



Finding a Better Way to Recycle...

Saint Paul's Recycling Collection Study

Major Changes Recommended for Curbside Recycling in 2004

Saint Paul residents recycle 45 percent of the waste they generate. While this is much higher than the national rate of 28 percent, the state predicts the amount we throw away will triple in two decades. Waste will increase even if we continue to recycle at our current rate. Clearly, waste reduction efforts and curbside recycling must dramatically improve if we are going to stop creating so much garbage.

In order to do more than just keep up with the growing waste stream, Eureka Recycling has explored ways to offer residents a recycling program that is more cost effective, more convenient and provides an opportunity to recycle more material. Eureka Recycling, in partnership with the city of Saint Paul and the Minnesota Office of Environmental Assistance (MOEA), conducted a study of five different ways to pick up recycling at the curb. Eureka Recycling's study took place over the past 14 months. In four neighborhoods, residents tested new ways to collect, sort, and set out their recyclable materials. A fifth neighborhood, which continued recycling with the current recycling method, served as a control group.

Based on the results of this study, Eureka Recycling is recommending to the city of Saint Paul three changes to improve the recycling program. The city must approve these changes and determine the time frame in which they will happen. Since the time frame is structured by current agreements with our subcontractors, you won't see any changes to the program right away. If these recommendations are approved, you can start to look for changes to your recycling program starting January 2004.

1. Materials should be sorted into a "two-stream" collection system. In other words, materials would be sorted into two categories. One would be all types of paper and the other would be containers such bottles, jars and cans. Each "stream" would get its

own blue recycling bin.

2. Plastic bottles, #1 and #2 bottles with necks, should be picked up in the curbside collection program.
3. A change in the frequency of collection should be made. Weekly collection using 18-gallon blue bins would provide a convenient sort for residents and a dramatic increase in materials recycled at an affordable cost.

Eureka Recycling is also recommending more study and testing of kitchen organic material pickup with curbside recycling. Preliminary results indicate this service could significantly reduce the amount of material in our trash. However, other issues, such as how residents might view the change and transportation costs, need further study.



This stop recycling sign appeared on the cover of brochures sent to study participants and alerted them to a change in their recycling.

Assessing the Results

The results from data collected over the four-month study has been evaluated to assess the environmental impacts, cost and convenience of each method. Our recommendation is made using the following three indicators:



Environmental Impacts

We considered which collection method would allow residents to recycle the most materials while having the least amount of contaminated or damaged materials that have to be thrown out.



Convenience

We considered why people recycle, what people want to recycle and what would make them recycle more.



Cost

We considered how much the different methods cost and how the cost of each affected the residents preferred choices.

When residents were asked to rank the importance of these three factors, they overwhelmingly ranked environmental benefits as the most important factor, followed by convenience. Cost, although important, was ranked last. Residents in Saint Paul are already big recyclers and they are willing to do even more. By carefully phasing in important changes in what and how we recycle, we can control costs, improve convenience and create a better community.

About Eureka Recycling

With a distinct focus, a skilled staff and board, and a fifteen-year legacy of award-winning recycling services in Saint Paul, Eureka Recycling is uniquely positioned to elevate waste reduction and recycling. In November 2001, the Saint Paul Neighborhood Energy Consortium (NEC) created Eureka Recycling to provide a separate, independent entity to bring recycling and waste reduction services to a larger and more diverse customer base and to manage Saint Paul's recycling program. To accomplish this, Eureka Recycling practices a model of resource management rather than waste man-

agement. This model assumes waste is preventable, not inevitable. By balancing full costs, personal convenience and environmental benefits, Eureka Recycling demonstrates the qualities and advantages of resource management by creating the best practices of recycling and working to put them into place.

Eureka Recycling's mission is the following:

Reduce waste today through innovative resource management. Reach a waste-free tomorrow by demonstrating that waste is preventable not inevitable.



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Learn more about Saint Paul's recycling collection study on our new website, www.eurekarecycling.org





Finding a Better Way to Recycle...

Five scenarios for five neighborhoods

The five tested scenarios can be categorized by the way materials were sorted at the curb. There are three primary ways that recyclable materials are sorted and collected at the curb: source-separated, two-stream and single-stream. We tested each of them.



