waste Consultants, 2008

¹⁹ Mecklenburg County Solid Waste Management Plan, 2006-2016, July, 2006.

Material Categories		Estimated Tonnage
	Yard Waste-grass and leaves	14,506
	Yard Waste- woody materials	0
	Food Waste	63,001
	Wood Pallets	15,869
	treated Wood	22,361
	Untreated Wood	39,196
	Diapers	5,008
	Other Organic Material	25,356
	Total Organic Material	185,297
Problem Materials		
	Televisions	0
	Computer Monitors	0
	Computer Equipment	2,764
	Electric and Electronic Products	5,210
	Batteries	278
	Other	4,232
	Total Problem Materials	12,484
HHW		
	Latex Paint	0
	Oil Paint	964
	Unused Pesticide, Fungicides, Herbicides	0
	Unused Cleaners and Solvents	102
	Compressed Fuel Containers	24
	Automotive-Antifreeze	0
	Automotive- Used Oil Filters	0
	Other	1,446
	Total HHW	2,536
Other Waste		
	Textiles	9,121
	Carpet	10,663
	Sharps and Infectious Waste	201
	Rubber	6,011
	C&D Debris	24,144
	Household Bulky Items	8,906
	Empty HHW Containers	201
	Miscellaneous	21,343
	Total Other Waste	80,590
Total		601,862

A 2005 study completed by R.W. Beck for the County analyzed the commercial waste stream and identified the following categories of recoverable commercial materials with significant quantities going to the landfill:

Table 2.8: Recoverable Materials with Significant Tons Going to Landfill ²⁰

Material	Tons
Old Corrugated Cardboard	54,450
Mixed Recyclable Paper	29,960
High Grade Office Paper	21,520
Newsprint	15,762
Food Waste	63,000
Untreated Wood	39,200
Wood Pallets	15,869
Other Ferrous Metal	30,900

²⁰ Mecklenburg County Solid Waste Management Plan, 2006-2016, July, 2006.

SECTION 3: MECKLENBURG COUNTY COMMERCIAL SURVEY RESULTS

This section presents the details of the Mecklenburg County small business statistical survey. The purpose of the statistical survey was to collect sufficient responses from a random sampling of businesses to be able to report, with a confidence level of 95% +/- 5%, on behaviors, opinions, and program choices for the small commercial properties within the County.

To collect the survey, SERA used a random sample of businesses within the County. To create this survey, a listing of all businesses located within the County was utilized. A random stratified sample was created in order to gather responses from all small businesses from 1 employee to 49 or less employees. The sample contained the following proportions of business sizes, chosen at random from throughout the entire County:

Table 3.1: Business Sizes in Sample

	1-4 employees	5-9 employees	10-19 employees	20-49 employees
Percent of Sample	25%	20%	25%	30%

Before research could be undertaken to determine small business activities, it was necessary for the SERA team to distinguish between small and large businesses within the County. For the purposes of this project, small businesses were defined as businesses with less than 50 employees. The official definition of a small business, as provided by the US Small Business Association, is one that:

- Is organized for profit
- Has a place of business in the US
- Pays US taxes, uses US products, materials, and/or labor
- And, does not exceed the numerical size standard for its industry.

The following table shows the large industry groups and size standards²¹:

Table 3.2: Industry Size Standards

Industry Group	Size Standard
Manufacturing	500 employees
Wholesale Trade	100 employees
Agriculture	\$750,000
Retail Trade	\$6.5 million
General & Heavy Construction	\$31 million
Dredging	\$18.5 million
Special Trade Contractors	\$13 million
Travel Agencies	\$3.5 million
Business and Personal Services	\$6.5 million
Architectural, Engineering, Surveying, and Mapping	\$4.5 million
Dry Cleaning and Carpet Cleaning	\$4.5 million

²¹ Source: US Small Business Administration- Summary of Size Standards

As this definition represents more than 99%²² of the 26 million businesses in the US²³, it was necessary for the researchers to develop a separate benchmark for delineation.

The County uses a reference point of 16 cu yd of trash generation per week to quantify whether or not a business is subject to the SSO ordinance. This threshold limit is rough guideline separating small and large commercial trash generators in the County. The focus of this study was to investigate trash and recycling behaviors for small generators, however, it was impossible to define small businesses for a sample study using trash disposal. There were no available records of trash disposal, per week, for all of the County's businesses.

Table 3.3 illustrates the method used in approximating the disposal and determining the cut-off for small business definition for the project²⁴.

To gather contact addresses and phone numbers for businesses, the InfoUSA data base, provided by the County, was used. Although economic census data was also available for a number of businesses by sector, US census data does not link to any business names, contacts, or addresses due to federal statutes. Thus, a private service was needed to find contact information. The InfoUSA data base provided by the County contains the following business size categories:

Table 3.3: Business Size Categories

InfoUSA Category	Employment
A	1-4
B	5-9
C	10-19
D	29-49
E	50-99
F	100-249
G	250-499
H	500-999
I	1,000-4,999
J	5,000-9,999
K	10,000+

Although the cut-off of 50 employees was used for the survey, an argument can be made for each of the following employment cut-offs:

- 28: Using the approximate employment mix for Mecklenburg County, we find the average number of employees needed to reach 16 cubic yards of disposal per week is about 28 employees.
- 50: Looking at each industry individually, the average disposal per employee derives an estimate of 50 average employees needed to reach 16 cubic yards of disposal per week.
- 38: The median value for the number of employees needed to reach 16 cu yd/week – which means half the industries are above this figure and half below.
- 208: The maximum number of employees needed to reach 16 cu yd per week
- 100: A possible compromise figure for covering most industries – approximately all but 4 of the industries would be covered by this figure.

²² Source: US Small Business Administration- Summary of Size Standards

²³ Source: US Bureau Economic Census

²⁴ NOTE that these employment figures came from 3 sources, and do not exactly replicate Mecklenburg county. However, we only need to use information that roughly approximates the proportions by business type, not the precise employment figure.

It was decided to use the cutoffs of under 50 employees. This included group D (up to 49) but not group E (up to 99) or above. Using these larger figures left in the mix some industries that don't generate much for disposal. It was important to maintain the cut-off at the D level to keep the employment size from getting too large. For the larger businesses, the concern arose that no matter how much/how little trash they generate, they do not behave like a small business. Using 50 employees as a max allowed the research to cover the majority of businesses; this would pull the vast majority of businesses that generate this threshold amount or less.

Table 3.4: Waste Disposal Calculations for Small Businesses

	A	B	C	D	E	F	G	H	I	J	K
1	Waste disposal rates for business types - calc of SMALL BUSINESS for Mecklenburg County									16.0	
2	SIC Group	SIC Name	Disposal Rate (tons/empl/yr) (from CA Data)	Waste Density (lbs/cuyd) (From CA data)	Employment by industry Meck (VERY approx from 2002 Econ Census) Meck Co; SMSA, State apportioned	Approx % of employees by industry (calc)	Total Tons for Industry in Meck Co (calc col e*col c)	Average annual cu yd/empl over all industries, meck (calc col d) (wt by empl)	Calc cy/yr per employee for this industry - make 16 cu not wtd by employment	Employees in this industry needed to make 16 cu yr/week (unwtd)	
3	1	Ag/Fisheries	0.9	107					16.8	49.5	
4	2	Forestry	0.2	100					4.0	208.0	
5	3	Mining	1.8	100	350	0.1%	630	12,608	36.0	23.1	
6	4	Construction	3	116	21,043	5.3%	63,129	1,088,438	51.7	16.1	
7	5	Mfg-Food/Kindred	1.6	74	7,195	1.8%	11,512	311,135	43.2	19.2	
8	6	Mfg-Apparel/Textile	0.9	103	1,500	0.4%	1,350	26,214	17.5	47.6	
9	7	Mfg-Lumber & wood products	3.1	134	1,232	0.3%	3,819	57,003	46.3	18.0	
10	8	Mfg-Furniture / Fixtures	2.4	145	750	0.2%	1,800	24,828	33.1	25.1	
11	9	Mfg-Paper/Alid	0.6	100	2,207	0.6%	1,324	26,484	12.0	69.3	
12	10	Mfg-Printing/Publishing	0.8	88	2,839	0.7%	2,271	51,618	18.2	45.8	
13	11	Mfg-Chemical/Allied	0.9	135	6,905	1.7%	6,215	92,067	13.3	62.4	
14	12	Mfg-Primary/Fabricated metal	0.7	122	4,887	1.2%	3,421	56,080	11.5	72.5	
15	13	Mfg-Industrial Machinery	0.2	69	3,883	1.0%	777	22,510	5.8	143.5	
16	14	Mfg-Electronic Eqpt	0.5	63	3,750	0.9%	1,875	59,524	15.9	52.4	
17	15	Mfg-Transportation Eqpt	0.4	76	750	0.2%	300	7,895	10.5	79.0	
18	16	Mfg-Instruments/Related	1.2	121	2,961	0.7%	3,553	58,726	19.8	41.9	
19	17	Mfg-Other	3.1	122	1,802	0.5%	5,586	91,577	50.8	16.4	
20	18	Trucking & Warehousing	1.9	95	15,538	3.9%	29,522	621,520	40.0	20.8	
21	19	Transportation-Air	1	82		0.0%	0	0	24.4	34.1	
22	20	Communications	1.5	98		0.0%	0	0	30.6	27.2	
23	21	Utilities	0.3	73	5,254	1.3%	1,576	43,179	8.2	101.2	
24	22	Transportation-Other	1.3	73		0.0%	0	0	35.6	23.4	
25	23	Wholesale Trade-Durable Goods	0.9	65	24,061	6.1%	21,655	666,305	27.7	30.0	
26	24	Wholesale Trade-Nondurable Goods	0.9	87	16,417	4.1%	14,775	339,662	20.7	40.2	
27	25	Retail Trade-Bldg Material & Gard	3.3	121	4,164	1.1%	13,741	227,127	54.5	15.3	
28	26	Retail Trade-Gen'l Merch Stores	0.3	87	7,785	2.0%	2,336	53,690	6.9	120.6	
29	27	Retail Trade-Food Store	2.9	84	8,503	2.1%	24,659	587,112	69.0	12.0	
30	28	Retail Trade-Automotive Dealers&	0.6	84	6,969	1.8%	4,181	99,557	14.3	58.2	
31	29	Retail Trade-Restaurants	3.1	109	6,169	1.6%	19,123	350,876	56.9	14.6	
32	30	Retail Trade-Other	1.9	72	15,759	4.0%	29,943	831,745	52.8	15.8	
33	31	Finance/Insurance/Real Estate/Lea	0.3	88	9,020	2.3%	2,706	61,500	6.8	122.0	
34	32	Svcs-Hotel / Lodging	2.1	97	36,829	9.3%	77,341	1,594,658	43.3	19.2	
35	33	Svcs-Business svcs	1.7	87	33,325	8.4%	56,653	1,302,356	39.1	21.3	
36	34	Svcs-Motion Pix	1.1	169	9,157	2.3%	10,073	119,204	13.0	63.9	
37	35	Svcs-Med/Health	1.5	75	43,450	11.0%	65,175	1,738,000	40.0	20.8	
38	36	Svcs-Education	0.8	73	1,645	0.4%	1,316	36,055	21.9	38.0	
39	37	Svcs-Other Professional	1.2	104	27,457	6.9%	32,948	633,623	23.1	36.1	
40	38	Svcs-Other Misc.	0.9	90	11,162	2.8%	10,046	223,240	20.0	41.6	
41	39	Public Admin	0.4	89	51,806	13.1%	20,722	465,672	9.0	92.6	
42	Totals						546,053	11,981,786			
43	Averages		1.338461538	96.8461538	396,524	100.0%			27.3	50.2	avg
44	Calculations (various / ignore)		27.64098491		per empl		This is very approx - looking			12.0	min
45							for general proportions for wtg			208.0	max
46										38.0	median
47			Cu yd / empl avg		Reaching 16 cy per (yr/mo/wk) means threshold 16 empl at						
48			30.22	ANNUAL	0.53						
49			2.52	month	6.35						
50			0.58	week	27.53						

Two samples of 3,064 unique addresses were drawn from the total list of businesses provided in InfoUSA. InfoUSA listed a total of 41,061 businesses in categories A thru D, including home based businesses. Each of the 6,128 addresses was sent a postcard marketing the survey and the recipients were given the choice of filling out the survey on-line or calling a toll-free number to finish the surveys.²⁵ The vast majority completed the survey on line, however about 2% completed the surveys via phone calls with SERA staff. The sample contained the following proportions of business sizes, chosen at random from throughout the entire County:

Table 3.5: Business Size and Location from InfoUSA

Area	# Business	Percent	0 Employees	1 Employees	2 or less	4 or less	Home Based	B 5-9	C 10-19	D 20-49
Huntersville	1563	4%	5	181	460	887	174	345	194	123
Cornelius	1369	3%		176	437	863	124	293	137	69
Davidson	501	1%	1	64	173	331	41	101	43	26
Matthews	2610	6%	2	321	797	1609	328	518	280	185
Pineville	906	2%	2	81	215	455	37	219	135	87
Charlotte	34112	83%	37	3780	10418	20602	2810	6745	3836	2611
Total	41061	100%	47	4603	12500	24747	3514	8221	4625	3101

The first survey was completed on April 2, 2008. A total of 350 total statistical surveys were collected.

Table 3.6: Number of Collected Statistical Surveys

Sector	Number of Postcards Mailed	Number of Completed Surveys	Completion Rate of Sample Contacted
Commercial	6,128	350	6%

Table 3.7: Confidence Level Surrounding Percentage Results by Survey Group²⁶

Sector	50%/50%	60%/40%	70%/30%	80%/20%	90%/10%
Commercial	+/-5.3%	+/-5.2%	+/-4.8%	+/-4.2%	+/-3.2%

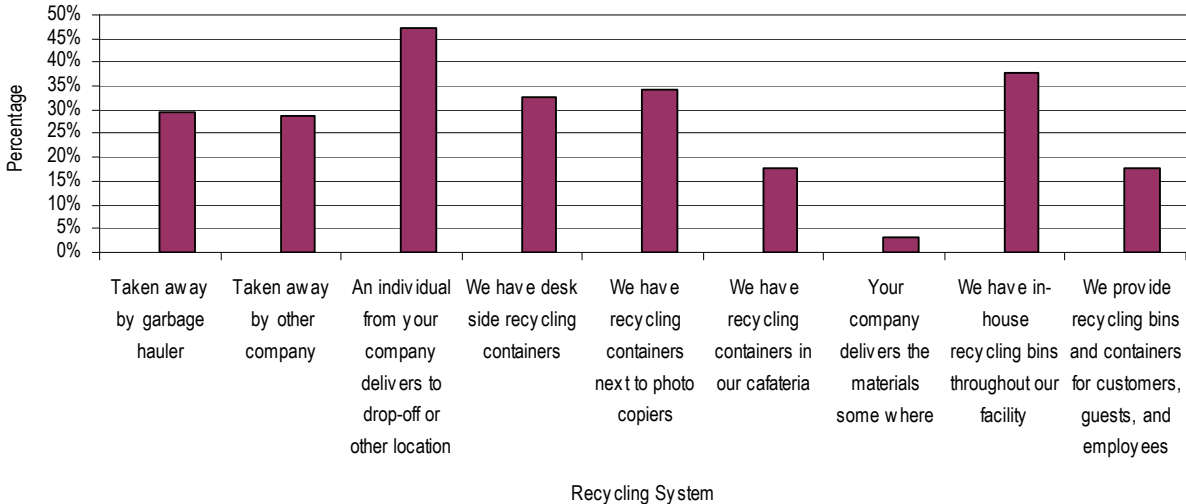
²⁵ The postcards were followed up by a second, reminder postcard to the same sample to improve the statistical properties associated with the survey.

²⁶ **Using Confidence Bands:** The confidence intervals can be used to detect significant differences between responses or groups. For instance, if 85% of households say they would support curbside recycling and 80% say they would support additional education, the table would say that there is about +/- 3.1% confidence band around responses near 80%. Thus, the responses would be 85% plus or minus 2.7 (halfway between 90% and 80% in the table) or a computed confidence band of 82.3%-87.7% supporting curbside recycling, and 95% confidence that the true answer lies between 76.9%-83.1% for those supporting education. Since these two confidence bands overlap (this is a somewhat simplified discussion), there is no statistically significant difference between those rankings. However, if support for PAYT is at 75%, and its confidence interval would be about +/- 3.3% (we picked midway between 70% and 80% confidence level values), the 95% confidence interval around PAYT would be about 71.7%-78.3%. The conclusion is that support for PAYT is significantly lower than support for curbside recycling, but not significantly different than support for residential recycling education.

3.1 Recycling Programs

Slightly over half of the businesses in the County reported that they do have a recycling program. The majority of businesses responding to the survey reported that they **do have a recycling program (53%)** while **42%** reported that they **did not have a recycling program**. Many of the businesses were not operating a 'conventional' recycling program where a hauler or recycling service was contracted or paid for to collect the generated materials. When asked to report on how their recycling program worked, nearly half of the businesses reported that an **individual from their company dropped the materials off (49%)** at another location/drop-off. More than a quarter of the businesses reported that they had a **hauler other than their garbage hauler (29%)** collect the materials and a similar number of businesses reported that their **garbage hauler (28%)** collects their materials. About one third of business reported that they have **desk side recycling containers (32%)** or **recycling containers next to photo copiers (34%)**. The distribution of the responses to how the business recycling programs work is displayed in figure 3.1.

Figure 3.1: Recycling Program Types



When asked to report on what company is responsible for hauling the recyclable materials the answers were quite varied. The responses ranged from large national companies like **Waste Management** or **Allied Waste** to smaller companies such as **ProShed** or **Iron Mountain** to unique programs such as: *We have employed a 15 yr. old girl to recycle our cans and we pay her for the summer plus she gets the money from the recycling material*. The full listing of the open-ended responses to recycling haulers can be viewed in the appendix.

In addition to recycling programs, the survey sought to determine if businesses were undertaking any other diversion programs. Almost all of the respondents reported that they **did not have any other diversion programs in place at their business (49%)**. However, over one-third of the businesses reported that they had a **waste prevention /reduction program in place (i.e. duplex copying, minimizing containers)(37%)** and **19%** reported that they had a **re-use program** in place. Only **3%** of businesses reported that they had a **food or green waste** composting program.

Only about one-fifth of businesses reported that they have a **robust recycling program that is well used (22%)**. More commonly, businesses reported that they had an **'ok' recycling program that is well used (51%)**. The other ways that businesses described their recycling programs were:

- **We have a fairly minimal recycling program that is well used (13%)**
- **We have a fairly minimal program that is not well used (10%)**
- **We have an "ok" recycling program that is not well used (5%)**

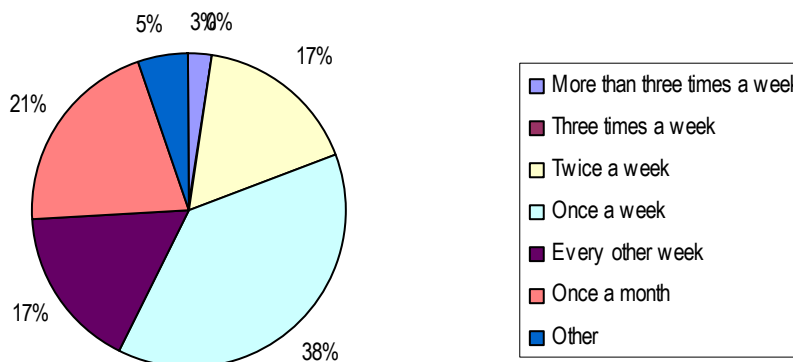
Recycling Frequency, Amounts and Materials

Most businesses reported that they have **one (45%)**, **96-gallon cart** for recyclables that is collected **once a week (38%)**.

Frequency

Recyclables are collected or self-hauled **once a week** for over one third of the businesses responding (**38%**). Nearly one fifth have their recyclables collected **twice a week, (17%)**, while another one-fifth have theirs collected **once a month (21%)**. Figure 2.2 shows the distribution of these responses.

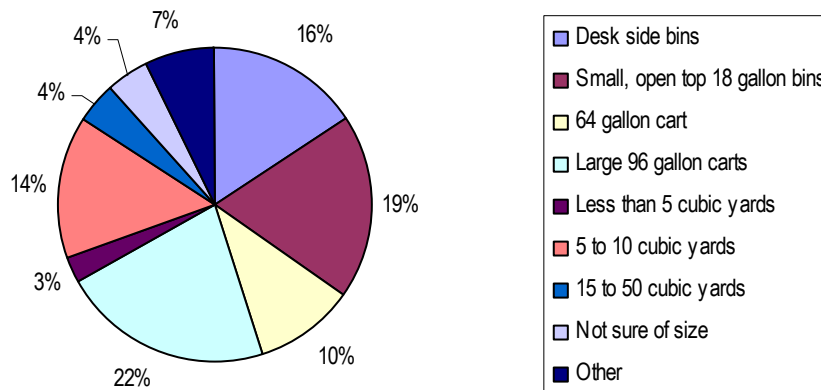
Figure 3.2: Frequency of Recycling Collection



Containers

The most common recycling container was reported to be **96-gallon carts (22%)** followed by **18-gallon open topped bins (19%)**. The figure below displays the container types.

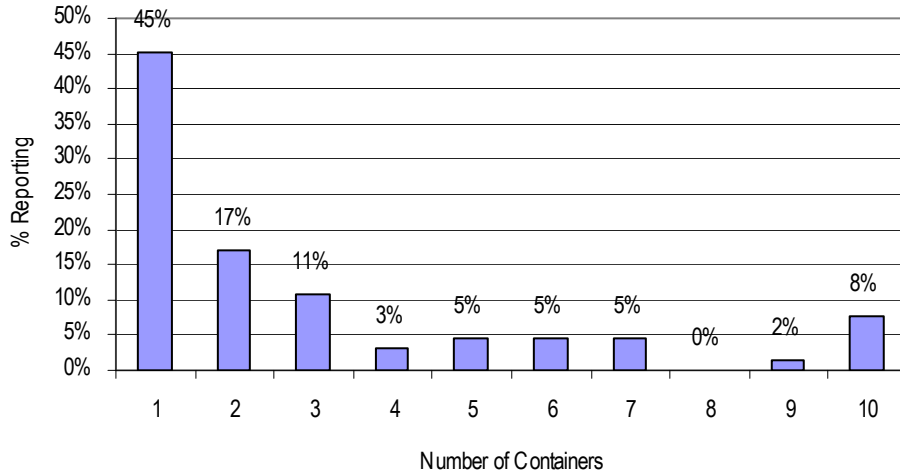
Figure 3.3: Recycling Containers



Number of Containers

Almost half of the businesses reported that they only have **one recycling container** on-site (**45%**) and **73%** reported that they had **3 or fewer containers**. Conversely, **8%** reported they had **10 containers** on site and a quarter of the businesses had **5 or more containers**. The figure below displays the number of recycling containers reported by businesses.

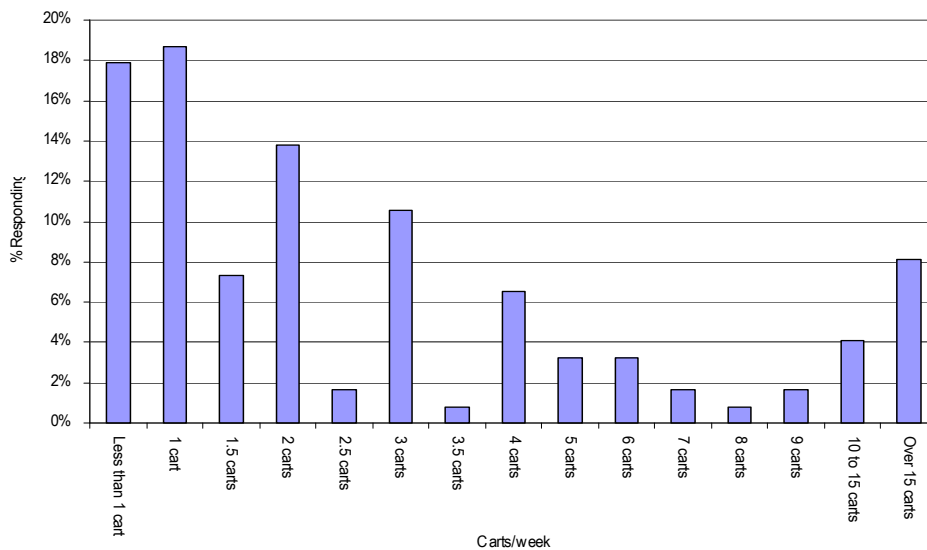
Figure 3.4: Number of Containers
Average: 3.8 cans



Amount of Materials

If all the recyclable materials a business collects were to be placed in 96 gallon containers, the average amount of recycled materials/per week was reported as **3.8 96-gallon** containers. About one fifth indicated they would fill up **one container (19%)** a week of recyclables. Additionally, one fifth would fill up **between one and two containers** per week and just under one fifth would require **three to four 96 gallon containers** per week. There were also a few large recyclers reporting that they fill up **10-15 carts per week (4%)** and **over 15 carts per week (8%)**. The figure below displays the recycling amounts as reported by the survey respondents.

Figure 3.5: Amount of Recyclables Generated



Type of Materials

The most often recycled materials as reported by businesses were:

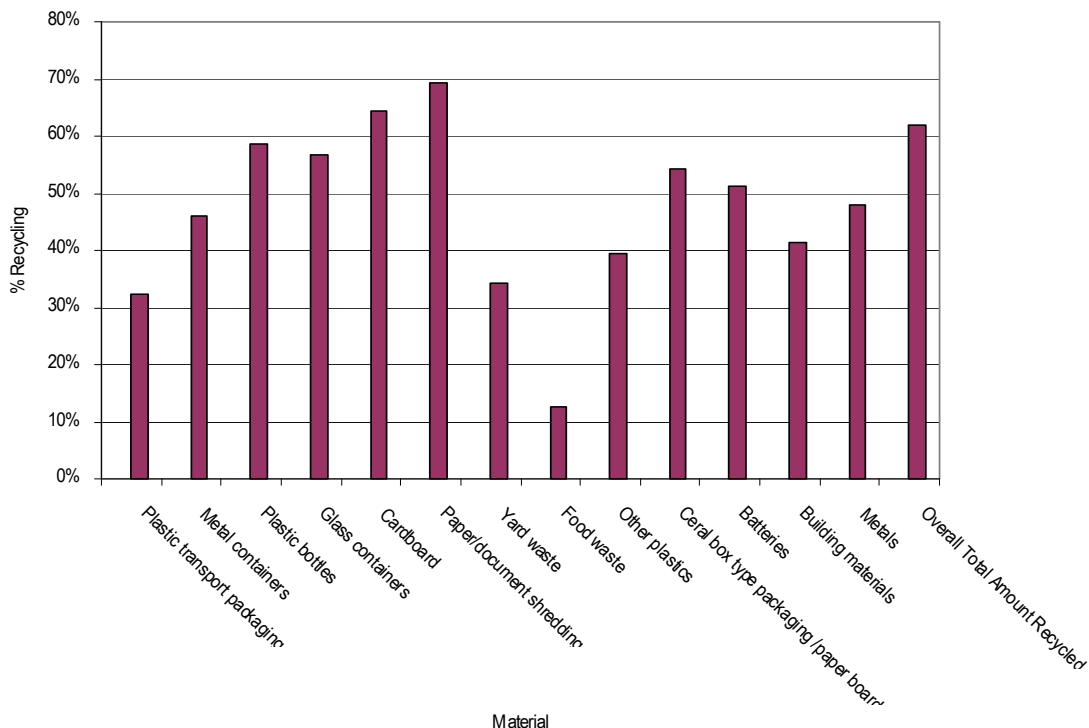
- **All** of the materials they generate (100%) for the following materials: **cardboard (30% of businesses), paper and document shredding (30% of businesses), plastic bottles (24%)**
- **Almost all** of the materials they generate (75-99%) for the following materials: **paper and document shredding (31%), cardboard (27%), plastic bottles (15%)**

The least often recycled materials were reported as:

- **Less than 10%** of the following materials: **Plastic transport packaging (shrink wrap for pallets, etc) (34%), food waste (31%), other plastics (24%)**

Figure 3.6 displays the percentage of responding businesses that are undertaking a particular behavior, in this case, recycling a certain material. The most often recycled material by all businesses was reported as **paper document shredding** with **69%** of businesses reporting this behavior followed by **cardboard (64%)** and **plastic bottles (59%)**. **Food waste** and **plastic packaging materials** are the least often recycled materials.

