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INCREASING RECYCLING IN THE COMMERCIAL SECTOR: ASSESSMENT OF MANDATORY COMMERCIAL RECYCLING PROGRAM AND EXCLUSIVE HAULER ARRANGEMENTS

-- Final Report --

Prepared for:

HF&H Consultants, LLC as part of a contract with StopWaste.Org

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This Report was performed under subcontract to HF&H Consultants, LLC, and was used in preparation of their letter report to StopWaste.Org titled “Survey of Mandatory Commercial Recycling and Nonexclusive Collection Solid Waste Programs.” This Report was never separately presented to the Recycling Board.

SECTION 1: EXECUTIVE SUMMARY

1.1: Introduction

Historically, agencies have focused on programs for the residential sector as the primary means to increase overall diversion. However, as communities struggle to reach and surpass higher and higher diversion goals program designers are realizing that incremental changes for households are not getting them there. Residential diversion rates are beginning to plateau and in multiple jurisdictions City/County staff are re-thinking their commercial programs. Generally, commercial generators are responsible for 40-60% of MSW but are often underserved when it comes to program design and delivery. Mandatory commercial recycling programs have been gaining steam both in California and nationally. New jurisdictions are beginning to adopt mandatory programs and other jurisdictions are re-examining existing programs and strengthening the language pertaining to the commercial sector. As a subcontractor to HF&H consultants, Skumatz Economic Research Associates Inc. (SERA) conducted research and interviews for StopWaste.Org (The Alameda County Waste Management Authority and Recycling Board) in order to gather information and opinions on two key strategies showing promise to increase diversion in the commercial sector:

- Mandatory commercial recycling programs that are in place, or are now in development
- Non-exclusive commercial solid waste collection arrangements as a strategy to help increase commercial diversion

SERA was responsible for research pertaining to mandatory commercial recycling programs, and for contributing to the research on non-exclusive collection arrangements (which was HF&H's primary responsibility). SERA analyzed five unique mandatory commercial recycling programs and assessed:

- program design, incentives, policies, and initiatives that help improve recycling and diversion
- effects on and opinions of key actors including City/County staff, haulers, recyclers, and generators.

1.2: Research Approach

The following list of five communities was developed by SERA (with input from HF&H and Alameda StopWaste) for in-depth program research:

- Chula Vista, CA
- Highland Park, NJ
- Bonita Springs and Unincorporated Lee County, FL
- Mecklenburg County/Charlotte, NC
- Portland, OR

To complete research on mandatory programs, SERA researchers conducted a series of interviews with stakeholders involved and directly affected by the mandatory program.

The interviews for each program included:

- Municipal program staff (staff)
- Solid waste collectors (haulers)
- Collectors of commercial recyclables (recyclers)
- Representatives from solid waste generators (generators)

The table below displays the number of completed interviews for the researched programs:

Table 1.1: Completed Interviews

Program	Staff ¹	Haulers ²	Recyclers	Generators	Total
Chula Vista, CA	2	1	1	3	6
Highland Park, NJ	3	1	1	3	8
Lee County, FL	1	3	2	3	9
Mecklenburg County, NC	3	2	3	3	11
Portland, OR	1	3	3	3	10
Total	9	10	10	15	44

1.3: Overview of Mandatory Commercial Programs

The following table displays a summary of the researched programs including a brief program description and the strong/weak elements associated with the mandatory program in place in each community.

Table 4.1: Comparison of Mandatory Commercial Recycling Programs

Location	Diversion ³	Program description	Strong elements	Weak elements
Highland Park, NJ ⁴	63%	Recycling paid through taxes / no separate fee for recycling, municipal collection of all commercial and residential recycling; businesses collected same as SF; enforced by County staff inspections at generators and by landfill ban inspections (disposal of recyclables banned for all sectors).	Covers a wide variety of materials, City has ownership of program, strong enforcement by County, good example of businesses served under res.	Difficult reporting, location specific program that might not work in larger municipalities/different demographics
Lee County, FL	41% in 2006-90% participation	All businesses must contract for recycling service; Commercial trash collected by 5 franchised haulers, recycling open collection; for enforcement, contract must be readily available to inspectors who conduct on-site checks. County sets rates; generators must pay no more than \$1.33 per cubic yard of recycling per month.	Very strong enforcement and fines, low rates for customers to recycle, recycling plan forms and inspections	Recyclers upset with rate setting, rate setting does not incentivize haulers to increase recycling

¹ For two programs (Charlotte, NC and Highland Park, NJ) interviews were conducted with City, County, and State staff to understand the full extent of the mandatory programs.

² For two programs (Chula Vista, CA and Highland Park, NJ) only 1 hauler/recycler was interviewed. These cities operate under a single contracted hauler arrangement and municipal collection arrangement respectively. Multiple haulers/recyclers were not available for interviews.

³ Description of diversion measurement techniques can be seen in table 3.1.

⁴ Highland Park, NJ ranked first, however, it is important to consider that the effectiveness for the City, hauler, and recycler were all reported by City staff. The municipality collects MSW and recycling.

Location	Diversion ³	Program description	Strong elements	Weak elements
Chula Vista, CA	8%	Businesses must contract for recycling service, one contracted hauler for trash and recycling, City sets rates, City checks that new businesses sign up, limited enforcement afterward, no fines thus far.	Almost all businesses have a recycling container, single contractor gives City high amount of control	No incentive to participate, overall low diversion rate
Mecklenburg County, NC- ABC ⁵	~30K tons State-wide	All restaurants, bars etc. must recycle commingled containers or their liquor license won't be renewed; Collection (trash and recycling) is open market, strong enforcement; state law, with county and city support and involvement.	Strong teeth, targets certain materials, increased market development, uses established enforcement FTEs	Bars/restaurants feel unfairly targeted, space can be an issue, new program and other issues might arise
Mecklenburg County, NC - SSO	30% reduction compared to base year	All businesses subscribed to 16 cubic yards or more of trash service must recycle; collection (trash and recycling) is open market, significant outreach in first year / not maintained; limited / weak enforcement.	Targets certain materials, threshold limit allows for economic savings to be realized	Does not address a large portion of businesses, effectiveness has decreased over time
Portland, OR	59%	All businesses must recycle 75% (formerly 60%), Collection is open market with nearly 60 haulers, No fines, limited / minimal enforcement; varied compliance.	Lots of competition in the market, high diversion rates, business generally consider recycling a normal business activity	Some haulers/recyclers not happy with program, high diversion rate creating some resentment among generators, not strong enforcement

1.4: Mandatory Program Strengths and Weaknesses

The relative strengths and weaknesses of each of the five researched programs were compared. Each program had strengths -- many of them unique for the particular program -- and each had related weaknesses. The following tables display the overall program attributes that exemplify both the strengths and potential weaknesses related to the mandatory commercial recycling programs analyzed.

Table 1.3: Strengths of Mandatory Commercial Recycling Programs

Program Element	Description of Strengths
Increased diversion-	All of the programs reported that the commercial diversion has increased

⁵ There is one law, mandatory recycling for Alcohol Beverage Control (ABC) permit holders, and one ordinance, Source Separation Ordinance (SSO) requiring recycling of cardboard and mix paper, that effect commercial facilities in the County.

Program Element	Description of Strengths
Increased access/opportunity-	Programs increase access and the opportunity for all business to participate, divert materials, and in some cases realize monetary savings in trash costs
Increased revenues-	Haulers and recyclers reported that the program can increase revenues available to support diversion initiatives
Increased customers-	Potential to increase customer accounts for haulers and recyclers
Market development-	May help bring processors, or end-users into the area
Market development (haulers)-	May increase opportunities for haulers and bring in new haulers
Efficient Design-	Some target specific sectors with large amounts of waste, or exempt small generators to reduce administrative hassle with minimal impact on waste diversion
Addresses all sectors-	Instead of placing the burden of diversion only on the residential sector, the entire community is responsible, no sector is exempt
Flexibility-	The program can offer flexible options for diversion for each business type
Goals-	Programs can be designed with community goals in mind and can be crafted to address certain materials or diversion aims
Reporting-	Programs can require reporting and tracking of diversion and disposal in the sector which might not have been done previously
Economies of scale-	Increased efficiencies in collector routing and processing by requiring all businesses to participate

Table 1.4: Weaknesses of Mandatory Commercial Recycling Programs

Program Element	Description of Weaknesses
Increased costs-	May increase the costs for haulers and generators
Need for infrastructure-	Without proper infrastructure to handle the additional recycling stream the program may not be successful
Politics-	May require market intervention by City/County, possible negative political reaction by some actors
May drive out small haulers-	Depending on the hauler's ability to adapt, some haulers report that the programs may push them out of the market and favor larger haulers
Reporting-	Added burden to City staff, haulers, and generators to complete necessary reporting
Incentives-	Depending on program design there may not be incentives for the generator or haulers to increase participation above minimum requirements
Enforcement (generators)-	Can build resentment and resistance to the program among generators
Enforcement (haulers, City)-	May add time and cost to enforce the program to City staff and/or haulers

Program Element	Description of Weaknesses
May not increase participation-	Although the opportunity is offered for all businesses to divert materials, without proper planning the program may not increase participation
Not the best way to meet goals-	If the goal is increased diversion tonnage, forcing 100% participation may not be the most effective or equitable way to achieve it. Focusing on the largest generators and those that can reduce trash bills through recycling may work better and may be less expensive from a social point of view.

1.5: Best Management Practices “BMP” for Mandatory Commercial Recycling

The following is an abbreviated listing of the strong points and lessons learned from the various interviews. The full description of BMPs can be seen in section 4.2.

- **Development/planning:** It is important to involve a number of relevant stakeholders in the ordinance/program development. In communities where a stakeholder committee was not used in the development, there is at best a noted resentment among haulers and generators, and at worst, the program does not work optimally.
- **Inventory:** Know what facilities are and are not available for the collection and processing of the materials that will be affected by the ordinance. Also, be aware of processing issues, is there single stream, C&D, composting, etc. that will be able to handle the additional recycling streams?
- **Space for Recycling:** A number of City/County interviews reported that space for recycling was an issue for certain businesses. Planning for this issue ahead of time, working with generators/haulers, and adopting “space for recycling” ordinances can help alleviate the barrier.
- **Menu of Options:** Flexibility of program design is important in the commercial sector. Unlike the residential sector that has a rather homogeneous waste stream, the commercial waste stream can vary greatly from business to business.
- **Efficiency in Design:** Targeting specific sectors or exempting small generators can allow a community to retain the bulk of the diversion impact but reduce administrative or enforcement burdens.
- **Enforcement:** Enforcement is necessary for a successful program. Most of the ordinances give a grace period prior to strict enforcement, but all report that without enforcement the programs will not be successful.
- **Reporting:** Reporting by haulers to the City/County, the City to the County/state, or the generators to the City, County, or State, is integral to success. Reporting also ties in to enforcement.

- **Recycling Plans:** Short, succinct, recycling plans filed by the generator with either the hauler or municipality/County is important. These plans allow for easy tracking and can help the generator plan efficient collection of materials.
- **Education/Outreach:** As with any new recycling or diversion program, education and outreach are integral. A lead time of 3 to 6 months was reported to be sufficient to allow for the necessary actors to learn about the program.

