

Zero Waste Advisory Commission

Scott Pasternak

May 5, 2017





Presentation Overview

- Introduction
- Economic Drivers
- Material Recovery Facility (MRF) Technology Impacts
- “Super Size Me” Effect
- Findings & Recommendations



Scott Pasternak Background

- ▶ Texas Solid Waste & Resource Recovery Practice Leader since the 2000s
- ▶ Serve as director of SWANA's Planning and Management Division
- ▶ Member of the Solid Waste Advisory Commission (1990s)

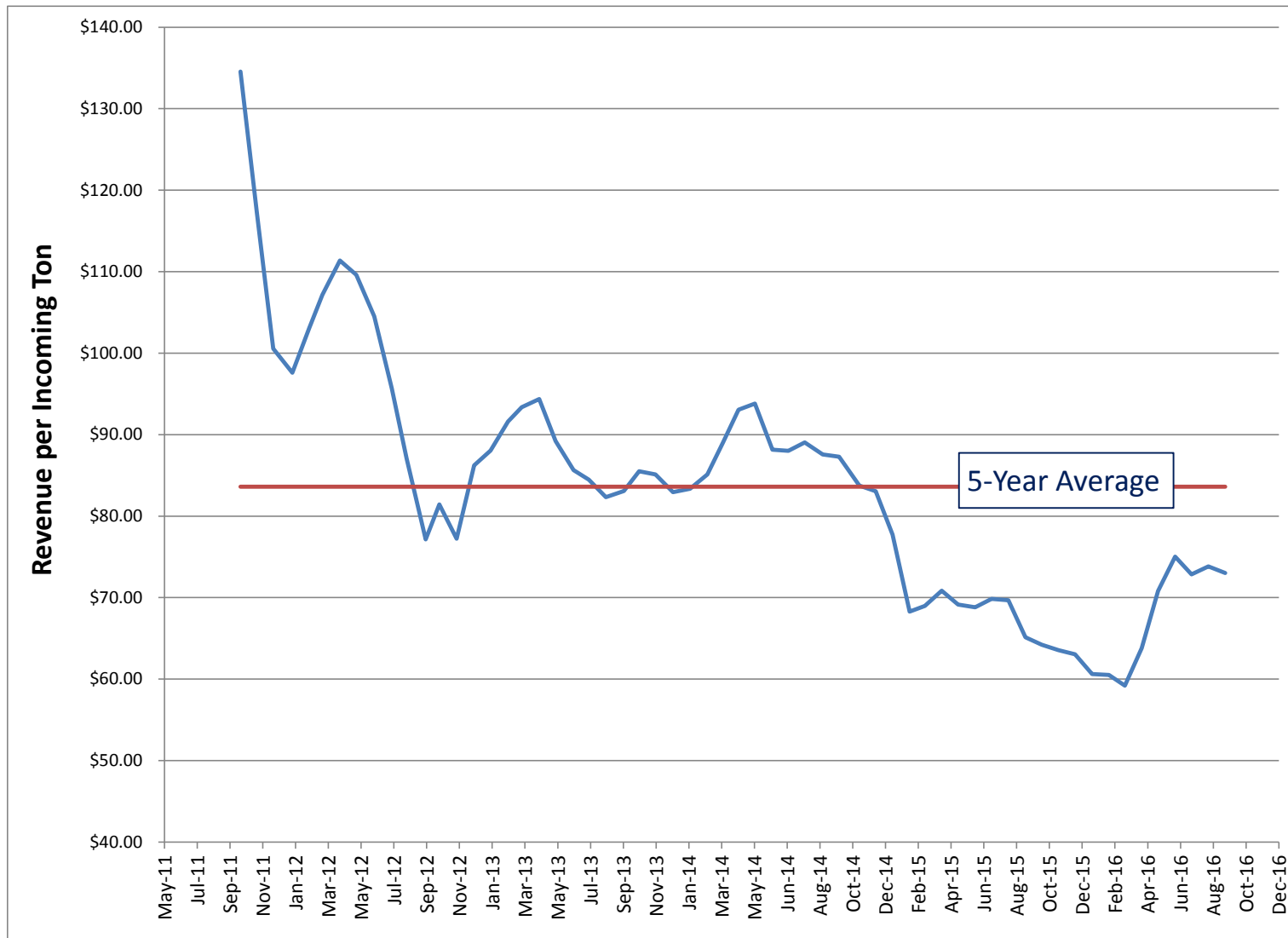


Economic Drivers

2008-2009 Market Crash: Long-term Financial Impact

- ▶ Commodity values plummeted from all time highs to historic lows in a matter of weeks
- ▶ Crisis drove recycling processors to reconsider their financial approach to allocate more risk to local governments
- ▶ Financial benefits to local governments have decreased due to lower trending commodity values and higher processing fees
- ▶ Other factors such as China, value of the US dollar, oil prices and recovering economy impact commodity prices

Commodity Values Create Economic Pressure



The Cost of Contamination

Financial terms often include a processing fee and revenue share