Figure 3.6: Weighted Average of Recycled Materials²⁷



²⁷ For this figure businesses reporting an N/A as a response were not incorporated.

The material that takes up the most space in the recycling bins was reported as **paper and magazines (40%)** followed by **cardboard (35%)**. The table below displays the responses:

Table 3.8: Materials Taking Up the Most Space in Recycling Bins

Material	Percent Responding
Paper/Magazines	40%
Cardboard	35%
Plastic	19%
Food/Metal/Others	6%

Despite the recycling activities and behaviors undertaken by the businesses, a number of recyclables are still ending up in the trash bins. When asked to report what materials take up the most space in the trash containers the following items were reported as the most prevalent: **paper (52%), plastic bottles and packaging (45%), cardboard (41%), Styrofoam (29%), and food waste (27%)**. There is very little **yard waste (1%)** ending up in the trash. There are, however, a few **hazardous items** ending up in the trash with **3%** reporting large amounts of **batteries** in their trash and **1%** reporting large amounts of **e-waste**.

When asked what materials they would most like to recycle at their business, the overwhelming majority of businesses indicated **paper (76%), cardboard (71%), and plastic bottles (56%)**. Low on their lists were **bulky items (5%), building materials (4%), yard waste (1%), and clothing/fabric (1%)**. There was mild interest in recycling the following materials: **electronics, Styrofoam, batteries, food waste, and packaging materials**. A **program addressing paper (38%)** was reported as the one most businesses would like to see implemented, followed by a **program for cardboard (28%), and bottles, cans, and commingled containers (24%)**. Only **6%** reported they would like to see a program to handle **food waste**, **5%** said they would like a **C&D program**, and less than **1%** reported they would like a **yard waste** program.

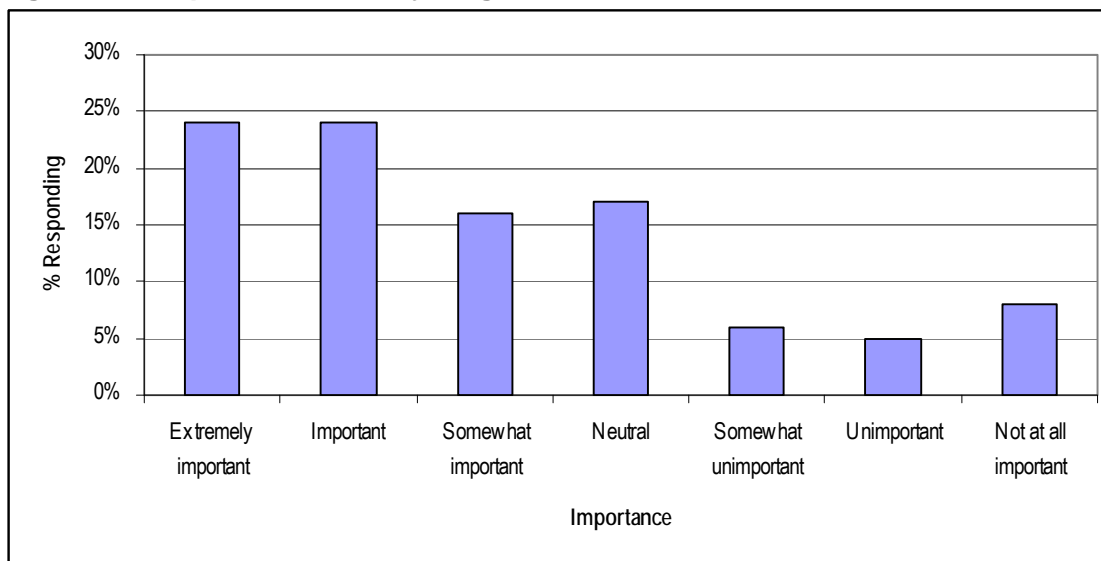
Costs, Barriers, and Behaviors

Costs

Decisions about what services the businesses use for recycling services are handled locally by the **business owners (73%)** for the majority of respondents. Other important decision-makers include the **property management company (18%)** or **corporate headquarters (9%)**.

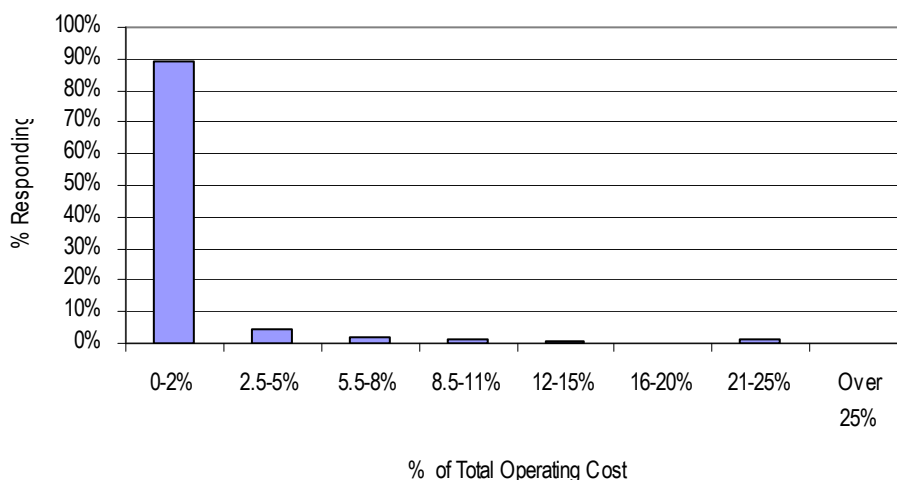
Nearly one-quarter of businesses reported that the cost of recycling services relative to their overall operating costs were **very important (24%)**, while only **8%** reported that these costs were **not at all important**. The figure below displays the distribution of these responses.

Figure 3.7: Importance of Recycling Costs



Compared to the overall operating costs for the businesses, the vast majority of businesses (**90%**) reported that **recycling service costs** were between **0% and 2%** of their total operating costs. The distribution of the responses is displayed below.

Figure 3.8: Relative Cost of Recycling Service



The **average monthly cost** for recycling services was reported as **\$207** for businesses in Mecklenburg County, with a **median cost** of **\$46**. There were two companies that reported monthly bills of over \$1000. The **maximum** paid per month was reported as **\$5000**, the **minimum** was reported as **\$0** per month. If the two companies reporting monthly bills of over \$1,000 are dropped from the analysis, the **average** monthly bill is only **\$80.41** and the **median** is **\$42.5**. About one sixth of the businesses reported that they **did not pay for recycling services (15%)**. These businesses were asked to explain why they did not have to pay for the services. A full listing of the responses can be seen in the appendix. Some of the responses provided include:

- *It is included in the lease*

- *Costs in time and gas are quite large but I do not pay for it*
- *Haul it myself*
- *We haul it ourselves or reuse it ourselves*
- *Person picks up recycled materials to turn in for profit*

Nearly half the businesses **contract directly (44%)** with the hauler for their recycling services and one quarter **self haul (28%)** their recyclables and do not pay for any recycling services. Only **12%** have recycling **included in their leases** and **9%** reported that they have recycling taken care of **by the property association**.

Barriers to Recycling

The businesses responding reported that the most common barrier to regular recycling was that **collection for the items they generate isn't available (29%)**, followed by the **hauler doesn't offer collection (21%)**. Nearly one quarter of the businesses reported that they were **unaware of any recycling options (25%)**. **Cost** is a barrier to slightly less than one fifth of the businesses (**16%**) while only **10%** reported that they **did not have room for containers**. The most often repeated open-ended response to barriers was that the building owners/management/landlord does not offer recycling service. Although all of the open-ended responses may be viewed in the appendix, a sampling of the responses includes:

- *Building owners do not provide recycling services.*
- *Poor Service from the Collector, Spill product on the ground, Leave Black Marks on the street by sliding their tires to stop in front of my house.*
- *Our building management doesn't offer it, I think it should be a law that it's required!*
- *We don't generate enough to hire someone to collect (paper, boxes other than cardboard)*

Business Behaviors

Overall, most of the respondents are recycling materials when they are not at work. The behaviors that survey respondents reported partaking in **almost always** (90-100% of the time) were reported as:

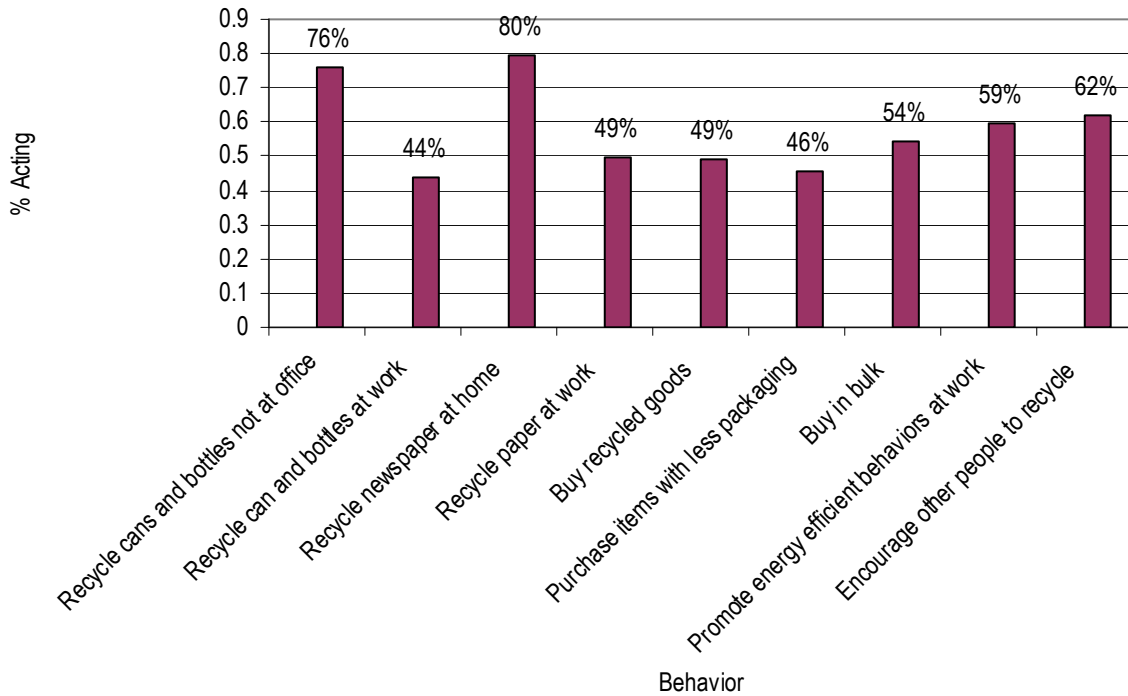
- **Recycle newspapers at home (69%)**
- **Recycle cans and bottles when away from work (62%)**

Conversely, the respondents were not participating in the same behaviors when in at work. The behaviors survey respondents **virtually never did** (only do the behavior 0-10% of the time) were reported as:

- **Recycle cans and bottles while at work (41%)**
- **Recycle paper at work (41%)**

The figure below displays the weighted averages of the recycling behaviors. The behavior that was most often undertaken by respondents was reported as **recycling newspaper at home (80%)**. The behaviors that were least often completed by respondents were **recycling cans and bottles at work (44%)** and **purchasing items with less packaging (46%)**.

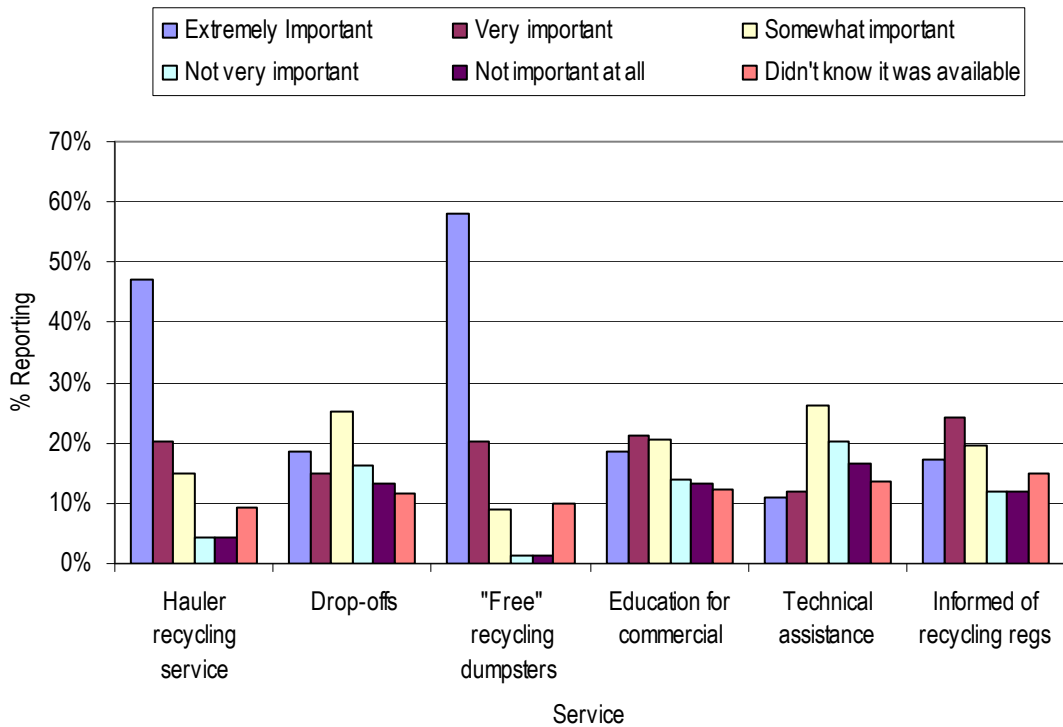
Figure 3.9: Recycling Behaviors



Important Services

The two most important recycling services offered in the County are the "free" recycling dumpsters for participating businesses program and the recycling service provided by haulers. Nearly all of the businesses (**87%**) reported that the **"free" dumpster program** was at least *somewhat important* to them and **58%** reported that the program was *extremely important* to them. Almost half of the businesses reported that the hauler provided services were *extremely important* to them (**47%**). On the other hand, only **11%** reported that **technical assistance programs** were *extremely important* to them and **37%** reported that **technical assistance** was either *not very or not at all important* to them. The programs with the least recognition in the County were reported as **being informed of recycling regulations and options when applying for a business license (15% unaware of program)** and **technical assistance (14% unaware of the program)**. Around 10% were unaware of all of the County's programs. The figure below displays the distribution of business responses:

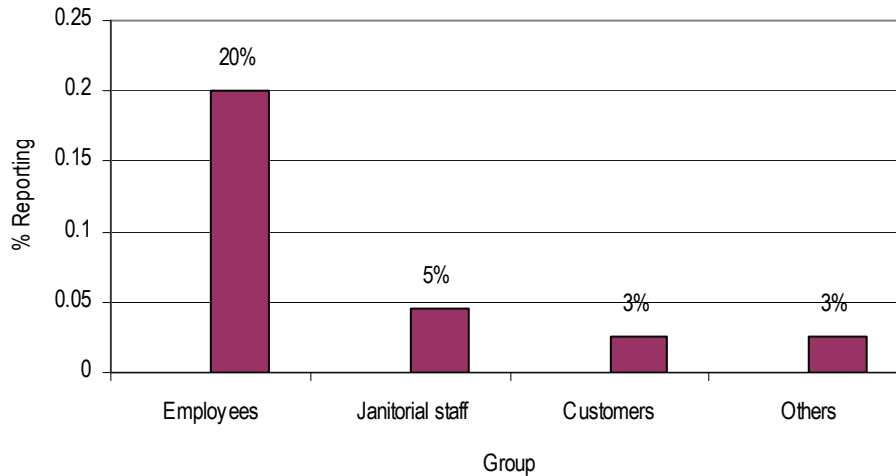
Figure 3.10: Importance of Various Recycling Service Options



Recycling Education Programs

The majority of businesses do not have any recycling education programs. For those that reported that they do have recycling education programs, the most popular programs were those that targeted employees. Only **5%** reported that they had recycling **education programs targeting janitorial staff**. However, this could be due to the fact that many of the small businesses might not have any janitorial staff.

Figure 3.11: Recycling Education Programs

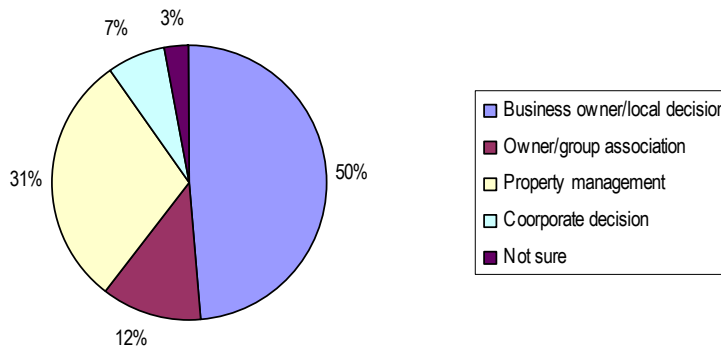


Of the approximately one-fifth of businesses that reported they have education programs, the most popular type of program was **posters about recycling (36%)**. This was followed by **brochures and pamphlets (33%)** and web information (**21%**). Additionally, businesses reported using **stickers (15%)**, **newsletters (15%)**, **seminars (12%)**, and **mailings (6%)** to share recycling education information. Only about **10%** reported that the **property manager** had recycling education programs in place.

3.2 Trash Services

The decisions regarding trash collection services are most often decided upon by the **business owners (50%)**. Nearly one-third of the businesses have their trash service decisions made by the **property management company (31%)** while **12%** report that the **building owner/group**, not the business owner, is the responsible party for decision making. The figure below displays the trash service decision-makers.

Figure 3.12: Trash Service Decision-Makers



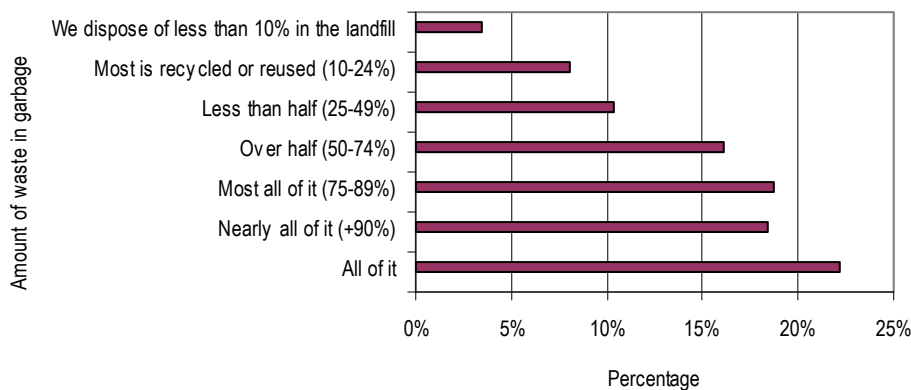
The most common response as to which company handles the trash service was **not sure (32%)**, followed by **Waste Management (15%)**, **Allied Waste (14%)**, and the **City of Charlotte (10%)**. Nearly 10% reported that they had their trash collected by **Republic/GDS of Charlotte (10%)**. In order to contract out their trash services, over one-third of the businesses reported that they **contract directly with the hauler (38%)**. Around one-third pay for trash service by **inclusion in their lease (31%)** and **1%** reported that they **self haul** their trash and do not require services.

Amounts, Frequency, Materials and Containers

Amounts

More than half of the businesses report that they throw **most all to all of the total waste stream into the garbage (60%)** and over one fifth reported they throw **all of their materials in the garbage (23%)**. The figure below displays the garbage disposal behaviors of the respondents.

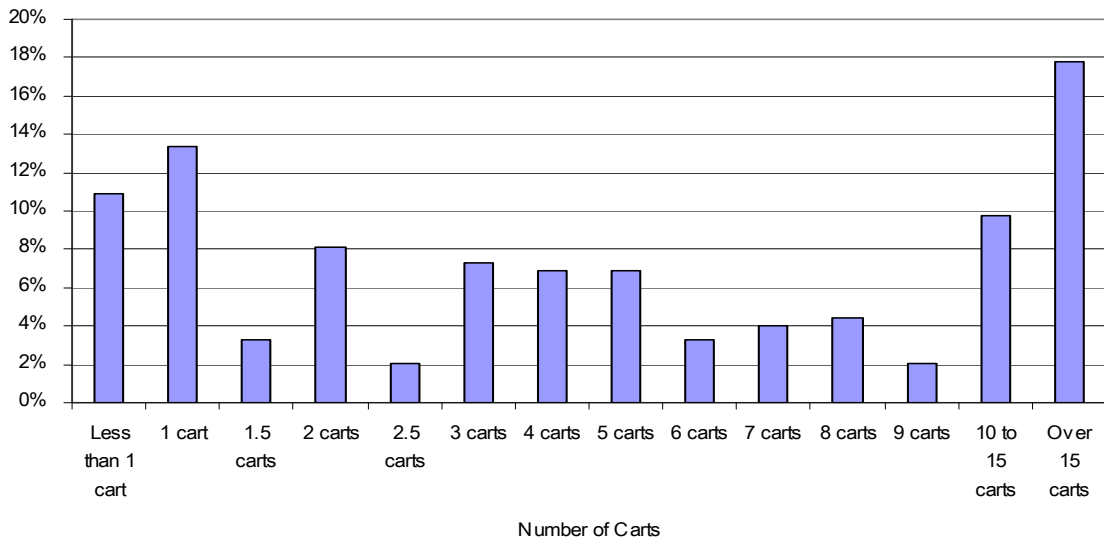
Figure 3.13: Garbage Disposal Behaviors



Businesses were also asked to report on the amount of trash they were disposing of, per week, in terms of the number of 96-gallon carts they would fill up per week. The **average** amount of garbage per week was reported as **5.1 96-gallon carts**. Nearly one-fifth of businesses (**17%**) reported that they were disposing of **over 15, 96-gallon carts of trash, per week**. The figure below displays the results.

Figure 3.14: Amount of Trash Disposed (96-gal/week)

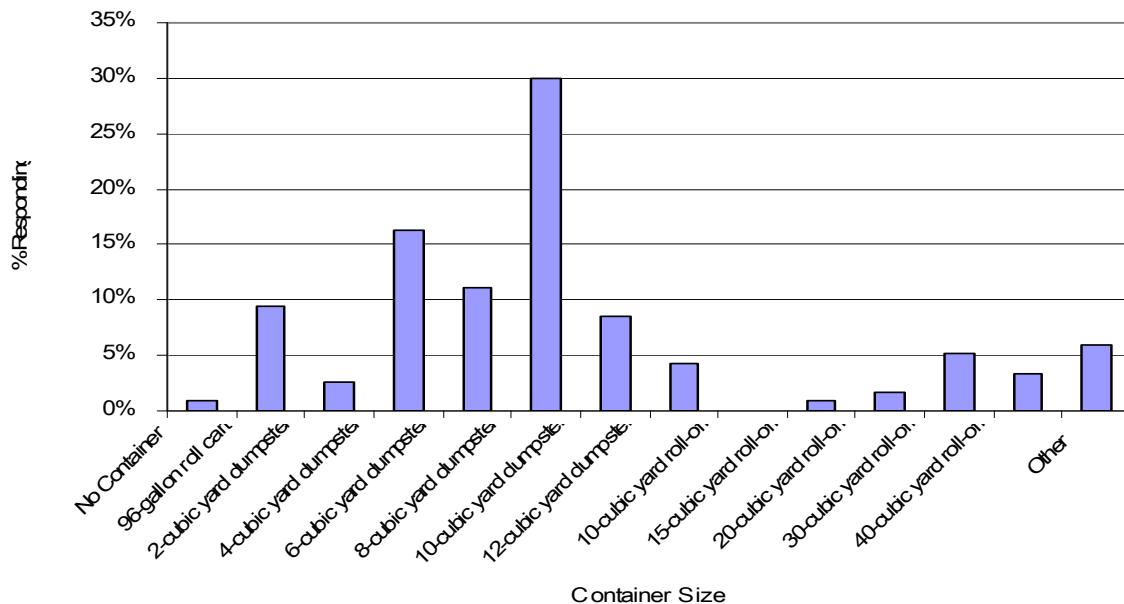
Average: 5.1 96-gallon carts/week



Container Size

About one-third of respondents reported that they used **8-cubic yard** containers for their trash collection (**30%**). The second most common container size was reported as a **4-cubic yard container** (**16%**) followed by **6-cubic yard** (**11%**) and **96-gallon roll off carts** (**9%**). The figure below presents the frequency of reported container sizes. Additionally, **12%** reported that they do have a **trash compactor** on-site. Only 9% of all businesses reported contracting for 16 cubic yards or greater trash containers.

Figure 3.15: Trash Container Sizes



Frequency

The majority of businesses reported that they have trash collected **weekly (63%)** and about one quarter reported they have trash collected more than once a week. Less than 5% reported they only have trash collected **monthly (3%)** and **9%** reported they have trash collected **every-other-week**. Trash collection frequencies are displayed in the table below.