1.6: Exclusive and Non-Exclusive Arrangements

In addition to work on mandatory commercial recycling strategies, the project examined the strengths, weaknesses, and potential of various hauler arrangements – exclusive vs. non-exclusive – in helping to increase diversion. Exclusive (or near-exclusive) arrangements include franchising or contracting; non-exclusive or more market-based strategies include simple licensing or little interferences in a private market competition setting. Generally speaking, the greater the involvement in the sector, the greater the control the City/County has in terms of influence over diversion, incentives, and funding. However, greater control means higher requirements for staffing as well as greater potential for political fallout as haulers, facing potential erosion or loss of their hard-won customer base work to protect their investment (and retirements).

SERA conducted a number of interviews with city staff, haulers, and generators on the topic of exclusive and non-exclusive arrangements. Of the five communities interviewed, two communities had exclusive commercial hauler arrangements, two had non-exclusive commercial collection, and one city had municipal collection. The exclusive arrangements varied in that one community had clearly exclusive trash and more open recycling collection, and the other was purely exclusive for both commercial streams.

Using the interviews in combination with some literature review, pros and cons for exclusive compared to non-exclusive collection arrangements could be identified. These advantages and disadvantages are provided in Table 1.5. A key advantage noted from the interviews is that each community with exclusive arrangements cited higher participation and access to recycling; however, the performance in terms of recycling diversion is less clear and seems to depend on the quality (or presence) of incentives. Best results can be derived if the hauler arrangements provide:⁶

- Incentives (or requirements) for haulers to get greater diversion from generators (direct financial incentives or through renewals), and
- Incentives through rate design and rates authority to provide direct customer bill savings for greater diversion at the building or customer level.⁷

For the interviewed communities, hauler incentives were scarce. Chula Vista has a hauler incentive overall, but not for commercial sector separately. If the hauler achieves

⁶ Skumatz, Lisa A., Ph.D., "*Options/Choices for Solid Waste Services*", White Paper 05-3, Skumatz Economic Research Associates, Inc., Superior, Colorado, 2/24/2005 and Skumatz, Lisa A., Ph.D. and Constance Hornig, Esq., "*Assessing Franchising, Contracting and Other Options for Provision of Solid Waste Services*", Skumatz Economic Research Associates, Inc., SERA Research Report 31-2, Superior, Colorado, January 2001.

⁷ And/or requirements for participation, as discussed under the "mandatory commercial programs" sections of this paper.

50% diversion they retain 60% of recyclables revenues, and if they do not exceed the 50% diversion goal, they only retain 40% of the revenues. They have met and beat that incentive. Performance could likely be improved if the threshold was increased. In Lee County, Florida, the haulers expressed a willingness to have hauler incentives installed and suggested they would work to increase recycling if incentives were provided. The North Carolina interviews showed ambivalence on the subject of hauler incentives. Portland is considering franchising the commercial sector (like they do the residential sector), and many of the haulers were concerned or against the proposed system. In all communities, the generators must pay separately for recycling, which usually makes the economic benefit/costs for recycling a case-by-case question; overall costs sometimes increase and sometimes decrease. In the community with municipal collection, the commercial generators do not pay separately for recycling – it is embedded in the rates. The commercial recycling rate in this community (Highland Park, NJ) is very high.

Table 1.6: Pros and Cons of Non-Exclusive vs. Exclusive Arrangements⁸

	Pros	Cons
Non-Exclusive	<ul style="list-style-type: none"> • Haulers/recyclers maintain all of their customer accounts • No interference by the City/County in the market place • Less oversight, staffing by responsible entity • More choices for hauler/recycler for generators • Market forces may dictate most efficient/cheapest prices for service (but not necessarily b/c of economies of scale) • May encourage value added service/customer service by haulers/recyclers⁹ • Increased competition among haulers/recyclers, create opportunities for smaller haulers/recyclers¹⁰ 	<ul style="list-style-type: none"> • High cost to provide service/redundancy of routes/trucks on the same street • Little control over trash/recycling services by County/City • Low recycling/diversion, little incentive for diversion • Inefficiencies in truck routing/number of trucks/collection schedules, GHG emissions, road wear and tear, etc. higher social cost from lots of trucks • May discourage haulers/recyclers from offering additional services/recycling options as haulers compete to provide cheapest service¹¹ • Service levels/costs/options inconsistent within service area • Tracking/tonnage reporting may be difficult • Compliance/enforcement/participation tracking challenges • Licenses fees (if used) may not cover much more than cost to monitor

⁸ Table based on SERA findings from the Alameda CA Mandatory Commercial research project and Skumatz, Lisa A., Ph.D., "Options/Choices for Solid Waste Services", White Paper 05-3, Skumatz Economic Research Associates, Inc., Superior, Colorado, 2/24/2005.

⁹ Small haulers report that they are able to distinguish themselves in the open-market place through value added services

¹⁰ In some cases competition may increase, in others predatory practices may occur in the market forcing out smaller competitors

¹¹ Non-exclusive City staff and some haulers report that non-exclusive programs encourage the least expensive "no-frills" service

	Pros	Cons
Exclusive	<ul style="list-style-type: none"> Economies of scale could create cheaper rates for generators, higher revenues for haulers/recyclers Efficiencies in routing/number of trucks More control over trash/recycling service by responsible entity Rates can be set to encourage participation/diversion Rates can be set to help cover costs of other recycling/diversion programs Reduced wear and tear on streets, reduce GHG gas emissions, trucks on streets, etc. Enforcement/compliance tracking easier Tonnage reporting less complicated All businesses receive consistent service options/materials, etc. May increase opportunity for smaller haulers with multiple franchised service areas 	<ul style="list-style-type: none"> "Takes" business from existing haulers/recyclers, may reduce competition in the market place Politics- haulers/recyclers may not support the choice and may fight the program Increased work/staffing for responsible entity Decreased choices for service providers for generators Rate setting can be difficult and proper rate setting is integral to success May not encourage value added service by hauler

When deciding which program is most appropriate for a City/County, it is important to match the program goals or objectives with an appropriate hauler arrangement. The tables below display City/County goals and the hauler/recycler arrangement that is most appropriate to reach the goals as well as the pros and cons associated with various arrangements.

Table 1.6: Goals and Hauler Arrangements

Goal	Arrangement	Explanation
IF the goal is Participation, Access, or Diversion, select →	Exclusive	City/County has control over program design/rates and can plan the program for maximum diversion or set rates to create incentives to increase diversion. Performance incentives can be easily built into the arrangement.
IF the goal is Lowest Rates, select →	Exclusive	Haulers/recyclers can realize economies of scale, routing efficiencies, truck savings, etc
IF the goal is Environmental Effects, select →	Exclusive	Reduces the number of trucks on the streets, wear and tear, GHG emissions caused by trucks, etc, through route design, service areas, and reduced redundancy. Maintains a "cleaner" look on the street with uniform containers, days of collection, etc.
IF the goal is Program Funding, select →	Exclusive	Rates can be designed to cover more than just the costs of collection and can help fund diversion efforts.
IF the primary consideration is Politics, select →	<i>Non-Exclusive</i>	Haulers will be less resistant to this approach. There is minimal interference in the free market and all haulers are on a level playing field. Exclusive arrangements tend to involve a "taking" of customer accounts from some haulers, and often lead to political backlash
IF the primary consideration is Least Staff/Oversight, select →	<i>Non-Exclusive</i>	Staffing and oversight may be lower with non-exclusive agreements unless there are auxiliary regulations to oversee.

SECTION 2: OBJECTIVES, RESEARCH

2.1: Objectives

Generally, commercial generators are responsible for 40-60% of MSW but are often underserved when it comes to program design. Mandatory commercial recycling programs have been gaining steam both in California and nationally. New jurisdictions are beginning to adopt mandatory programs and other jurisdictions are re-examining existing programs and strengthening the language pertaining to the commercial sector. The research team at Skumatz Economic Research Associates Inc. (SERA) worked with HF&H Consultants to gather information and opinions on:

- The relationship of non-exclusive commercial solid waste collection to commercial diversion
- Mandatory commercial recycling programs that are in place, or are now in development

Overall, the project sought to determine how non-exclusive and mandatory commercial programs work in different jurisdictions. The SERA team was responsible for research pertaining to the mandatory commercial recycling programs while HF&H was responsible for research into the relationship of non-exclusive commercial solid waste collection to commercial diversion. The SERA team worked to identify the strengths and weaknesses of the various mandatory recycling programs and a number of other broad issues pertaining to the programs. These issues include the diversion effectiveness of the programs and the public and private sector perspectives regarding the programs. SERA conducted research into five unique mandatory commercial recycling programs and reviewed the program design, incentives, policies, and initiatives that help improve recycling and diversion for key actors including City/County staff, haulers, recyclers, and generators.

2.2: Research Approach

The SERA team, with assistance from Alameda StopWaste and HF&H Consultants, developed a preliminary pool of 10 programs for mandatory commercial recycling research. A first round of calls/interviews was completed by SERA with the initial 10 communities to determine whether or not they would be appropriate candidates for further research. One of the key elements to be eligible for further investigation, in addition to having mandatory programs and data regarding diversions, was to identify program staff that were willing to participate. Staff in all five investigated jurisdictions were willing to assist in the research and were extremely open about their program design. Without their assistance the research would have been drastically more difficult to complete. After the initial calls and cursory research were conducted, the following list of five communities was developed by SERA (with input from HF&H and Alameda StopWaste) for in-depth program research:

- Chula Vista, CA
- Highland Park, NJ
- Bonita Springs and Unincorporated Lee County, FL

- Mecklenburg County/Charlotte, NC
- Portland, OR

To complete research in to the mandatory programs, SERA researchers completed a series of interviews with stakeholders involved and directly affected by the mandatory program. The interviews, for each program, included:

- Municipal program staff (staff)
- Solid waste collectors (haulers)
- Collectors of commercial recyclables (recyclers)
- Representatives from solid waste generators (generators)

The first round of interviews was conducted with the program staff. During the interview process the City/County staff was asked to provide references (when possible) for further interviews. When these references were exhausted (or in some cases sufficient references were not provided) web research was used to locate additional interviewees. A database containing the full responses to the completed interviews was submitted with the final report. The table below displays the number of completed interviews for the researched programs:

Table 2.1: Completed Interviews

Program	Staff ¹²	Haulers ¹³	Recyclers	Generators	Total
Chula Vista, CA	2	1	1	3	6
Highland Park, NJ	3	1	1	3	8
Lee County, FL	1	3	2	3	9
Mecklenburg County, NC	3	2	3	3	11
Portland, OR	1	3	3	3	10
Total	10	10	10	15	44

¹² For two programs (Charlotte, NC and Highland Park, NJ) interviews were conducted with City, County, and State staff to understand the full extent of the mandatory programs.

¹³ For two programs (Chula Vista, CA and Highland Park, NJ) only 1 hauler/recycler was interviewed. These cities operate under a single contracted hauler arrangement and municipal collection arrangement respectively. Multiple haulers/recyclers were not available for interviews.

SECTION 3: OVERALL FINDINGS FOR MANDATORY COMMERCIAL PROGRAMS

3.1: Summary of Mandatory Commercial Recycling Programs and Interviews

The table below summarizes the results of the City staff, hauler, recycler, and generator interviews. The following sections discuss the research in detail.