We collected data from an East Side neighborhood participating in Saint Paul's regular **source-separated** collection system. Source-separation means that

residents sort the materials at the curb into separate categories. It is more work for residents, but yields high quality materials that don't need to be sorted at a recycling facility.

Another way to collect materials is in two categories or streams: papers (including newspaper, cardboard and mail) and containers (a mix of cans, glass and plastic bottles). This two-stream collection method means less sorting for residents, but requires a recycling facility where the materials are separated by machines and people. Three of the study recycling scenarios tested a **two-stream** collection system.



In one Como neighborhood, residents used their regular blue bins to sort recyclables.



Another Como neighborhood sorted the same way, but used 32-gallon rolling carts to collect and set out their materials.



The third neighborhood, located in Highland Park, used blue bins for their recyclables, but also tested the collection of household organics

(including food scraps and non-recyclable papers like pizza boxes and paper plates) in a rolling cart. In this neighborhood, recycling and household organics were collected every week.



The final recycling scenario, in the Midway, tested a **single-stream** collection system using large 60-gallon rolling carts to collect recyclables.

Single stream collection means residents mix all of their materials together—cans, glass, plastic bottles and papers—and all of the separation takes place at a recycling facility. This type of collection is very easy for residents, but the quality of collected materials suffers and more of the collected materials must be thrown away.

How we conducted the study

Each household selected to test a new recycling method received a brochure describing the temporary method and the pickup dates. The neighborhood serving as a control group received a brochure asking them to continue recycling and described the current program and pickup dates. To make sure residents understood what they were asked to do, our staff went door-to-door in all five neighborhoods and spoke to the residents in person. After this, appropriate recycling containers were delivered to every home and recycling started. At the end of the tests, residents went back to the regular recycling program and were asked to fill out a survey about their experiences with and opinions about the different methods.

For four months, we collected data from approximately 2000 households describing how much was recycled, what was recycled and how often individual households set out their recycling. To bridge gaps in information we researched similar programs around the country. We also compiled residents' responses on the surveys they returned. Thanks to the great effort of the study participants, we received 1016 responses from the 1848 surveys sent, or a 55 percent response rate.

What We Discovered in the Study

From the two types of results we received—data showing what residents did at the curb and data tracking what residents thought about the tests—we found the path Saint Paul should take to recycle more while providing a cost-effective and convenient program.

In some ways the results of the study are not surprising. More than anything, residents want to recycle plastic bottles at the curb and are willing to pay for this service. What was interesting was what residents actually did in their homes and at the curb. For example, when residents were offered the opportunity to recycle plastic bottles at the curb, what influenced how much plastic and other materials they recycled was more storage capacity. We discovered real potential to add kitchen organic material to curbside service. Also, when asked why they recycle, Saint Paul residents believe the environmental benefit is the most important reason to recycle.

Residents tested potential options

The goal of the tests was to find ways to increase the amount of materials residents put at the curb and to find which collection method assures minimal contamination and damage of the materials so that valuable resources don't need to be thrown away. In order to determine the best method, we tried systems other cities currently use along with some newer methods. Eureka Recycling did the following:

- carried out an educational and promotional campaign in all five neighborhoods
- used different types of recycling containers (carts or bins) in several neighborhoods
- collected materials weekly in one neighborhood
- evaluated how the different methods affected what was rejected at the recycling center due to contamination and damage
- picked up all kitchen organic materials for composting in one neighborhood
- added #1 and #2 plastic bottles in all but one neighborhood

Educational and Promotional Campaign.

Eureka staff conducted an aggressive educational and promotional campaign in each neighborhood in the study. The campaign consisted of several types of education and promotion. It included mailing an introductory letter and brochure detailing the new sorting method and recycling schedule, a visit from a staff member to 73 percent of the households, delivery of new recycling containers and a postcard reminding residents of the date the study was starting and ending. Other pieces of information residents received were leaflets reminding them of holiday pickup schedules and how to correctly recycle plastics and kitchen organics at the curb.