Table 3.9: Frequency of Trash Collection

Frequency of Collection	% Reporting
More than 3x week	3%
3x a week	3%
2x week	17%
Once a week	63%
Every other week	9%
Once a month	3%
Other	3%

Materials

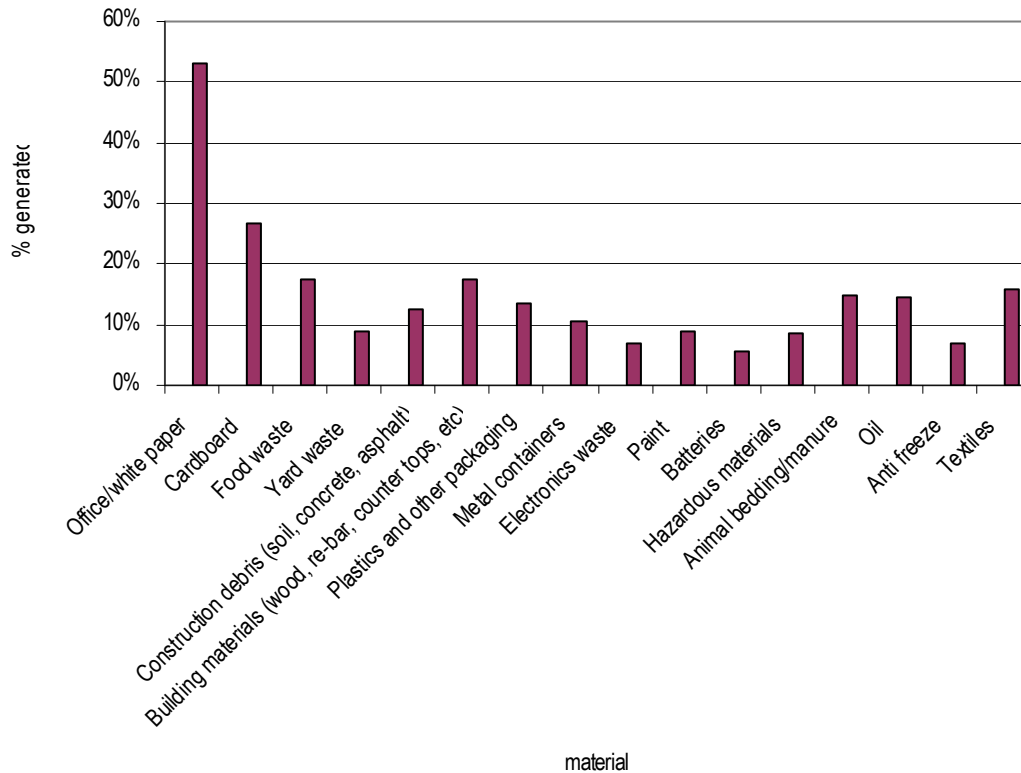
The businesses were also asked to report on the materials they generate. All of the businesses reported they generate at least some **office/white paper (100%)** and almost all reported that they generate **cardboard (97%)**. The table below reports on the materials that businesses are generating, regardless of the amount of the material.

Table 3.10: Materials Businesses are Generating

Material	% of Businesses generating
Office/white paper	100%
Cardboard	97%
Food waste	86%
Yard waste	24%
Construction debris (soil, concrete, asphalt)	13%
Building materials (wood, re-bar, counter tops, etc)	24%
Plastics and other packaging	93%
Metal containers	40%
Electronics waste	30%
Paint	12%
Batteries	24%
Hazardous materials	13%
Animal bedding/manure	6%
Oil	7%
Anti freeze	6%
Textiles	10%

A weighted average was used to determine the main materials generated for those businesses that are generating the material. For instance, only 10% of the businesses reported that they are generating textiles, and for these businesses, textiles are generally around 16% of their total generated materials. For paper, all of the businesses reported that they generate paper, and paper consists of around half of the material that they generate. The figure below displays the distribution of weighted averages.

Figure 3.16: Main Materials Generated by Businesses



Estimated Trash and Recycling Generation

To determine the estimated recycling generation and disposal rate for the small businesses in the County, a series of responses collected from the statistical survey were utilized. The majority of surveyed businesses are unable to report directly what their diversion rate is²⁸. The survey instead, asked the small businesses two questions which were analyzed concurrently to estimate material generation and diversion. The two survey questions were:

²⁸ SERA has completed trash and recycling surveys for over two decades and has found that threshold questions are more likely to be answered by respondents.

If you were to place ALL of the RECYCLING material you normally collect in a flip-top, 96 gallon container (like you use at home), how many containers would you fill up in ONE WEEK at your business?

- Less than 1 cart
- 1 cart
- 1.5 carts
- 2 carts
- 2.5 carts
- 3 carts
- 4 carts
- 5 carts
- 6 carts
- 7 carts
- 8 carts
- 9 carts
- 10 to 15 carts
- Over 15 carts

If you were to place ALL your GARBAGE in a flip-top, 96 gallon container (like you use at home), how many containers would you fill up in ONE WEEK at your business?

- Less than 1 cart
- 1 cart
- 1.5 carts
- 2 carts
- 2.5 carts
- 3 carts
- 4 carts
- 5 carts
- 6 carts
- 7 carts
- 8 carts
- 9 carts
- 10 to 15 carts
- Over 15 carts

The average generation of both trash and recycling, in 96 gallon containers, along with the average diversion rate²⁹ is displayed in the table below.

Table 3.11: Estimated Recycling and Trash Generation (gallons)

	Trash in gallons	Recycling in gallons	Total Generation in gallons	Diversion rate
Average	493	362	658	22%
Median	336	192	384	0%
Max	1200	1536	2736	
Min	48	48	48	

When converted to cubic yards the estimates are³⁰:

Table 3.12: Estimated Recycling and Trash Generation (cubic yards)

	Trash in cubic yards	Recycling in cubic yards	Total Generation in cubic yards	Diversion rate
Average	2.4	1.8	3.3	22%
Median	1.7	1.0	1.9	0%
Max	5.9	7.6	13.5	
Min	.2	.2	.2	

²⁹ Diversion = Reported recycling/Σ(recycling, trash). The displayed average is the average of all individually reported diversion rates.

³⁰ 1 cubic yards=201.97gallons

For comparison purposes, the estimated generation and diversion rates were also converted to pounds. Table 1.4 displays the estimates in pounds.

Table 3.13: Estimated Recycling and Trash Generation (pounds)³¹

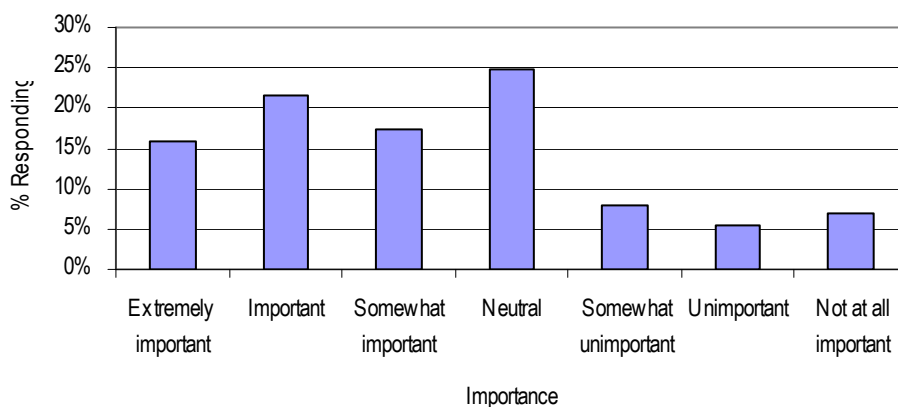
	Trash in lbs	Recycling in lbs	Total Generation in lbs	Diversion rate
Average	360 to 720	390 to 470	750 to 1,190	22%
Median	255 to 510	205 to 252	460 to 762	0%
Max	885 to 1,770	1,651 to 2,017	2,536 to 3,787	
Min	30 to 60	51 to 63	81 to 123	

Costs

Trash Service Costs

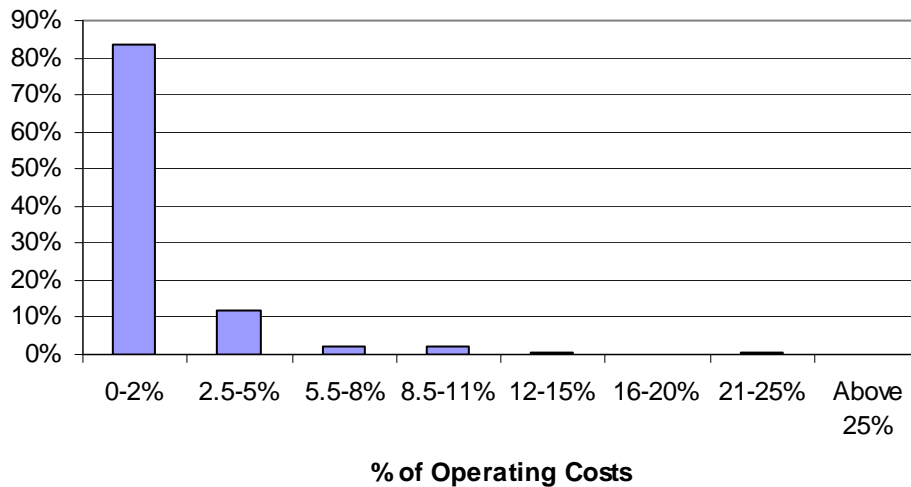
In general, the businesses reported that the impact of garbage and recycling program costs on overall operating costs is very important relative to overall operating cost. Yet more than 80% of the businesses surveyed reported that these program costs are less than 2% of their operating costs. The following two figures display this discrepancy graphically.

Figure 3.17: Importance of Garbage Costs



³¹ For weight estimates a range of possible weights is displayed. Unlike gallons or cubic yards, weight is not a volumetric measurement and density and mass of the materials determines the weight. Cubic yard and gallon conversions to pounds were calculated using SERA data for various MSW and recycling streams densities. For example, one cubic yard of MSW typically weighs between 150 to 300 pounds depending on the materials in the waste stream.

Figure 3.18: Percent of Operating Costs



The average cost for trash services in Mecklenburg County is **\$527** per month with a median cost of **\$130**. The maximum anyone is paying is **\$33,000** and the minimum is **\$0** per month. If the outlier value of \$33,000 is dropped the **average** monthly garbage bill was reported to be **\$258.65** with a **median of \$130**.

3.3 Programs, Behaviors, and Service Options

The programs receiving either *strong support* or *somewhat support* from the majority of businesses were reported as:

- Hauler required to offer recycling (80%)
- Mandatory bottle and can recycling (77%)
- Free recycling for small business to use residential curbside recycling service (75%)
- Program to reduce construction waste (74%)
- Enhanced education programs to businesses (74%)

The programs receiving the highest levels of *strong support* were:

- Free recycling for small businesses (58%)
- Hauler is required to offer recycling (51%)

The programs with the highest level of *opposition* were:

- Extra fee charged at landfill to make garbage more expensive to help pay for recycling efforts (30%)
- Business plans for recycling required in lease (24%)
- Business plans for recycling required (22%)
- A “User Fee Tax” allowing both Mecklenburg County small businesses and, as it is now, residents to use County Recycling Centers (limits of items to apply) (22%)
- Building code revision to increase space for recycling (16%)

The full results of program support can be seen in figure 4.2. Figure 4.1 displays the combined support and opposition of various program measures.

Figure 3.19: Combined Program Support and Opposition

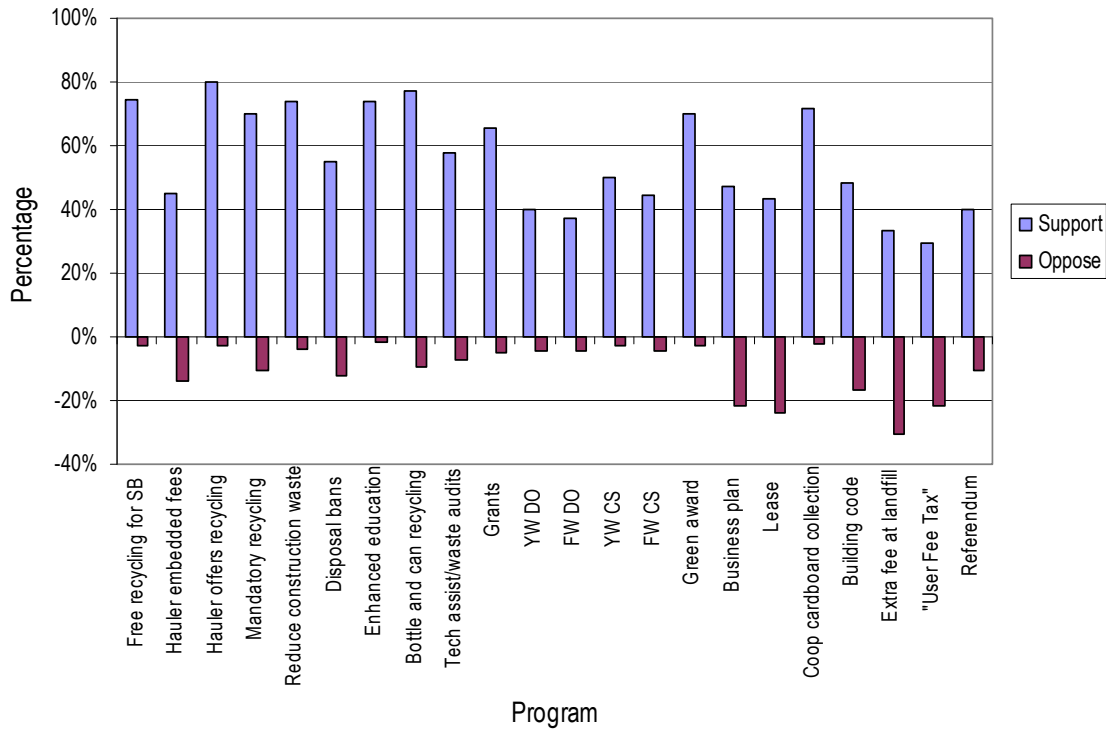
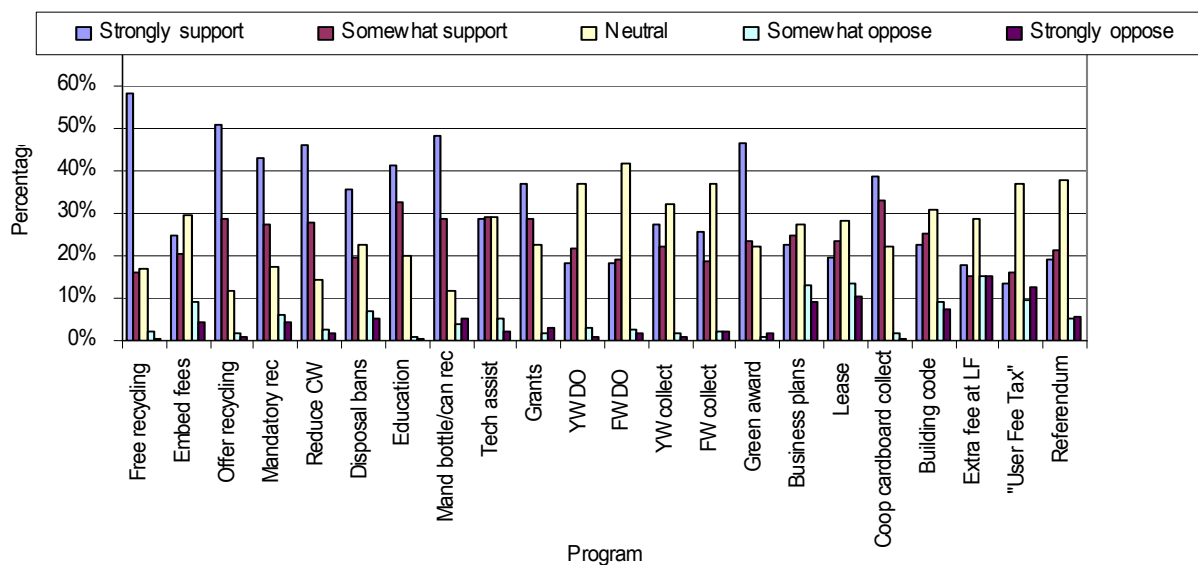


Figure 3.20: Program Support and Opposition



Willingness to Pay

The survey queried the businesses on their likelihood to use (and pay for) enhanced recycling opportunities if they were available. Figure 3.21 shows the willingness to pay for expanded services. If the County implemented some of the changes from figure 3.20 above, but the service cost an additional **\$10 more per month**, nearly three fourths of the businesses responding would still be **likely to use the expanded services** and **61%** would be **very likely**. Over one half would be somewhat or very likely to use the expanded services if the cost went up \$20 a month. At **\$40 a month** cost increase, more than half of the business would be **likely to not use the expanded services**. The businesses were also asked to report, in an open-ended question, the *maximum* they would be willing to pay for recycling services. After weighting the individual likelihood responses,³² we found the following results:³³

- Between 62% and 70% of businesses are estimated to sign up for, and pay for, enhanced services if they cost about \$10 per month;
- 44%-52% will participate at the cost of \$20 extra per month;
- 25%-29% will participate at the cost of \$40 extra per month;
- 18%-21% will participate at the cost of \$50 extra per month;
- 12%-13% will participate at the cost of \$100 extra per month;
- 40%-46% will participate if costs rise 5% per month;
- 20%-23% will participate if costs rise 15% per month³⁴.
- 71%-78% said they would participate, even if the programs were available at no extra cost.

For comparison, the average trash and recycling bills for those reporting figures are shown in the table below.

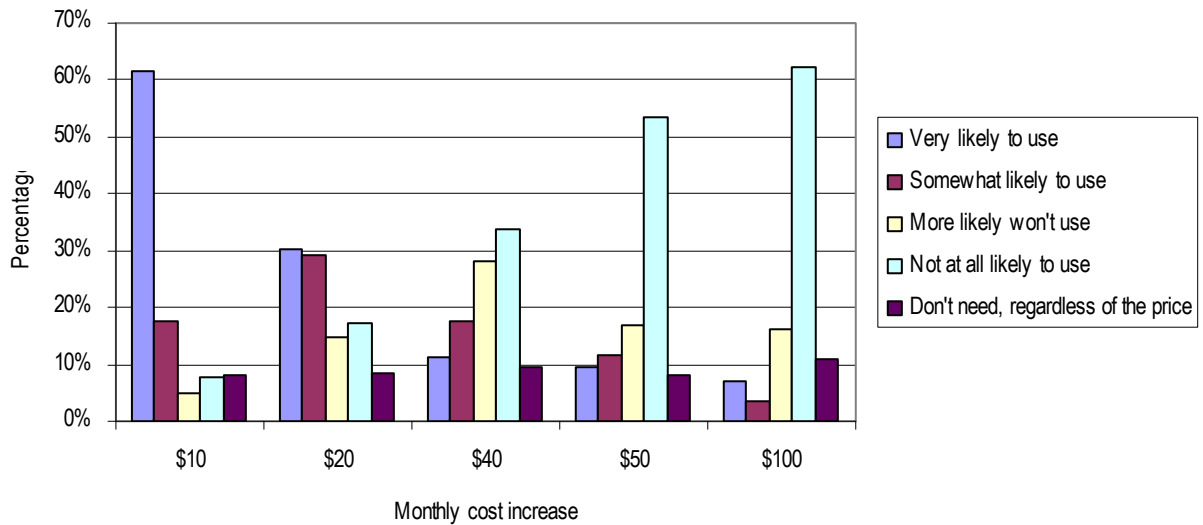
	Trash	Recycling
Average	\$260	\$222
Median (half pay more, half pay less than this value)	\$130	\$47

³²The survey answer categories assigned 85% likelihood to “very likely to use”; 50% to 85% to “somewhat likely to use”; less than 50% to “more likely won’t use”, and there were no percentages applied to “not at all likely” or “don’t need”, both of which were assigned a 0% likely to pay or use. We ran scenarios assuming the low end of the percentage likelihoods, and another assuming the midpoints, and those are the reported percent of businesses likely to use and pay for the service at each cost increment. For the “more likely won’t use, we assigned 25% for both scenarios. To stay conservative, no scenarios were run using the “high end” of the participation percentages.

³³ We also examined an “open-ended” response, asking businesses to state how much, in dollar terms, they would be willing to pay for the enhanced services. A relatively small number replied to this question (20%), and even fewer provided estimated trash bills to allow percentage comparisons). On average, they said about 27%. The average dollar amount represented by this response was about \$55.70 per month (the median was \$20/month), and included the wide range of small to large businesses.

³⁴ In all our surveys, we find respondents more nervous about expressing willingness to pay increases in percentage terms; dollars seem to be less of a barrier or interim computation for respondents. As a result, we usually find the percentages lower or more conservative for what should be similar numbers when expressed in dollar terms.

Figure 3.21: Willingness to pay for expanded services

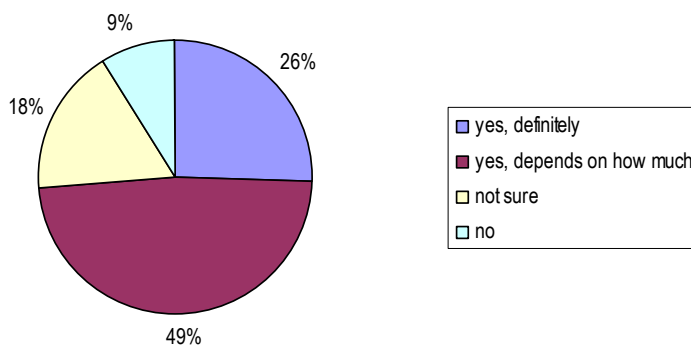


Over a quarter of the businesses said they would **definitely support (27%)** a program that increased their solid waste costs per month, but included unlimited recycling services. Nearly half of the respondents reported that their participation **depends on how much** the cost increases. Respondents were given an opportunity to write in an amount of how much they would be willing to pay for such a service and the **average** suggested increase was **\$17.81 month**, with a **median of \$10/month**.

The results indicate that there is likely to be high participation if the County introduces programs, initiatives, regulations, or services that cost the average business on the order of \$10-20/month; or if bills rise by only about 5% (which, expressed as a percent of average trash bill, is \$13/month).

The figure below represents the business response to whether or not they would support paying more for trash services if it included recycling collection.

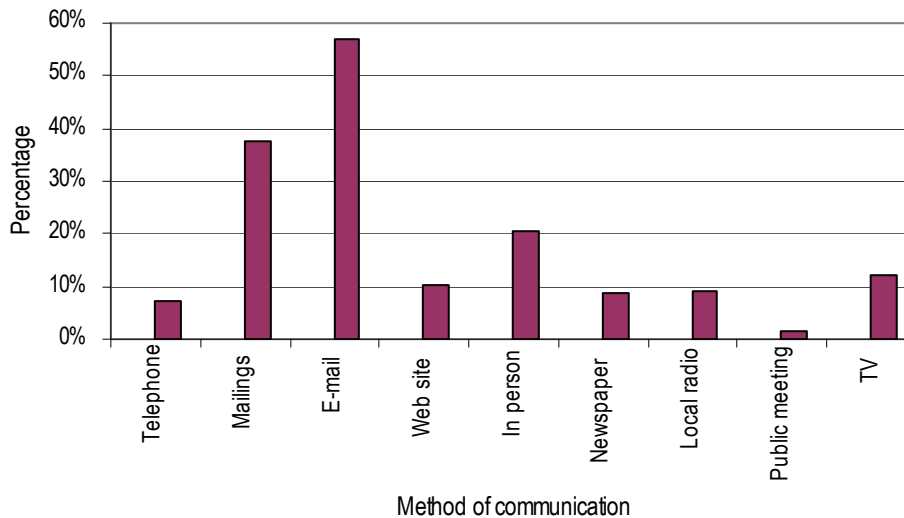
Figure 3.22: Support of Higher Trash Bills with Unlimited Recycling



Communication

The most effective way of communicating information regarding recycling within the business is through **e-mail (57%)**. **Mailings (38%)** and **in-person contact (21%)** were the second and third most effective way of communicating. **Public meetings, television, and radio** were all reported as less effective ways to contact business decision-makers regarding their trash and recycling services.

Figure 3.23: Best Method of Communicating



Mecklenburg County has several current recycling outreach campaigns. Nearly three-quarters of the businesses responding to the survey were aware of the **Solid Waste and Recycling Website (73%)** while about one third knows about the **Swat-A-Litter Bug campaign (32%)**. The **resource guide, business recycling hotline, and C&D programs** are not widely known among the majority of businesses in the County.

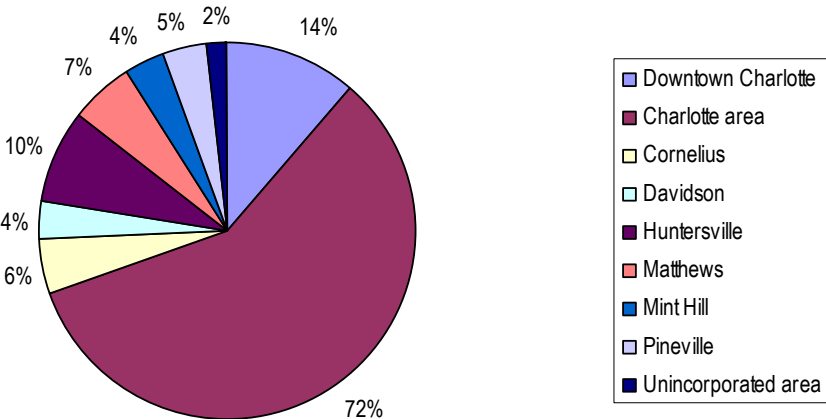
Table 3.14: Business Awareness

Recycling Outreach Campaign	Percent Aware of Program
Solid waste and recycling website www.wipeoutwaste.com	73%
Business recycling info-line	8%
Swat-A-Litter bug	32%
Resource guide for commercial waste reduction and recycling	5%
Construction and Demolition waste reduction and recycling	8%
Wipe Out Waste guidebook	11%

3.4 Firmographics

Two thirds of the businesses responding to the survey are *located* in the **Charlotte area (67%)** with **14%** in **Downtown Charlotte**. The majority of those responding *conduct* their business in the **Charlotte area (72%)** followed by **Pineville (5%)**. Only 2% reported that they conduct their business in unincorporated areas.

Figure 3.24: Where do Businesses Conduct Their Business



The average number of full time employees of the businesses was reported as **14** with a median of **10**. The maximum size of business was **49** full time employees while the smallest is a single employee.³⁵

The five largest business types surveyed were: **professional/bank/insurance (19%)**, **non-profit (13%)**, **construction (11%)**, **medical care (11%)**, and **manufacturing (9%)**. The listing of “other” responses for business activities can be seen in the appendix. A full listing of business types follows:

Table 3.15: Business Sectors

Business Sector	% Reporting
Retail	9%
Manufacturing	9%
Wholesale (trade)	5%
Professional/bank/insurance	19%
Medical care	11%
Hospitality/hotel	2%
Restaurant/bar	4%

³⁵ Businesses that reported over 49 employees were not included in the analysis.