Table 3.1: Summary of Programs/Interviews

City/County	Mecklenburg/Charlotte	Portland	Highland Park	Lee County/Bonita Springs	Chula Vista
State	NC	OR	NJ	FL	CA
Population	765,000	540,000	14,000	180,000/43,000	211,000
Diversion and Year	30% reduction 2005, 30,000 tons estimated statewide from ABC bill	59% 2007	63%	41% 2006- 90% participation in mand. program	8%
How Div. Measured	Per capita commercial generation measured against base year (98/99)	Detailed reporting by haulers and drop-offs	Includes residential and comm. City does not distinguish between sectors	County collects data from all recovered material dealers, landfills, and TS and reports to state	CA waste reduction
Ordinance Description	Two ordinances: 1) OCC/SSO is a County wide ordinance affecting all businesses generating over 16 cuyd of MSW per week. They must source separate and recycle OCC and office paper. This ordinance is from '02 and saw a spike in diversion at first that has recently dipped. 2) ABC Statewide- holders of Alcoholic Beverage Container licenses must recycle all recyclable beverage	In late 80s City mandated that haulers must offer recycling and could not charge more for recycling than trash. In the 90s the City adopted a requirement that all businesses recycling at least 60% of their materials. This program however, was mainly voluntary and although the City was seeing high rates of commercial diversion, they have just mandated that all businesses must now recycle paper and containers (food is piloting but not	Commercial recycling is mandated at three levels in NJ, State wide, County wide (Middlesex) and City wide. The ordinance covers the traditional recyclables and is applied to all entities in the State, SF, MFU, Commercial, etc. For Highland Park, they mainly follow the guidelines set out by	New ordinance started in Jan 08. Covers all unincorporated areas and the City of Bonita Springs. All haulers must provide recycling service and can charge a max of \$1.33 cuyd. Businesses are given a "menu" of possible items they must recycle. Has very strong enforcement element. Very hands on by the County for enforcement and monitoring so far. Must complete recycling plan (1 page) and keep on file and file with hauler. Can be fined and service	Mandatory ordinance included in City code, last updated 2007. It is mandated in the hauler franchise/contract and mandated to all generators. Must source separate and develop "in house" recycling pans. City and hauler provide technical assistance and expertise. All generators must submit annual recycling tonnage information.

City/County	Mecklenburg/Charlotte	Portland	Highland Park	Lee County/Bonita Springs	Chula Vista
	containers sold on site. If the businesses (mainly bars/restaurants) do not recycle they will not be able to renew their liquor license.	City wide yet) and are increasing the rate to 75%. The City is also undertaking a series of other steps to address the commercial sector with much more emphasis in the near future.	the County. Enforcement and inspection handled by County.	canceled for trash collection if not recycling. If the businesses is not getting trash collection they get another fine.	
Effectiveness as reported by City/County staff	OCC limited effectiveness due to threshold, ABC very effective so far for its portion of the commercial sector	Old program, not too effective, new program just starting. However, high rates of recycling under the old program.	Very effective	So far seems very effective	Effective in gathering high levels of participation but not in ensuring high diversion
Hauler Arrangement	Permitted- open market	Permitted- open market	Municipal collection	Franchised and districted- recycling rates set by County	Single contracted by City-Rates are set by the City.
Hauler Comments	The haulers see it as an added cost but overall are ok with the program. They are willing to provide service and are capable of doing so. Space is an issue- some of the larger haulers are subbing out independent recyclers to handle smaller accounts with 96 gallon roll carts. The OCC ordinance is not the driver to do recycling- it is more the businesses see OCC as a way to save money. The haulers see the ABC law as a burden on the generators.	2 out of 3 like the ordinance- allows for "value added service" or business opportunities for a younger hauler to out bid older competition and take their market. The older hauler did not like it b/c he was getting outbid and undercut b/c he must offer service but could not do it cheap enough. The hauler that did not like it wanted franchised districts similar to the residential system.	It is a small town with a majority of "ma and pa" stores, 95% of all accounts are collected by the City and paid for in taxes. Collection for commercial is handled basically the same as residential, there is no dumpster service. There are 2 or 3 larger stores (a supermarket, candy factory) that are handled by the private sector but also have recycling. The haulers must report to the municipality on tonnages, etc.	Most of their customers like it. Gone to single stream so it's easy for customers to comply. There are strict fines for non-compliance. Competition is limited due to County setting rate. The rates set by the County do not quite cover the costs, especially if 100% participation with added routes, carts and gas. They are planning on renegotiating contracts and adjusting rates. The haulers were not included in the ordinance drafting and resent it.	Single hauler via contract for the entire City. The hauler reports that the customers are participating but may be able to recycle more. The ordinance does increase expenses but the revenues are also increasing. The contract includes an incentive for the hauler to increase diversion; they receive a greater portion of recycling revenues the more they recycle.

City/County	Mecklenburg/Charlotte	Portland	Highland Park	Lee County/Bonita Springs	Chula Vista
Recycler Comments	<p>The small recyclers like it. They see it as a chance to ramp up business- some of the small haulers are being sub contracted out by the big nationals to handle the additional accounts. Statewide, the ABC law has increased the marketplace with 7 new recycling haulers and possessors starting in the last 8 months. One interviewed hauler started her company only b/c the ordinance was passed.</p>	<p>Some independent haulers are small (two or three person) operations. Some are not happy with mandate. Larger companies are able to bid lower prices and independents are losing customers. Others see it as a business opportunity that will increase competition in the market.</p>	<p>Same as above- handled by Municipality</p>	<p>Smaller independent haulers are not happy with ordinance. The set rates make it very difficult for them to compete. If County is operating the program, use the independents that are already in business rather than overhaul a working system. Franchising makes the smaller companies struggle to stay in business. The small independent recyclers feel like they were left out of the program development.</p>	<p>Same as above- one hauler for both</p>
Generator Comments	<p>Many of the generators were unaware of the ordinances. The OCC ordinance does not affect many of the companies due to the 16 cuyd threshold, and the ABC regulation is relatively new. Restaurants see the ABC as a new cost of doing business and fought it a bit at first, but with the strong enforcement they must comply.</p>	<p>Not that difficult to comply once employees/renters are trained. This includes janitorial staff for office towers. Multi-family housing is most difficult because of turnover in renters. There is a recycling ethos in the City and most commercial generators want to recycle and think that it is part of business cost. One restaurant found a reduction in waste costs due to composting service provided by hauler while another says the costs might be prohibitive and odors/smells are a concern.</p>	<p>The generators are happy with the ordinance and almost all generators in the community are serviced under the residential program.</p>	<p>Although it is a new program the generators are aware of the program and are complying. The generators have not been fined yet and with the law rate setting it is not too much of an added burden.</p>	<p>Overall the ordinance is not difficult to comply with and the generators are willing to recycle despite the added costs. The generators report that education is key.</p>

City/County	Mecklenburg/Charlotte	Portland	Highland Park	Lee County/Bonita Springs	Chula Vista
Advice	<p>It is important that there are ample facilities to handle materials and the infrastructure (haulers/recyclers) to collect the material from the businesses. Luckily there was a single stream MRF nearby b/c without it the ABC program would not have worked. Most businesses do not have the space for a MSW, an OCC, and a Commingled container. Recommend strong enforcement, especially with the new ABC- if restaurants start to hear thru the grapevine that they can get away with not recycling they are going to do it. A space for recycling ordinance for new and significant remodels would be helpful.</p>	<p>The City passed an ordinance for an increased diversion rate (75%) in the sector without discussion with haulers/generators. The Office of Sustainable Development is now working with a Stakeholder group to develop BMPs on how to reach the rate. Important to involve haulers/generators in all aspects, only having a diversion rate goal misses some source reduction possibilities and EPP.</p>	<p>Tonnage reporting for haulers is a problem. Include direct, clear, and concise language on how haulers should report. In Highland Park it is not as important as the City collects, but for other municipalities in the County this has been an issue.</p>	<p>County recommends strong enforcement mechanism- nearby County has a similar ordinance with no teeth and it is not successful. The haulers/recyclers would like to be more involved in the stakeholder meetings/development of the ordinance (they were left out) and do not think that the set rates really work- it is being renegotiated. Also, some type of hauler incentive and generator incentive might increase diversion. There is no minimum amount that must be recycled and generators do not have a large incentive to do so. No incentive for haulers to collect more recyclables with current rates.</p>	<p>Program has been effective in getting high participation but it is not effective in getting high diversion rates. The City has an innovative hauler incentive and was the only interviewed City to do so. The City recommends that a strong enforcement mechanism is included in any ordinance.</p>

The table below displays the materials covered under the mandatory programs in the researched jurisdictions.

Table 3.2: Covered materials

City	Glass	Tin	Plastic 1-7	OCC	ONP	Other paper	Other plastic	Yard waste	Food waste	Batteries	Oil	Electronics	C&D	Other
Chula Vista	X	X	X	X	X	X	X	X	X				X	X
Highland Park, NJ	X	X	X	X	X	X	X	X		X	X	X	X	X*
Lee County/Bonita Springs, FL	X	X	X	X	X	X		X**					X	X***
Mecklenburg County	X	X	X	X	X	X		X						
Portland, OR	X	X	X	X	X	X	X	X	X				X	X

*Other items include white goods, plastic film, textiles, and CFLs

** Wood waste

*** Ferrous and non-ferrous metals

3.2: Chula Vista, CA

Population: 211,000

Year Started: 1992

Diversion: 2006: 7.5% (54% overall)
2007: 8.6% (56% overall)

Program: City ordinance, single contracted hauler, all businesses must sign up and pay for service.

Program Design

Description:

The City of Chula Vista began their mandatory commercial recycling program in 1992. The program is implemented through a City wide ordinance. The ordinance, in addition to mandatory recycling regulations, lays out the requirements and stipulations for the contract and franchising authority for waste and recycling haulers in Chula Vista. There is only one contracted waste and recycling hauler operating in the commercial (and residential) sector for the City. As part of the contract agreement with the hauler the City requires the regular collection of recyclables for any and all premises, business establishments, industries, or other properties. The generators are required to pay a fee for this service charged by the contractor but set by the City. The ordinance also requires that commercial establishments develop “in-house” recycling plans and must annually submit recycling tonnage documents to the City. Commercial properties must also have adequate enclosure space for recycling. To help the businesses comply with the requirements the City offers free waste audits and does extensive outreach.

Staff Interviews:

The staff like the program’s ability to make recycling access available to virtually all businesses; however, ensuring participation is the next step. The program implementation has occurred in two tiers. The first effort by the City was to work with the property owners and managers to make them aware of the ordinance and to get bins and receptacles in place. The second tier, which is what the City is doing now, is to work with business owners/tenants to get them to use the recycling bins/containers. There is an opportunity for some of the larger businesses to save money on their trash bills by recycling and the small quantity generators are allowed to sign up for residential service to decrease their trash bills. Only about 15% of the businesses in the City qualify as small quantity generators and participate in the residential program. The City staff believes that the economic incentives available for recycling are more meaningful than the ordinance. City staff is planning on conducting more aggressive audits and combining City departments to conduct multi-resource audits. By working with water and energy efficiency experts in the Chula Vista, the City hopes to leverage multi resource audits to “get in the door” more easily, increase cost efficiency in conducting audits, and increase participation in the recycling program.