Our survey of all residents shows that they liked all of the ways they were educated about the study, but preferred the information that was sent in the mail more than the information delivered to the door or door-to-door discussions with Eureka staff. The least preferred method of receiving information was the recycling hotline.

Our study showed that additional education and promotion—with no other program changes—yielded a 6 percent increase in all recyclables collected. From studying all five neighborhoods, we also concluded that 7 percent more residents recycled during the study than at other times.

Type of recycling container. In different neighborhoods, different types of recycling containers were tested, including the regular 18-gallon blue bins, 35-gallon wheeled carts and 60-gallon wheeled carts. Ninety-three percent of the residents either loved (29 percent), liked (41 percent) or thought the blue bins were OK (23 percent). However, over 80 percent of the residents that tested the carts said they liked them and were willing to pay for them. Because residents liked both the



Our staff talked to residents participating in the study.



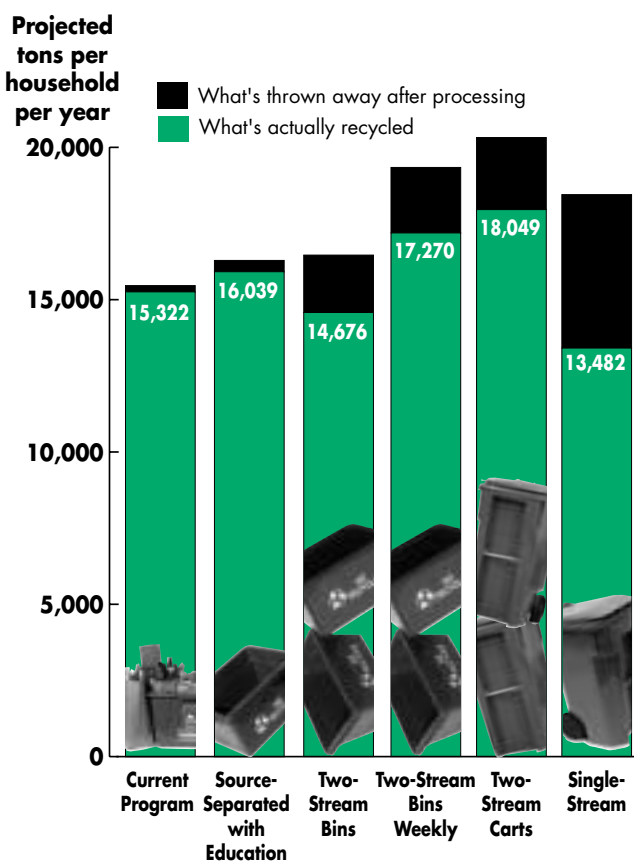
Saint Paul's Recycling Collection Study

bins and carts, we were not able to determine if residents preferred the bins over the carts.

We learned that significant increases in recycling were not necessarily related to the type of recycling container the resident used, but instead to the overall storage capacity provided. We knew that picking up plastic bottles would take up a lot of space. The study showed that if provided with large carts, residents recycled more. But not necessarily more than those residents provided with two blue bins and weekly pickup, which is twice as much space as the current every-other-week pickup.

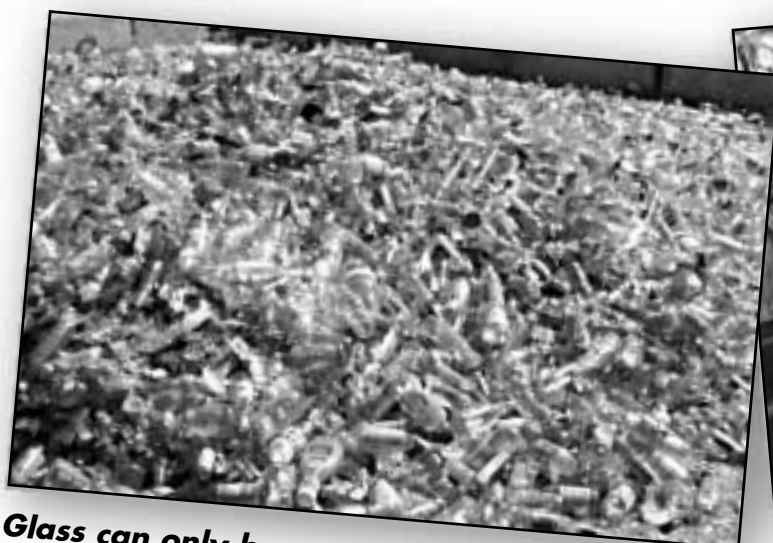
Weekly Recycling Pickup. In one neighborhood we tested weekly pickup of recycling in two blue bins, one for all of the recyclable papers and another for plastic bottles, glass and aluminum and steel cans. 68 percent of the residents who tested weekly pickup felt that it was just the right amount of service. 61 percent were willing to pay for weekly service.