Business Sector	% Reporting
Administrative support	1%
Auto repair	1%
Construction	11%
Lawn care/landscape	<1%
Beauty shop/salon/spa	2%
Non-profit	13%
School	3%
Government	4%

3.5 Comparisons of Sub-Groups (Small Business Specifics)

A comparison of business with less than five employees and all other businesses was completed to identify what, if any, issues effect the smallest businesses in the County. Many of the smallest businesses were reported to be at home businesses with one to two employees total. The average number of employees for the smallest businesses was reported as 2.3. The distribution of the businesses with fewer than 5 employees is shown below.

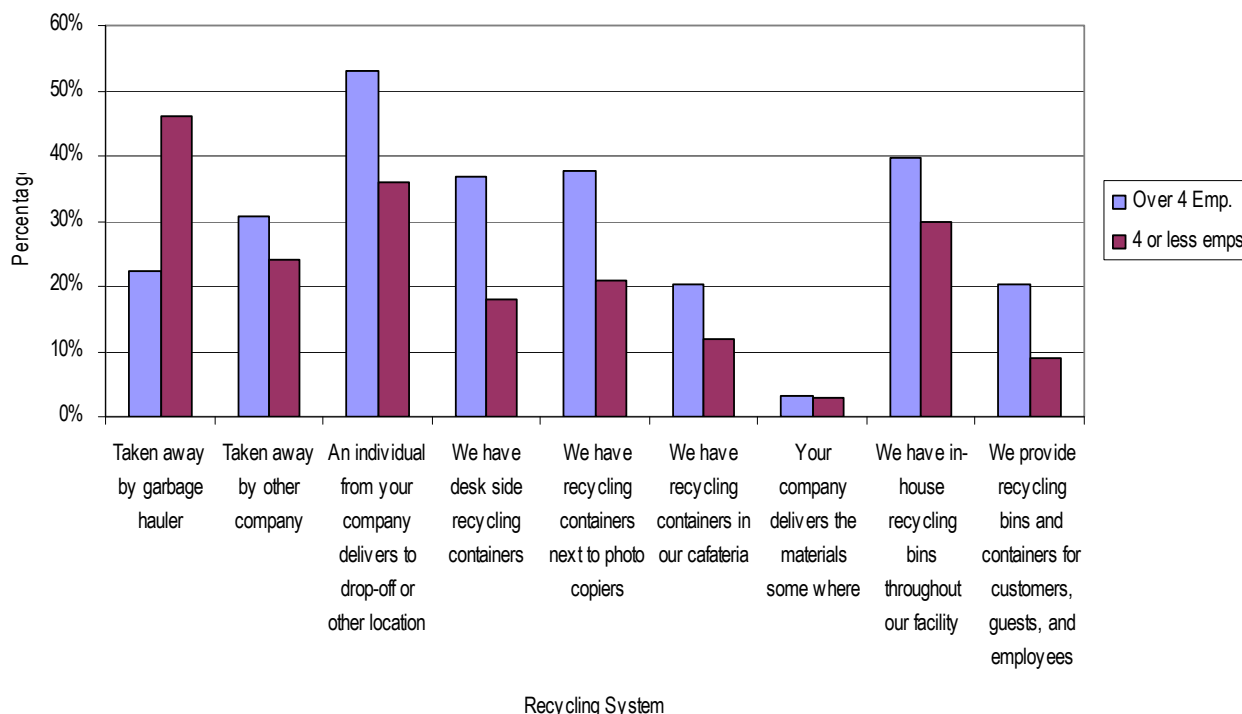
Table 3.16: Distribution of Smallest Businesses

Number of employees	Number of businesses	Percent of smallest
1	25	30%
2	24	29%
3	15	18%
4	19	23%
Total	83	100%

Recycling Programs

For the smallest businesses, recycling is **taken away by a hauler** more often than for the larger businesses (**46% smallest, 22% larger**). The smaller businesses also reported that they do not **self haul** as often as the larger businesses (**36% smallest, 53% larger**). A comparison of the recycling program types is displayed in the figure below.

Figure 3.25: Recycling Program Types



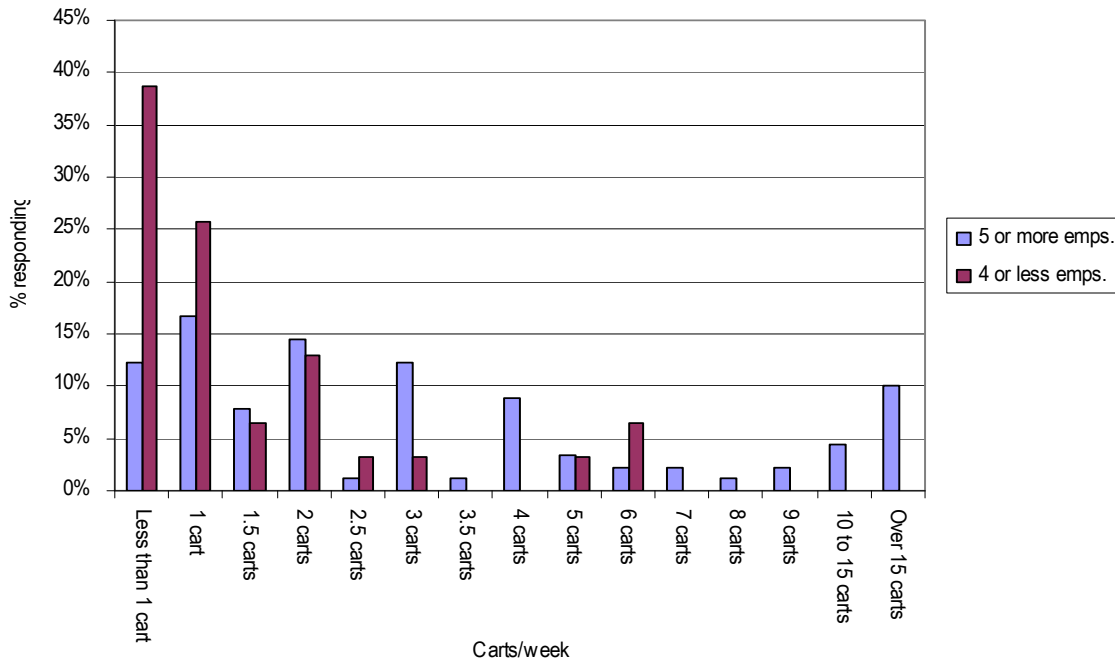
For both groups diversion programs other than recycling were not especially common. Over half of the smallest businesses reported that they did **not have any other diversion programs (54% smaller, 46% larger)** and one third of the smallest businesses reported having a waste reduction program such as **duplex copying (33% smaller, 39% larger)**.

Recycling Frequency, Amounts and Materials

The smallest business most often reported that they had **one (56%) small, open top, 18 gallon bin (29%)** that is collected **once a week (58%)** compared to the larger businesses where most respondents reported that they had **one (43%) large 96-gallon cart (26%)** that is collected **once a week (31%)**.

The larger businesses, predictably, reported that they produced more recyclables. While nearly two fifths of the smallest businesses reported that they could place all of their recyclables in less than 1 96 gallon cart per week (39%) only 12% of the larger businesses reported that they could fit all their recyclables in less than 1 96 gallon cart. The majority of the larger businesses reported that they generated 2 or more carts (66%). The reported generated amounts of recyclables, per week, are displayed in the figure below.

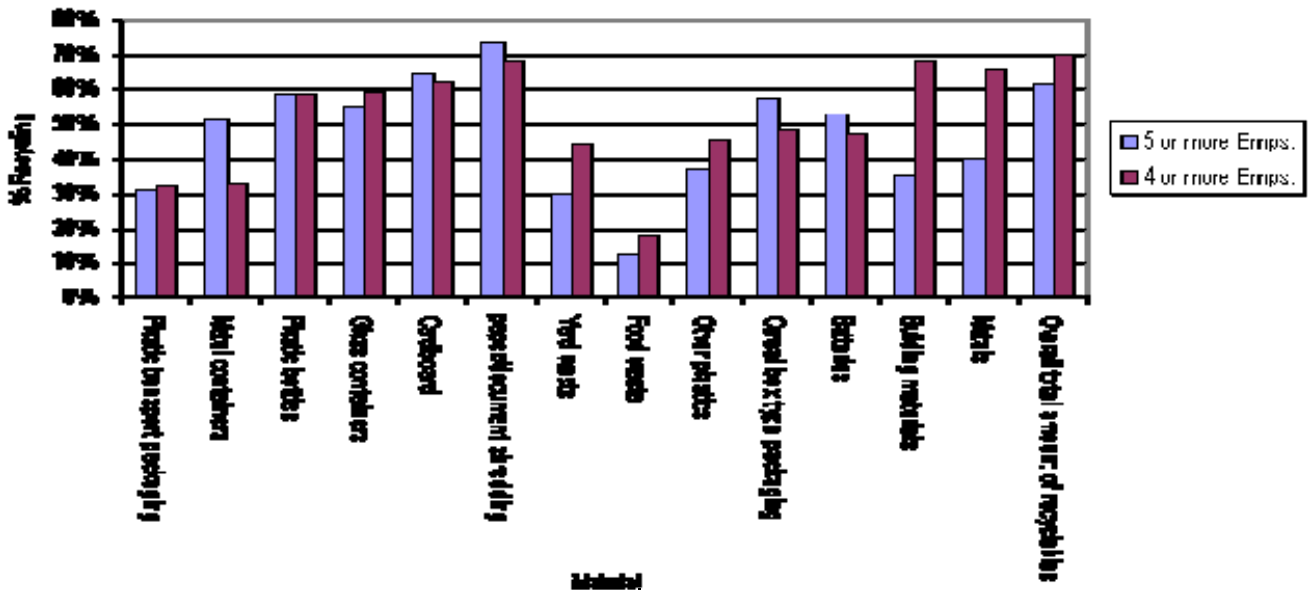
Figure 3.26: Amount of Recyclables Generated



Types of Materials

Weighted averages were used to compare the differences in the materials recycled for the largest and smallest businesses. Overall, the large and small businesses are recycling the same materials with little difference between the two categories. The figure below displays the weighted averages for reported recycled materials.

Figure 3.27: Weighted Average of Recycled Materials³⁶



For both groups, the materials that were reported as taking up the most space in the garbage after any and all recycling efforts that they did were: **paper (59% smallest, 51% larger)** **cardboard (32% smallest, 43% larger)** **Styrofoam (28% both)** and **plastic containers (25% smallest, 23% larger)**. Both groups reported that the material they would most like to recycle at their business was **paper (42% smaller, 37% larger)** and **bottles, cans, commingled containers (26% smallest, 22% larger)**. There was a difference in cardboard. While only 17% of the smallest companies said they would like to see a program address **cardboard** recycling nearly one third of the larger businesses want a program to recycle more **cardboard (32%)**. Neither group was very interested in seeing more additional programs related to recycling **yard waste, food waste or C&D**.

Costs, Barriers and Behaviors

There was little difference in who made recycling decisions between the two groups with the majority of both groups reported that recycling decisions were made on site by the business owner (**75% smallest, 72% larger**). Likewise, both groups reported similar responses regarding the importance of their recycling costs and the percent of their operating costs that they spend on recycling.

On average, the larger companies pay more for their monthly recycling services than the smallest companies. The **average monthly rate** for the companies with 5 to 50 employees was

³⁶ To determine this weighted average, businesses reporting N/A were dropped from the analysis. The largest discrepancies in reported recycling were seen in yard waste (30% larger, 45% smallest), metal container recycling (50% largest, 34% smallest) and building material recycling (35% largest, 68% smallest). The discrepancies could be partially explained by the N values and N/A responses. For example, only a few of the smallest companies did not report N/A for the building material category but those that did not respond N/A reported recycling it. For all of the materials with the largest differences, a large proportion of the respondents reported N/A in their surveys.

reported as **\$252.75** compared to **\$95.60** for companies with 4 or fewer employees. The **median values** were **\$48.00** and **\$40.00** respectively. When the outliers were dropped from each group the averages were computed as **\$75.78** for the larger companies and **\$34.00** for the companies with less than 5 employees.

The primary barriers to recycling for both groups were not very different. Both reported that **haulers do not collect the items they generate (28% smallest, 29% larger)** and haulers **do not offer collection(20% smallest, 22% larger)**. There were a few differences though, mainly that a higher proportion of companies with under 5 employees reported that they **regularly recycle (24% smallest, 16% larger)** and that the companies with over 4 employees were more likely to report that they were **unaware of recycling options (28% larger, 16% smallest)**.

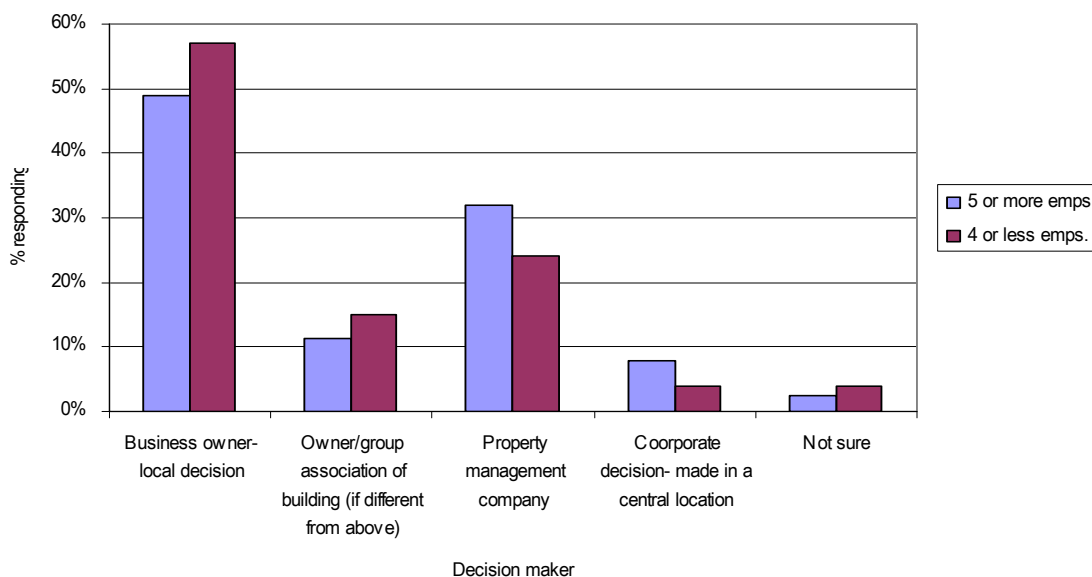
Important Services

There was little to no difference in the respondent rankings of the important business diversion services offered by the County. Both reported that the **“free” recycling dumpsters** and **hauler provided services** were very important to them and that technical assistance was not very important.

Trash Services

Businesses with four or less employees were slightly more likely to report that the trash service decisions were **local (57% smallest, 49% larger)** while businesses with over 4 employees were somewhat more likely to have a **property management company (24% smallest, 32% larger)**. The distribution of the decision-makers for trash service is displayed in the figure below.

Figure 3.28: Trash Service Decision Makers



Amounts Frequency, Materials and Containers

There was little difference between the reported amounts of generated waste that are disposed of in the trash. For both groups, the majority of respondents reported that they disposed of ***most all to all of the materials they generate in the trash (61% smallest, 59% larger)***. Only about 15% of both groups reported that they ***recycled or reused*** most to all of their materials generated (***15% smallest, 10% larger***).

On average, the companies with fewer than five employees generated less trash per week than the larger companies. The smallest business reported that on average, they ***generated 3.5 96-gallon carts/week*** compared to an average ***7.75 carts/week*** for the businesses with 5 or more employees.

Container Size and Frequency

The most common size for the smallest businesses was reported as ***1 96-gallon container (29%)*** while the most common container size for businesses with five or more employees was reported as a ***4-cubic yards dumpster (17%)***. Less than half of the businesses with fewer than 5 employees use a ***6-cubic yards or larger container (47%)*** while two thirds of the larger firms use a ***6-cubic yards or larger container (66%)***. The majority of both groups reported that they have their trash collected ***once a week (68% smallest, 62% larger)***. Only 5% of the smallest businesses reported contracting for 16 cubic yard or more of trash disposal and 10% of the businesses with 5 or more employees reported contracting for 16 cubic yard or more of trash service.

Materials

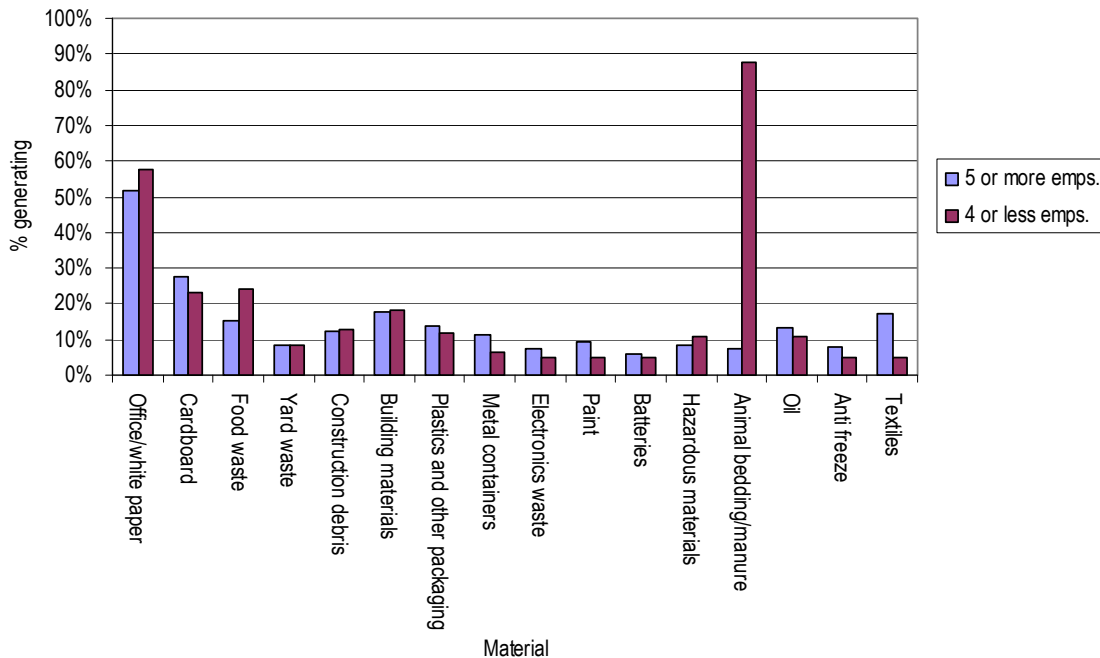
Businesses were asked to report on what materials they generate on-site. The table below shows the percentage of businesses that reported generating at least some of the material. The materials with the largest differences are **bold** and *italicized* in the table.

Table 3.17: Materials Businesses are Generating

Material	5 or more employees	4 or less employees
Office/white paper	99%	100%
Cardboard	99%	91%
Food waste	87%	84%
Yard waste	24%	23%
Construction debris (soil, concrete, asphalt)	16%	9%
<i>Building materials (wood, re-bar, counter tops, etc)</i>	<i>28%</i>	<i>15%</i>
Plastics and other packaging	93%	93%
Metal containers	40%	37%
<i>Electronics waste</i>	<i>35%</i>	<i>21%</i>
<i>Paint</i>	<i>15%</i>	<i>4%</i>
Batteries	26%	17%
<i>Hazardous materials</i>	<i>16%</i>	<i>4%</i>
Animal bedding/manure	7%	2%
Oil	7%	4%
Anti freeze	7%	2%
<i>Textiles</i>	<i>12%</i>	<i>2%</i>

Similar to the overall analysis, a weighted average was used to compare generated trash amounts for the two groups. There are no large differences between the generated materials with the exception of animal bedding/manure. There was only one small business reporting that they generated this material and they reported that between 75% and 100% of their material was animal bedding/manure.

Figure 3.29: Weighted Average of Generate Materials



Trash Costs

Both groups reported that the impact of their garbage costs on their business was very important and the vast majority reported that the costs made up between 0-2% of their total operating budget. The average cost of trash services for the companies with 4 or less employees was reported as significantly lower than that for companies with 5 or more employees. The averages and means are displayed in the table below.

Table 3.18: Monthly Trash Service Costs³⁷

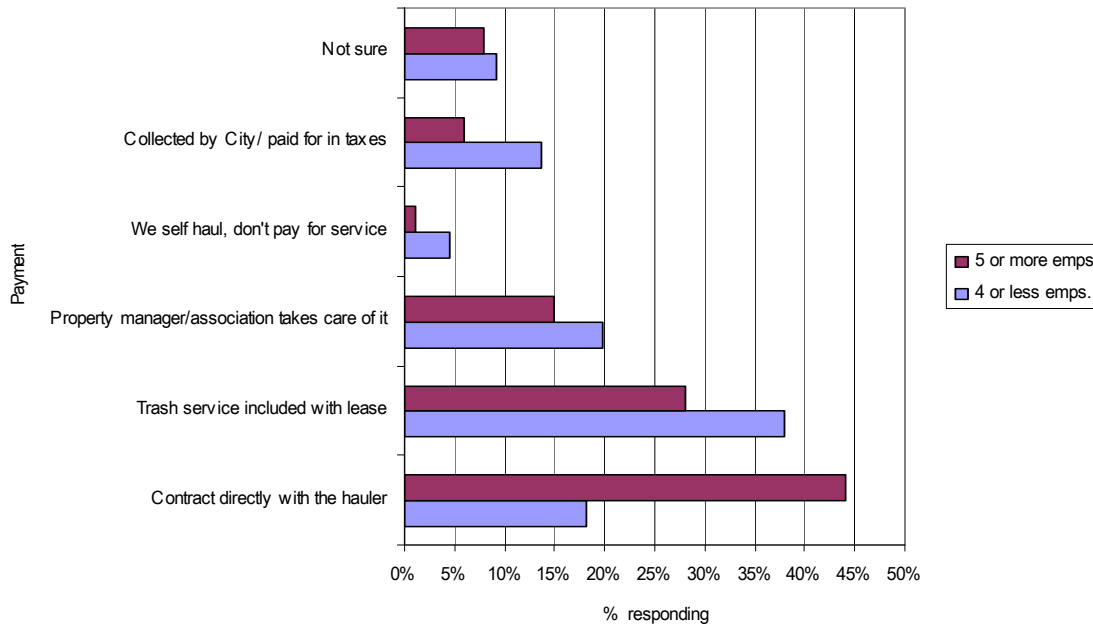
	4 or less employees	5 or more employees
Average	\$85.57	\$299.91
Mean	\$45.75	\$152.50
Max	\$650	\$3000

The businesses with more than 4 employees were much more likely to **contract with a hauler directly (44% larger, 18% smallest)** and pay them for their trash services. On the other hand, the smallest businesses reported that they often had **trash service included with the lease**

³⁷ One outlier was dropped to compute the averages/means for the 5 or larger employee companies. The outlier value was \$33,000 and with this included, the average is \$637.03/month and mean is \$155/month.

(38% smallest, 28% larger) or handled by the **property manager/association (20% smallest, 15% larger)**. Additionally, only **6%** of the firms with more than 4 employees have their trash collected by the **city/paid for in taxes** while **14%** of the smallest businesses had their trash services paid for through taxes/collected by city. The payment method for trash collection services is compared in figure 3.30.

Figure 3.30: Trash Service Payments



Program Support and Opposition

There was little difference reported in the program support and opposition between the two sub-groups. The two figures below display the responses for both groups.

Figure 3.31: Comparison of Program Support

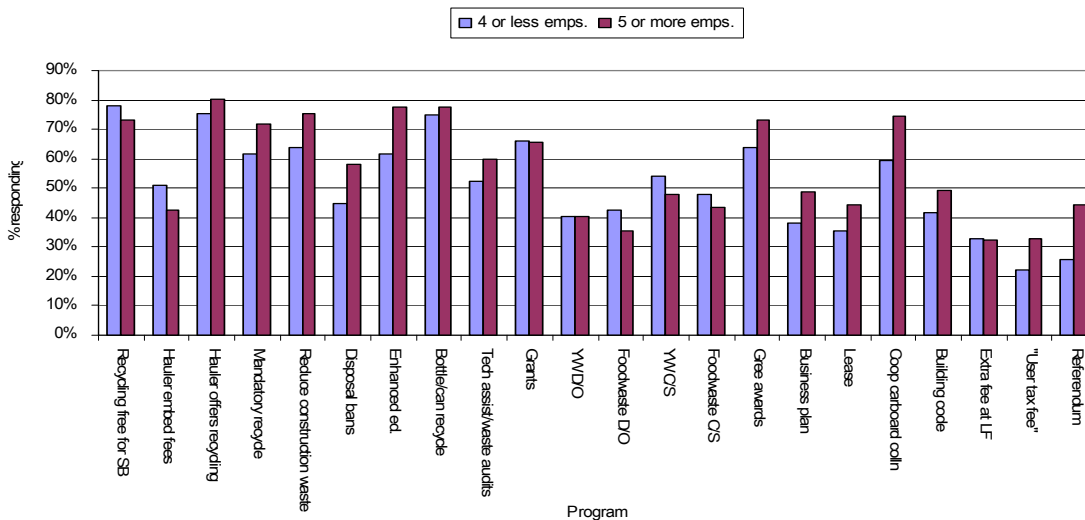
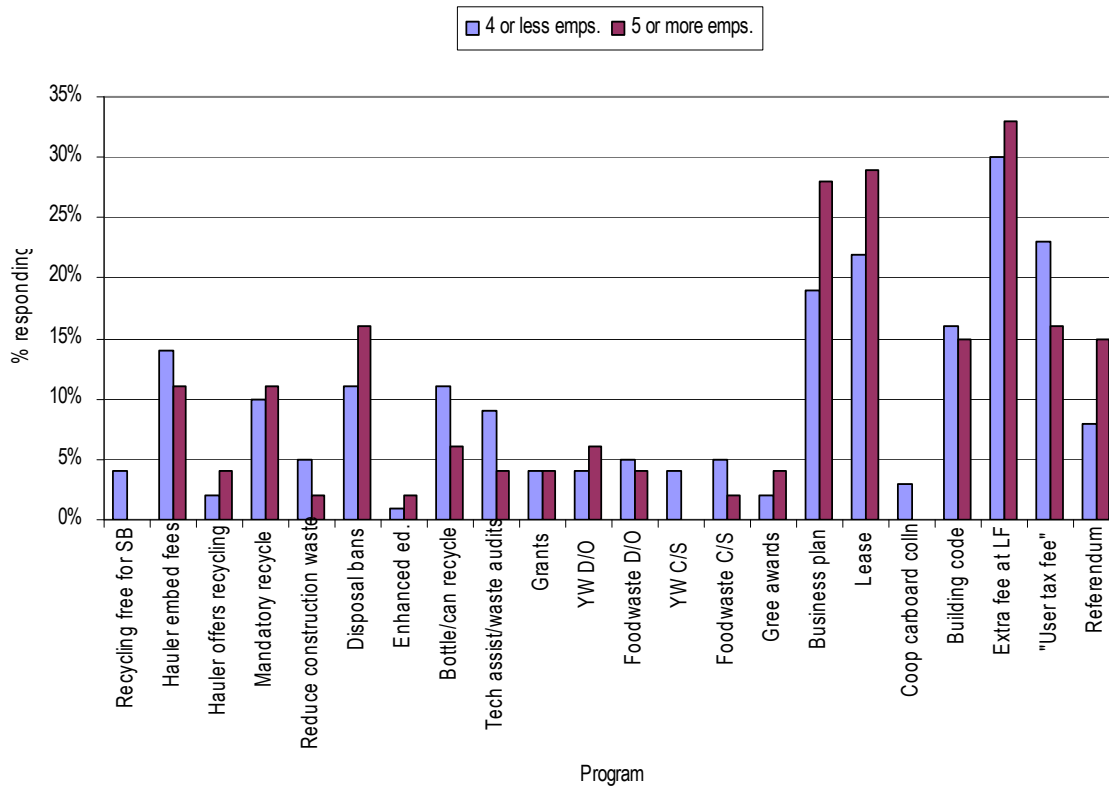


Figure 3.32: Program Opposition



Willingness to Pay

Overall, the businesses with 5 or more employees were willing to pay more for recycling services or an expanded diversion program. At **\$10/month added cost, 64%** of the larger businesses would definitely use the program while only **50%** of the smallest businesses reported they would definitely use the services. The same trend continued as the businesses were asked about different incremental price increases. At **\$20/month, 35%** of the larger would definitely use the program but only **17% of the smallest**, and at **\$40/month only 2%** of the smallest would definitely use the program compared to **14%** of the largest. The table below displays the comparisons of those that reported they would definitely use the services and those that were not at all likely to use the services.

