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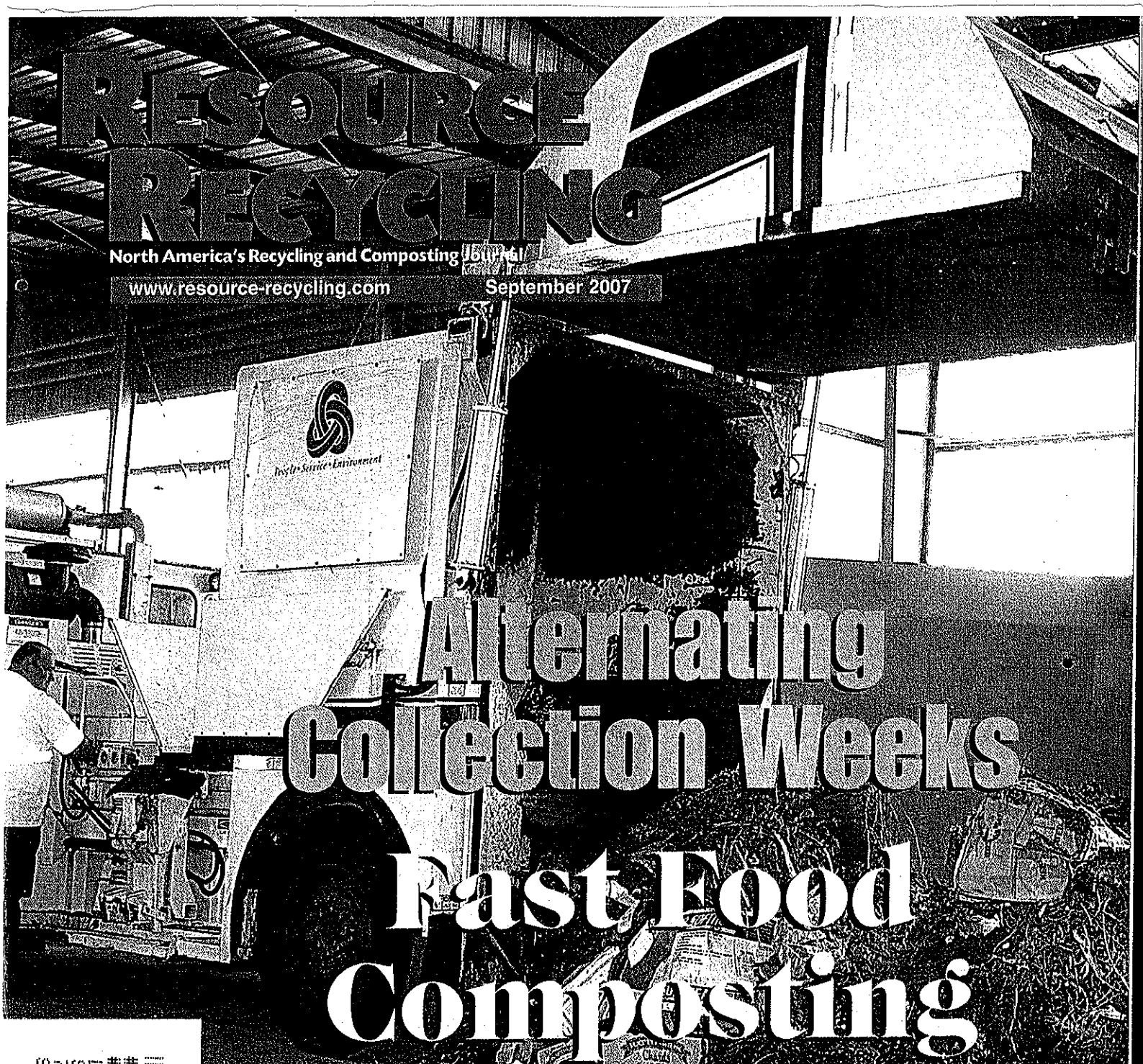

Alternating Collection Weeks

Fast Food Composting

Waste Reduction Practices

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Alternating weeks: Options and opportunities for garbage and recycling

Can every-other-week collection provide greater efficiencies and incentives for the future?

by Lisa A. Skumatz, Ph.D. and Juri Freeman

Skumatz Economic Research Associates (Superior, Colorado) recently conducted a detailed review of the advantages, disadvantages and real-world experience with every-other-week (EOW) collection of garbage and recycling. This waste management scheme may aid communities in considering modifications to encourage recycling and diversion, reduce costs and improve efficiencies.