Enforcement:

There is not a strong enforcement mechanism for non-compliant businesses in Chula Vista. The ordinance language does not specify any particular enforcement measures or fines. City staff reported that if they could rewrite the ordinance with ideal language it would include specific fines for violations. Currently, the City gives notices of violations to businesses that do not comply and works closely with them to get them into compliance. There are recycling containers in place at the vast majority of businesses in the City but whether or not they actually use those containers to divert materials is an issue.

Hauler, Recycler, and Generator Interviews:

Haulers:

Chula Vista contracts with a single hauler for trash and recycling services in the City limits. For this project, only the one contracted hauler was interviewed as there were no other haulers or recyclers operating in Chula Vista. Allied Waste Services is the contracted hauler. The hauler reports that almost all of their accounts are contracting and paying for recycling, a very small percentage of accounts have been granted exceptions due to space constraints. The hauler did work with the City in developing the requirements and reports that technical assistance and waste audits are necessary in making the program successful. In the hauler's point of view, it saves them money if the City conducts the waste audits/assistance. However, the hauler reported that if they conduct the audits the information about how to divert is more consistent and it typically results in better, cleaner streams.

In Chula Vista, the hauler has a very small part to play in the enforcement of the program. When they begin a new account Allied tells the customer that they must sign-up for recycling service. If the business refuses, Allied reports the business to the City for enforcement. The hauler likes this level of enforcement because they do not want to be viewed as the "bad guy". The mandatory recycling program is not the hauler's choice/program and it should not be the hauler that is forcing customers to sign-up for additional services. Typically, the hauler reports that customers do not want to recycle but are willing to do it because of the ordinance. As a hauler, Allied reports that the ordinance does add work in terms of reporting and adds to the overall operating expense, but the additional revenues generated through recycling match or exceed the cost increases.

Chula Vista was the only City interviewed that provided the hauler with a strong incentive to increase recycling. If the City reaches or exceeds its State mandated AB 939 goal of 50% diversion, the hauler receives 60% of the recycling revenues and the City receives 40%. If the City does not meet or exceed the 50% diversion goal the City receives 60% of the revenues while the hauler only receives 40%. The money collected by the City goes into the general fund. Bottle bill money from the State goes directly to the recycling department to be used to supplement diversion programs.

Independent Recyclers:

See above section.

Generators:

Overall, the generators reported that they do not find the mandatory ordinance difficult to comply with. Although space was listed as a concern for some by the hauler, the generators did not report that for them, space was an issue. Education for tenants and education for employees was reported to be integral to success, especially with the mall that was interviewed. The program was reported to increase the amount of time that businesses must think about recycling but they did not report that it increased costs very much. The generators reported that the program was very effective. The advice from the generators to a jurisdiction thinking about implementing a program include to keep the program simple (for them it is single stream which is very important), work with the hauler, businesses to help with education and outreach, and provide good signage on all the bins for tenants and employees.

Observations

Strengths:

The program has been in effect for over a decade and has achieved the goal of getting recycling containers to nearly 100% of the businesses in the City. However, the City is now trying to make sure the businesses are actually using the recycle bins. One of the unique strengths of the program is the hauler incentive structure. Instead of simply mandating that the hauler must recycle the rate structure gives the hauler an incentive to increase diversion for its customers. The incentive though, does not distinguish between residential or commercial sectors but looks at overall diversion only. Another successful aspect of the program is that it allows small quantity generators to be serviced under the residential PAYT program. This gives the small quantity generators the needed economic incentive to participate. Other jurisdictions have reported that for the smallest commercial generators there is often no economic incentive to participate. Small quantity generators are often on the lowest level of service available and must pay a service fee for recycling while not seeing a corresponding reduction in trash subscription fees. By allowing the small quantity generators to enroll in the residential service it provides them with the needed economic incentive.

The single contracted hauler works as both a strength and a weakness for the City. The contract gives the City more control over rates and ensures that recycling is offered and contracted for all businesses. At the same time it decreases service options and hauler competition for the generators. The only competition in a contract system is when the RFP is issued and the winners/losers are decided upon by City staff, not the future customers.

Weaknesses:

The lack of enforcement was cited by the City as the largest weakness in the ordinance. Additionally, the current program is more designed to encourage high rates of participation, not high rates of diversion. Although businesses may be contracting for the recycling service many are not diverting high amounts. Hauler incentives could be crafted to address the commercial sector directly, minimum diversion goals, or minimum recycling service levels could be incorporated to increase the diversion. The hauler reports that instead of focusing on getting all businesses to participate, they feel that a

program addressing and working closely with the largest generators might produce more tons.

3.3: Highland Park, NJ

Population: 14,000

Year Started: State wide 1987, County and City 1994

Diversion: 2007: 63¹⁴%

Program: Statewide mandatory recycling, County wide mandatory recycling, City wide mandatory recycling, City collects for almost all.

Program Design

Description:

Commercial recycling is mandated by the State, the County, and the City. In 1987 the State of NJ passed the NJ Statewide Mandatory Source Separation and Recycling Act. The comprehensive legislation required that all residents, businesses and institutions recycle certain materials and set forth diversion goals. The important aspects of the legislation affecting the Highland Park program are:

- Tax on solid waste disposed of at landfills and transfer stations for dedicated funding
- All counties must designate a recycling coordinator
- All counties must develop a solid waste management plan
- All municipalities must designate a recycling coordinator
- Municipalities must develop recycling plans for new development
- Annual tonnage reporting by municipalities
- On-going education/outreach
- And other provisions regarding tax credits, studies, and specific materials

In addition to the comprehensive statewide program, there is a mandatory commercial program at the County level as well. Middlesex County is located in the Middle of NJ and prides itself on having the highest diversion rate in the State, 64%. Municipalities located within the County may opt to be part of a County wide contract for collection of MSW and recycling, Highland Park has chosen not to be in the contract. Of the 25 municipalities in the County, 16 are under County contract for the collection of recyclables and the remaining 9 are responsible for recycling collection on their own. The County plan, in addition to restating all of the statewide requirements, designates additional recyclables including non- traditional materials such as e-waste, CFLs, and plastic film (for commercial establishments with over 25 employees), sets a recycling goal, puts forth measurement techniques, sets a waste management fee on disposed tons of \$5.47/ton, and designates a number of responsibilities for the municipalities in the County. The State tells counties that they may not mandate the collection of a recyclable material unless they can demonstrate a long term market for the material. In Middlesex County, the markets for the materials arise before the mandates for diversion.

¹⁴ Includes both residential and commercial tonnage. The City does not distinguish between the two sectors in their reporting.

Staff Interviews:

Both County and City staff are very happy with the mandatory ordinances and the County reports that their current 2008 SWMP is the most far reaching plan in the State. Staff at both the County and municipal level report that the mandatory ordinance and the SWMP have been very effective in increasing recycling and diversion. Although both stressed the importance of tonnage reporting, reporting is one of the harder aspects of the ordinance for the City and County to comply with. The City must report tonnages to the County and the County must report to the State. They both recommend that ordinances include clear and specific language for reporting that haulers must comply with. The mandatory programs have increased the amount of competition among recycling processors and overall the recycling market has been steadily growing in the area.

Enforcement:

The City may choose to do their own enforcement or have County staff do the enforcement; Highland Park chose to have the County conduct enforcement. The County has general recycling inspector that conduct inspections at businesses, schools, and landfills. Enforcement is on both the generators and the haulers and is equally important for both. There is a County wide landfill ban of the mandated recycling materials that is enforced by the County. The County conducts inspections of all 10,000 to 11,000 commercial generators. The inspections happen over a five year period and notices of violation are issued to businesses without adequate recycling programs. The County was not sure about the number of notices issued but they reported that for every 10 notices, 3-4 penalties are assessed. The most common excuse is ignorance of the ordinance. The County also strictly enforces the mandatory hauler reporting. If a hauler fails to report tonnage, or completes the report incorrectly, the County revokes the hauler's permit to deposit loads at the County landfill for 60-90 days. The hauler can still operate but they must travel out of the County to dispose of their loads.

Haulers, Recycler, and Generator Interviews:

Haulers:

The City of Highland Park collects trash and recycling from over 95% of the businesses in the City, the remaining businesses contract with private haulers for service. City staff were the only haulers/recyclers interviewed. The commercial entities are included in the residential service routes and the collection costs are paid for in taxes. Highland Park is only 1.8 square miles in size and the vast majority of businesses are fronted along a 1.5 mile stretch of State highway. The businesses fall under the "mom and pop" variety and have rental apartments atop them. Other than a Stop-N-Shop Supermarket, there are less than 10 businesses that choose to contract with private haulers for collection. If the businesses do not want municipal collection they can hire an outside hauler but they still pay for municipal collection in their taxes. The City does not offer dumpster service.

The City has a five day work commitment to collect all the commercial and residential trash. Garbage is collected twice a week and recycling is collected every other week. The City is planning to decrease garbage collection to only once a week.

Highland Park is one of 9 municipalities in the County that chose to opt out of a County-wide contract with Waste Management for recycling collection. The municipality used to be part of the contract but chose to switch to municipal collection for a number of reasons, the most significant being economic. The original contract with the County was subsidized through tipping fees but when the County decided to remove subsidies the contract price almost doubled. To save money the City decided to collect materials themselves. Additional reasons include the desire to control the trash and recycling system themselves and the ability to generate local jobs. At the County level, the ordinance does seem to negatively affect the smallest haulers. The mandatory program makes it harder for the smaller haulers to compete and seems to favor the large national companies.

Generators:

The generators of Highland Park were quite satisfied with the recycling service provided by the City. They feel that the mandatory recycling program is at least somewhat effective. The majority reported that their businesses now think more about recycling and recycle more overall than they did previously. Most of the businesses said that they had adequate notice about the program and few received technical assistance in setting up recycling collection. One generator (a nail salon) who had problems making the meetings about program implementation and therefore didn't know very much about it did receive assistance from the City in setting up collection. They find the program easy to comply with and haven't had any enforcement issues (although one business (floral design shop) said they are notified if they dispose of a recyclable item in the trash). The generators aren't sure if their costs for solid waste service increased as a result of program implementation due to their bills being paid through their taxes, and the businesses were not aware of any compliance tracking or solid waste audits. In general they didn't have any suggestions for program improvements.

Observations

Strengths:

New Jersey uses mandates at three levels to ensure that commercial entities are recycling. The State, County, and municipal ordinances cover commercial entities and mandate that a broad swath of materials be diverted. The program has helped to build strong markets in the area for not only conventional recyclables but also such materials as CFLs, e-waste, oil, and batteries. There is also a strong enforcement mechanism that focuses equally on generators, landfills, and haulers. Additionally, Highland Park is a strong example of how to include businesses under residential collection. With its small population and geographic size, City staff are able to collect all the materials, including recycling from all of the businesses in town in a cost efficient manner. Both County and City staff are proud of their program and recommend it to other jurisdictions. The City is also very happy with the grant program that is included in the County plan. The City is paying a fee, per ton, for tipping at the County landfill but sees returns on the fee through the enforcement officers and a comprehensive grant program for diversion activities that is operated by the County.