Table 3.19: Willingness to Pay

Cost Increase	Very Likely to Use		Not at all Likely to Use	
	4 or less emps.	5 or more emps.	4 or less emps.	5 or more emps.
\$10/month	50%	64%	10%	7%
\$20/month	17%	35%	23%	16%
\$40/month	2%	20%	40%	33%
\$50/month	2%	17%	69%	49%
\$100/month	2%	5%	75%	57%

In addition to the above, businesses were also asked to report the maximum amount per month that they would be willing to pay for recycling services. The maximum amount that businesses with under 5 employees reported they would be willing to pay for monthly recycling services was

\$6.43 on average, median value **\$10.00**, compared to an average of **\$43.68** with a median of **\$25.00** for the firms with 5 or more employees.

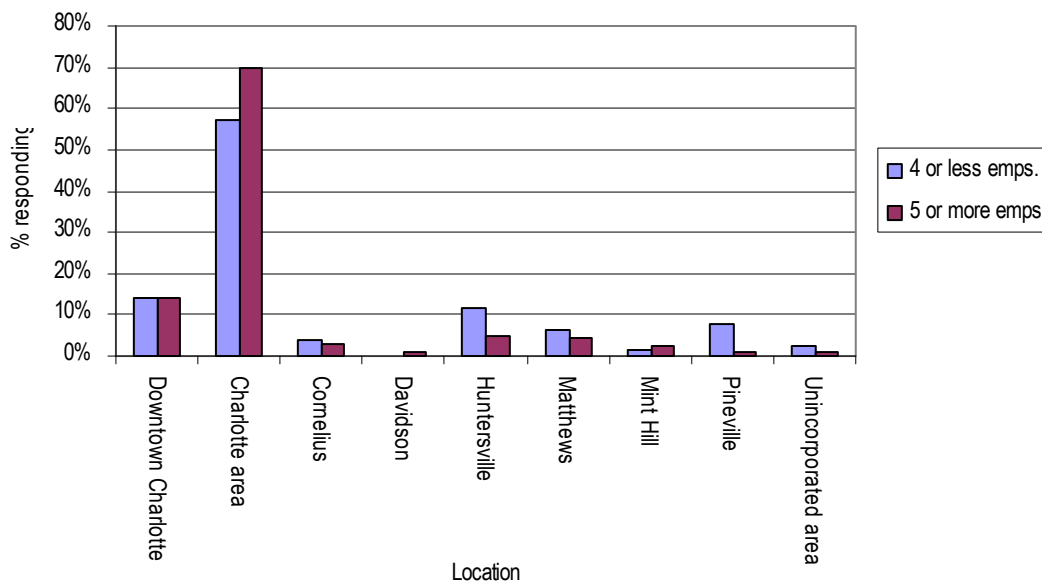
Communication

There was not a notable difference on the preferred method of communication for the two sub-groups.

Firmographics

The businesses with 4 or less employees were overall slightly more likely to live in the outlying areas of the County while businesses with 5 or more employees were a bit more likely to be located in the Charlotte area. The figure below displays the reported business location.

Figure 3.33: Location of Businesses



3.6 Implications

The purpose of the survey was to provide guidance for the design of new strategies in small business solid waste management in Mecklenburg County. The results provide information on key topics, including:

- Current recycling and garbage services;
- Perceived gaps in current services;
- Priorities for new initiatives, and strategies with high potential support – and with high potential opposition; and
- Willingness to pay to support new initiatives.

The results are summarized below.

Recycling

- Although half of the businesses reported having some sort of recycling program, the other half of surveyed businesses are not recycling. A large portion of the businesses with recycling programs do not have 'conventional' programs with a contracted hauler, but instead self haul recyclables, or have some other sort of program.
- There is ample room to expand and increase waste diversion activities in the County, particularly when it comes to source reduction, composting, bulk buying, and other similar strategies. There is room for recycling programs to grow as well. Only one fifth of the businesses reported having a well used, robust, recycling program.
- The average small business recycling rate, as computed through the survey responses, was reported as 22%³⁸.

Materials

- The most often recycled materials are paper, cardboard, plastic, and glass. However, there is still a need to build the paper and cardboard recycling programs. The largest materials remaining in the trash were reported as paper and cardboard and all of the businesses generate these materials.
- There is little generation of yard waste materials in the small business community and even less recycling. It is possible yard waste programs for small businesses may not be the highest priority for the County. Very few businesses reported that they wanted a program dealing with yard waste and less than a quarter of the businesses reported generating yard waste. On the other hand, the majority of small businesses reported that they generated food waste and very few are composting their generated materials.

Costs and Willingness to Pay

- Although they are not a very large portion of the total operating costs for businesses, garbage and recycling costs are quite important to the business owners. Additionally, businesses are paying quite a bit per month for their services. The average trash bill, per month, was reported as \$527 and the average monthly recycling bill was reported as \$207 per month.
- Businesses are willing to pay for expanded services. The majority of businesses would be willing to pay \$20.00 per month for *expanded* recycling services. The average total amount businesses reported they would be willing to pay, per month, to cover their recycling services was reported as \$55.77.
- Less than 10% of businesses reported that they would *not* be in favor of a program in which they would pay more for trash services with recycling fees embedded. Nearly a quarter of businesses reported they would like such a program regardless of the price. The average amount more businesses reported they would be willing to pay for trash with recycling was reported as \$17.818 per month.

³⁸ The diversion rate was computed using responses for amounts of trash and recycling generated in terms of 96-gallon carts per week, the number of recycling containers per week was divided by the total generation to determine the recycling rate.

Gaps and Outreach

- There is a large opportunity to increase the education and outreach regarding recycling and diversion options for small businesses in the County. About three-quarters of the businesses reported that they support enhanced education and outreach programs in the County. The outreach could target specific barriers uncovered in the survey including confusion about which materials to recycle ,and which haulers offer recycling collection. Outreach should target business owners, property mangers, and corporate decision makers.
- Although the County has a number of outreach programs, the majority of businesses are only aware of the website. Most businesses do not know about the County’s other diversion outreach programs.

Program Preferences

Based on business responses, the following program preferences can be noted:

- Continue the 'free' recycling pick up for businesses. This is a very popular program and the businesses rank it as being the most important program in the County. The County should also continue to foster relationships between businesses and private haulers for recycling collection.
- Programs that increase recycling garnered the highest support among respondents. Businesses voiced support for programs that require haulers to offer recycling and "free" recycling for small businesses. Interestingly, the surveyed businesses also supported mandatory bottle and can recycling.
- The businesses did not support programs that increased fees or costs for services. Also, businesses did not support programs that require businesses recycling plans to be filed or business code revisions.

Comparison of Sub Groups

Businesses with 4 or fewer employees were compared to businesses with 5 or more employees. Although the two sub-groups were similar in many categories, they did differ in their recycling and trash behaviors/services. The table below displays the main differences between the two groups:

Table 3.20: Comparison of 4 or fewer and 5 or more Employee Firms

4 or fewer Employees	5 or more Employees
Demographics	
<ul style="list-style-type: none"> • 2.27 employees average • More often located outside of the Charlotte area 	<ul style="list-style-type: none"> • 17.9 employees average • More often located in Charlotte area
Recycling	
<ul style="list-style-type: none"> • Hauler collects recycling more often • 18-gallon open topped bins • Generate less materials • Pay an average of \$95.60/month for recycling • Pay on average, more for recycling services 	<ul style="list-style-type: none"> • Self haul more often • 96 gallon flip top containers • Generate more recyclables • Pay an average of \$252/month for recycling • Pay on average, less for recycling services than

4 or fewer Employees	5 or more Employees
than trash service	trash service
Trash	
<ul style="list-style-type: none"> • Trash service often included in lease • City collects/paid in taxes more often than for larger sized businesses • Contract for 1 96-gallon container per week • Average monthly service fee of \$85.57 	<ul style="list-style-type: none"> • Contract directly with haulers for service • Generate higher amounts of e-waste and building materials • Contract for 1 4-cubic yards container • Average monthly service fee \$299.91

The next section of the report will delve further into programs to increase small business recycling throughout the County. A number of various program options to increase diversion behaviors are researched and discussed, including the barriers to implementation, the benefits and costs, and implementation options for the diversion strategies.

SECTION 4: PROGRAM OPTIONS AND RECOMMENDATIONS

4.1 Exploration of Program Concepts from Elsewhere Jurisdictions

The first step in SERA's analysis was to examine commercial programs used elsewhere in the nation that might be suitable for Mecklenburg County. These options were explored in order to provide program concepts that could potentially be transferred to Mecklenburg County. The list of programs is provided below, and the options include ordinances, programs, and outreach. In the table, basic information on the programs and descriptions, a "high level" assessment of the diversion potential, and the ranking of costs to the County, haulers, and generators, are presented. The options were discussed with the County and a subset was identified to be included in the survey for feedback.³⁹

Table 4.1: Program Choices (High to Low Diversion by Sector)

Type	Program	Brief Description	Diversion Potential	Cost to County	Cost to Hauler	Cost to Generator	Actors to implement
County	Mandatory pay for recycling and get free recycling up to 150% of trash service	All haulers in County embed recycling rates with their trash rates. Customers receive "free" recycling of certain materials up to 150% of the volume of trash. Ex. If business contracts for 2 cubic yards of trash they get 3 cubic yards recycle (2x150%)	High	Low	Medium	High	County ordinance, haulers act, generators pay.
County	Mandatory recycling certain business types, mandatory materials for different business types	Similar to the NC ABC law where bars/restaurants must recycle bottles, cans. Certain businesses types, offices, grocery stores, bars, etc must recycle certain materials depending on the business type.	High	Low	Medium	High	County ordinance, haulers act, generators pay.
County	Require leases with recycling clauses	When signing a lease, there is a clause in the lease that the tenant must recycle, or contract for recycling, etc.	High	Low	Low	Depends	County ordinance, commercial property owners act

³⁹ However, separate from this survey and report, the County may wish to reconsider other options on this list periodically if recycling performance does not continue on a track as aggressive as generally desired by the County.

Type	Program	Brief Description	Diversion Potential	Cost to County	Cost to Hauler	Cost to Generator	Actors to implement
County	Two tiered "recycling" rates	A way to encourage recycling activities without ordinances. Charge a two tiered rate at the landfill for haulers/munis participating in preferred practices. For example, if a hauler offers PAYT and commercial recycling with embedded fees they only pay \$40/ton at the landfill while if the hauler/muni does not offer diversion programs they pay \$80/ton tipping fee at the landfill.	Medium to High	Low	High	Medium	County program to incent hauler/city action
County	Rate incentives for recycling require lower rates for recycling containers	Require that haulers offer recycling to commercial accounts where equal size of recycling costs less than trash.	Medium	Low	High	Medium	County ordinance, haulers act, generators pay.
County	Mandatory recycling for businesses with greater than x number of employees	Generally this program is geared for larger businesses, for example, all businesses with over 100 employees must recycle. However, Mecklenburg could adapt it to all businesses with over 20 employees must recycle.	Medium	Low	Medium	Low to some High to others	County ordinance, some haulers act, some generators pay.
County	Require businesses to meet recycling/diversion goals	Set a diversion goal, i.e.- 50%, that all businesses must reach by a certain date, or be subject to fines or other enforcements. In many cases, the fines are used more as a threat than actually levied.	Depends on level of enforcement	Low	Varies	Varies	County ordinance, County enforcement (possibly) generators act
County	Encourage recycling cooperative	Allow and encourage businesses located near each other to share recycling services/dumpsters, as a way to reduce costs.	Low to medium	Low	Low	Low	County program, generators act, haulers allow businesses to share
County	County gives away free recycling carts to commercial businesses asking for them via recycling service hauler	County provides desk side bins/96 gallon carts to business that want to recycle as a way to reduce the costs of the program to haulers and businesses.	Low to medium	High	Low	Low	County program and action with assistance from haulers

Type	Program	Brief Description	Diversion Potential	Cost to County	Cost to Hauler	Cost to Generator	Actors to implement
County	Multi-resource audits	Offer audits to businesses for multiple aspects of sustainability including recycling/waste, water, energy, and others. In some programs, audits are mandatory for some businesses to receive other benefits such as discounts on recycling, etc.	Low	High	Low	Low	County completes audits.
County	All businesses must pay for commercial food waste collection, whether they use it or not, and a small portion do use.	Program starting to gain some ground as a way to spark commercial food waste. All businesses in the City/County pay a small fee for the food waste collection and all are eligible to use, however, only a small portion of the businesses, mainly groceries, restaurants, participate.	Low	Low	Medium	Medium	County ordinance, haulers act, generators pay.
Hauler	Recycling embedded in trash rates required for commercial PAYT	Pass an ordinance requiring all haulers offer PAYT with recycling rate included for commercial accounts. Technically, haulers already offer PAYT for commercial with fees based on cubic yards and pick ups, now the haulers just include "free" recycling for accounts by embedding the costs in their trash fees and offering recycling collection.	High	Low	High	High	County ordinance, haulers act, generators pay.
Hauler	Fees for recycling, yard waste/compost and potentially food embedded in trash bill	Similar to embedding recycling rates with trash, but this program embeds yard waste/food waste as well.	High	Low	Medium	High	County ordinance, haulers act, generators pay.
Hauler	Small firms get free recycling (96 gallons), larger firms have user pays rates for trash/recycling	The firms on the lowest level of trash service are offered "free" recycling to as an incentive for them to recycle. Larger firms have an incentive built in with PAYT to save money on trash bills if they recycle.	Medium	Low	High	Medium	Haulers act
Hauler	PAYT bag program for MFUs and small businesses	This program has been used in only a few towns in the Country. Commercial accounts are given the choice of contracting for trash and recycling or using the City wide PAYT collection where the businesses must buy city logo bags for \$2/bag to dispose all waste in a and receive "free" recycling.	Medium	Low	Medium	Medium	Haulers and businesses

Type	Program	Brief Description	Diversion Potential	Cost to County	Cost to Hauler	Cost to Generator	Actors to implement
Hauler	Recycling must be offered at significant discount from trash	Like the program above, in that haulers must offer recycling to commercial accounts, but this program requires that the fee charged for recycling is significantly lower than the fee for trash to serve as an economic incentive for business participation.	Medium	Low	High	Depends	County ordinance, haulers act, generators pay.
Hauler	Recycle bank for businesses	RecycleBank(tm) offers residential accounts the chance to earn coupons, free goods, and other rewards for recycling. Bins are fitted with RFI tags and the automated collection trucks weigh the recycling. The rewards are based on the weight of the recyclables. Not sure if this program is available for commercial generators at this time.	Low to medium	Low	Low	Low	Private sector program with assistance from County to implement
Hauler	For hauler license, must offer commercial recycling of 14 materials and pay fee per ton for trash, not recycling	In order for haulers to receive licenses, they must offer recycling services to their commercial accounts of a list of materials chosen by the County. As an incentive to the haulers, they are charged an additional tip fee surcharge on trash but recycling is free to tip.	High <small>participants incentivized, could be</small>	Low	High	Depends	County ordinance, haulers act, generators pay.
C&D	Construction and demolition deposit incentives	At the onset of a new or significant remodel project, the contractor must put down a deposit that will be returned if the recycle at least 50% of their C&D waste at a certified facility. The fees collected are used to pay for the program and additional diversion programs. Common in the west coast.	Medium to High	Low	Low	Low	County program, contractors act
C&D	Permit fees for C&D work	C&D site must pay for permit fees to conduct work- these fees go to pay for diversion activities and the higher the rate of diversion achieved at the site the lower the permit fee	Medium	Medium	Low	High	County program, contractors act
C&D	Mandatory C&D recycling rate	The County sets a mandatory rate (ex. 65%) that all permitted new construction and significant construction sites must meet.	Medium to High	Low	Low	High	County program, contractor acts

Type	Program	Brief Description	Diversion Potential	Cost to County	Cost to Hauler	Cost to Generator	Actors to implement
C&D	Developer incentives providing extra benefits (development sq.ft., etc.) if green elements incorporated	If a developer does certain actions, i.e. dismantle, divert 50% of waste, or incorporates green building techniques, they are given preferential treatment such as their permits are moved to the front of the line, they can build a taller building or develop a larger footprint.	Low	Low to medium	Low	Low	County program, contractors act
C&D	Require contacting deconstruction and dismantlers	Contractors must verify that they have contacted deconstruction/dismantlers for any significant remodel or deconstruction to ensure materials are reused/recycled or diverted.	Low	Low	Low	Low	County program, contractors act
C&D	Require on-site sale of C&D from demolitions	Similar to the program above but include the sale of materials to the public.	Low	Low	Low	Low	County program, contractors act

4.2 Program Recommendations for Mecklenburg County

SERA used information from the “gap” analysis, the waste stream characterizations, and the small business statistical survey to assess which program options might help increase diversion in the County.

To recap the results discussed earlier in this report, the commercial survey indicated that the materials that remain most in the waste stream for small commercial businesses include: paper, plastics, packaging, and cardboard. The materials they most want to recycle include: paper, cardboard, and plastic. They are moderately interested in recycling electronics, batteries, and Styrofoam packaging. The respondents showed little interest in recycling construction and demolition (C&D) debris. They like the free recycling dumpster service provided by the County, the source separation and single stream programs, and the services provided by the haulers. They are most interested in the following potential programs: free cardboard recycling and free recycling in general, continuing to foster relationships with the haulers and introducing greater hauler service requirements, and programs like the source separation ordinance and mandatory recycling. They say they are generally not interested in increased fees or mandatory recycling plans. Finally, they state that a primary barrier to recycling is that the haulers don’t provide the collection service for the materials (probably not correct), or potentially that they are unaware of the opportunities.

Certainly, there is a wide range of programs that have the potential to divert materials in the County and have been implemented in multiple counties/municipalities throughout the Country. Mecklenburg already leads the nation in the implementation of key ordinances surrounding recycling in the commercial sector; our first recommendations discuss refinements to these programs.

- **Expand the mandatory commercial source separation program** - Expand the mandatory recycling ordinance to address all businesses with 8 cubic yards or more service.⁴⁰ The program currently includes only abbreviated lists of materials for various sectors. The County might also consider expanding the list of eligible or required materials to include either 1) all those requested in the survey (paper, cardboard, plastic, and packaging) or 2) a list similar to those accepted at the single stream MRF, or 3) a selected number (say 4 materials for small firms and 6 for large, or similar) of those accepted at the single stream MRF.
- **Construction and demolition permit program-** Require all permit applications for construction or significant remodels to submit a diversion plan for each project and pay a diversion deposit. The County establishes a minimum diversion requirement, i.e. 50% for the diversion plans. Before certificate of occupancy is issued, the permittee must show compliance with their plan and submit proof of diversion (either from contracted hauler or facility receipts) or forfeit deposit. The size and amount of the deposit is assessed using a formula that depends on the type of project (construction vs. remodel), business type (residential, commercial, multifamily) and size in square footage. The C&D sector makes up a considerable amount of the commercial waste stream and for a County that is planning on increasing diversion it is important to consider C&D programs.
- **Building/business recycling plans-** Require all businesses (even those smaller than 8 cubic yards, or possibly only those smaller than 8 cubic yards of trash service) to submit a recycling plan to the County. This plan could be a simple check list that businesses must complete. The check list would identify generated materials and the businesses plan for dealing with the reuse, recycling or disposal of those materials. The plans are either filed with the haulers or the County. Although this program was not highly rated by the survey respondents, it performs well in other jurisdictions, and will force businesses not covered by the SSO to consider their options for recycling.
- **Generator Fee-** One potential program that may be more difficult to implement, but has performed well in other places (and provides a steady source of revenues for programs) is to assess upon all improved properties a generator fee per unit to fund recycling in the County. This program is in use in Orange County NC and funds the County's diversion efforts. It applies to all improved structures in the County including residential, commercial, school, and government. This fixed fee payment allows businesses to qualify for a "free" minimum service level and if they want additional services they pay an additional amount.
- **Recycling space allocation for commercial buildings-** Continue to work with towns within the County to develop the space for recycling ordinance recommended in the 2000 Solid Waste Management Plan. The ordinance should require all new commercial buildings or significant remodels to provide at least equal space for recycling and trash containers and require that recycling containers are at least as accessible as trash containers.
- **Support continued development of single stream recycling-** Single stream recycling is extremely well suited to the small commercial sector. Single stream addresses some of the key traditional barriers to recycling expressed by this sector, including issues related to space constraints, complexity for staff, etc. Single stream is convenient and easy to understand, and has repeatedly been shown to significantly increase diverted tonnage. Mecklenburg County already has a single stream service provider available and this program should provide a viable option for increasing diversion in the small

⁴⁰ The analysis supporting this threshold decision is included in the following section.

commercial sector – especially for those businesses not covered by the SSO ordinance.⁴¹

In addition to the above recommended programs, we provide a list of additional programs for consideration by Mecklenburg County. These programs scored well on our assessment in Table 4.1⁴² and may make sense for the County as it works to continue to increase recycling in the small commercial sector.

- **Introduce mandatory pay for recycling and get free recycling up to 150% of trash services:** Under this program all businesses pay for recycling embedded in their trash rates. All businesses are allowed to recycle up to 150% of their trash subscription level for no additional fees. For example, if a business contracts for 4 cubic yards of trash collection per week, they would get up to a 6 cubic yards (4cubic yards *1.5) of recycling for no additional charge.
- **Implement mandatory recycling for certain business types, mandatory materials for different business types:** The County already does this to an extent with the SSO ordinance and the State wide ABC law. The program could be expanded to cover more business types and more materials. The program could be included in the mandatory commercial source separation and construction and demolition plan listed above.
- **Require businesses to meet recycling/diversion goals:** This program can be used as an education and outreach device among the County's businesses. Similar to setting a County wide recycling goal, by setting a business goal that allows for detailed measurement and reporting, it allows to County to assess progress in their commercial recycling program and shot for benchmark levels of success. The program could be strictly enforced (similar to Portland, OR) or used as a way to increase awareness of options.
- **Require leases with recycling clauses:** Nearly one third (31%) of businesses reported that they had their trash decision made by a property management company. By requiring leases within the County to include a recycling clause these businesses would be covered. The clause could include language that the tenant must either participate in the established recycling program or that tenants must have their own recycling program.

4.3 Source Separation Threshold

As a means to reach the County's goal of per capita waste reduction of 23% by 2010, the County established a mandatory source separation ordinance (SSO) for businesses in January of 2002. The ordinance states that businesses must separate corrugated cardboard and office paper from their other trash for the purpose of recycling. The ordinance only effects businesses that generate more than 16 cubic yards or greater of trash per week. In addition, the ordinance lays out a number of exemptions for businesses including:

- Businesses that generate less than 500 pounds of cardboard/week
- Businesses generating less than 500 pounds of paper/week

⁴¹ Single stream allows businesses to use only one new dumpster rather than the complexities introduced by multiple streams. Most important for the small, potentially underserved programs in Mecklenburg County, service can be provided by small 90-gallon carts, which can often be squeezed into the space surrounding the trash dumpsters.

⁴² description of scoring can be seen in the appendix

- Temporary locations
- If the ordinance is in violation of any Zoning or other ordinances

The County provides businesses with three notices before levying a \$50 per day fine. The County also provides technical assistance for businesses that receive notices of violation to assist the businesses in setting up a source separation and recycling program.

Overall, the source separation ordinance applies to less than two-fifths of the small businesses in the County as defined by this study. However, if only subscription size, not frequency, or reported generation is examined, significantly fewer businesses are covered by the ordinance. For businesses with less than 50 employees, only 12% of the surveyed businesses reported contracting for a 16 cubic yards container or larger for trash disposal. When asked to self report on waste generation per week, *none* of the small businesses in the survey reported generating above the minimum 16 cubic yards per week threshold. This could signify that small businesses in the County are over subscribing for their trash services, under reporting their generation, or both.

The ordinance does have possible enforcement issues. With multiple permitted commercial haulers and limited reporting to the County, it is difficult for the County to determine which businesses are and are not exempt from the program. As reported, only a limited portion of the small businesses contract for a 16 cubic yards container per week, however, a number of businesses reported that they contract for smaller size containers with more frequent collection. While enforcement can be conducted through “windshield” surveys to determine which businesses contract for a 16 cubic yard or larger container, it is more difficult to determine collection frequency. When frequency of collection is combined with subscription size, the number of businesses contracting for weekly collection of 16 cubic yards or more of trash collection increases from 12% of the surveyed businesses to 39%. This triples the number of businesses that are covered by the SSO ordinance. In order to examine the SSO ordinance at a closer level only the reported subscription levels, not the reported generation, were used.

At the current threshold level, the SSO ordinance affects the diversion behaviors of 39% of the small businesses according to subscription size and frequency of collection. If frequency of collection is not included in the calculation, only the reported size of containers, only 12% of the surveyed businesses subscribe to a 16 cubic yards or greater trash dumpster. In order for the ordinance to include greater than half of the small businesses surveyed, the threshold level would need to be cut in half to 8 cubic yards per week. At this level, the SSO ordinance would cover 56% of the responding businesses. At a threshold level of 6 cubic yards per week the ordinance would cover 64% of the responding businesses. In order for the ordinance to cover 90% of the reporting businesses the threshold level would need to be lowered to 1 cubic yard of generation per week.