To identify communities using this option, SERA reviewed its in-house database of more than 1,300 communities in the U.S. and Canada and conducted follow-up interviews. Although EOW recycling collection schemes are not uncommon, such programs may be growing, due to the expanding adoption of single-stream recycling and recycling programs that alternate with yard debris. However, EOW garbage collection is uncommon, and only a handful of communities were found to be currently using these systems.

Analysis of EOW recycling collection

SERA conducted detailed statistical analyses using data from more than 700 communities across the U.S. and Canada to identify the effects of EOW collection, as well as other aspects of recycling program design differences on the community's residential recycling diversion, in percentage terms. Most communities in the sample experienced recycling rates on the order of between seven-percent and 22-percent diversion.

To assess the recycling impacts specifically due to the difference between weekly versus alternate-week recycling, SERA used a statistical approach to control the other differences between communities and their programs that could otherwise confound the attributable results. Specifically, the assessment controlled a wide array of demographic differences and variations in recycling program design – features that affect recycling performance. If these factors are not held constant statistically, apparent differences between the two groups of communities – those with weekly collection and those with EOW collection – might be assumed to be due to the collection frequency. However, EOW collection may be more common in higher-income communities or communities with larger bins, or programs that collect more materials. These other factors may also be contributing to the apparent performance differences, and the approach enabled the separate isolation and examination of the effects of EOW collection.

Several SERA studies isolated the effects of EOW collection on diversion and program costs. The results show that:

- Programs with weekly collection of recyclables led to two-(and perhaps up to four) percentage points more recycling diversion (about 10 percent to 25 percent or more recycling) than communities with less frequent (largely EOW) collection.
- The costs for the weekly recycling collection programs were about 30-percent to 40-percent higher than programs that collected recycling every other week.

SERA's analysis showed that less frequent collection of recycling provided savings on the order of 20 percent to 50 percent – hovering around 30 percent to 40 percent. This reflects a combined effect of half the frequency, which would imply 50-percent savings, rolled back by higher volumes during each collection and the fixed costs associated with billing and other factors. The estimated cost savings made EOW recycling collection relatively attractive, although some communities were concerned that it was confusing for residents, while others were concerned about the loss of recycled material.

Three changes have spurred a resurgence of interest in EOW recycling collection:

- Fully-automated recycling collection using large containers
- Single-stream recycling
- Wet/dry collection.

The combination of automated, containerized, single-stream collection has led to considerable collection savings without a concomitant loss of recycled material. SERA studies show

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that the increase in tonnage from going to a single-stream collection (about one to 3.5 percentage points) nearly balances the decrease in recycling from the change to EOW recycling (two to four percentage points).

In addition, single-stream collection is less costly than dual-stream programs – on the order of 15 percent or more savings in program costs. These combined program savings (EOW and single stream) have allowed some communities to implement curbside yard debris collection on alternate weeks, at very little increase in total cost over the old weekly system – but very significant increases in total diversion. Those that already have yard debris collection will see significant program cost savings from this change.

Some Canadian communities have adopted a different approach that also results in EOW recycling collection – weekly collection of green waste with additional collection of recycling one week and trash the next. Diversion levels from all of these options are impressive, and are becoming compelling to communities with access to single-stream processing facilities.

Analysis of EOW trash collection

EOW trash collection is quite uncommon in North America, but may increase as communities consider options for smaller garbage service under PAYT and automated collection methods – and/or adopt wet/dry systems. The EOW programs that have been instituted have been able to address the practical difficulties in obtaining smaller trash containers, particularly ones suitable for fully-automated collection.