Weaknesses:

The only problem reported was related to tonnage reporting. The municipality and County must both complete reports and the staff say that the reporting process is tedious and sometimes confusing, especially when they must reconcile tonnage reported by haulers, generators and landfills that do not match up. They recommend that any adopted ordinance includes plain, straightforward language outlining reporting requirements for municipalities, counties, landfills, and haulers.

3.4: Bonita Springs and Unincorporated Lee County, FL

Population: 180,000 Lee County Unincorporated, 43,000 Bonita Springs
Year Started: 2008
Diversion: 2005: 34%¹⁵
2006: 41%
2008: Tonnage not reported yet for 2007 or 2008, but participation went from only 30% recycling before to 90% now.
Program: Franchised haulers, all generators must contract for service, County sets rates for recycling.

Program Design

Description:

On January 1st 2008 Unincorporated Lee County and Bonita Springs Florida began the implementation of their mandatory commercial recycling program¹⁶. The program was fully implemented by April 2008. The County spent years researching the best mandatory programs throughout the country and modeled their program very closely to a similar one in Gainesville FL, with the exception of adding strong enforcement language. For trash service the county has franchised areas and they have incorporated a similar program (with a few important variations) for the mandatory recycling program. The County set the maximum rate that recyclers may charge for recycling service at \$1.33/cuyd. The County owns a MRF (mostly residential, some commercial) and a waste-to-energy facility.

The ordinance states that all businesses, with a few exceptions, must contract with a registered hauler for the collection of their recyclables. The ordinance allows exceptions for certain businesses such as those on minimal trash service levels and those for whom there is extreme disparity between the cost of recycling and disposing of the same material. Some of the major elements of the ordinance include:

- All business must recycle a minimum of 1 Recyclable Material that is the primary material generated¹⁷
- All businesses must maintain a Recycling Program Form on site
- Businesses must contract with an approved service provider
- There is also an education and promotion component for business employees and tenants

Staff Interviews:

¹⁵ The reported tonnage is for commercial and institutional and is collected from recovered material dealers. Landfills, and transfer stations. The diversion however, is not specific for unincorporated and Bonita Springs only but instead includes the entire County (including Cape Coral and Fort Meyers)

¹⁶ The ordinance also covers multi-family units and C&D.

¹⁷ The ordinance lists the following Recyclable Materials: fiber products (include at a minimum mixed paper, ONP, OCC, and paperboard), co-mingled containers (include at a minimum aluminum cans, plastic 1-7, tin/steel, glass), ferrous or non-ferrous metal, and wood,

The County is currently taking a very "hands-on" approach to implementing and enforcing the new ordinance. Prior to the adoption of the ordinance only 39% of the 9,000 affected businesses were recycling. The rate is around 90% now and the County is aiming for a 100% participation rate. They do not specify tonnage or diversion requirements. The County board was very pro-recycling and was integral in the adoption of the ordinance. The County offers waste audits and technical assistance to any business that requests it. To date, the County staff reports that the program is very effective and they predict that it will greatly increase their diversion. When asked to report on possible changes to the ordinance, the County staff reported that "I think we nailed it".

Enforcement:

Enforcement mechanisms were a main focus of the Lee County Ordinance. The County uses three tools; recycling plan forms, inspections, and fines, to enforce the program. All commercial entities must submit a brief two page Recycling Plan form to the County and keep the form on-site. When the County conducts inspections they are able to easily view the form and determine what recycling, if any, the business is doing. The County is aggressively conducting inspections, completing as many as 25 inspections or audits per day. The County has designed an innovative and strong set of fines. The trash haulers will assess the violators a monthly Advanced Disposal Fee (ADF) on locations found to be in violation. The level of fine depends on the size of the. The fines, collected by the hauler, are then paid to the County. Additionally, if the business fails to pay the ADF on their bill, the hauler will stop collecting trash. For each day that the business does not have trash collected, the County will fine the business \$300¹⁸. At the time of the interview no fines had been assessed.

Hauler, Recycler, and Generator Interviews

Haulers:

All of the haulers interviewed for Lee County also collect recycling. The County has franchised hauler arrangements with 5 haulers serving the districts. Each hauler is allowed to operate only in their established district. The County set the maximum amount a hauler can charge for recycling service at \$1.33/cuyd for the franchised areas. The haulers can negotiate any price they would like for commercial entities not in the franchised areas but it is nearly impossible for haulers to negotiate a price for recycling collection only that is less than \$1.33/cuyd.

The haulers report that overall, they are able to supply the needed services and are willing to do it. The costs to provide the service have increased for the haulers and the cost for service have increased somewhat for the customers. The haulers reported that it takes a long lead time to prepare for the program, possibly 6-8 months, and the County

¹⁸ One interviewee reported a differing opinion of the aggressive fines that is worth noting. The recycling hauler served both Lee and Collier County (an adjacent County with a mandatory ordinance) and reported that she has seen her accounts grow much quicker in Collier County due to their less stringent fines and enforcement. She reported that the business owners in Collier were quicker to embrace the ordinance because they felt they were not being penalized for not participating while in Lee County some of the businesses were resisting the ordinance because they had issues with the steep fines and enforcement.

did give ample time and helped greatly with outreach to customers. The haulers had to order totes, larger containers, possibly new trucks, and plan their routes to accommodate the new recyclers. The haulers report that the program seems like it will be quite effective and that they predict high levels of participation. Although it is a new program, their customers seem to accept the mandate and many are embracing the program.

Despite the positives, the haulers did have a few issues with the ordinance, many of which stemmed from the fact that they were not intimately involved in a stakeholder process during the development of the ordinance. The haulers seem to resent not being involved and report that the set rates for recycling do not completely cover their costs for the service, especially with rising fuel costs. The County is planning on working with the haulers in the near term to adjust the rates. The haulers would also have liked to see some sort of incentive for increased diversion. This could help offset their costs and investments into recycling. They also suggest that account rebates for large generators achieving high diversion could help push the program.

Independent Recyclers:

Although all of the waste haulers reported that they were also recyclers, a number of recycling only companies were interviewed. Unlike the waste haulers, the recyclers were not pleased with the new ordinance. The recyclers, like the haulers reported that they thought the program was effective, was increasing recycling, and reported that it did increase their number of accounts. But like the haulers, the recyclers were upset at not being involved in the stakeholder process. By setting rates and creating franchised areas, the County is limiting the competition in the market place and making it more difficult for independent recyclers to operate. When the program went into place it coincided with a renewal of the hauler franchise agreements. The haulers were able to adjust their MSW collection rates to make up for the increased cost of recycling collection at the \$1.33/cuyd rate. The independent recyclers can charge whatever they want for recycling collection, but since the haulers are only charging \$1.33/cuyd as per the ordinance, the recyclers are basically limited to this rate as well. Unfortunately, it is not a rate that allows for the recyclers to make a profit. Overall, the recyclers support the idea of a mandatory ordinance but were adamantly against rate setting and franchising. They also resented that the County left some of them out of the plan.

Generators:

All of the generators interviewed were aware of the new program and reported that they were recycling. However, overall the generators were only somewhat satisfied with their recycling service. They did report that in their opinion, the mandatory program was effective and will increase diversion in the County. Generators felt they had adequate notice about the mandatory program before it was implemented. They all found the program easy to comply with and none had any issues with enforcement. However, at the time of the interviews the County had not begun aggressive fines but was planning to start the following month.

When asked about technical assistance or audits, one generator (a bicycle store) reported that they received help setting up the recycling program from their hauler and another (a CPA firm) was instructed by the property manager on how to be in compliance with the program. Most of the generators said that overall their costs for solid

waste had increased somewhat as a result of program but that that they now recycle more. Although the reports that compliance and participation tracking is integral to the program, none of the businesses reported knowing whether or not their compliance is tracked. As a whole, the businesses reported that they were willing to comply, the ordinance increases recycling, and that their costs have increased slightly due to the program.

Observations

Strengths:

One of the planned strengths of the program is its strong enforcement mechanism. When planning the program, the County felt that many of the other ordinances they researched were unsuccessful due to a lack of “teeth”. Although the County had not issued any violations at the time of the interviews, they plan to issue fines to make sure that the commercial entities know that the County is taking the ordinance seriously. The County completed strong outreach and gave the businesses and haulers ample time to ramp up for the program. Other aspects of the Lee County program that stand out are the requirement for businesses to submit a simple recycling plan and the flexibility in recyclable materials. Instead of mandating that all businesses must recycle a long laundry list of materials, the County gives the businesses choices of what materials make the most sense for them to divert. Allowing for year long exceptions to the mandate allows businesses to participate without harming their bottom line.

Weaknesses:

By not involving some of the haulers and recyclers in the stakeholder process, the County seems to have lost some support for the program among these sectors. The haulers reported that the set rates do not completely cover their costs and the recyclers reported that they feel like they have been left out of the process. Overall, the recyclers are against the set rate and franchised areas. The ordinance does not mandate any amount of diversion that entities must complete and it does not provide for an incentive to increase recycling among haulers. By setting a maximum rate per cubic yard of recycling that can be charged by the haulers there is a disincentive for haulers to collect more recycling and less trash. It is also important that enclosure requirements in County ordinances are ironed out prior to the adoption of a mandatory program. There are strict enclosure requirements for trash and recycling containers in the County that make it hard for some generators to comply with the mandatory recycling ordinance. It serves as a sort of Catch-22, the generators are fined if they do not recycle, but if they do recycle and do not have approved enclosures, they must either pay for new enclosures or are fined for recycling without proper enclosures.

3.5: Mecklenburg County and Charlotte, NC

Population: 827,000

Year Started: SSO Ordinance 2002, ABC Statewide 2008

Diversion: 30% Decrease from base year¹⁹

Program: One ordinance and one law affect businesses, one targeting OCC and paper and the other targeting bottles. Multiple haulers operate in the County in an open market.

Program Design

Description:

The County has two ordinances that affect the disposal behaviors of commercial entities. One, the source separation ordinance (SSO) is a County level ordinance and the other, the Alcohol Beverage Container bill (ABC), is a statewide measure. The County has 28 permitted waste haulers and an unknown amount of recyclers operating in an open market to provide service. 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 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. 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. The County has one full time Ordinance compliance inspector who visits about 5 businesses per work day. The County also offers "free" OCC drop-offs for businesses that cluster together and agree to share the drop-off area. The County has established 46 such commercial drop-offs.

In addition to the SSO, the State of NC passed the ABC bottle bill in 2007 which went into effect January 2008. The bill affects all holders of on-premise alcohol permits in the State, approximately 8,000 businesses. The bill states that all permit holders must separate, store, and provide for the collection of all recyclable beverage containers. Collection can be completed through drop-off recycling, contracting for collection, or in some areas the local government provides for collection. In Mecklenburg County, collection is completed either through drop-off or contracting with private haulers. If the business fails to recycle, they will not be allowed to renew their liquor license the following year.

¹⁹ Mecklenburg County set a base year landfill disposal rate for the fiscal year of 1998/99 and computes diversion using that base line year. The base year tonnage was 641,072 and the 2004/2005 (the most recent data available) tonnage was 548,388. The County then looks at the per capita waste generation based on the annual tonnage and calculates the decrease (or increase). The per capita commercial waste generation decreased from 1.04 tons 1998/99 to .73 tons 2004/2005, a 30% decrease.