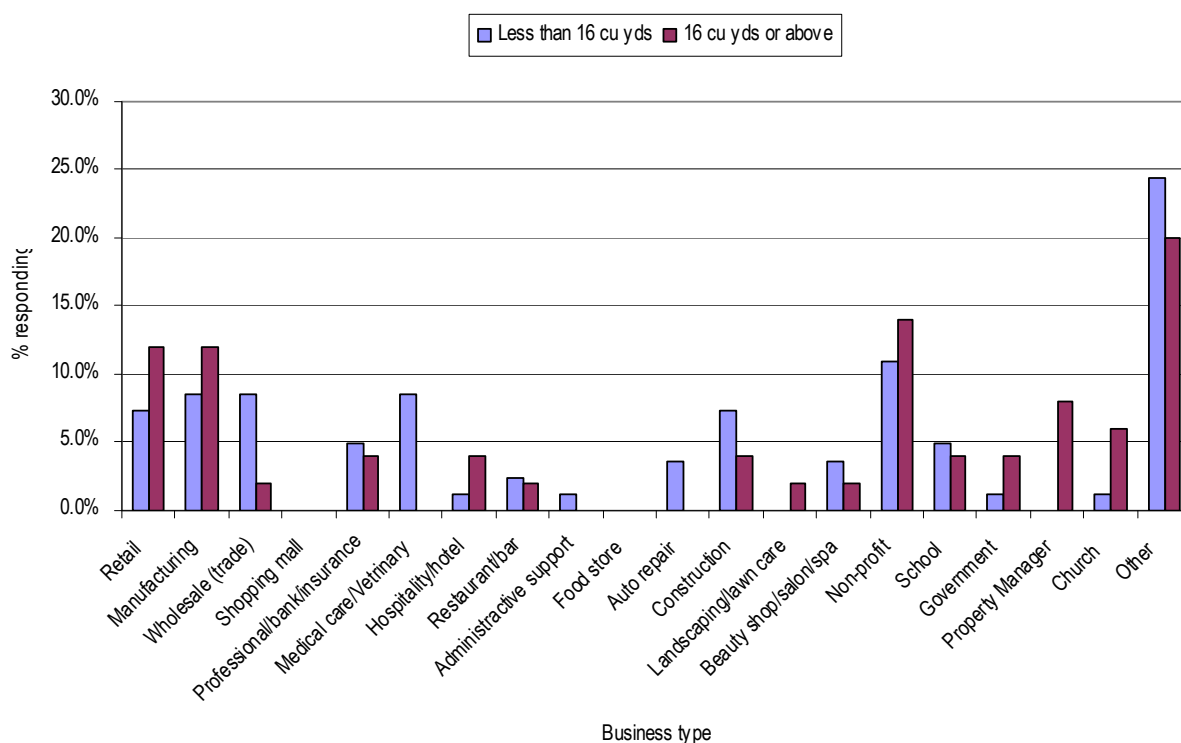
The current threshold limit of 16 cubic yards is estimated to cover between 13,900 and 18,100 businesses with fewer than 50 employees in Mecklenburg County⁴³. At a threshold level of 8 cubic yards per week of generation, the ordinance would cover approximately 56% of the reporting businesses or approximately 20,800 to 25,200 businesses in the County with fewer than 50 employees.

⁴³ To determine this range the reported percent of businesses subscribing to 16 cubic yards per week (size of container x frequency of collection) was multiplied by the number of total businesses in the county with less than 50 employees (41,061 total) using a 95% confidence interval +/- 5.2%. For more information on confidence bands see page 22 of the report.

Effects of the Current Limit

To determine the effects of the current threshold limit the reporting businesses were divided into two groups, those that reported subscribing to 16 cubic yards of garbage collection or more per week and those that subscribe to less than 16 cubic yards per week. The businesses with the higher subscription level generally had slightly more employees, 17.8 (on average) compared to 13.8 (on average) for the businesses with lower subscription levels. The business types were compared to determine whether or not certain businesses typically subscribed to higher levels of service compared to other business types. Businesses subscribing for 16 cubic yards or larger service were more often property management companies, non-profits, churches, and retail businesses while businesses with smaller subscription levels were more often medical care/veterinary offices, wholesale(trade), auto repair, and construction businesses. The figure below compares the business types by subscription level.

Figure 4.1: Business Type by Subscription Level



There was little difference in the overall recycling rate of the two groups. Those that reported 16 cubic yards or more subscription level had a slightly higher recycling rate of 19.4% compared to 15.8% for those with the lower subscription levels. There was a more notable difference between the weighted averages of businesses that reported they were recycling cardboard. For the businesses with 16 cubic yards or greater service levels, 76% reported that they were recycling cardboard compared to 63% of the businesses with less than 16 cubic yards of service. However, if the reported weighted averages of businesses recycling paper/document/shred are examined, the outcome is not as rosy. For businesses with over 16 cubic yards of trash service 52% are recycling paper/documents/shred while 68% of the businesses with the lower subscription level reported recycling the same materials.

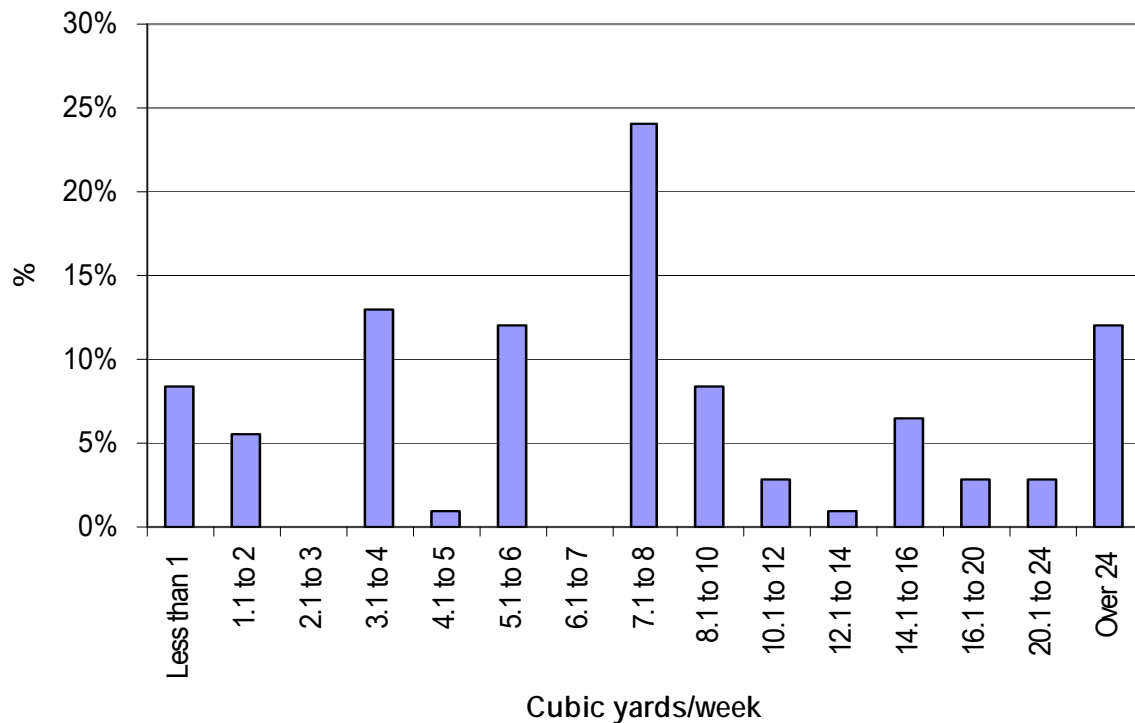
Implications

Overall, the SSO ordinance as it stand, effects nearly two-fifths of the small businesses reporting to the survey *if* the subscription level and frequency of collection are examined. If reported generation is used, *none* of the surveyed businesses reported generating over 16 cubic yards of material per week. If only dumpster size and not frequency is considered, only 12% of surveyed businesses would be covered under the ordinance. The distribution of subscribed cubic yards (using those respondents that filled out the elements we needed to compute this value) showed the following:

- 6 cubic yards or less of service weekly – 40% of small businesses, 11% of small business trash volume (in cubic yards)
- 8 cubic yards to 15 cubic yards of service weekly – 37% of small businesses, 28% of small business trash volume
- 16 or more cubic yards of trash service weekly – 23% of small businesses, 61% of small business trash volume.

The figure below displays the distribution of service levels:

Figure 4.2: Cubic Yards per Week Collection⁴⁴⁴⁵



⁴⁴Cubic yards per week = container size X number of containers X collection frequency

⁴⁵ All of the responses between 7.1 and 8 cubic yards were subscribing to exactly 8 cubic yards per week of service.

We also examined the implications of collection frequency (and thus, container sizes that would be observable) for those businesses with 16 or more cubic yards of service. We found:

- More than 2/3 of those with 16 cubic yards of service were getting service twice weekly, so the observed can size would be an 8 cubic yarder. None were using smaller containers collected more frequently than twice weekly.
- For those subscribed to 8 to 15 cubic yards of service, virtually all were receiving service only once per week (in fact, this was true down to service levels of four cubic yards weekly).

The existing SSO program provides an important driver for business sector recycling. The currently-eligible businesses may generate about 60% of the trash from the small business sector. However, the program would provide even greater impact if it were more strongly enforced.

SERA staff happen to have conducted interviews with Mecklenburg county haulers as part of efforts on another project. These interviews indicated that haulers thought ABC program was especially effective. The SSO ordinance is perceived by haulers to have been effective at the beginning, but has become less so because enforcement has not been strong and consistent. Figures from the County show that there have been very few notices of violation (10 first NOVs, and 1 2nd NOV), and no fines. Clearly the County focuses on enforcement as an education tool (which is valid), but a few visible enforcements would likely go a long way to increasing compliance and impact.

The haulers also indicated that for businesses with trash service levels of 16 cubic yards or greater, economics is the primary driver for recycling (and thus, the ordinance would be re-encouraging the recycling behavior, but not “causing” it). If the threshold were set at 8 cubic yards (adding businesses making up another 40% of the sector, and representing perhaps 28% of the trash generated from small businesses), the ordinance would be a more important driver; however, the economics of recycling may not always “pan out” for these customers and compliance with the ordinance may cost the business more than trash service alone.

The actions to be taken or reformations regarding thresholds may vary depending on the County’s primary objectives:

To maximize diversion →

- consider increasing enforcement, including assessing some fines to cause the program to re-energize compliance by those already covered by the program;
- Consider reducing the size of the threshold to bring more firms into recycling.

To make compliance and inspections feasible →

- Consider reducing the threshold for SSO requirements to 8 cubic yards of service weekly. The survey seems to indicate that one-third of businesses subscribing to 16 cubic yards of service are using 16 cubic yard containers collected once weekly, and the remaining two-thirds are collected in 8-cubic yard containers collected twice a week. Those receiving 8 cubic yards of service are mainly using 8 cubic yard containers collected once per week. Therefore, inspecting for 8 gallon containers would tend to indicate eligible or “covered” buildings.

Table 4.2 Advantages and Disadvantages 8 cubic yard threshold for SSO, with additional enforcement

Advantages	Disadvantages
<ul style="list-style-type: none"> • Re-energize recycling and compliance among 16 cubic yard and larger customers (about 25% of the small businesses, 60% of the small business waste stream) • Bring in extra recycling through extending eligibility to businesses with 8 cubic yards of trash service and more (representing perhaps 40% of the small businesses and 28% of the small business waste stream) • Simplify enforcement, as all businesses with observable 8 cubic yard containers would be covered by the ordinance.⁴⁶ 	<ul style="list-style-type: none"> • Greater enforcement (expanding percent of “small businesses” covered from 23% of the sector to 60% of businesses) • Economics of recycling less dramatic for lower-generating businesses; may cost businesses more

If the County is interested in expanding diversion, it should→

- At least enforce the ordinance more to re-energize compliance among businesses with 16 or more cubic yards of service;
- Consider expanding eligibility to small businesses with 8 cubic yards of trash service or more.⁴⁷ This brings the total eligible businesses to more than half (a total of 60%) and encourages (or requires) recycling for businesses generating nearly 90% of the trash stream from small businesses.

⁴⁶ Of course, there will be some businesses on 8 cubic yards of service that use 4 or perhaps even 2 cubic yard containers; our survey sample was not large enough to identify a large population of these customers, indicating they may not be common.

⁴⁷ At the 8 cubic yards level, the ordinance would be estimated to cover between 20,800 and 25,200 of the businesses identified through InfoUSA with less than 50 employees in the County, compared to the current estimates of 13,900 to 18,100 at the 16 cubic yards threshold level.

SECTION 5: APPENDIX

Appendix 1: Program Scoring

In order to compare the recommended programs the programs were rated and scored depending on four combined factors: diversion potential, cost to County, cost to hauler, and the cost to generator. Each of the factors was given an estimated description ranging from high to low based on the similar programs in other jurisdictions in the country and the potential for the program to be successful in Mecklenburg County. A weighted score was then computed for the give each program and overall score. The five highest scoring programs were:

- Mandatory pay for recycling and get free recycling up to 150% of trash service
- Mandatory recycling certain business types, mandatory materials for different business types
- Require businesses to meet recycling/diversion goals
- Require leases with recycling clauses

The following table displays all of the program options in order of their weighted scores:

Type	Program	Brief Description	Diversion Potential	Cost to County	Cost to Hauler	Cost to Generator	Actors to implement	Diversion Score	County Cost score	Hauler cost score	Generator cost score	Weighted Score
County	Mandatory pay for recycling and get free recycling up to 150% of trash service	All haulers in County embed recycling rates with their trash rates. Customers receive "free" recycling of certain materials up to 150% of the volume of trash. Ex. If business contracts for 2 cubic yards of trash they get 3 cubic yards recycle (2x150%)	High	Low	Medium	High	County ordinance, haulers act, generators pay.	3	1	2	3	2.80
County	Mandatory recycling certain business types, mandatory materials for different business types	Similar to the NC ABC law where bars/restaurants must recycle bottles, cans. Certain businesses types, offices, grocery stores, bars, etc must recycle certain materials depending on the business type.	High	Low	Medium	High	County ordinance, haulers act, generators pay.	3	1	2	3	2.80
County	Require businesses to meet recycling/diversion goals	Set a diversion goal, i.e.- 50%, that all businesses must reach by a certain date, or be subject to fines or others enforcements. In many cases, the fines are used more as a threat than actually levied.	Depends on level of enforcement	Low	Varies	Varies	County ordinance, County enforcement (possibly) generators act	3	1	2		2.80
County	Require leases with recycling clauses	When signing a lease, there is a clause in the lease that the tenant must recycle, or contract for recycling, etc.	High	Low	Low	Depends	County ordinance, commercial property owners act	3	1	2	2	2.80
C&D	Construction and demolition deposit incentives	At the onset of a new or significant remodel project, the contractor must put down a deposit that will be returned if the recycle at least 50% of their C&D waste at a certified facility. The fees collected are used to pay for the program and additional diversion programs. Common in the west coast.	Medium to High	Low	Low	Low	County program, contractors act	2.5	1	1	1	2.75

Type	Program	Brief Description	Diversion Potential	Cost to County	Cost to Hauler	Cost to Generator	Actors to implement	Diversion Score	County Cost score	Hauler cost score	Generator cost score	Weighted Score
Hauler	Recycling embedded in trash rates required for commercial PAYT	Pass an ordinance requiring all haulers offer PAYT with recycling rate included for commercial accounts. Technically, haulers already offer PAYT for commercial with fees based on cubic yards and pick ups, now the haulers just include "free" recycling fro accounts by embedding the costs in their trash fees and offering recycling collection.	High	Low	High	High	County ordinance, haulers act, generators pay.	3	1	3	3	2.60
Hauler	For hauler license, must offer commercial recycling of 14 materials and pay fee per ton for trash, not recycling	In order for haulers to receive a licenses, the must offer recycling services to their commercial accounts of a list of materials chosen by the County. As an incentive to the haulers, they are charged an additional tip fee surcharge on trash but recycling is free to tip.	High <small>Low unless participation is incented; could be</small>	Low	High	Depends	County ordinance, haulers act, generators pay.	3	1	3	2	2.60
Hauler	Fees for recycling, yard waste/compost and potentially food embedded in trash bill	Similar to embedding recycling rates with trash, but this program embeds yard waste/food waste as well.	medium to high	Low	Medium	High	County ordinance, haulers act, generators pay.	2.5	1	2	3	2.55
County	Two tiered "recycling" rates	A way to encourage recycling activities without ordinances. Charge a two tiered rate at the landfill for haulers/munis participating in preferred practices. For example, if a hauler offers PAYT and commercial recycling with embedded fees they only pay 40/ton at the landfill while if the hauler/muni does not offer diversion programs they pay 80/ton tipping fee at the landfill.	Medium to High	Low	High	Medium	County program to incent hauler/city action	2.5	1	3	2	2.35
County	Mandatory recycling for businesses with greater than x number of employees	Generally this program is geared for larger businesses, for example, all businesses with over 100 employees must recycle. However, Mecklenburg could adapt it to all businesses with over 20, employees must recycle.	Medium	Low	Medium	High to others	County ordinance, some haulers act, some generators pay.	2	1	2	2	2.30

Type	Program	Brief Description	Diversion Potential	Cost to County	Cost to Hauler	Cost to Generator	Actors to implement	Diversion Score	County Cost score	Hauler cost score	Generator cost score	Weighted Score
Hauler	PAYT bag program for MFUs and small businesses	This program has been used in only a few towns in the Country. Commercial accounts are given the choice of contracting for trash and recycling or using the City wide PAYT collection where the businesses must buy city logo bags for \$2/bag to dispose all waste in a and receive "free" recycling.	Medium	Low	Medium	Medium	Haulers and businesses	2	1	2	2	2.30
County	Encourage recycling cooperative	Allow and encourage businesses located near each other to share recycling services/dumpsters, as a way to reduce costs.	Low to medium	Low	Low	Low	County program, generators act, haulers allow businesses to share	1.5	1	1	1	2.25
Hauler	RecycleBank™ for businesses	RecycleBank™ offers residential accounts the chance to earn coupons, free goods, and other rewards for recycling. Bins are fitted with RFI tags and the automated collection trucks weigh the recycling. The rewards are based on the weight of the recyclables. Not sure if this program is available for commercial generators at this time.	Low to medium	Low	Low	Low	Private sector program with assistance from County to implement	1.5	1	1	1	2.25
Hauler	Small firms get free recycling (96 gallons), larger firms have user pays rates for trash/recycling	The firms on the lowest level of trash service are offered "free" recycling to as an incentive for them to recycle. Larger firms have an incentive built in with PAYT to save money on trash bills if they recycle.	Medium	Low	Medium to High	Medium	Haulers act	2	1	2.5	2	2.20
C&D	Permit fees for C&D work	C&D site must pay for permit fees to conduct work-these fees go to pay for diversion activities and the higher the rate of diversion achieved at the site the lower the permit fee	Medium	Medium	Low	high	County program, contractors act	2	2	1	1	2.20

Type	Program	Brief Description	Diversion Potential	Cost to County	Cost to Hauler	Cost to Generator	Actors to implement	Diversion Score	County Cost score	Hauler cost score	Generator cost score	Weighted Score
County	Rate incentives for recycling require lower rates for recycling containers	Require that haulers offer recycling to commercial accounts where equal size of recycling costs less than trash.	Medium	Low	High	Medium	County ordinance, haulers act, generators pay.	2	1	3	2	2.10
Hauler	Recycling must be offered at significant discount from trash	Like the program above, in that haulers must offer recycling to commercial accounts, but this program requires that the fee charged for recycling is significantly lower than the fee for trash to serve as an economic incentive for business participation.	Medium	Low	High	Depends	County ordinance, haulers act, generators pay.	2	1	3	2	2.10
C&D	Require contacting deconstruction and dismantlers	Contractors must verify that they have contacted deconstruction/dismantlers for any significant remodel or deconstruction to ensure materials are reused/recycled or diverted.	Low	Low	Low	Low	County program, contractors act	1	1	1	1	2.00
C&D	Require on-site sale of C&D from demolitions	Similar to the program above but include the sale of materials to the public.	Low	Low	Low	Low	County program, contractors act	1	1	1	1	2.00
C&D	Developer incentives providing extra benefits (development sq.ft., etc.) if green elements incorporated	If a developed does certain actions, i.e. dismantle, divert 50% of waste, or incorporates green building techniques, they are given preferential treatment such as their permits are moved to the front of the line, they can build a taller building or develop a larger footprint.	Low	Low to medium	Low	Low	County program, contractors act	1	1.5	1	1	1.85
County	All businesses must pay for commercial food waste collection, whether they use it or not, and a small portion do use.	Program starting to gain some ground as a way to spark commercial food waste. All businesses in the City/County pay a small fee for the food waste collection and all are eligible to use, however, only a small portion of the businesses, mainly groceries, restaurants, participate.	Low	Low	Medium	Medium	County ordinance, haulers act, generators pay.	1	1	2	2	1.80

Type	Program	Brief Description	Diversion Potential	Cost to County	Cost to Hauler	Cost to Generator	Actors to implement	Diversion Score	County Cost score	Hauler cost score	Generator cost score	Weighted Score
County	County gives away free recycling carts to commercial businesses asking for them via recycling service hauler	County provides desk side bins/96 gallon carts to business that want to recycle as a way to reduce the costs of the program to haulers and businesses.	Low to medium	High	Low	Low	County program and action with assistance from haulers	1.5	3	1	1	1.65
County	Multi-resource audits	Offer audits to businesses for multiple aspects of sustainability including recycling/waste, water, energy, and others. In some programs, audits are mandatory for some businesses to receive other benefits such as discounts on recycling, etc.	Low	High	Low	Low	County completes audits.	1	3	1	1	1.40

Appendix 2: Full Survey Responses

-Responses have not been edited-

In what part of the County is your business located?

	Other (please specify)
1	South Charlotte
2	North Charlotte
3	Ballantyne Area
4	airport area
5	South End area
6	Ballantyne
7	Independence Boulevard 28205
8	Crown Point
9	University City area
10	Ballantyne
11	Southwest Charlotte
12	Crown Point
13	Steele Creek
14	I am a mobile business and cover all of the above areas
15	South - Southwest area of Charlotte
16	Lakepoint business area
17	Carowinds
18	Dilworth
19	south park
20	South Charlotte near 485, between Pineville and Matthews
21	Northeast
22	southend area of charlotte
23	South side
24	South End
25	dilworth
26	Old Nations Ford Road 28273
27	South Charlotte
28	Northwest Charlotte
29	Uptown charlotte
30	Eastover & SouthPark
31	South End
32	university area
33	28217
34	N. Tryon & 30th St
35	University area
36	Southpark
37	South Charlotte Region (including Pineville, Matthews and Steele Creek)
38	University City
39	Cotswold in Charlotte
40	Southpark
41	Ballantyne
42	Ballantyne
43	Whitehall

44 just outside downtown, Statesville Ave., Graham St., Dalton Ave Intersection.
45 on Randolph near Presbyterian & CMC Mercy hospitals

In what part of the County do you primarily conduct your business?

	Other (please specify)
1	South Charlotte
2	North Charlotte
3	Our products are usually sold out of state
4	Our products are usually sold out of state throughout the county
5	throughout the county
6	Greater Charlotte Area & NC
7	Primarily conduct business outside of Mecklenburg County
8	Other counties throughout the eastern united states
9	All of Mecklenburg
10	All of Mecklenburg
11	Nationwide
12	Crown Point
13	university city area
14	Ballantyne
15	Crown Point
16	See #1
17	South - Southwest area of Charlotte
18	internationally
19	Freedom Park
20	South Park Area
21	same
22	Southeast United States
23	southend area
24	Same
25	North and South Carolina
26	peidmont of nc
27	Business covers entire Mecklenburg County
28	Southeast US
29	all of north and south carolina
30	also conduct business in states outside of NC
31	Northwest Charlotte
32	Same
33	Eastover & SouthPark
34	university area
35	28217
36	N. Tryon & 30th St
37	Charlotte, and across NC and US
38	University area

39	South County Region (including Pineville, Matthews and Steele Creek)	33	31
40	University City	34	11
41	All over the country	35	40
42	Throughout several counties of NC	36	42
43	we operate nationwide	37	17
44	All throughout Charlotte	38	1
45	We are located in the Arboretum area but cover six states in the Southeast.	39	55
46	Most of these locations	40	7
47	Ballantyne	41	14
48	Ballantyne	42	22
49	Whitehall	43	4
50	everywhere	44	32
51	field employees through out NC and SC, office in Charlotte	45	10
52	Western North Carolina, Rock Hill, SC	46	1
53	We have four offices in the Charlotte area	47	8
54	All over the county & even outside of the county.	48	17
		49	3
		50	1
		51	26
		52	13
		53	28
		54	28
		55	27
		56	6
		57	0
		58	39
		59	25
		60	1
		61	30
		62	13
		63	4 people 3 shifts 24/7 at this fire station #35
		64	12
		65	18
		66	4
		67	2
		68	21
		69	50
		70	22
		71	17
		72	26
		73	22
		74	3
		75	220
		76	14
		77	30
		78	2
		79	7
		80	11
		81	60
		82	16
		83	23
		84	30
		85	36
		86	3
		87	14
		88	12

Number of Employees
Including yourself, how many full time employees do you have?