- ▶ **Processing fees increasing:** compensate processors for cost to provide service, current typical range of \$60–90 per ton; compared to \$30 – 40 prior to 2008
- ▶ **Revenue share increasing:** Based on market prices for recyclable materials, typical range of 40–90 percent; but values typically less than in 2008

CONTAMINATION IS EXPENSIVE

- \$ Paying \$60 – \$90 per ton to process trash
- \$ Zero revenue is generated from contamination
- \$ Costs to transport to landfill and dispose

MRF Technology Impacts





“Super-Clean” Glass

Shredded Paper Impacts



“Super Size Me” Effect

The Quest to Recover More

- ▶ Single-stream processing = game changer
- ▶ Programs focused on recovering more and more and more
- ▶ Examples
 - City and MRF contracts: continue to expand material types
 - Paper: “anything that tears”
 - Plastics: expanded from plastics 1 and 2 (soda bottles and milk jugs) to plastic bottles 3 – 7

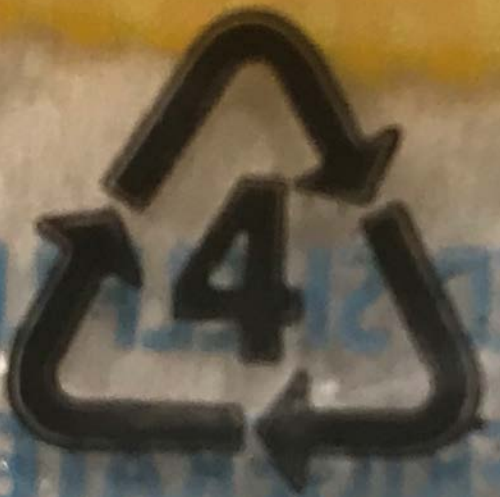
SELL BY
0418

CORN & WHEAT TORTILLAS

LOW CORN TORTILLAS. WITH A
END OF CORN & WHEAT.

FAT WITH 14 GRAMS
WHOLE GRAINS
PER SERVING*
8 COUNT

WT. 11.57 OZ (328g)



LDPE.