Staff Interviews

SSO Ordinance: The SSO program achieved an increase in diversion when it was first implemented but recently that diversion has been stagnating or even decreasing. The County is looking at possible setting hauler rates, lowering the threshold level for participation in the program, or adding hauler incentives to help reinvigorate the program. The City reports that the SSO ordinance was somewhat effective but that many of the small generators are being left out and they need to strengthen the ordinance.

ABC Law: Originally the bill was slated to say that the businesses would have their license revoked but upon negotiations with the restaurant/bar industry it was changed to say they could not have it renewed. Of the 8,000 businesses with a liquor license, the State reports that to date, 7,000 of them have registered recycling plans with the State and are reporting that they will comply. The estimated tonnage statewide generated by the program exceeds 30,000 tons and it was reported that 10 new collectors, processors, or end-users have moved into NC as a result of the bill. Mecklenburg County is working with the State to ensure that businesses are aware of the bill and is very optimistic about its possible success. The response to the bill has been mostly positive. The most common complaint has been from participating businesses questioning why other businesses/sectors do not have to recycle.

Enforcement:

There is very little enforcement, but a significant amount of outreach related to the SSO ordinance. The table below displays the inspections and notices of violation related to the ordinance:

Topic	Count
Businesses Inspected	689
Follow-up Inspections	224
Complaint Initial Inspection	338
Exempt	263
Initially Non-Compliant	88
Compliant Post-Inspection	86
1 st NOV's	10
2 nd NOV's	1
Company Requests Additional Information	532

The ordinance does allow for penalties of \$50 per day to accrued after three violation notices have been given, however the County rarely, if ever, issues fines. They instead use the notices of violation as a way to increase awareness of the program and get businesses to be in compliance. Enforcement is confounded by the difficulty in determining what businesses are above the 16 cu yds/week generation threshold. The haulers do not report account subscriptions to the County and it is difficult to determine generation based on just container size. A business contracting for a 4 cu yd container may or may not be generating 16 cu yds per week depending on the frequency of collection.

There is a very strong enforcement element to the ABC bill. If you do not recycle you cannot renew your ABC permit. The County plans to rely on the State for the enforcement of the ABC bill. Although the State has not begun wide spread

enforcement, at this point they are planning on using the State alcohol enforcement officers. The officers already inspect the permit holders so the plan is for the officers to add recycling inspection to their duties. However, the State is a little hesitant to use officers carrying firearms to conduct recycling inspections. They do plan on strictly enforcing the bill to permit holders that they are taking the bill and its enforcement seriously.

Hauler, Recycler and Generator Interviews:

Haulers:

Haulers report that the largest obstacle in complying with the mandatory recycling is space for the generators. If a generator must have MSW, OCC, and now a separate container for glass, many of the entities do not have enough room and it can be difficult for the trucks to collect. The haulers report that the ABC bill seems like it will have a strong, positive effect on increasing recycling in the restaurant/bar sector but that the OSS ordinance does not have a large influence. In the haulers opinion, the OSS ordinance is not the driver to increase diversion but it is instead the opportunity for businesses to save money by recycling OCC and paper. The ordinance mostly affects the larger businesses, many of which would be recycling with or without the ordinance.

The Mecklenburg County haulers were not involved in the development of the ABC bill. They report that they are willing to participate and that their customers mainly are viewing it as just an added cost of doing business. The ABC bill is expected to create 100% participation and the haulers report that it is very effective. A potential problem, that the haulers in Mecklenburg were able to avoid, is processing. Luckily, there was a single stream MRF in the area that was able to accept additional recycling streams. The haulers reported that without the MRF they would have been in trouble. The MRF allows them to collect materials in a single stream and helps reduce the need for additional containers/space. In other parts of the State the haulers report that they have heard of issues with processing and collecting.

Recyclers:

The independent recyclers in Mecklenburg County are very supportive of mandatory recycling, especially the ABC bill. The smaller haulers report that the ABC bill has opened up a whole new market for them and has allowed them to get into a market that was previously dominated by the larger nationals. One of the interviewees, a small glass independent recycler, reported that the only reason she started her company was the adoption of the ABC bill. The company saw a niche opportunity open up and is serving the small businesses with roll cart recycling containers that the large nationals do not want to service. Some of the larger companies in the County are sub-contracting with the smaller recycling companies to collect materials from businesses that are not already on their routes. The recyclers, like the haulers, reported that it is important for a community contemplating a mandatory ordinance to look at your goals and make sure you have the companies and infrastructure in place to achieve those goals.

Generators:

Many generators were unaware of the SSO ordinance or thought that compliance was simply voluntary. One restaurant that was interviewed was unaware of the ABC law. The generators reported that the ordinances could increase their operating costs but say that recycling is important. One generator (a restaurant) was dissatisfied with their recycling service because they didn't collect enough recyclable materials while another business (a hotel), that's always recycled irregardless of the mandatory programs, self-hauls their recyclables to save money. Several generators didn't believe that recycled materials were truly recycled. A restaurant manager who thinks the mandatory program was effective, had to actively seek out a hauler to collect their recyclables. Many restaurants believed that solid waste costs would increase as a result of the program and fought against it. At least one restaurant thought their costs remained the same after the program was implemented. Many generators felt their diversion rates stayed about the same. Although the County, the haulers, and recyclers reported that they provide waste audits and technical assistance, none of the interviewed generators had received a waste audits or assistance.

Observations

Strengths

The innovative statewide bottle bill is a strength of the Mecklenburg County program. By using existing FTEs for enforcement and an enforcement mechanism with serious teeth, comply or use your license, the State has developed a viable program. Additionally, the County uses the ordinance and the bill to address targeted, low-hanging fruit, materials. By focusing on larger generators (SSO) and only certain materials the programs divert the most common and cost efficient materials. The ABC bill has helped to build the market for processors in the State and in the County has developed new businesses to handle the recycling stream.

Weaknesses

The ABC bill is applied only to bars/restaurants and the SSO ordinance covers only businesses generating over 16 cubic yards of material per week, meaning that a number of small businesses and non-liquor permit holders are not covered. The covered businesses have made complaints to the County regarding disparity in the programs. If they have to recycle, all businesses should recycle. The SSO ordinance has reportedly been losing steam since its inception, with enforcement, outreach, and participation possibly dwindling since it began. There were also concerns about space constraints for both containers and trucks collecting containers.

3.6: Portland, OR

Population: 540,000

Year Started: Started in 1987, has evolved over the years, most recently updated 2008

Diversion: 2006: 58%

2007: 59%

Program: Open market with 20 plus recyclers and nearly 60 haulers, haulers must offer recycling and businesses must divert 60%.

Program Design

Description:

In the late 1980s the City of Portland passed an ordinance requiring that all garbage and recycling companies must offer the collection of recyclables to any interested businesses. In 1996 the City mandated that all businesses divert 60% of their waste. Although this mandate has been on the books in Portland for 12 years, there has been little focus and even less enforcement of the program until the last two years. Recently the City has re-examined its recycling and diversion programs and is dedicating itself to a focus on the commercial sector. This sector has 25,000 businesses and is responsible for 76% of the overall waste stream in Portland. The current program requires that all permitted haulers must offer recycling of 14 recyclables, all businesses must divert 60% (changing to 75% Fall 2008) of their waste, haulers must report tonnages to the City, and haulers pay a fee of \$5.60/ton of MSW to the City but no fee for recycling. There are multiple opportunities for the City to assess penalties to generators and haulers written into the ordinance.

Staff Interviews:

The City reports that historically, they have been rather “hands-off” in their approach to addressing the commercial sector but that is changing. They have hired on FTE to focus full time on the sector and have completed a series of stakeholder meetings with generators, haulers, recyclers and various trade groups such as property managers, janitorial staff, bar/restaurant industry, and others. The City is planning to increase their level of regulation over the sector and has contemplated setting rates for the commercial sector. The residential sector operates under a franchise system with rates set by the City and the City has looked at a similar program for the commercial sector. The City has found that rates paid by the commercial sector vary significantly in the City for similar levels of service. Also, smaller generators are paying more than similar sized businesses in other jurisdictions while larger generators are paying less. The diversion rate has been stagnating recently and the City is looking at ways to increase it. One program that is being piloted now is a commercial food scraps collection which the City plans to mandate for large generators in late 2008. Additionally, the City is increasing its monitoring, outreach, education and waste audits in the commercial sector. The City is also increasing the mandatory diversion rate from 60% to 75%.

Enforcement:

Although the City ordinance allows for enforcement and lays out fines for a multitude of infractions, the City has not strictly enforced the ordinance to-date. The City plans on changing this in the near future.

Hauler, Recycler, and Generator Interviews

Haulers:

There are 58 commercial haulers serving Portland in an open market systems. Each interviewee reported different levels of recycling among their customers:

- *We offer it to everyone but very few customers do it- it does not pay for the business unless they are generating more than 10 cu yds or more.*
- *99% of our customers are recycling at least a little bit*
- *75% of our commercial customers are recycling while almost all of our MFUs are, if they can save money they do it.*

The haulers also differed in their opinions related to franchising and rate setting. One of the older, more established haulers was very pro rate setting while the newer, smaller hauler reported that rate setting would hurt them because right now they are growing their customer base by offering value added service at a discount. Two of the haulers reported that the program was effective while the third reported that it was very ineffective and was a public relations move only. One thing the haulers could agree on was that hauler incentives would be attractive to them. They have little incentive to “sell” recycling to their customers as it generally does not create the income that MSW does. The haulers cannot charge more for recycling than MSW but in some cases it costs them more to collect it due to routing, trucks, and containers. Overall, the haulers seem to be positive about the new focus on commercial recycling in Portland. The City has been working closely with the haulers to determine the best way to increase diversion and for the most part, the haulers see this as a business opportunity²⁰.

Recyclers:

All of the haulers in the City also offer recycling. To gather the recycler perspective a number of specialty material, or niche market recyclers were interviewed. These included a Styrofoam recycler, a paper only recycler, and a recycle salvage company. In general, the recyclers were against any franchising arrangements. They reported that they like the mandatory recycling program as long as the rates are not set and districts are not franchised. For the small recyclers, the less regulation the better, and the less regulation the higher the level of competition. The mandatory ordinance seems to make it a little harder for the small companies to compete with the large firms but the ordinance could also increase their business.

Generators:

²⁰ The haulers were supportive of the OSD but felt that the elected officials just passed the mandated diversion rates without working with the haulers. Some of the haulers felt that the City officials passed a very high diversion goal before investigating if it was possible and that the officials failed to recognize all of the hard work and strides the haulers had already made toward increasing diversion.