1	8
2	13
3	2 employees, 5 independent contractors
4	40
5	2
6	11
7	8
8	9
9	28
10	17
11	38
12	2
13	28
14	10
15	31
16	17
17	11
18	2
19	6
20	33
21	6
22	19
23	5
24	31
25	24
26	9
27	12
28	2
29	2
30	8
31	1
32	70

89	5	145	16
90	14	146	5
91	9	147	5
92	5	148	35
93	1	149	11
94	18	150	8
95	100	151	5
96	23	152	12
97	11	153	2
98	15	154	35
99	15	155	31
100	32	156	1
101	8	157	15
102	75	158	5
103	7	159	21
104	20	160	28
105	16	161	17
106	1	162	113
107	3	163	1
108	193	164	4
109	9	165	22
110	5	166	44
111	10	167	08/12/2008
112	2	168	Less than 50
113	2	169	20
114	42	170	2
115	22	171	5
116	3	172	25
117	15	173	5
118	200	174	9
119	8	175	25
120	12	176	42
121	16	177	9
122	6	178	9
123	10	179	3
124	10	180	2
125	7	181	20
126	12	182	1
127	10	183	46
128	8	184	7
129	8	185	6
130	4	186	25
131	20	187	3
132	1	188	11
133	3	189	25
134	14	190	20
135	60	191	1
136	180	192	20
137	7	193	20
138	1	194	3
139	10	195	30
140	25	196	Four
141	9	197	10
142	10	198	22
143	60	199	10
144	250	200	2

201	9	256	40
202	5	257	6
203	7	258	9
204	55	259	5
205	15	260	40
206	11	261	40
207	6	262	40
208	6	263	31
209	2	264	15
210	6	265	12
211	10	266	46
212	100	267	43
213	58	268	7
214	3	269	15
215	6	270	5
216	1	271	30
217	04/05/2008	272	five
218	1	273	2
219	2	274	4
220	1	275	11
221	26	276	30
222	31	277	15
223	0	278	5
224	18	279	6
225	just myself	280	4
226	3	281	2
227	7	282	5
228	6	283	60 but only 17 in Charlotte
229	1	284	24
230	2	285	4
231	1	286	5
232	11	287	14
233	11	288	3
234	14	289	13
235	35	290	4
236	6	291	4
237	9	292	2
238	1	293	11
239	10	294	80
240	23	295	21
241	12	296	4
242	4	297	8
243	2	298	25
244	102 employees within my region (covers 4 facilities)	299	40
245	4	300	15
246	17	301	45
247	17	302	25
248	eight	303	4
249	30	304	4
250	39	305	1
251	3	306	15
252	9	307	3
253	2	308	4
254	194	309	20
255	2	310	9
		311	50

312 6
 313 54
 314 25
 315 3
 316 5
 317 5
 318 10
 319 12
 320 13
 321 2
 322 15
 323 26
 324 21
 325 32
 326 1
 327 102 for all our four offices / 14 at our
 location
 328 15
 329 7
 330 20
 331 4
 332 1
 333 8
 334 7
 335 18
 336 7
 337 50
 338 only myself, (1)
 339 13, Full time in office
 340 22

23 Real Estate Development
 24 Educational consultants
 25 Professional counseling
 26 church
 27 Commercial Land Surveying
 28 Arboriculture - Tree pruning, care and
 removal.
 29 Arboriculture - Tree pruning, care and
 removal.
 30 software development
 31 Marketing
 32 Apartments
 33 Law Office
 34 City Fire Station
 35 Veterinarian
 36 real estate consulting
 37 US Sales Office - German Mfg Wastewater
 Equipt.
 38 church
 39 metal repair & job shop - welding
 40 Entertainment
 41 alternative medicine
 42 Engineering
 43 Holding Company
 44 Veterinary Hospital
 45 DISTRIBUTION
 46 public library
 47 Interior Design Firm/Retail
 48 Service
 49 warehousing
 50 Event Production
 51 Sales Agency
 52 Transportation
 53 Event production
 54 Finance & Investment
 55 Church
 56 Service a Sales Account
 57 Starbucks Coffee
 58 Financial consulting
 59 daycare
 60 engineering
 61 Church
 62 public library
 63 Real estate
 64 Commercial Service
 65 Salon/Spa
 66 Property Management
 67 Telco
 68 Electric Company
 69 residential resale estate sales
 70 Interior design studio
 71 Clothes alteration
 72 Material Handling Distributor
 73 Property Management
 74 Truck Rental
 75 Commercial Real Estate

Which of the following business types best describes your business?

Other (please specify)

1	flooring sales and installation
2	Real Estate Brokerage
3	Convention and Visitors Bureau
4	Commercial Photography
5	Real Estate Firm
6	Dentist Office
7	Property Management
8	Marketing
9	advertising and marketing
10	office equipment sales & service
11	Corporate Events, Go-Karting
12	residential house cleaning
13	Veterinary Hospital
14	chemical laboratory
15	Off Premise Caterer
16	Communications Agency
17	Custom Home Design
18	Church
19	Screen printer of textiles and vinyl stickers
20	Architectural services
21	Communications
22	Business office

76 Newspaper printing & Publishing
 77 Software Development
 78 staffing
 79 Medical Insurance Carrier
 80 Real Estate
 81 real estate sales
 82 Psycho therapist
 83 Indoor Amusement (Karting)
 84 Engineering
 85 Land Development
 86 Law Firm
 87 Apartment Community Management
 88 Import Export Freight Forwarder - Logistics

Business

89 Accounting
 90 church
 91 Real Estate
 92 AUTOMOTIVE DEALERSHIP
 93 Fitness Center
 94 Graphic Design
 95 Professional services, E-Learning, custom

content

96 Veterinary hospital
 97 Public Library of Charlotte & Mecklenburg

County

98 Printing company
 99 Printing company
 100 auction services
 101 Children's Fitness
 102 Television Station
 103 AUTO SERVICE (OIL CHANGE & STATE INSPECTION)

104 Research and Development
 105 Engineering/Construction Management
 106 church
 107 pest control
 108 psychotherapy
 109 film production / advertising
 110 Exercise/Health Care
 111 Religious - Church
 112 Transportation Brokerage
 113 GIS Software Development & Sales
 114 electrical rebuilt
 115 staffing and recruiting
 116 Software
 117 Service Company - Market Research
 118 Interior Design
 119 Recruiting
 120 Law Office
 121 Race Team
 122 Commercial Maintenance
 123 animal hospital
 124 dental
 125 consulting
 126 children's fitness center
 127 field case management, primarily w/c

128 Commercial Lighting Manufacture's Rep
 129 neighborhood swim & tennis facility
 130 Software
 131 Apartment Community
 132 Land Surveying
 133 wholesale bread bakery
 134 Real Estate Brokerage
 135 Apartment Community
 136 Transportation/Truck Fleet Maintenance
 137 RACE TEAM
 138 surgical practice
 139 We have a ReStore that sells items which otherwise would have gone to the landfill.

Business activities

	Primary business activity
	If other (please specify)
1	Real Estate Brokerage
2	Sales and Marketing Destination
3	Photography Studio
4	Fire Sprinkler Installation
5	technology services
6	computer programming
7	Warehouse
8	School of Gymnastics
9	graphic design
10	Awards, Promotional products and Signage
11	Conference Facility
12	Veterinary Care
13	Consulting, content creation, design, web development
14	Map Publisher
15	Custom Home Design
16	Education/Serving the Lord
17	Regulate the safety and soundness of the national banking industry.
18	Wholesale distributor of bolts and nuts
19	Travel and Instruction
20	Customer service - Call Center
21	communications
22	Management of Operating companies and real estate
23	Real Estate Development
24	college planning for high school and college students
25	Professional Counseling services
26	daycare, church services
27	Surveying @ site & mapping @ office
28	Software development
29	Focus Group Facility
30	Town Administration and Planning
31	law practice
32	Fire Station
33	Legal Services/ Law Office
34	Legal

35	construction project management & consulting	80	Gage & Tooling Sales / Calibration Lab
36	US Sales Office - German Mfg Wastewater Equipt.	81	Architecture
37	Organ and Tissue Donation	82	Law Enforcement
38	church	83	Leasing, Selling & Property Management
39	welding	84	Insurance sales
40	Manufacture water-based printing inks.	85	auto body repair & paint
41	Manufacturers' Representative	86	Dental
42	Church	87	auto body repair & paint
43	Corporate Management	88	sales and design engineering
44	sell & service air compressors, sell parts, oils, etc	89	research and creating reports/documents for client service
45	Fire Department 911	90	veterinary hospital
46	Public Service	91	staffing
47	DISTRIBUTION OF IMPORTED WHOLESALE PRODUCT	92	Primary-Paint Your Own Pottery Studio
48	lending books/other materials; community center	93	Secondary- Custom commissioned art work
49	Administrative services for pension plans	94	church and school
50	Interior Design	95	retail sales of specialty countertops
51	Piano tuning and repair	96	Religious Organization
52	phone sales	97	Retail Clothing Sales
53	Childcare Services	98	Rentals and Property Management Services
54	Business to business sales of Office Equipment	99	sales
55	Church	100	Architecture & planning (design, drafting, etc)
56	Investment related services	101	Development
57	worship, education, child care, counseling, sports activities, meals	102	glass company
58	Financial consulting and publishing	103	hair salon
59	provide for daycare children	104	Legal Representation
60	engineering	105	Audits and Tax
61	Church services/community programs	106	church
62	Vibration Signature Analysis, Predictive Maintenance on Rotating Equipment and Training on above	107	Financial Services
63	insurance wholesale/sales	108	Accounting & Tax
64	public library - education, literacy	109	public television
65	Phone sales	110	Fitness Center
66	Hair cuts and hair coloring, massage, skin care	111	Technical Consulting Firm
67	hair cutting, coloring, massages, skin care	112	Consulting
68	hair care, coloring, massage, skin care	113	INCOME TAX AND ACCOUNTING
69	Real estate brokerage and investments	114	Accounting
70	Financial Services/Investment Management	115	Graphic Design. Print Design. Interactive Design.
71	education of young children	116	Informational needs - library
72	Sales calls	117	Medical Research
73	Day Care Center	118	E learning, web based training content
74	counseling	119	financial services
75	Electric Company	120	Church
76	Staffing	121	Veterinary care
77	Our business involves furniture and accessories home improvements for the interior	122	Investments & trading
78	Material Handling Sales and distribution	123	Real Estate Sales
79	television broadcasting	124	Providing print and non-print items for patrons. Also providing programs and resources relevant to needs of the library community.
		125	Maternity outreach and counseling center
		126	Real Estate
		127	Counseling and testing
		128	farm machinery sales, and auction services
		129	News and Information
			Graphic design

130 Graphic design
 131 construction administration
 132 religious
 133 sales and service
 134 Mental Health Services
 135 School facility
 136 film production and support
 137 Personal Training
 138 Photo Identification
 139 Disaster Recovery and Business Continuity

Services

140 We are an Insurance Agency office
 141 Engineering - Structural
 142 Insurance Sales
 143 warehousing
 144 Software sales
 145 electrical rebuilt shop
 146 Architectural Design
 147 Software for Healthcare Industry
 148 Accounting Services
 149 Decorating Services
 150 Law office
 151 Lodging for guests
 152 pet care
 153 JEWELRY SALES AND REPAIR
 154 Soft goods for Home decor
 155 Investment Banking/Real Estate
 156 marketing consulting
 157 Sales
 158 Church with a full time child development center (100 children)
 159 neighborhood swim & tennis facility
 160 medical care
 161 Software
 162 Apartment rentals
 163 Land surveying
 164 Sales
 165 property management/maintenance
 166 Reducing overall cost per mile by various reporting
 167 events
 168 small retail store for patient's surgical needs

Who makes the decisions regarding trash services for your business?

Other (please specify)

1 Trustee Committee and Church Administrator
 2 administrator
 3 Town Manager
 4 City
 5 manager
 6 Trustees
 7 City
 8 PLCMC/Mecklenburg County
 9 Owner of Property

10 Plant Manager for Facility
 11 Trustees representing membership of Church
 12 we are in a warehouse area, but are responsible for having our own trash picked up. There is no central disposal area
 13 Congregation Board
 14 I make the decisions as the community manager
 15 church committee
 16 The President of the Corporation
 17 Administrator
 18 Administrative Team located in Downtown Charlotte
 19 Executive Director
 20 Administrative assistant
 21 financial administrator
 22 Pastor, Business Mgr, Facility Mgr
 23 Office Mgr
 24 Leaser for building/ we do for construction sites
 25 office manager
 26 GENERAL MANAGER

What is the name of the company responsible for hauling your organization's garbage from your location? (If appropriate)

If you responded "Other" please specify

1 All Points Waste
 2 City of Charlotte
 3 city of charlotte
 4 City of Charlotte
 5 not sure
 6 We haul it ourselves
 7 Charlotte Mecklenburg
 8 Republic
 9 I don't know
 10 Picked up by the City
 11 don't know
 12 waste management and affordable waste city ?
 13 Don't know
 14 Don't know
 15 City Sanitation
 16 Weyerhaeuser
 17 City Of Charlotte picks up trash
 18 city
 19 Discount Waste
 20 charlotte Mecklenburg garbage collectors
 21 not sure
 22 Sonocco
 23 BMI i think what they call themselves
 24 home business/trash picked up by Mecklenburg County
 25 City of Charlotte
 26 don't know

27 we usually take it home and put it in our home trash
 28 city of charlotte - curb service
 29 The Tool & Gage House
 30 Charlotte/Meck
 31 Action
 32 city of charlotte
 33 and Allied Waste
 34 Eola Capitol Management
 35 Waste Management
 36 BFI
 37 BENFIELD SANITATION SERVICES
 38 WPMI
 39 Republic Waste Management
 40 Benfield Sanitation
 41 iron mountain
 42 Holden Property Management
 43 Arranged by property management company - First Colony
 44 Republic Waste
 45 Rising Roll Gourmet
 46 skyline
 47 unknown
 48 Jan-Pro

**Who pays for your trash service?
 Other (please specify)**

1 Taxes
 2 included in city of charlotte sanitation services
 3 No cost incurred
 4 janitorial services we contract, they dump in property dumpster
 5 Taxes
 6 Taxes
 7 I guess the city
 8 We put it out at the curb- isn't that Char/Meck?
 9 included in water/sewer charges
 10 PLCMC/Mecklenburg County
 11 I haul all of my own recyclables myself to the appropriate locations
 12 Lincoln Waste Solutions- management company
 13 No payment - courtesy for church
 14 George Mattress of Atlanta hauls off old mattresses
 15 basically residential from town of Cornelius
 16 trash picked up by city, business is in primary residence
 17 City
 18 curb service
 19 Taxes
 20 taxes paid-city of charlotte
 21 we have two locations so I answered for both of them

22 We do
 23 Corporate Office
 24 share dumpster rental with neighbor
 25 We pay for trash on construction sites
 26 We pay a janitorial service to handle it
 27 Management Company

"If you are responsible for contracting/paying for garbage collection, could you report what is the size of each garbage container collected/self hauled at your company?
 (Please select size for EACH container you use)"

If you responded 'other', please specify

1 not sure / dumpster 1 collection / week
 2 1 13Gal can & 1 county recycle bin
 3 We recycle our metal in the large container
 4 8-cubic yard recyclables
 5 1 dumpster - not sure what size
 6 Trailer
 7 Cardboard Service Picks up
 8 30 cubic foot dumpster
 9 32 gallon to one bag
 10 1 - trash can
 11 approx. 50 gallon trash container
 12 34-yard compacted unit
 13 12-cubic yard cardboard recycling dumpster
 14 We have approx. 11 different locations and containers
 15 Don't know the size though it is a large dumpster: we have 5 buildings on our campus.
 16 have total of 9 8cubic yard dump

**Additionally, could you report how often trash is collected/self hauled at your organization?
 If you responded other, please specify**

1 we call when we need it emptied
 2 1 8yard for trash once weekly/1 8yard for recycle bi-monthly
 3 Once every 3 months on the large container
 4 Not sure
 5 also trailer once a month
 6 once a week
 7 3 times weekly
 8 Once a year
 9 Some places once a day

How important are garbage and recycling costs (if applicable) relative to your overall operating costs?

Comments (why or why not)?

1 Garbage covered in rent, we recycle on our own
 2 We have very little garbage. relative to our business.
 3 We are non-profit

4 We must have the garbage hauled away, but we don't have an "official" recycling program of any kind, so there is no actual cost. A few employees take home some recyclables to put out for curbside pick-up.

5 part of our environmental initiative

6 more then Duke Energy

7 It is just good for the environment

8 We recycle woodchips and they cost over \$1000 a month

9 since our building does not offer recycling programs, we paid to have our paper recycled (privately)

10 not sure

11 We conduct our own inner office recycling

12 We really need to recycle more, so cost only so relevant

13 We recycle boxes/cardboard only.

14 Not applicable ... included in lease

15 recycle goods pays for containers

16 No payment

17 When our company entertains our clients, we don't want to see garbage in back of the office bldg.

18 it is a fixed cost

19 we have no control over the cost

20 We don't have to pay for any.

21 We want recycling!!!

22 we send recyclables back to home office

23 Costs of the property management will ultimately affect leasing rates

24 It is included in the lease. With thousands in expenses - waste will probably never be a high dollar line item. I am eager to keep costs in check at all levels

25 There should be a more cost effective recycling program in place for small businesses.

26 We would love to recycle but it is not available to us

27 Non-profit day care center

28 it is not available but it is very important

29 We actually recycle on our own because we are unaware of any available options

30 if we had to pay for some of the larger (waste management, etc) it could get pricey. Recycling is often an additional charge

31 Medical Waste - Healthcare Waste Solutions; CINTAs - secure document recycling

32 we've recently become responsible for paying for some of our recycling

33 we don't pay -- landlord pays

34 not applicable

35 We would like to recycle more products, but not at extra costs

36 recycling is very important to us. we hope it will be comparable to regular disposal

37 Cost is very small % of rent

38 We want to be environmentally aware.

39 city collects garbage; no recycling

40 No Recycling Program

41 Company wants to begin recycling

42 we need to be good stewards of the money entrusted to us

43 We produce very little garbage

44 I support recycling at any reasonable cost

45 We have a shredding company that takes all of our paper

46 N/A

47 would love to have recycling

48 We need to decrease our footprint on this earth.

49 We are interested in recycling our office waste paper generated.

50 Saves environment; destroys confidential information

51 We currently do not have a recycling program in the center but we would love to have one!

52 to save environment

53 cleaner environment and less in the dump

54 Trash pickup included in condo fees. We have few items for recycling

55 recycling not available

56 City Picks Up

57 Recycling is extremely important to us, but we don't directly realize the costs because it's handled by the property management company.

58 Cost are important but recycling is very important

59 Environmental reasons

60 Included in lease, so not important, but we are concerned about recycling.

61 would like to recycle; building does not offer

62 Minimal amount of value relative to overall budget

63 ALL costs are extremely important

64 We recycle our Oil

65 not available, would LOVE it

66 Every dollar saved goes towards affordable housing

Approximately, how much do you pay for the trash services you receive?

	Per month
1	1500
2	0
3	0
4	0
5	30
6	110
7	900
8	0
9	0

10	220	66	650
11	Nothing	67	no idea it is all lumped into our cam price
12	150	68	75
13	113	69	1267.5
14	0	70	0
15	117	71	included in taxes
16	120	72	400
17	135	73	245
18		74	nothing
19	440	75	120
20	124	76	??
21	0	77	since we self haul, we pay nothing
22	0	78	1500
23	60	79	300
24	800	80	250
25	220	81	220
26	158	82	?
27	0	83	0
28	220	84	don't know
29	0	85	0
30	178	86	300
31	60	87	0
32	not sure	88	not sure
33	3000	89	300
34	0	90	115
35	0	91	210
36	150	92	300
37	Unknown	93	Not sure
38	179	94	215
39		95	400
40	500	96	0
41	N/A	97	Unknown - included in lease
42	126.07	98	1400
43		99	not sure
44	included	100	
45	0	101	529.78
46	1000	102	407.53
47	1241.32	103	46.5
48	130	104	180
49	50	105	800
50	\$235 or \$50 extra dump	106	100
51	N/A	107	0
52	286	108	0
53	200	109	0
54	2500	110	200
55	NA	111	108
56	50	112	in lease
57	n/a	113	155
58	0	114	Do Not Know
59	0	115	200
60	120	116	
61	None	117	200
62	40	118	150
63	0	119	600
64	78.5	120	131
65	80	121	250

122 250
 123 250
 124 127
 125 600
 126 70
 127 50
 128 500
 129 75
 130 200
 131 n/a
 132 not sure
 133 100
 134 45
 135 320
 136 Don't know
 137 138
 138 250
 139
 140 425
 141 included in lease
 142 33000
 143 unknown
 144 300
 145 Our Administrator would have to answer this question
 146 100
 147 0
 148 130
 149 1025
 150 250
 151 139.8
 152 under \$200/mo
 153 125
 154

If you were to place all your garbage in a flip-top, 96 gallon container (like the wheeled carts you use at home), how many containers would you fill up in ONE WEEK at your business?

Other (please specify)

1 Not Sure
 2 I'm not real sure about the accuracy of this.
 3 We typically have large items that would not fit into a 96 gallon container
 4 NA
 5 too many
 6 If we did not use CINTAs for document shredding
 7 don't know
 8 more than 10 at our other location
 9 Much less than 1 bag almost nothing- lots of paper shredding
 10 Not including cardboard boxes
 11 would like to be able to recycle
 12 10

13 This does not count cardboard we recycle - our second container.
 14 Appox 450 tons per month
 15 in the summer maybe 5-8 containers- in the winter 3-4 containers

In an average month, what are the main materials generated during your business activities? (Please select the material and report how much is generated)

Other (please specify)

1 Vinyl waste
 2 Wood and wood chips
 3 medical non hazardous
 4 Chemotherapy supplies
 5 Newsprint & other printing paper
 6 glass
 7 bathroom materials, toilet paper, towels, diapers, etc. However we do also use a number of plastic containers also (juice bottles).
 8 plastic jugs
 9 nonworking household appliances and furniture, etc.

Who makes the decisions regarding recycling services for your business?

Other (please specify)

1 Property Management offered us the solution
 2 Regional Manager
 3 Office Staff
 4 individual shifts
 5 manager
 6 Plant Manager of Facility
 7 Trustees/ Church Council
 8 Office Administration
 9 We only recycle paper & cardboard
 10 The city/county will NOT pick-up our plastic bottles & Cans!!!
 11 Congregational Board & Staff
 12 Cardboard boxes collected by prop mgmt, office paper recycled by individuals if they so desire
 13 office staff/committee
 14 landlord does not recycle, we recycle by taking to residences
 15 minister with youth
 16 Pastor, Bus Mgr, Facility Mgr
 17 Property Mgr. recycle dumpster in place.
 18 Everyone in the office

How does the recycling system operate within your business and externally (getting the materials taken away) at your business? (Please read all and check all that apply)

Other (please specify)

- 1 Maintenance from Property Management collects
- 2 We would like to contract a pick-up service
- 3 Take home and recycle
- 4 Currently launching a recycling program
- 5 We pay to have hauled away
- 6 We place in recycle red bin and you pickup the recycle
- 7 We only recycle cardboard

How would you characterize your recycling program and its use?

Other (please specify)

- 1 Just launching program
- 2 would love to have recycling drop off at work instead of individual's homes
- 3 My wish would to have our buildinf recycle more than paper. I take the recycled bottles and cans to my home recycling.
- 4 recycling is handled by garbage pick-up
- 5 we just started our recycling program last week so I can not tell as yet if it is robust or not

Please name the company responsible for hauling your organization's recycling from your location? (if applicable)

Response Text

- 1 Blue Ridge Recycling
- 2 na
- 3 Property Management handles
- 4 Maslo
- 5 Planet Recycling
- 6 ShredIt for paper, employees for other
- 7 na
- 8 republic
- 9 Plyler Paper Company
- 10 waste mgt
- 11 Cintas
- 12 Allpoints
- 13 Self hauled to recycler
- 14 Republic Waste
- 15 n/a
- 16 City of Charlotte
- 17 city
- 18 VLS Recovery Service
- 19 Wayerhouser
- 20 Shred-It
- 21 Weyerhaeuser
- 22 we haul ourselves
- 23 Me
- 24 Not Applicable
- 25 Plyler Paper
- 26 don't know
- 27 Urban Disposal
- 28 employee's of starbucks
- 29 Cintas

- 30 self
- 31 Weyerhaeuser
- 32 corporate office
- 33 Wastemanagement, Paperstock Dealers,Inc.
- 34 waste management
- 35 Unknown company for some/Shred-it for documents
- 36 Waste Systems
- 37 Allied
- 38 City Contractor
- 39 we haul it away ourselves
- 40 Cintas
- 41 Individual
- 42 Ebsco
- 43 don't know
- 44 Pro-Shred
- 45 The City
- 46 Private individual at one location takes cardboard, other location is waste company hired by prop mgr
- 47 not sure
- 48 Republic
- 49 BFI
- 50 WPMI
- 51 All Points Waste
- 52 City of Charlotte
- 53 N/A
- 54 Do not know name of company
- 55 ProShred
- 56 Maslo
- 57 HYDROCARBON RECOVERY
- 58 Mr. Jackson
- 59 Allied waste
- 60 Plyler Paper
- 61 Shred-It
- 62 allied waste
- 63 city of charlotte & Mars Recycling
- 64 not sure
- 65 don't know
- 66 Iron Mountain
- 67 Sorry don't know.
- 68 Not sure, but it may be waste management
- 69 Waste Management
- 70 Jan=Pro
- 71 Have to ask our Administrator. I don't know.
- 72 We have employed a 15 yr. old girl to recycle our cans and we pay her for the summer plus she gets the money from the recycling material.
- 73 Allied Waste
- 74 Maslo
- 75 Self, FCC Environmental
- 76 The Town of Cornelius

Approximately, how much do you pay for the recycling services you receive?

	Per month
1	450
2	0
3	0
4	
5	0
6	75
7	0
8	0
9	\$50.00 to 75.00
10	0
11	0
12	0
13	37
14	160
15	
16	86
17	0
18	47
19	0
20	60
21	
22	1500
23	
24	
25	50
26	
27	
28	
29	0
30	included in HOA
31	
32	60.00per site
33	40
34	0
35	650
36	65
37	
38	30
39	172
40	
41	included in garbage costs
42	150
43	50
44	
45	
46	don't know
47	25
48	
49	don't know
50	
51	IN taxes
52	
53	don't know
54	
55	100

56	included in garbage fee
57	90
58	0
59	0
60	Do not know
61	
62	
63	
64	
65	
66	500
67	40
68	
69	100
70	
71	40
72	
73	
74	60
75	75
76	
77	not sure
78	45
79	30
80	Paid by Landlord
81	20
82	
83	5000
84	300
85	Don't know, though I think we pay nothing.
86	\$50.00 a SUMMER
87	teh gas it takes to drive to the recycle center.

"If you pay for your recycling service, how do you do so?"

	Other (please specify)
1	They pickup our recyclable materials and pay us.
2	NA
3	They pay us for the bales picked up
4	There is also a paper cardboard dumpster(free) in complex
5	property mgr provided service-until 5/1- we will pay partially
6	we reuse as much as possible and haul some to a facility
7	City collects
8	property taxes
9	City of Charlotte
10	We pay individual
11	pay employees mileage to take to recycling center
12	Contracted janitorial work

If available, could you report the size and number of recycling containers collected/self hauled at your company?

If you responded 'other', please specify

1	Two 1x1x3 receptacles
2	various sizes throughout the facilities
3	N/A
4	About 200 lb/month
5	we just use small garbage cans and pullout the cardboard as we dump trash
6	30 yard compactor
7	We have small bins throughout the church and a dumpster for paper on location (this is picked up weekly by some company).

How often is recycling collected/self hauled at your organization?

If you responded other, please specify

1	as needed, every 2 months maybe
2	bi-monthly
3	Don't know
4	Every 6 weeks
5	aluminum cans picked up monthly
6	every 3 months

If you were to place ALL of the recycling material you normally collect in a flip-top, 96 gallon container (like the wheeled carts you use at home), how many containers would you fill up in ONE WEEK at your business?

Other (please specify)

1	Very little
2	18 gallon eow
3	varies widely though
4	3 containers a week in the summer and 1 container in the winter

What materials, and approximately how much of each material, are recycled at your company?

Other materials? (please specify)

1	print ads
2	Wooden skids, Plastic buckets, fiber drums
3	newspapers and catalogues
4	Paint - It is donated
5	we would love to recycle other items but don't have an outlet to do so.
6	aluminum cans
7	Textiles, unused fabric and lots of plastic bags!
8	Church recycles paper heavily. CDC/CDC kitchen does not recycle yet.
9	plastic, glass

From the above list, which materials take up the most space in your recycling bins?