What Really Gets Recycled



More material is collected with these different recycling methods. However, some of the material doesn't really get recycled because it is broken or damaged in the process. Note: Residuals include mixed glass not recycled.

How much residents sort materials at the curb affects how much of the materials set out by residents actually gets recycled. Materials so damaged or contaminated that they can't be sorted are called residuals. Since they can't be recycled, residuals must be thrown away. The less sorting residents did the more recyclable materials were damaged in the processing. Since processing is mechanically aggressive, the majority of the glass in a single-stream method is either disposed of or used as a landfill cover.



Glass can only be recycled if it is first sorted by color.

Surveys showed residents overwhelmingly want the glass bottles and jars they set at the curb recycled back into bottles and jars, not thrown away. When asked, less than one percent of residents were willing to accept using glass collected for recycling as a landfill cover, a practice referred to as "recycling" by some garbage companies.

Kitchen Organic Material.

Approximately 25 percent of what Saint Paul residents throw away could be separated for composting. In one neighborhood, we tested the collection of kitchen organic material for composting. This material included food waste, such as vegetable and meat scraps, and nonrecyclable papers, such as freezer boxes and pizza boxes.

Seventy-five percent of residents to whom we offered this service agreed to participate. Of those residents who returned their surveys, 75 percent said that this service was very valuable and 52 percent said that they would pay for this service. While 46 percent of residents that tested this method noted that they preferred composting at the curb because they had less trash, some felt that backyard composting or sink disposal was preferable. Only 13 percent said they preferred to throw organics in the trash.

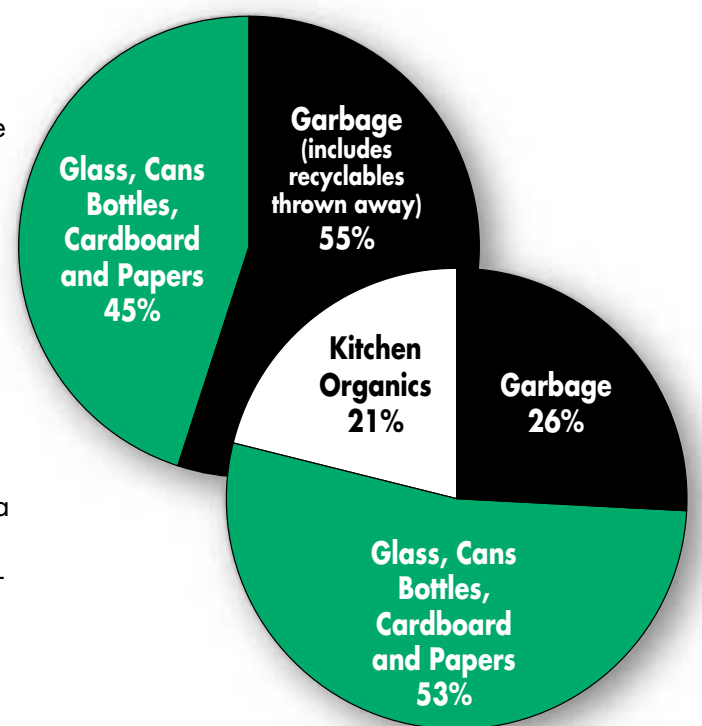
For four weeks, we weighed the recyclable materials, compostable materials and trash of a sub-group of these residents. We found that by collecting kitchen organic material for composting we were able to capture an additional 21 percent of the waste stream. That left only 26 percent of the waste stream as garbage.