SELL BY
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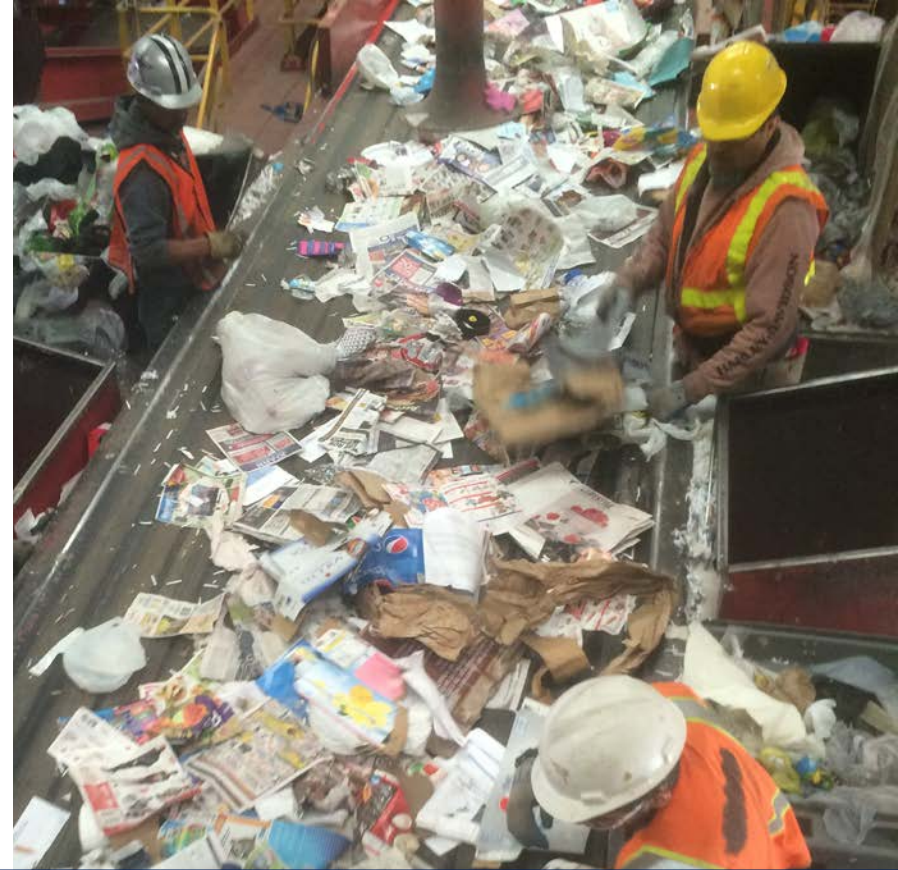
8 COUNT

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FOR EXTENDED SHIP LIFE
PLEASE REFRIGERATE







Good Move, Austin: Benefits of Removing Plastic Bags



Findings & Recommendations

Keys to Successful Multi-Family and Commercial Recycling Programs

- ▶ Public education
- ▶ Convenient access
- ▶ Performance measures
- ▶ Apartment/property manager buy-in
- ▶ Conduct waste audits and workshops for businesses to focus recycling programs (Austin did this in 2013)



Organics

- ▶ Contamination allowance much lower for organics, compared to single stream
- ▶ Decide whether to focus on pre-consumer vs. post consumer
- ▶ Some compost operators have stopped servicing customers with high contamination levels
- ▶ Use of visual aides critical



Food Waste Recycling Pilot Program

What is acceptable in the food waste recycling cart?

YES

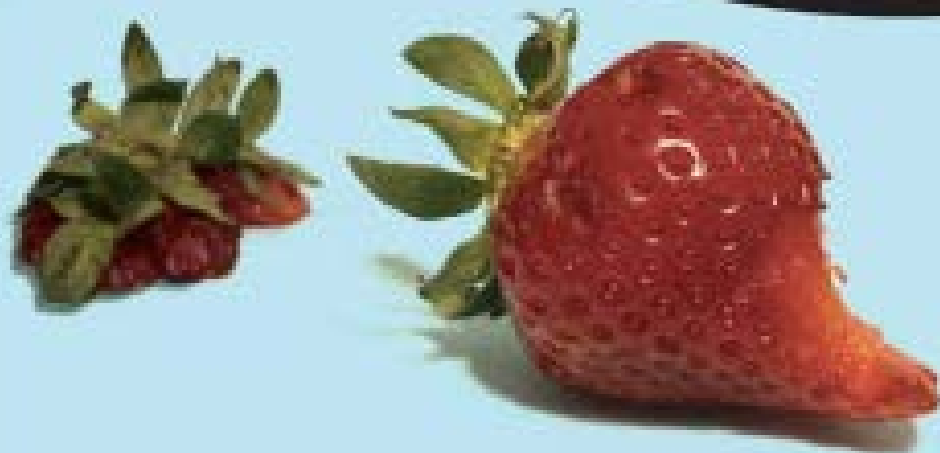
Bread, Grains, and Pasta 	Dairy and Eggshells 	Fruits, Vegetables, and Herbs 
Meat without Bones and Meat with Small Bones (i.e. chicken) 	Coffee Grounds 	Flowers and Floral Trimmings 