Response Text

1	Cardboard and carpet and pad
2	paper/magazines/publications
3	Paper and magazines
4	paper (that's all we are able to recycle)
5	cardboard, bottles
6	metal containers (drink cans)
7	Paper
8	newspapers
9	plastic bottles and metal cans
10	plastic bottles
11	cardboard
12	cardboard
13	Plastics and other packaging
14	plastic bottles, office paper, and aluminum cans
15	card board
16	Cardboard
17	paper board
18	cardboard boxes and paper
19	Cardboard
20	paper
21	Paper
22	paper
23	cardboard
24	plastic and glass
25	White Printed Paper
26	Cardboard, plastic buckets, fiber drums, wooden skids
27	paper
28	paper
29	cardboard
30	glass and plastic containers
31	Not applicable
32	CARDBOARD
33	cardboard
34	paper
35	plastic bottles and paper
36	plastics
37	copy paper
38	paper
39	plastic bottles and aluminum cans
40	paper
41	glass, plastic bottle
42	cardboard
43	cardboard packaging
44	Plastic, and cardboard
45	cardboard boxes
46	paper
47	cardboard
48	paper
49	CARDBOARD BOXES
50	glass bottles, cans, plastic containers
51	milk jugs
52	paper and plastic drink bottles
53	paper

54 paper and cardboard
 55 Plastic and glass bottles, aluminum
 56 Cardboard
 57 paper
 58 Aluminum cans
 59 Cardboard
 60 paper/document shredding
 61 paper & cardboard
 62 cardboard
 63 cardboard
 64 card board
 65 paper
 66 cardboard
 67 cardboard
 68 paper
 69 paper
 70 office paper
 71 paper
 72 cardboard
 73 Cardboard
 74 paper/document shredding
 75 Paper
 76 Plastic bottles, cans
 77 plastic bottles and cans
 78 paper
 79 cardboard
 80 Plastic bottles
 81 Paper
 82 Paper
 83 plastic containers and bottles
 84 paper/document shredding
 85 cardboard
 86 aluminum drink cans
 87 cardboard
 88 paper
 89 cardboard
 90 cardboard
 91 cardboard
 92 plastic bottles followed closely by white & paperboard paper
 93 plastic bottles
 94 paper is all we recycle
 95 cardboard
 96 paper and plastic bottles
 97 paper
 98 paper and plastic bottles
 99 cardboard
 100 aluminum cans
 101 Paper
 102 Cardboard
 103 Paper
 104 cardboard
 105 cardboard
 106 cardboard tubes
 107 paper
 108 Paper

109 plastic bottles and aluminum cans
 110 food waste
 111 paper
 112 Metal

What items not being recycled seem to take up the most space in your garbage/trash(after any recycling efforts that you do)?(check all that apply)

Other (please specify)

1 paper products
 2 Non-white fiber paper
 3 vinyl waste
 4 table paper towels gloves instrument wrap
 5 Take out food containers
 6 its all paper
 7 hand paper towel waste from bathrooms
 8 glass
 9 restroom trash
 10 pet manure
 11 Paper

What are the primary barriers to regular recycling faced by your business?

Other (please specify)

1 although we take the recycling ourselves, it would be much easier with a pick up service
 2 no recycling program for small businesses
 3 I currently take home paper & cardboard to recycle
 4 not clear to know what can/can't recycle
 5 Recycling not offered as part of the property management
 6 Paper contains confidential information and cannot be recycled
 7 Landlord doesn't offer it
 8 Building owners do not provide recycling services.
 9 we use a shredding service
 10 takes time and money to load and haul off
 11 no recycle for Styrofoam
 12 Hassle to self haul
 13 Our building management doesn't offer it, I think it should be a law that it's required!
 14 Do not have enough recycling bins
 15 we have to haul it away ourselves
 16 Didn't know it was available to businesses
 17 Recycling truck will not pick up
 18 We recycle, but have to take our own materials to recycle facilities
 19 trash/recycling is handled by landlord
 20 To many bags from the grocery store
 21 We don't generate enough to hire someone to collect (paper, boxes other than cardboard)
 22 Huntersville does not have CharMeck recycling available

23	I recycle but it would be easier with Pickup/Cost	14	10
24	It may be the landlord, not the hauler that does not offer the option to recycle.	15	50
25	its not offered	16	we hope that this would remain a courtesy for church
26	at this point no program	17	50
27	Poor Service From the Collector, Spill product on the ground, Leave Black Marks on the street by sliding their tires to stop in front of my house.	18	going rate
28	City of Charlotte will not provide pick up service	19	10
29	Unless we take it to a recycling facility it is not readily available.	20	20
30	CDC Kitchen Food Services Manager is not yet interested.	21	Don't generate much-should be included in lease.
31	No barriers	22	50
32	cost would be an issue	23	0
		24	cost wouldn't be a factor in whether or not system was used. Convenience and ease of system would determine how much system would be used.
		25	85
		26	don't want to see the cost at all
		27	50
		28	15 dollars
		29	0
		30	nothing
		31	?
		32	don't know
		33	We would pay pro rata through Condo Association - don't know costs yet since it is new construction
		34	25
		35	\$75.00 - \$100.00
		36	50
		37	50
		38	10
		39	50
		40	5
		41	10
		42	0
		43	5
		44	5
		45	20
		46	The same amount that the business is paying
		47	200
		48	10
		49	N/A
		50	100
		51	30
		52	10
		53	Difficult to determine b/c it is included in our CAM charges with the landlord. Not sure how much it actually is.
		54	25
		55	50
		56	\$0 - Volunteers take it away to recycling centers
		57	100
		58	20
		59	25

60 0
 61 50
 62 100
 63 Would prefer that it be no cost
 64 15
 65 10
 66 20
 67 10
 68 nothing because our taxes should provide this service since you would be collecting the materials and receiving the money that it generates.
 69 30
 70 ???
 71 50
 72 don't know where to begin answering this question

If everyone's garbage bill went up, but you could recycle as much as you wanted, would you be in favor?

How much more would you be willing to pay?

1 10/mo
 2 \$10/month
 3 50
 4 0
 5 15
 6 20
 7 10% more
 8 25
 9 see #8
 10 Up to \$50/month
 11 going rate
 12 10
 13 0
 14 5
 15 10
 16 30
 17 15
 18 nothing
 19 not sure
 20 \$75.00 - \$100.00
 21 don't know
 22 don't know
 23 10% maybe
 24 50
 25 10
 26 0
 27 0
 28 5
 29 0
 30 25
 31 we are taxed to death now strongly oppose taxing
 32 minimal amount
 33 15

34 10
 35 10
 36 We already pay too much in mis-managed taxes & fees, the city/county needs to better manage the taxes/fees they receive.
 37 -
 38 \$10 - \$20/month

Has your company adopted any "green" or sustainability goals or guidelines?

If you answered yes, are you aware of what the goals are, are there financial penalties/goals?

1 try to recycle
 2 no
 3 Our company is a big advocate of sustainable buildings, which have a small increase in initial cost but save money over time.
 4 save energy, recycle, use green material and products, no penalty
 5 no financial penalties/goals
 6 yes, no
 7 Encouraged to not print emails as much. No penalties incl.
 8 We cooperatively collect plastic bottles and recycle through a colleague's home collection
 9 Dry vacuum to eliminate water use, fluorescent and LED lighting
 10 No
 11 retrofitting windows and bathroom fixtures, light timers
 12 no
 13 We have made this an office project
 14 florescent light bulbs, no
 15 Yes
 16 Yes, There are no financial penalties
 17 no and never should be. You don't have the right to spank
 18 yes
 19 I feel like I am the only one trying to recycle. I see our neighbors throwing away computer parts and lots of cardboard boxes and it makes me sick!

"If you do have recycling education programs, what are they (check all that apply)?

Other (please specify)

1 Inter office Emails
 2 verbal
 3 email updates
 4 we discuss it in weekly safety meetings.
 5 co meetings
 6 notes at staff meetings
 7 no
 8 email
 9 word of mouth - there are only 3 of us at the location

- 10 nothing
- 11 Jeff's recycling
- 12 Trash cans/recycling bins
- 13 Just launching "Go Green"
- 14 Staff Meetings
- 15 E-mail
- 16 email
- 17 vocal

What efforts, if any, would you like to see the County make to encourage and increase recycling in the commercial sector?

- Response Text
- 1 Maybe sending a service representative out to our business to meet with/educate the owner.
 - 2 Offer curb side pick up!
 - 3 Have more receptacles handy available.
 - 4 Make it available with our city provided trash collection
 - 5 Have curbside pick up for small business'
 - 6 more emphasis on building management providing service to tenants at reasonable cost
 - 7 Drop-off locations that are in more populated areas. The place I use is set up so that I can't readily be seen by passers-by. I really don't like to use that location but don't know where any others are located.
 - 8 RECYCLING CENTERS AT CENTRAL LOCATIONS FOR DROP OFF.
 - 9 We need opportunity to recycle, there are not enough items that we can recycle, need more choices
 - 10 supply roll out containers or some other type of container, then have once a week pick up
 - 11 Make it affordable & convenient
 - 12 If it is as simple as filling a recycle bin and taking it to the curb like at home, I think all businesses should be made aware and encouraged. I don't think it should be mandatory.
 - 13 I would like to see the ability to recycle a variety of plastics expanded from just the few we can recycle now, to all recyclable plastics being able to be recycled locally. Also, the ability to recycle products like styrofoam peanuts and packing materials would be great.
 - 14 Make it mandatory for leased office spaces for businesses located in downtown Charlotte.
 - 15 Provide free large recycle bins for paper, cardboard, alum cans, and plastic.
 - 16 incentives to encourage people to recycle. Free recycling or very nominal fee. There is no incentive to recycle for some people if they have to pay to do it. They should receive a discount or discount in some way if they recycle and according to how much they recycle.
 - 17 "make it easy for every business.

- on site, or booklet, basic training for employer/employee"
- 18 Pay for bottles and cans.
- 19 Make it mandatory
- 20 Do it where there is an economy of scale. Leave small businesses that don't create much waste alone.
- 21 If the city picks up trash from a business it should also provide recycling services.
- 22 Have multiple drop sites for clean recyclables such as office papers, clean cardboard, soft drink cans, and plastic bottles.
- 23 communication improvement
- 24 Make it more available
- 25 "Require cardboard and office paper recycling. Require drink container recycling"
- 26 Education and awareness of programs
- 27 I am unsure of what the current requirements are and how we should be meeting those requirements.
- 28 We have had a problem getting our recycling picked up. It seems for now to be resolved.
- 29 I would promote with materials, if available.
- 30 Being a coffee house, I would love to see some kind of vigorous approach to recycling plastics. On average we go through 30-60 gallon containers daily and 15-20 syrup containers daily
- 31 N/A
- 32 distribute recycling containers to all residents in the county without having to call the trash service to get them and provide them with what gets recycled
- 33 Pass a law, make it mandatory, but don't charge us a ton, make your money selling the recycled materials.
- 34 I should not have to drive my recyclables 20 miles and hold them for a month or two (which I now have to do) to recycle. You need to make it easy and small businesses will do it. Now it is too hard for small Business to recycle. We should have curbside pickup at our buildings like residential for household type recyclables. However, in our business, most of our waste, even from the manufacturing area, would be classified as recyclable. We could greatly reduce our waste if we had a "pro" from the county (or wherever) call us and discuss our waste, but it can not cost me a lot of money or we would not use it. Our office waste consists mostly of paper. We recycle 50% from the cafeteria, but 0% for the warehouse and plant. Help me in the warehouse and plant waste and you would reduce our landfill waste by 95%.
- 35 put recycling plans in building plans before county approval
- 36 Allow businesses to use the city curb side service since we pay taxes too.
- 37 make recycling available to businesses

- 38 "To place mandatory ordinance and compliance on the commercial sector in the county."
- 39 Recycling dumpsters in business office parks that are convenient to businesses. Ensure that janitorial services are required to recycle. Many will no do it. I have asked.
- 40 "Having recycling pickups like curbside pickup. Also having recycle bins all over the city especially near businesses especially restaurants and salons."
- 41 Educate and give a good price if payment is necessary
- 42 Should be customer NOT government driven
- 43 Make it mandatory.
- 44 provide containers as they do for homes
- 45 make it affordable. Even if it is mandatory it needs to be affordable especially for those of us that have small businesses. It has more impact on our bottom line than for many larger companies
- 46 We would love to have bins in our container area for glass/plastic, cardboard packaging, office paper that our whole set of buildings could share.
- 47 better signs for cans and things in public areas
- 48 let us know what is available concerning recycling in the commercial sector.
- 49 is curb-side pickup an option for in town, single user, stand alone building occupants?
- 50 Yes, But I would like to know how the recycled Items - paper, plastic is recycled and where it goes. That would show people that they are making a difference. How much money is generated- if any for the sale of recycled items.
- 51 offer a type of recognition to every company who is trying to recycle regardless of their size
- 52 Provide recycling to small businesses (just like trash)
- 53 Its going well but she runs a small home business that has full recycling available
- 54 Have recycling bins/collection points for specific items match the commercial use of the area. For instance, we are a clothing store. There are other similar retailers near both of are locations. We collect the cardboard boxes but not the other packaging that most clothing comes in, ie. plastic bags. We can't get our vendors to not put our merchandise in plastic bags but we just throw them away. I think that's what happens with the other retailers too.
- 55 provide free containers and removal.
- 56 More information about availability and services.
- 57 "Provide bins for paper recycling. Provide shredders of discounts for shredders."
- 58 Provide recycle buckets & collection as is done at homes.
- 59 The landlords need to make it available and educate the tenants about what is available. We would recycle if we were able
- 60 broaden the items to be recycled -
- 61 Offer more web-based info to reduce paper waste
- 62 Offer to pick-up our recycling at the curb along with our garbage. We were told our office (4000sq/ft w/ 3 tenants) was too small.
- 63 Provide more incentives for staff and customers to recycle materials.
- 64 make it mandatory
- 65 Affordable recycling and increased education.
- 66 Don't know
- 67 more education about the need for compliance from everyone. more recycling containers in public locations to make it easier to recycle when out in the community
- 68 Educate citizens and make easily available.
- 69 Place recycling bins in a central location of the Research Park (that is where our facility is located).
- 70 put in motion now, this should have happened a long time ago.
- 71 "offer to send analyst to help small business set up sorting and collection in easiest way. (we don't need that, but maybe older companies do) run a campaign to have companies keep and sort all waste for a week, to see how much of their garbage is in fact recyclable."
- 72 Recognition and financial rewards
- 73 I would like to see specific bins for glass, cardboard, and paper for business to use.
- 74 Pick up for businesses that have curbside garbage pickup.
- 75 don't know. it can be done. A lot of commercial already do
- 76 Provide free or very low cost containers and pick up. We are a small business and will participate so long as the cost is not prohibitive.
- 77 Give more info on what is available
- 78 To require more recycling of cardboard and glass products
- 79 recycling bins by the vending machines
- 80 Provide free pick up services for cardboard
- 81 Mandatory recycling
- 82 Offer recycling bins similar to those offered for residential services.
- 83 In Chicago we had to purchase "stamps" to place on our roll out garbage containers (1 stamp per 96 Gallons). After that we had to place 1 stamp on any and all bags not fitting inside the 96 gallon container. This encouraged recycling and there was an extensive

free recycle program. All plastics up to # 5, green, brown, and clear glass, all paper and cardboards. This really incentivised people to recycle. The "stamps" were special long adhesive strips you could purchase at all grocery and convenience stores.

- 84 Educate businesses on the benefits to be good stewards of our environment
- 85 Clear guidelines, MSW mandatory recycling, recycling dumpsters more available
- 86 Fine businesses that are not cooperating to do their part.
- 87 use roll out bins
- 88 The County should provide our neighborhood swim club containers to recycle plastic and aluminum cans and pick them when the regular trash is picked up in teh neighborhood
- 89 "Provide Central Business District recycle pickup Incentives preferable to requirements"
- 90 Attempt to generate money by offering and collecting all of the recyclables from everyone. If I can take a can in to receive \$\$\$ why can't the city/county?
- 91 Bottle deposit 10 cents per can/bottle to take back to the grocery store

Do you have any other comments regarding commercial recycling?

	Response Text
1	We would love to participate.
2	Not sure that I understand why business would need to pay to recycle?
3	The recycling center at Park Road park should have better access for dumping cans and bottles. I collect recyclables in a 42 gallon trash container, and do not have time to pull these items out individually and put through an 8" slot. there should be more than one opening through which I can dump items from the top.
4	We would love to get something going within our company.
5	I currently take home a small portion of the paper waste generated at our church, however we have many meals prepared here and would love to encourage or congregation to recycle IF we had recycle pick up at our location. However, the pick up dates would have to be during the week so we can put the recycles out before we leave work M-Friday. Thanks
6	I and others have often found incorrect information on your site, particularly pertaining to the cardboard pick-up locations at local businesses. Please review the list you have online, contact those people and make sure they are actually participating in the recycling pick-up program. It can be very frustrating.

- 7 I believe recycling is a needed lifestyle practice, however if it is too costly for small business, it will not be widely used.
- 8 Need more promotion. Make it simple and easy to understand why and what to do.
- 9 We need a biomass furnace for heat or power near the airport compost central..
- 10 Need to make it easy
- 11 I don't need another government mandate. Make things voluntary, and put incentives in place for large firms -- kind of like the LEED program is for green buildings.
- 12 If the city provided this service for free more businesses would participate
- 13 I simply am not aware of my options for recycling as a small business owner.
- 14 It needs to be a must!
- 15 I feel that if recycling by small businesses is required, there should at least be an affordable option for pick-up. With the extensive waste of resources and funds in Char-Meck currently, there could be better provisions for small businesses without an increase in costs to small businesses.
- 16 Willing to get started.
- 17 I'm all for it.
- 18 I would like to see residential recycling as well. It was mandatory in NY State. I have lived here 14 years and it still isn't mandatory here.
- 19 N/A
- 20 We want to recycle at our business. I can not drive my waste around. You need to make it easier and cost effective for business to use the system.
- 21 no
- 22 start an antilitter campaign
- 23 "We need to be on the forefront of becoming a green county/city."
- 24 no
- 25 Recycle #4,#5,#6,#7 plastics
- 26 make it easy to do.
- 27 Right now, it is almost impossible to recycle even our office paper in Matthews - it's a shame and a waste. We would love to be able to recycle here in a similar manner to what we do at home.
- 28 I used to work at a Waste Management Transfer Station. If we got to much recycled items they would just thrown away they extra items. We are zoned Mudd and we can not seem to get the recycle truck. 2 years ago we move to a new space across the street and now we do not get service. At our old location we got service for about 7 years.
- 29 I think if there were fees.. it should apply to trash rather than recycling
- 30 We don't have enough office paper to use a commercial shredder/collector for our paper but I still

need to shred some of our paper. I don't know where to take it. If I put it in the clear plastic bags, can I take it to the recycling center and put the bag in the mixed paper dumpster? If I empty the bag, the shredded paper goes flying everywhere.

31 No.

32 I managed apartment communities in Charlotte and found recycling to be very popular among our residents. In Huntersville, where recycling is not provided as a city service, we don't have recycling available and cannot afford the added increase to our contract waste removal fees.

33 I strongly support mandatory commercial recycling

34 Provide dumpsters for staff and patrons to bring their recycled materials.

35 needs to be freely available at all locations

36 I believe more people would recycle if they knew where to take the recyclable items!

37 I would like to see every business start some sort of recycling program.

38 Truly should be mandatory and monitored.

39 No

40 I would love to see every business make efforts in cleaning up our environment, reducing waste and recycling anything that can be recycled

41 Certainly an important issue, but all business need to be educated. Affordability and ease of use/access are critical components to insure success

42 for small businesses that already struggle with tons of state and local fees and high overhead in our expensive city, make recycling as simple and inexpensive as home curbside and you will get plenty. if it costs much money or the sorting required is too complicated, I fear you will not get as much participation.

43 I wish we could recycle on-site. Please give us some options. I will liaison with my landlord if needed.

44 We do recycle old drawings, faxes, bad copies etc. and drop off behind Hal Marshall Bldg. Containers fill up between trips, and much more could be recycled if weekly pickup, or a roll out receptacle was available.

45 no

46 It would be great if everyone would do it

47 DO MORE OF IT.....

48 for small businesses, have recycling bins picked up on trash days, just like home recycling. This should be optional at no additional cost. City could recognize outstanding recycling businesses yearly in the paper or on the news

49 Cost is important. Availability is important. Information is important.

50 I think it is very important for our community and businesses should take responsibility to make a difference. Charlotte should be on the cutting edge and an example for other cities to emulate!

51 I do not believe that we qualify as a small business. Our trash and recyclable can not be measured in 96 gallon containers. It can be measured as tons per day. Please contact me if I can answer any questions.

52 have large building owners offer recycling options

53 I have tried for years to understand why the County does not pick up recycle cans and plastic containers.

54 THIS SURVEY IS FLAWED. WHEN ASKING THE NUMBER OF EMPLOYEES, YOU DO NOT TAKE INTO CONSIDERATION THE NUMBER OF INDEPENDENT CONTRACTORS AT MY BUSINESS LOCATIONS. THEREFORE YOU HAVE NO IDEA THE AMOUNT NUMBER OF PEOPLE CONTRIBUTING TO RECYCLABLE WASTE. SHAME ON YOU. YOU SHOULD BE MORE CAREFUL.

Company Name

Company:

- 1 Hughes Floor Covering, Inc.
- 2 Wanda Smith & Associates
- 3 Kevin Chelko Photography
- 4 Catanese and Herron DDS
- 5 Charlotte CPL LLC
- 6 Technekes, LLC
- 7 ONSITE Woodwork Corporation
- 8 Ginger Griffin Marketing
- 9 RECOGNITION PLUS
- 10 Clemmer Gymnastics
- 11 Harrington & Associates
- 12 Hendrix Business Systems, Inc.
- 13 Victory Lane Indoor Karting
- 14 MK Earnhardt Enterprises, Inc.
- 15 Drinkard Research
- 16 Delectables by Holly, Inc.
- 17 Herlocker Mechanical Systems, Inc
- 18 Carolina Design Group
- 19 Harrison United Methodist Church
- 20 Contagious Graphics, Inc.
- 21 Ameriprise
- 22 Osborne
- 23 Moseley Architects
- 24 Matthews Construction Company, Inc.
- 25 Stewart Fastener & Tool
- 26 Carolina BioOncology Institute
- 27 Open Water Adventures
- 28 Golden Age Properties, LLC
- 29
- 30 The Survey Company

31	Heartwood Tree Service LLC	87	anderson & anderson, inc
32	Mantissa Corporation	88	Penske Truck Leasing
33	Latin American Coalition	89	Colliers Pinkard
34		90	LEAD Technologies, Inc.
35	planned furniture promotions	91	Communications Specialists, Inc.
36	Federal Defenders of WNC	92	First Defense Fire Protection
37	AOS USA, Inc.,	93	Sterling Capital Management LLC
38	LifeShare of the Carolinas	94	
39	Ferguson Welding Inc.	95	Our Paintin' Place, LLC
40	Atlantic Window Coverings, Inc.	96	Advent Lutheran Church
41	Poteet Printing Systems	97	
42	Robert W. Chapman & Co	98	Paul Simon Co., Inc.
43	Presbyterian Cardiovascular	99	Chun's, LLC
44	Lake Norman Health and Wellness	100	MECA Real Estate Services
45	WLR & Associates, Inc.	101	SouthEnd Specialties
46	Custom Interiors	102	Fist Charlotte Properties
47	Independence Veterinary Clinic	103	Victory Lane Karting
48		104	Provident Development Group
49	Tire Centers, LLC	105	Carolina Bevels
50	Genpak LLC	106	Hair Network
51	Campbell-Brown, Inc	107	great wok
52	Replico corp	108	Bollinger & Piemonte, PC
53	Kids R Kids	109	CWS Apartment Homes
54	BASICSPPLUS Office Products	110	LarsonAllen LLP
55	St. Stephen UMC	111	Globe Express Services
56	Forward Air	112	Sharon Presbyterian Church
57	Pineville United Methodist Church	113	
58	Hunter Fan Company	114	Curves
59	Starbucks	115	Art Aspects
60	Around The Clock Care	116	Mike McClure, PC
61	Stafford Consulting Engineers	117	MODE.
62	Central Steele Creek Presbyterian Church	118	Sugar Creek Branch Library
63	Technical Associates	119	Genesis anti-Aging & Cosmetic Surgery
64	Amwins Group	120	Prudential Carolinas Realty
65	Area Mental Health	121	Handshaw, Inc.
66	Barker Industries, Inc.	122	Love Leasing Company
67	Steele Creek Public Library	123	Stoney Creek Animal Hospital
68	Extended Stay America	124	Ferris Baker Watts, Inc
69	Mattress Firm, Inc.	125	VISION ENVELOPE
70	Fedexkinko's	126	Allen Tate Realtors
71	TriCapital Financial Group, Inc.	127	Career and Personal counseling Service
72	Providence Veterinary Associates	128	Gough Econ, Inc/
73	Carrier Commercial Service	129	The Little Gym of Huntersville
74	Modern Salon & Spa	130	
75	Lakewood Preschool	131	Quality suites Pineville
76	Addison Park	132	Capel Rugs
77		133	Rohm and Haas Chemicals, LLC
78	Lamm Electric	134	Action Menu Systems
79	EXIT Realty South	135	Roof Engineering, Inc.
80	Mark III Personnel	136	Republic Electric
81	Kohler Co.	137	Park Road Baptist church
82	Design Source	138	CPCG
83	McKee Dental	139	Living Church of God
84		140	Charlotte Psychotherapy
85	Oncology Specialists	141	TarHeel Drywall, Inc.
86	Advanced Equipment Company	142	St. Gabriel Catholic Church

143 Hardage
144 DealerNet, Inc.
145 Run For Your Life
146 Vector Electric Company
147 Hutch Ham Agency Inc
148 KingGuinn Associates, P.A.
149 Equity Corporate Housing
150 Charon Planning
151 Grainda Builders.com
152 luisas brick oven
153 YTM Construction
154 American Auto & Truck Electric
155 St.George Physical Therapy
156 Patient Care Technology Systems
157 Lane Burkey & Assoc PLLC
158 AOC Marketing Research
159 Hope Community Church
160 Boyles Distinctive Furniture
161 Rising Roll Gourmet
162 Redline Design Group
163 Davidson Village Inn
164
165
166 Designers Vision
167 Charlotte Airport
168 IMG
169
170 Park Road Baptist church
171 Park Crossing Recreation Club
172 NuTech Solutions, Inc.
173 PECKS BAKERY
174 Charlotte Woods Apartments
175 FWA Group
176 BAM RACING
177 CenterStage@NoDa
178 Southeast Bariatrics