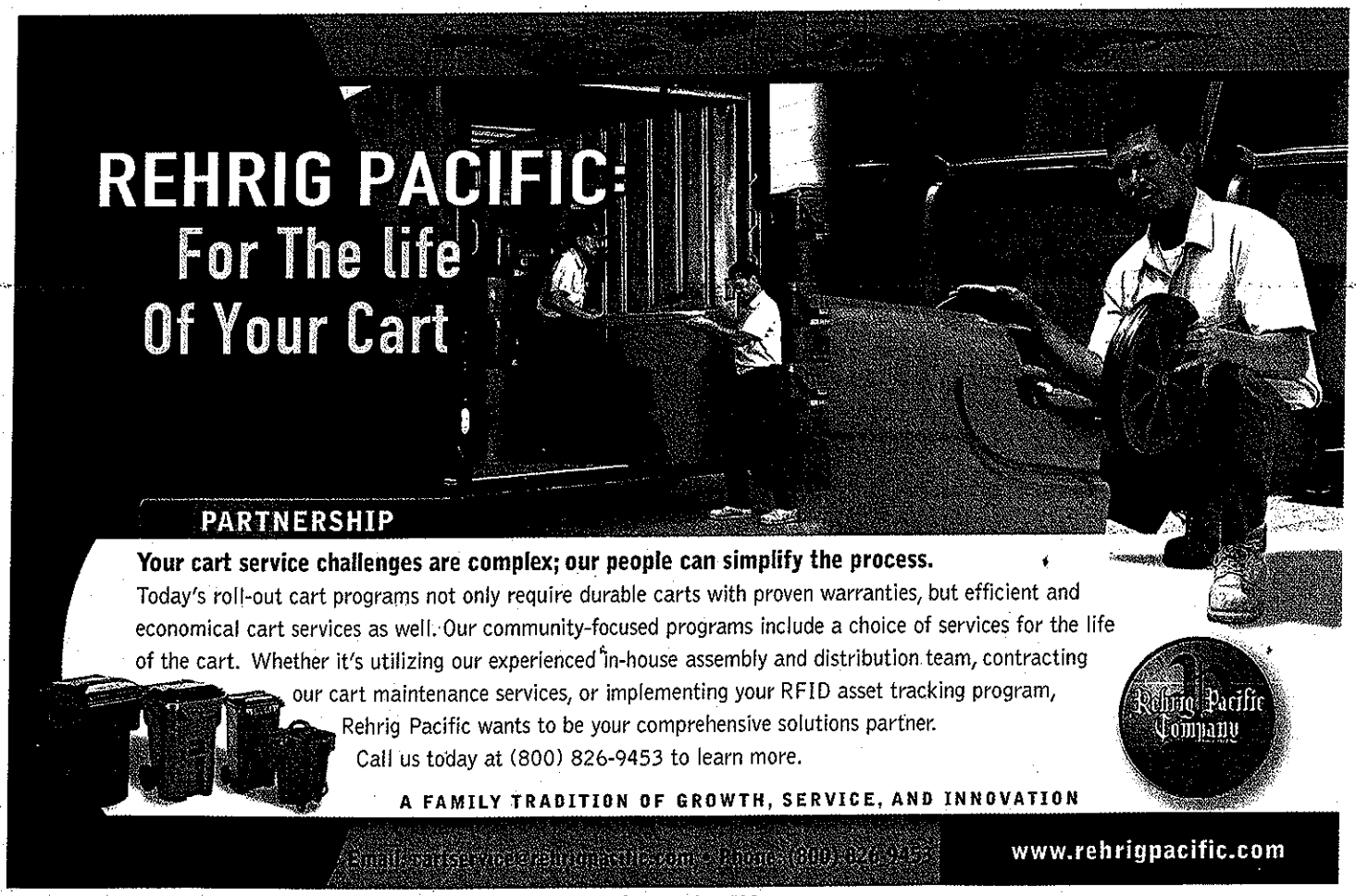
Small trash containers (dubbed mini-cans) can be relatively expensive, costing as much as $35 to $55 ($US) each – not much less than larger containers. SERA analysis shows inserts (or obstructions) have been attempted to reduce volumes in larger containers that better fit fully-automated gripping arms and do not tip as easily; however, they are expensive and labor intensive, and have a limited lifespan.

The EOW service provides a practical way to provide cheaper service and smaller containers that encourage recycling. Most communities using this system have PAYT or user-pay rate systems that charge households lower fees for smaller volumes of trash collected.