Our study concludes that, by collecting organics citywide at a rate of 254 lbs. per household per year, Saint Paul residents would increase useful materials recovered from the trash by 10,160 tons per year. This is half of what is currently being recycled in the city.

Number 1 and 2 Plastic Bottles. In four of the five neighborhoods we picked up #1 and #2 plastic bottles. In these areas, seventy-eight percent of residents indicated that they were willing to pay for recycling plastic bottles at the curb, more than any other new service element. In the neighborhood using carts with the two-



Organic material, such as egg cartons and vegetables, can be composted instead of being thrown in the trash.



By composting kitchen organic material, households could reduce the amount of trash they throw away.

stream method, the greatest amount of plastic bottles were set out at the curb. If the whole city recycled that many plastic bottles, we would save 714 tons of plastic from the landfill or incinerator. In the neighborhood testing weekly collection with bins, we recycled 542 tons of plastic bottles, a 255 percent increase over the current drop-off service.



When glass is mixed and broken it can not be recycled back into bottles and jars.



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The Cost of Recycling

Just like any other service, recycling costs money. Saint Paul's recycling program is funded from two different sources of revenue, an annual city recycling fee and SCORE funds, which come from a statewide tax on garbage disposal.

The city of Saint Paul contracts with Eureka Recycling, a nonprofit corporation, to manage its recycling program and to provide educational and waste reduction programs. Because the city pays a set price per ton for what residents set out at the curb, there is an incentive for Eureka Recycling to have the best recycling programs and services possible. This contract makes good business sense because the city pays for what it gets, and not any more. However, this also means that if Saint Paul residents recycle more material and/or set out new types of materials, the recycling program costs more.

Saint Paul is unique in having this agreement. In the metro area, most cities pay their recycling companies a per household payment, not a per ton payment. This means that the recycling company is paid whether or not recycling is put out by residents and whether or not it is picked up by the hauler on any given day. On average these cities pay their recycling companies around \$25 per household per year, which does not include educational and promotional materials or any other waste-reduction programs. These additional costs are paid from other city funds.

What Saint Paul Residents Pay for Recycling.

The annual recycling fee for single-family households in Saint Paul is \$22, or \$1.84 per month. Owners of apartment buildings with more than three units pay \$14 per unit annually, or \$1.17 per unit per month. Compared to what residents of other cities pay, this recycling fee, which in Saint Paul includes educational materials, the recycling hotline and other waste reduction programs, seems like a bargain. It is far less than the average home pays for coffee! In addition, since the city contracts with Eureka Recycling, a nonprofit, any "profits" left after providing these services do not go to stockholders. Eureka Recycling invests all of the "profits" from recycling back into the community through additional programs, services and direct funding to the NEC.

Cost Estimates for Implementing the Study.

Eureka Recycling expects to pick up more tons of recyclable materials if the program is improved or new materials are added for curbside pickup. We estimate that if the city implements the recommended changes—the two-stream method with bins and weekly pickup—residents would recycle 26 percent more, or as much as 3061 tons. If residents recycled more, the city's revenue for this material would also increase. However, since the market for these materials changes constantly, it is hard to predict how much more. We estimate residents could pay \$24 to \$26 annually, or \$2 to \$4 more per year.

Thanks for helping fund this study

The Minnesota Office of Environmental Assistance (MOEA) granted Eureka Recycling \$170,000 to do this study. The MOEA offers grants to encourage waste reduction. (The money for the grants comes from a tax collected on trash delivered to waste disposal facilities in Minnesota.) The grant we received requires a one-to-one match for a total estimated project cost of approximately \$340,000. The Saint Paul Neighborhood Energy Consortium and

Eureka Recycling provided approximately \$112,500 in recycling education and collection costs. Eureka Recycling provided approximately \$35,000 in staff time and used the grant for consultants, supplies, labor, education and other project costs. The city of Saint Paul provided \$12,800 for educational materials. Waste Management, Inc. and NRG Processing Solutions, Inc. provided approximately \$13,000 in staff time and processing costs.