NO

✗ Meat with Large Bones (i.e. ribs)	✗ Aluminum Foil or Trays
✗ Liquids or Ice	✗ Cooking Oil or Grease
✗ Plastic Bags, Wrappers, or Film	✗ Paper Products
✗ Styrofoam or Other Plastics	✗ Latex / Food Prep Gloves

For additional information, please contact Nancy Herod at (940) 349-8027, or Nancy.Herod@cityofdenton.com.

**LET'S START A
NEW LIFE
TOGETHER, SWEETIE.**



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Questions?

Scott Pasternak

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512-872-7141

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Taking the next step:

by Brent Matson
and
Scott Pasternak

How multi-family efforts can give cities a boost in recycling rates

By focusing on four key elements, cities can better structure on-site multi-family recycling programs to drive diversion and increase success.

As landfill space becomes scarcer and tipping fees rise, communities coast-to-coast are aiming to increase diversion out of necessity. Simultaneously, single-family recycling diversion tonnages have plateaued in many cities. As municipal officials seek to reduce landfill disposal tonnages, multi-family recycling is increasingly being considered as an answer to the question: What more can be done to increase my city's diversion rate?

A strong multi-family recycling program can have a significant impact on reduction to landfill disposal. For example, the West Coast cities of San Jose, California and Seattle, Washington each report collecting more than 10,000 tons of recyclables annually through multi-family recycling programs.

Management consulting and engineering firm R. W. Beck (Seattle) recently benchmarked 15 large U.S. cities' multi-family recycling programs as part of a multi-family recycling study for the City of Fort Worth, Texas. The study was funded by the North Central Texas Council of Governments (Arlington). This benchmarking included the analysis of oral interviews, diversion data and public education materials. Based on the detailed benchmarking research, R. W. Beck identified four common factors for success in multi-family recycling:

- ◆ Customer education
- ◆ Convenience
- ◆ Performance measures
- ◆ Apartment manager buy-in.

Traditionally, multi-family recycling programs are organized to collect recyclables either on-site at apartment complexes or off-site at drop-off locations. However, the study found that, regardless of collection methodologies employed, these four common factors and how they are optimized contribute to the success of any multi-family recycling program.

Customer education builds the foundation

Given the transient nature of apartment residents, a strong customer education program is extremely important. If a city fails to continually inform new apartment residents and

remind old residents, then significant diversion tonnages simply will not be reached.

One important element of public education is the signage placed on recycling containers. Signage should not only be prevalent but should include pictures as well as text. The City of Portland, Oregon, for example, found a need to offer recycling instructions in picture format, in conjunction with text formats, since children are often responsible for handling family garbage and recycling.

All public education materials should be presented in all languages spoken by significant numbers of a city's residents. For example, the City of Seattle, Washington offers recycling education materials in English and Spanish, as well as a number of other languages spoken within various areas of the city.

Other keys to multi-family recycling success include:

- ◆ Providing informational packets, containing recycling instructions in both picture and text format, to new residents upon move-in
- ◆ Distributing recycling information leaflets to residents on an annual basis
- ◆ Establishing a recycling hotline that operates at least 80 hours per week.

The costs of a strong customer education program are significant – a city should expect to spend at least \$1.50 per household per year for on-going customer education and at least twice that amount in the first year of the apartment recycling program. While such expenditures can add tens of thousands of dollars to a solid waste budget, inadequate funding of multi-family recycling customer education results in programs that fail to achieve significant levels of diversion.

Convenience encourages diversion

The greater the distance residents must travel to take part in recycling, the less incentive there



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is for them to recycle. Hence, convenience is a critical driver for the success of any multi-family recycling program.