EOW collection allows use of standard-sized containers to achieve smaller service levels. This scheme reduces tipped or blown-away containers, provides containers that easily fit the gripper arms and reduces the inventory of different sizes of cans needed to deliver more service levels, providing savings in container inventory/ storage and delivery/redelivery with service level changes. Additionally, mini-cans can be problematic for manual collection, forcing collectors to bend down for collection and causing related health issues.

> Those communities that modify their systems to collect trash every other week as the norm may see fairly dramatic increases in recycling diversion rates.

In these PAYT cases, most households continue with weekly collection. The EOW collection is not provided for all customers, just for those needing a smaller service level – one that is better served by less frequent collection of a larger can than by weekly collection in a difficult-to-collect small container. In communities offering EOW trash collection as an option, the service has been selected by four percent to 50 percent of households – most were between four percent and 12 percent. The EOW cans are denoted by decals or paint, and are collected on standard routes, just on alternating week collec-



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tions. However, EOW trash collection for all households is the norm in some Canadian communities that are moving toward systems that assign green waste as the weekly item collected, with trash or recycling service provided on the alternate weeks.

These Canadian communities have paired EOW systems with single-stream recycling and aggressive education, and are reporting strong diversion rates of more than 50-percent in some limited cases. However, these high rates are not due solely to the alternate-week garbage collection, but the combined effects of the weekly green waste, alternate-week garbage and single-stream recycling, and aggressive outreach programs. The systems are particularly popular with the elderly (who appreciate the chance to save money) and avid recyclers (who do not need the extra service volume).

Many of the communities that have instituted EOW collection report increases in recycling diversion or recycling participation. Quantitative data are sparse because EOW trash collection in North America is uncommon, but studies by SERA holding demographics and other factors constant indicate higher recycling associated with less frequent trash collection (perhaps three- to five-percentage-points more recycling, or about a 15-percent increase) and very significant savings (perhaps 30-percent to 40-percent savings) in program costs.

A similar tonnage-side analysis conducted for the City of Vancouver, Washington by Sound Resource Management Group (Olympia, Washington) found nearly identical results for increases in recycling (2.7 percentage points to 4.3 percentage points, or a nine-percent to 13-percent increase in recycled tons) with reductions of collection frequency of 20-gallon and 32-gallon containers from once weekly to every other week. These results indicate EOW trash collection may be a very cost-effective approach to increasing recycling, depending on recycling system costs.

The communities implementing such systems report that the programs are running well; however, a few communities reported some start-up difficulties. One identified a small problem with bookkeeping or customers "...forgetting which week they are on." Others said households got easy reminders by looking at neighbor set-outs. Another said it cost some man-hours to switch over as they sent staff to manually stencil carts with white paint. One Canadian community also reported some difficulties with their green waste system – but not the trash portion. The green waste containers (collected weekly) have been attracting skunks and raccoons, and customers have either been using bungee cords to keep them shut, or they wait until the morning to set out the containers.

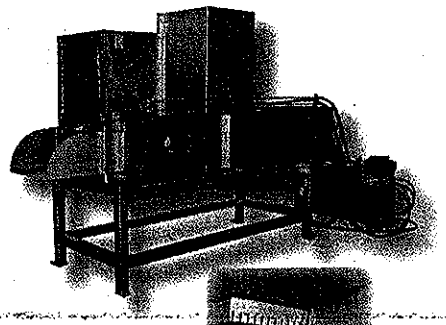
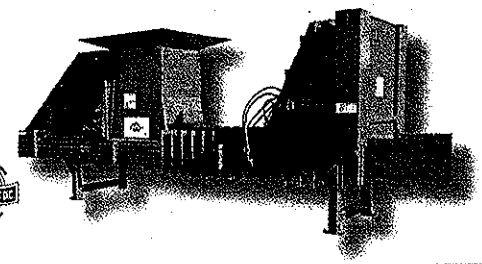
Every-other-week recycling collection

Unlike EOW trash collection, EOW recycling collection is relatively common in North America. Quantitative research by SERA indicates the EOW programs tend to collect two- to four-percentage-points less material than weekly collection though. However, EOW collection of recyclables reduces the cost of the program by about 30 percent to 40 percent – a very significant savings.