Learn more about Saint Paul's recycling collection study on our new website, www.eurekarecycling.org

Curbside Collection of Plastic Bottles Likely in 2004

Eureka Recycling is reconsidering its strategy on recycling plastic bottles. In the past, Eureka Recycling and its predecessor, the NEC, opted not to collect plastic because of the increased cost to collect and process the material, the poor and volatile markets for it and the concern that collecting it legitimized the proliferation of single-use plastics. However, some of those circumstances have changed.

In the past ten years we've seen that keeping plastic bottles out of curbside recycling programs has not diminished the use of plastics, which is increasing in almost all sectors of the economy. Its most rapidly growing use is for plastic packaging. It is virtually impossible to find many grocery products in anything but plastic. Analysts predict steady increases in the sales of most packaging plastics, particularly #1 and #2 bottles.

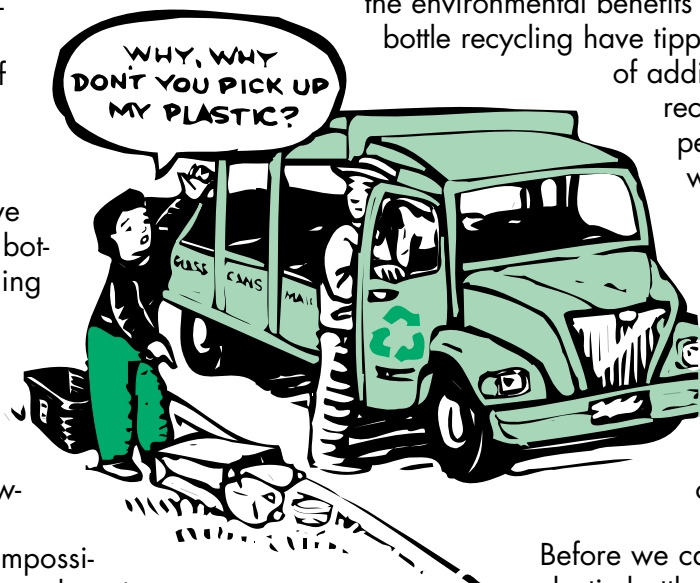
There are now better markets for plastic bottles, particularly #1 and #2 bottles, than ever before. Recyclers have worked to compete against the virgin plastic manufacturers by providing recycled materials for packaging, thus improving markets for recyclable plastic material. Unfortunately, this success has not stopped virgin plastic from being made, used and thrown away.

Last year, Ramsey County threw away more than 3,447 tons of just #1 and #2 plastic bottles. That doesn't include all of the other plastic packaging thrown away. If not recycled or reused, plastics get either burned or buried. Neither of these strategies, unlike recycling, benefits our health or the environment.

Trash, including plastic bottles, is increasing. Although the plastic industry frequently reports that plastic represents only 9.1 percent of the waste stream, it is 9.1 percent by weight. Landfills however do not get heavy—they get

FULL! It is the volume, not weight, of plastic that is rapidly filling landfills and incinerators across the country.

One factor that has not changed is the additional cost for collecting plastic bottles. However, the environmental benefits of increased plastic bottle recycling have tipped the scale in favor of adding it to curbside recycling. In fact, 74 percent of residents who recently tested new curbside recycling methods, stated that they would be willing to pay more for the convenience of recycling plastic bottles at the curb.



Before we can start picking up plastic bottles at the curb, the city must approve the program change and determine the time frame in which it will happen. Since the time frame is structured by current agreements with our subcontractors, we won't make changes right away. However, if our recommendation is approved, you can start to look for changes to your recycling program starting January 2004.

Eureka Recycling will continue to urge Saint Paul residents to reduce the amount of plastic they use when that is possible. One option is to use refillable containers. Some plastic containers are durable enough to be refilled and reused about 25 times before becoming too damaged. Other alternatives are buying in bulk and buying things that don't need much packaging. All of these options directly reduce the demand for disposable plastic. Longer term solutions include companies providing for the collection and recycling of products they sell, or passing laws requiring refundable bottle deposits.

In the meantime, drop off your #1 and #2 plastic bottles at one of our seven, free drop-off sites. For drop-off locations call (651) 222-SORT (7678).