For an on-site recycling program, collection should occur in more plentiful smaller containers, such as carts, as opposed to large open-top dumpsters. The use of carts not only means more containers will be scattered throughout the complex, but that these containers can be positioned in locations convenient to residents. Dumpsters, on the other hand, may not be able to be located as conveniently. In addition, by using carts to collect recyclable containers, residents are less likely to place refuse in recyclable collection containers, since the carts look very different than refuse collecting dumpsters.

For an off-site collection program, distances to drop-off locations should be minimized for apartment residents. Cities can do so by creating new staffed or un-staffed drop-off locations near clusters of apartment complexes. Geographic Information Systems (GIS) data may be used to identify potential new locations for drop-off stations near existing apartment clusters.

Under either collection scenario, apartment residents should be given small collection containers (five to 10 gallon) to use within their own homes to collect recyclables.

Such containers give residents a convenient place to store recyclables as well as a tangible reminder to recycle.

Performance measures: The lost element

Only six of the 15 cities R. W. Beck bench-

or plateau in diversion levels can be quickly identified and addressed.

Apartment manager buy-in is key

Apartment managers who support apartment recycling act as point people for a city's multi-family recycling efforts. Therefore, obtaining their buy-in to the program is critical.

Apartment managers may be relied on by the city to distribute information packets to new residents. They may also play an important role in convincing residents of the importance and ease of recycling by showing them the location of recycling facilities and encouraging them to participate. Apartment manager buy-in is particularly important for on-site programs since recycling facilities will be set up on apartment properties.

City staff may be able to obtain voluntary apartment manager buy-in by emphasizing the key benefits they will realize as a result of recycling. If a multi-family recycling program is successful, there may be an opportunity to reduce the number of refuse collection pick-ups. For example, dumpsters that may have been pulled three times a week may only need to be pulled twice a week.

In addition, apartment managers appreciate the fact that residents' demand for apartment recycling service actually may lead them

San Jose, California and Seattle, Washington each report collecting more than 10,000 tons of recyclables annually through multi-family recycling programs.

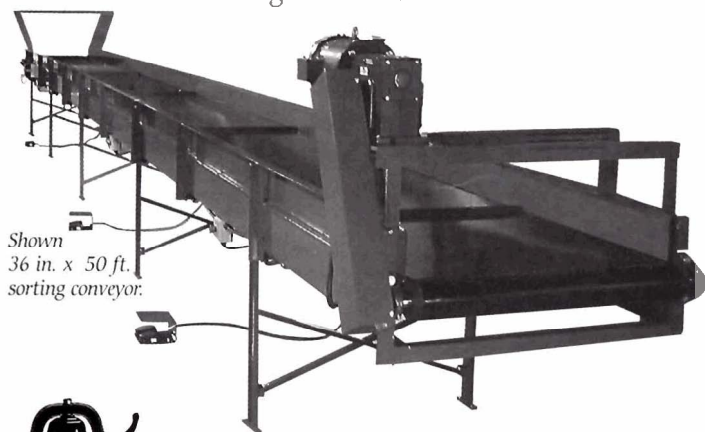
marked tracked multi-family diversion tonnages. Of these programs, nearly all reported significant levels of multi-family diversion. The strong diversion results realized by cities tracking diversion are a result of accountability.

Cities that hold themselves and their staff members accountable for multi-family recycling goals tend to have higher diversion rates than cities that do not. In addition, by regularly tracking recycling tonnages, any decrease

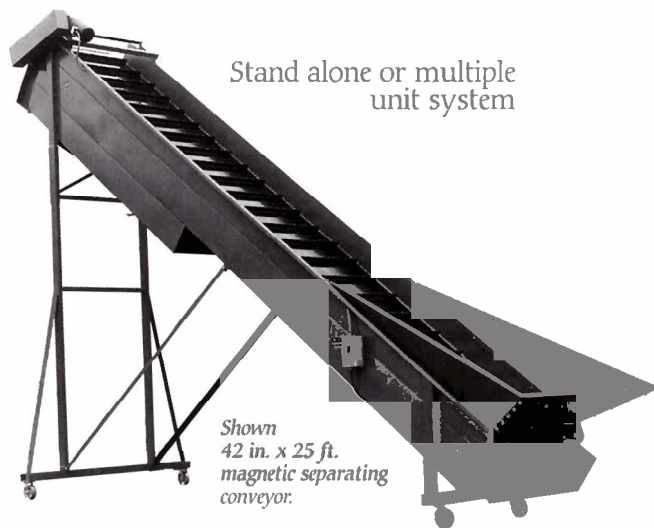
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to choose their apartment complex over that of a competitor. The study found that nearly 40 percent of apartment residents surveyed stated that having an on-site recycling program at an apartment complex would influence their decision to move to that complex.