The generators are supportive of the mandatory program as long as their opinion is taken into account in the development of the program. All of the generators stressed the importance of their business sector (a property management company, a mall, and a restaurant) being involved as stakeholders. They reported that they originally looked at recycling as a way to reduce costs and now most businesses in the City see recycling and diversion as just a normal part of doing businesses. The restaurant did express some skepticism about the approaching mandatory food scrap program, especially when it came to the added costs of the program and the possibility of odors. The businesses reported that they did not like the mandatory diversion rate and feel that it overshadows the diversion efforts they have already taken. If a businesses is undertaking successful source reduction efforts, it might actually reduce their overall diversion rate, but the ordinance does not take this into account. The generators reported that the City has been very good recently with working with the generators and doing outreach. Some of the keys to increasing diversion for the businesses were reported as education for employees/tenants, signs, and making sure their is room for containers. None of the businesses reported seeing strong enforcement by the City and said that they self-report diversion to Portland.

observations

Strengths:

The City has made a strong effort to include all of the possible stakeholders in the update of their ordinance. By working with all sectors they have been able to gather at least some support by all the stakeholders. The ordinance has been in effect for 12 years and the majority of generators are aware of the mandate and are recycling. Additionally, the City's open market system has encouraged competition and has opened up the market to small, efficient recycling and hauling operations that have strong recycling component. By requiring that all haulers offer recycling the City has ensured that every commercial entity may recycle.

Weakness:

There has been little enforcement of the mandatory program. The levels of participation varied from nearly 100% for one hauler to very few for another. There is little economic incentive for the haulers to push their recycling programs and without strong enforcement businesses may not be achieving the highest levels of diversion possible. Additionally, by setting a high mandatory diversion rate, and then raising it to 75%, the City might be alienating the generators and haulers that have worked very hard to get where they are and could be undervaluing source reduction.

SECTION 4: COMPARISON OF EXCLUSIVE AND NON-EXCLUSIVE ARRANGEMENTS

In addition to work on mandatory commercial recycling strategies, the project examined the strengths, weaknesses, and potential of various hauler arrangements – exclusive vs. non-exclusive – in helping to increase diversion. Exclusive (or near-exclusive) arrangements include franchising or contracting; non-exclusive or more market-based strategy include simple licensing or little interferences in a private market competition setting. Generally speaking, the greater the involvement in the sector, the greater the control the City/County has in terms of influence over diversion, incentives, and funding. However, greater control means higher requirements for staffing as well as greater potential for political fallout as haulers, facing potential erosion or loss of their hard-won customer base work to protect their investment (and retirements).

SERA conducted a number of interviews with city staff, haulers, and generators on the topic of exclusive and non-exclusive arrangements. Of the five communities interviewed, two communities had exclusive commercial hauler arrangements, two had non-exclusive commercial collection, and one city had municipal collection. The exclusive arrangements varied in that one community had clearly exclusive trash and more open recycling collection, and the other was purely exclusive for both commercial streams.

Using the interviews in combination with some literature review, pros and cons for exclusive compared to non-exclusive collection arrangements could be identified. These advantages and disadvantages are provided in Table 4.1. A key advantage noted from the interviews is that each community with exclusive arrangements cited higher participation and access to recycling; however, the performance in terms of recycling diversion is less clear and seems to depend on the quality (or presence) of incentives. Best results can be derived if the hauler arrangements provide:²¹

- Incentives (or requirements) for haulers to get greater diversion from generators (direct financial incentives or through renewals), and
- Incentives through rate design and rates authority to provide direct customer bill savings for greater diversion at the building or customer level.²²

For the interviewed communities, hauler incentives were scarce. Chula Vista has a hauler incentive overall, but not for commercial sector separately. If the hauler achieves 50% diversion they retain 60% of recyclables revenues, and if they do not exceed the 50% diversion goal, they only retain 40% of the revenues. They have met and beat that incentive. Performance could likely be improved if the threshold was increased. In Lee County, Florida, the haulers expressed a willingness to have hauler incentives installed and suggested they would work to increase recycling if incentives were provided. The North Carolina interviews showed ambivalence on the subject of hauler

²¹ Skumatz, Lisa A., Ph.D., "*Options/Choices for Solid Waste Services*", White Paper 05-3, Skumatz Economic Research Associates, Inc., Superior, Colorado, 2/24/2005 and Skumatz, Lisa A., Ph.D. and Constance Hornig, Esq., "*Assessing Franchising, Contracting and Other Options for Provision of Solid Waste Services*", Skumatz Economic Research Associates, Inc., SERA Research Report 31-2, Superior, Colorado, January 2001.

²² And/or requirements for participation, as discussed under the "mandatory commercial programs" sections of this paper.

incentives. Portland is considering franchising the commercial sector (like they do the residential sector), and many of the haulers were concerned or against the proposed system. In all communities, the generators must pay separately for recycling, which usually makes the case for recycling a case-by-case question; overall costs sometimes increase and sometimes decrease. In the community with municipal collection, the commercial generators do not pay separately for recycling – it is embedded in the rates. The commercial recycling rate in this community (Highland Park, NJ) is very high.

Table 4.1: Pros and Cons of Non-Exclusive vs. Exclusive Arrangements²³

	Pros	Cons
Non-Exclusive	<ul style="list-style-type: none"> Haulers/recyclers maintain all of their customer accounts No interference by the City/County in the market place Less oversight, staffing by responsible entity More choices for hauler/recycler for generators Market forces may dictate most efficient/cheapest prices for service (but not necessarily b/c of economies of scale) May encourage value added service/customer service by haulers/recyclers²⁴ Increased competition among haulers/recyclers, create opportunities for smaller haulers/recyclers²⁵ 	<ul style="list-style-type: none"> High cost to provide service/redundancy of routes/trucks on the same street Little control over trash/recycling services by County/City Low recycling/diversion, little incentive for diversion Inefficiencies in truck routing/number of trucks/collection schedules, GHG emissions, road wear and tear, etc. higher social cost from lots of trucks May discourage haulers/recyclers from offering additional services/recycling options as haulers compete to provide cheapest service²⁶ Service levels/costs/options inconsistent within service area Tracking/tonnage reporting may be difficult Compliance/enforcement/participation tracking challenges Licenses fees (if used) may not cover much more than cost to monitor

Of the programs investigated for this report, the following hauler arrangements were uncovered:

- Municipal collection (Exclusive) (Highland Park, NJ)
- One contracted hauler (Exclusive) (Chula Vista, CA)
- Franchised waste haulers (Exclusive) (Lee County, FL)
- Open market competition (Non-Exclusive) (Mecklenburg County NC and Portland OR)

The views of which hauler arrangement is best suited for mandatory commercial diversion programs varied depending on the actor and the City.

²³ Table based on SERA findings from the Alameda CA Mandatory Commercial research project and Skumatz, Lisa A., Ph.D., "Options/Choices for Solid Waste Services", White Paper 05-3, Skumatz Economic Research Associates, Inc., Superior, Colorado, 2/24/2005.

²⁴ Small haulers report that they are able to distinguish themselves in the open-market place through value added services

²⁵ In some cases competition may increase, in others predatory practices may occur in the market forcing out smaller competitors

²⁶ Non-exclusive City staff and some haulers report that non-exclusive programs encourage the least expensive "no-frills" service

In Lee County FL the program design was considered flawed (by some recyclers and haulers²⁷) because the fee structure/incentives only rewarded firms that provided both MSW and recycling service and excluded recycling only providers. The MSW and recycling providers also happened to be franchised haulers in the County. The recyclers were adamantly against the franchised area and rate setting program. The County set the rate for recycling collection at \$1.33/cuyd for its franchised waste haulers. At the same time the County was negotiating the franchise contracts and the franchised haulers were able to adjust their MSW collection rates to reflect the set recycling rate and generate the needed revenues. The haulers are allowed to negotiate with entities outside of their contracted area for recycling, and independent recyclers are also allowed to negotiate with businesses for recycling collection, however, the recyclers may not negotiate with the businesses for MSW collection. The franchised haulers have a distinct advantage over the smaller independents or non-franchised haulers in this arrangement. It was reported by the recyclers that it is very difficult for them to generate revenues at the set \$1.33/cuyd rate and although they are allowed to charge more, when the franchised haulers all charge the low rate it limits competition in the County. With a low set rate for recycling, the franchised haulers have little incentive to decrease MSW subscription levels and increase recycling subscriptions. The independent haulers supported the mandatory recycling program but they were against the rate setting and franchising.

The City of Chula Vista reports that without their single hauler contract system their program would not be as effective. As part of their single contractor they require that virtually all of the hauler accounts are contracting for recycling service. The City can review all of the current accounts and when a new account is started, the hauler tells the customer that they must sign-up for recycling. If they refuse, the hauler contacts the City and the City enforces the ordinance. With multiple haulers or an open market, the City reports that it would be difficult at best, to accomplish this. The City is now working on increasing diversion by making sure the commercial generators use the recycling containers they are contracting for.

Portland has an open market with nearly 60 haulers operating in the commercial sector. In the residential sector, the City retains rate setting authority with multiple franchised haulers. The City of Portland has contemplated extending the residential rate setting program to the commercial sector. An analysis of open markets versus rate setting options in the commercial sector conducted by the City of Portland Business Recycling Technical Advisory Committee (TAC) determined that²⁸:

- Rates per similar levels of garbage and recycling service varied widely throughout the City
- On average, Portland businesses that use smaller containers (wheeled carts, toters) for collection paid more than similar businesses in surrounding areas with franchised service
- On average, Portland businesses subscribing to higher levels of service (dumpsters) paid less than similar businesses in surrounding areas
- Haulers tended to offer the least complicated service at the lowest cost in order to remain competitive and did push expanded recycling services

²⁷ The County staff felt that they had "nailed" the program design.

²⁸ From the Portland Business Recycling Technical Advisory Committee Meeting Materials, June 24, 2008

The interviews with haulers and recyclers in the Portland supported the findings of the TAC. The haulers/recyclers reported that they must keep costs as low as possible to stay competitive and businesses are more supportive of diversion activities when they can see a reduction on their trash costs. The more efficient, agile, recycling service providers see the open market as a business opportunity that allows them to offer value added service and grow their market share. Some of the older more established haulers reported that they were being undercut by other haulers and would support franchised areas with set fees in order to maintain their customer accounts.

When deciding which program is most appropriate for a City/County, it is important to match the program goals or objectives with an appropriate hauler arrangement. The table below displays City/County goals and the hauler/recycler arrangement that is most appropriate to reach the goals.

Table 4.2: Goals and Hauler Arrangements

Goal	Arrangement	Explanation
IF the goal is Participation, Access, or Diversion, select →	Exclusive	City/County has control over program design/rates and can plan the program for maximum diversion or set rates to create incentives to increase diversion. Performance incentives can be easily built into the arrangement.
IF the goal is Lowest Rates, select →	Exclusive	Haulers/recyclers can realize economies of scale, routing efficiencies, truck savings, etc
IF the goal is Environmental Effects, select →	Exclusive	Reduces the number of trucks on the streets, wear and tear, GHG emissions caused by trucks, etc, through route design, service areas, and reduced redundancy. Maintains a "cleaner" look on the street with uniform containers, days of collection, etc.
IF the goal is Program Funding, select →	Exclusive	Rates can be designed to cover more than just the costs of collection and can help fund diversion efforts.
IF the primary consideration is Politics, select →	<i>Non-Exclusive</i>	Haulers will be less resistant to this approach. There is minimal interference in the free market and all haulers are on a level playing field. Exclusive arrangements tend to involve a "taking" of customer accounts from some haulers, and often lead to political backlash
IF the primary consideration is Least Staff/Oversight, select →	<i>Non-Exclusive</i>	Staffing and oversight may be lower with non-exclusive agreements unless there are auxiliary regulations to oversee.