One U.S. trend experiencing greater acceptance is the combination of EOW recycling collection with fully-automated (using larger, automated containers) single-stream recycling. Single-stream's convenience and larger containers tend to increase recycling to the degree that it makes up for, or exceeds, the decrease in recycling diversion realized under EOW collection. These programs also lead to additional and considerable cost savings. Some communities adopting EOW single-stream recycling are replacing one of the weekly recycling collections with alternate-week green waste collection, and finding little increase in costs – but dramatic increases in diversion. However, single-stream processing and the ability to realize the efficiencies of fully-automated curbside collection must be available.

Every other week collection – of recyclables and trash – provides a cost-effective and flexible system for:

- Increasing diversion
- Decreasing costs
- Offering practical alternatives for smaller PAYT service levels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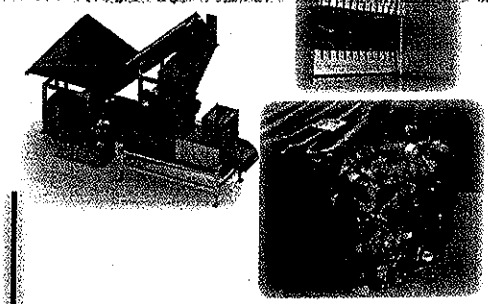
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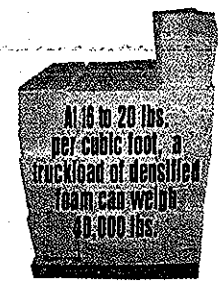
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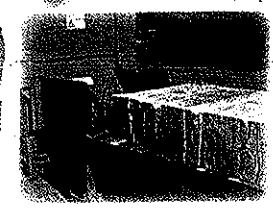
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- Support of wet/dry collection systems.

EOW collection helps move toward much more efficient and cost-effective collection, with savings in trucks and emissions.

Fears that EOW service will lead to odor and health problems seem to be a greater fear than reality; none of the cities indicated significant problems with this issue. However, it should be noted that most of the communities with these systems were located in northern parts of the country, not in southern areas, where odor issues may be a greater consideration.

Every-other-week trash collection

Every-other-week trash collection is uncommon in North America – available in well less than one percent of communities. However, this total may be expected to increase over the next decade, with the expansion of automated collection and the incompatibility of its grippers with small containers. EOW collection of a standard container can be an effective substitution for a small container collected weekly (and of course, even less frequent collection may be an effective substitute for PAYT micro can service).