The ideal structure for an on-site program

If a city opts to create an on-site multi-family recycling program, the structure of such a program should be carefully considered. Two critical issues of particular importance are:

- ◆ Should apartment participation be required?
- ◆ Should collection be carried out via open competition or contract?

Required apartment participation

In creating a multi-family recycling program, cities have the option of making participation in the program by apartment complex owners either voluntary or required.

Voluntary programs allow apartment complex owners to opt into a multi-family recycling program if they choose to do so. Under such a program, many apartment complex owners feel discouraged from participating for fear of incurring an additional cost that their competitors are not incurring. In addition, under a voluntary multi-family recycling program, costs per collection tend to be higher due to lower densities of recycling customers.

As a result of the challenges associated with voluntary multi-family recycling, R. W. Beck found the most successful multi-family recycling programs tend to require participation on the part of the apartment complex owners. Laws requiring that apartment owners provide on-site recycling ensure that apartment complexes compete on a level playing field, since each complex is burdened with costs associated with recycling.

An additional benefit of required participation is that it ensures adequate densities for collection exist for the collection of multi-family recyclables, thereby decreasing the average cost per recyclable collection.

Many cities require apartment participation in on-site collection programs by apartment complexes above a given size. For example, the City of Boston requires that all owners of multi-family dwellings of six units or greater provide on-site recycling.

Evaluating collection contract options

If a city has mandated on-site recyclable collection for apartment residents, it must decide how multi-family recyclable collection will be provided. A city may opt to enter into an exclusive contract or franchise for collection of all or part of the city or it may elect to allow the free market to collect apartment recyclables under open competition.

Generally, collection costs are higher under open competition than they would be under collection via an exclusive contract. However,

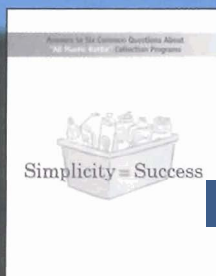
costs will vary depending on the characteristics of each city. If the city is large and has an existing competitive refuse collection system, the city may be served efficiently by open competition. In contrast, if the city is small or does not already have competitive refuse collection, the city should seek to form a collection contract with a private hauler.

Cities that opt to form a collection contract will incur additional costs related to the administration of a collection contract. However, many cities can expect that this additional administrative cost will be more than offset by a reduction in collection costs due to the economies of scale that result from an exclusive contract.

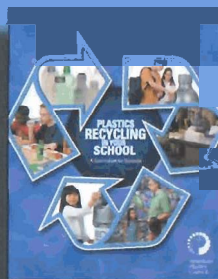
One additional benefit a city may realize by opting for an exclusive recyclable collection contract is that multi-family recyclable collection could be coordinated with single-family recyclable collection, potentially reducing total collection costs further.

Multi-family recycling offers an opportunity to significantly increase a community's diversion rate. This increase will not occur without a keen understanding of the drivers of multi-family success. Any municipal official who accounts for these drivers when designing his or her city's multi-family recycling program provides the greatest chance of attaining high multi-family diversion rates. **RR**

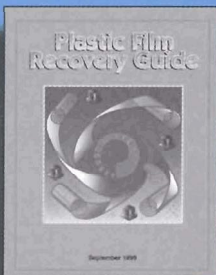
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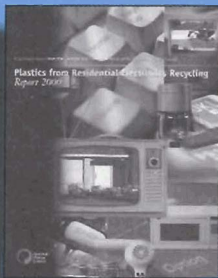
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