SECTION 5: FINDINGS AND BEST PRACTICES FOR MANDATORY COMMERCIAL RECYCLING PROGRAMS

5.1: Implications

To compare the mandatory recycling programs, the responses of the City staff, haulers, recyclers, and generators were examined. The average rankings were based on the self reported effectiveness of the program, where 1 signifies not at all effective and 5 is very effective. The table below displays the five researched programs in order of their average reported effectiveness. The program's diversion is also included in the table below, however, not all programs share a reporting mechanism and reported diversion is difficult to compare between programs. The Mecklenburg County programs are given two entries, one for the ABC bill and the other for the SSO ordinance.

Table 5.1: Comparison of Mandatory Commercial Recycling Programs
(1=not at all effective, 5=very effective)

Location	Diversion ²⁹	Average Rating	Staff	Hauler	Recycler	Generator	Program description	Strong elements	Weak elements
Highland Park, NJ ³⁰	63%	4.7	5	5	5	3.7	Recycling paid through taxes / no separate fee for recycling, municipal collection of all commercial and residential recycling; businesses collected same as SF; enforced by County staff inspections at generators and by landfill ban inspections (disposal of recyclables banned for all sectors).	Covers a wide variety of materials, City has ownership of program, strong enforcement by County, good example of businesses served under res.	Difficult reporting, location specific program that might not work in larger municipalities /different demographics
Lee County, FL	41% in 2006-90% participation	4.6	5	5	4.7	3.7	All businesses must contract for recycling service; Commercial trash collected by 5 franchised haulers, recycling open collection; for enforcement, contract must be readily available to inspectors who conduct on-site checks.. County sets rates; generators must pay no more than \$1.33 per cubic yard of recycling per month.	Very strong enforcement and fines, low rates for customers to recycle, recycling plan forms and inspections	Recyclers upset with rate setting, rate setting does not incentivize haulers to increase recycling

²⁹ Description of diversion measurement techniques can be seen in table 3.1.

³⁰ Highland Park, NJ ranked first, however, it is important to consider that the effectiveness for the City, hauler, and recycler were all reported by City staff. The municipality collects MSW and recycling.

Location	Diversion ²⁹	Average Rating	Staff	Hauler	Recycler	Generator	Program description	Strong elements	Weak elements
Chula Vista, CA	8%	4.6	4.5	5	5	4	Businesses must contract for recycling service, One contracted hauler for trash and recycling, City sets rates, City checks that new businesses sign up, limited enforcement afterward, no fines thus far.	Almost all businesses have a recycling container, single contractor gives City high amount of control	No incentive to participate, overall low diversion rate
Mecklenburg County, NC- ABC ³¹	~30K tons State-wide	4.5	5	5	5	3	All restaurants, bars etc. must recycle commingled containers or their liquor license won't be renewed; Collection (trash and recycling) is open market, strong enforcement; state law, with county and city support and involvement.	Strong teeth, targets certain materials, increased market development, uses established enforcement FTEs	Bars/restaurants feel unfairly targeted, space can be an issue, new program and other issues might arise
Mecklenburg County, NC - SSO	30% reduction compared to base year	3.4	3	4.5	3.5	2.3	All businesses subscribed to 16 cubic yards or more of trash service must recycle; collection (trash and recycling) is open market, significant outreach in first year / not maintained; limited / weak enforcement.	Targets certain materials, threshold limit allows for economic savings to be realized	Does not address a large portion of businesses, effectiveness has decreased over time
Portland, OR	59%	3.2	3	3	3.5	3	All businesses must recycle 75% (formerly 60%), Collection is open market with nearly 60 haulers, No fines, limited / minimal enforcement; varied compliance.	Lots of competition in the market, high diversion rates, business generally consider recycling a normal business activity	Some haulers/recyclers not happy with program, high diversion rate creating some resentment among generators, not strong enforcement

The researchers examined five separate mandatory programs and compared the relative strengths and weaknesses of each. Irregardless of the program design, each had strengths, many of them unique for the particular program, and conversely each had related weaknesses. The following section displays the overall program attributes that

³¹ There is one law, mandatory recycling for Alcohol Beverage Control (ABC) permit holders, and one ordinance, Source Separation Ordinance (SSO) requiring recycling of cardboard and mix paper in the County.

exemplify both the strengths and potential weaknesses related to mandatory commercial recycling programs.

Table 5.2: Strengths of Mandatory Commercial Recycling Programs

Program Element	Description of Strengths
Increased diversion-	All of the programs reported that the commercial diversion has increased
Increased access/opportunity-	Programs increase access and the opportunity for all business to participate, divert materials, and in some cases realize monetary savings in trash costs
Increased revenues-	Haulers and recyclers reported that the program can increase revenues available to support diversion initiatives
Increased customers-	Potential to increase customer accounts for haulers and recyclers
Market development-	May help bring processors, or end-users into the area
Market development (haulers)-	May increase opportunities for haulers and bring in new haulers
Efficient Design-	Some target specific sectors with large amounts of waste, or exempt small generators to reduce administrative hassle with minimal impact on waste diversion
Addresses all sectors-	Instead of placing the burden of diversion only on the residential sector, the entire community is responsible, no sector is exempt
Flexibility-	The program can offer flexible options for diversion for each business type
Goals-	Programs can be designed with community goals in mind and can be crafted to address certain materials or diversion aims
Reporting-	Programs can require reporting and tracking of diversion and disposal in the sector which might not have been done previously
Economies of scale-	Increased efficiencies in collector routing and processing by requiring all businesses to participate

Table 5.3: Weaknesses of Mandatory Commercial Recycling Programs

Program Element	Description of Weaknesses
Increased costs-	May increase the costs for haulers and generators
Need for infrastructure-	Without proper infrastructure to handle the additional recycling stream the program may not be successful
Politics-	May require market intervention by City/County, possible negative political reaction by some actors
May drive out small haulers-	Depending on the hauler's ability to adapt, some haulers report that the programs may push them out of the market and favor larger haulers
Reporting-	Added burden to City staff, haulers, and generators to complete necessary reporting
Incentives-	Depending on program design there may not be incentives for the generator or haulers to increase participation above minimum requirements

Program Element	Description of Weaknesses
Enforcement (generators)-	Can build resentment and resistance to the program among generators
Enforcement (haulers, City)-	May add time and cost to enforce the program to City staff and/or haulers
May not increase participation-	Although the opportunity is offered for all businesses to divert materials, without proper planning the program may not increase participation
Not the best way to meet goals-	If the goal is increased diversion tonnage, forcing 100% participation may not be the most effective or equitable way to achieve it. Focusing on the largest generators and those that can reduce trash bills through recycling may work better and may be less expensive from a social point of view.

5.2: Best Practices

The following is a listing of the strong points and lessons learned from the various interviews.

- **Development/planning:** It is important to involve a number of relevant stakeholders in the ordinance/program development. In communities where a stakeholder committee was not used in the development, there is at best a noted resentment among haulers and generators, and at worst, the program does not work optimally. The stakeholders have the advantage of being on the ground, knowing what materials are easiest to address, and can help spread the word of the impending ordinance among the effected sectors. Suggested stakeholders include:
 - City staff
 - trash haulers
 - recycling haulers
 - trade organizations (i.e. restaurant organization, school organizations, etc)
 - property management companies
 - janitorial staff
 - others
- **Inventory:** Know what facilities are and are not available for the collection and processing of the materials that will be affected by the ordinance. If haulers are not already collecting recycling from a large proportion of the commercial sector, it may be difficult for them to start doing so with out ample lead time. Haulers reported that they often need significant time to order carts, trucks, etc. and without the proper equipment they would be unable to serve the sector. Also, be aware of processing issues, is there single stream, C&D, composting, etc. that will be able to handle the additional recycling streams. If a certain material(s) is targeted through the program it is important to ensure that there is an accessible alternative for disposal. Programs were reported to help bolster already existing markets but all of the interviewed staff, haulers, and recyclers reported that it was important that the targeted material can be readily collected and processed.
- **Space for Recycling:** A number of City/County interviews reported that space for recycling was an issue for certain businesses. This was especially true if

single stream collection is not available and multiple collection containers are necessary. Planning for this issue ahead of time, working together with generators/haulers, and adopting “space for recycling” ordinances can help alleviate the barrier. Additionally, it is important that any recycling enclosure requirement meshes with the mandatory recycling program specifications. If there is a strict recycling enclosure ordinance it could make it difficult for businesses to comply with the mandatory recycling requirements.

- **Menu of Options:** Flexibility of program design is important in the commercial sector. Unlike the residential sector that has a rather homogeneous waste stream, the commercial waste stream can vary greatly from business to business. Set a menu of possible mandatory recycled materials that the generator must choose from to help address the large variations of material generation in the commercial sector. These options can be lumped into larger groups (similar to the FL ordinance) and the generator can choose a group that they are going to recycle. The selected menu group must be the materials that are most generated at each site.
- **Rate setting versus open market:** Both types of hauler arrangements were studied and both have advantages/drawbacks. It is important to be aware of the planned arrangement and develop the program accordingly. Rate setting, franchise areas, and competition will all be important in the overall success of the program. This aspect is addressed more in section 4.3.
- **Efficiency in Design:** Targeting specific sectors or exempting small generators can allow a community to retain the bulk of the diversion impact but reduce administrative or enforcement burdens. It might not be necessary to increase participation to 100% to increase the overall diversion by a significant amount. Through targeted programs diversion and cost effectiveness can be maximized.
- **Enforcement:** Enforcement is necessary for a successful program. Most of the ordinances give a grace period prior to strict enforcement, but all report that without enforcement the programs will not be successful. Enforcement can be handled by any of a number of entities depending on the program design. In NJ municipalities the County often handles enforcement, in FL FTEs were brought on to handle the program enforcement, and in NC the State liquor control officers are soon to be tasked with the enforcement of the ordinance. Haulers can also shoulder part of the responsibility through material bans (at the curb or landfill, T/S) or through auditing and reporting. Enforcement can include simple participation in the program to mandated diversion rates. If diversion rates are used, include source reduction in the computations (for example, a business could greatly reduce its use of paper (duplex copying, etc) but not see a corresponding rise in their diversion rate).
- **Reporting:** Reporting by haulers to the City/County, the City to the County/state, or the generators to the City, County, or State, is integral to success. Reporting also ties in to enforcement. Clear and concise language included in any mandatory program may help to alleviate issues related to reporting for haulers, generators, and the City.

- **Recycling Plans:** Short, succinct, recycling plans filed by the generator with either the hauler or municipality/County is important. These plans allow for easy tracking and can help the generator plan efficient collection of materials.
- **Education/Outreach:** As with any new recycling or diversion program, education and outreach are integral. All effected stakeholders must be aware of the program including haulers, recyclers, and generators and by involving the groups early on in the process it may help spread information. A lead time of 3 to 6 months was reported to be sufficient to allow for the necessary actors to learn about the program. Signs for tenants, bilingual information, and site visits by the responsible entity were all listed as effective means of education and outreach. Another effective outreach tool uncovered in the research was multi-resource audits. By combining a waste audit with energy and water efficiency audits it may help to increase the leverage available to the City/County and reduce the costs associated with the audit.