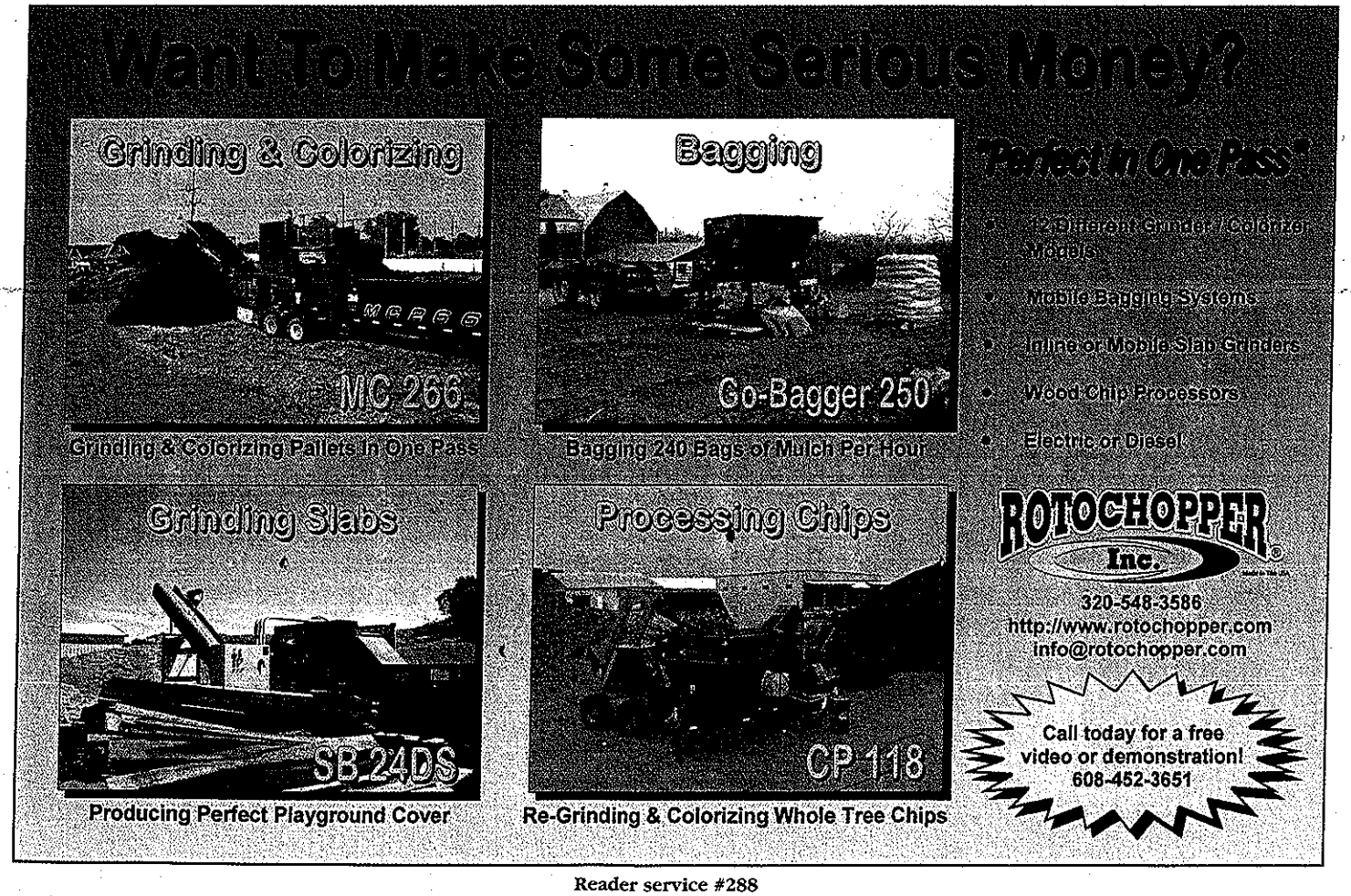
EOW trash collections provide recycling incentives through smaller trash volumes, particularly as a part of pay-as-you-throw options (PAYT), or when used in conjunction with wet/dry systems (in Canada and elsewhere). PAYT provides excellent reduction incentives, with lower rates for smaller volumes. However, mini-cans can be problematic physically for automated or semi-automated trucks (and workers for manual collection), as they blow away, tip over or are too small for grippers. Collecting a 32-gallon container every other week allows for 16-gallon service without smaller, tippy containers, or adding yet another size to PAYT container inventories (and associated delivery/redelivery costs).

Quantitative research indicates that decreasing the frequency of trash collection – particularly to EOW – leads to higher recycling and decreased costs. The quantitative studies that have been conducted indicate recycling increases of about three- to five-percentage points more recycling — about a nine-percent to 15-percent increase, and very significant savings – perhaps 35-percent to 40-percent savings in collection costs. These results indicate dramatic potential for more cost-effective trash and recycling systems. This also could indicate a very cost-effective approach to increasing recycling, depending on recycling system costs.

The analyses indicate that EOW collections – recycling and/or trash – may provide advantages to communities as they work to increase diversion and manage costs. EOW trash can help solve the small container barrier associated with PAYT and efficient automated collection systems – and research shows less frequent trash collection increases recycling and significantly decreases collection costs. EOW trash may be instituted for all garbage (e.g., with the wet/dry programs), or may provide an option just for those households previously limited by the smallest can size. EOW recycling programs alone decrease recycling tonnages collected, but combining such programs with single-stream programs (and large containers) makes up for most, if not all, of those lost tons.

Most importantly, EOW recycling collection (and single stream on top of it) decreases collection costs quite dramatically. Communities have used these savings to add new materials – such as commingled yard debris using automated trucks – at very little total cost change. SERA's research finds strong performance among communities going from weekly to EOW recycling, and adding EOW yard debris collection. This system adds no new collections, so overall program costs tend to stay nearly the same as recycling alone, while delivering a "big bang" of yard debris diversion – works especially well if PAYT (with EOW collection of the smallest garbage container) is a part of the program.

Innovation and re-thinking collection systems can help keep diversion programs as cost-effective and sustainable as possible. EOW elements can be a part of the innovation process for communities. **RR**



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