

# Recycling: It starts with you.

## A Guide to Recycling in Your Community



## Why Recycle? Community Recycling Pays Off

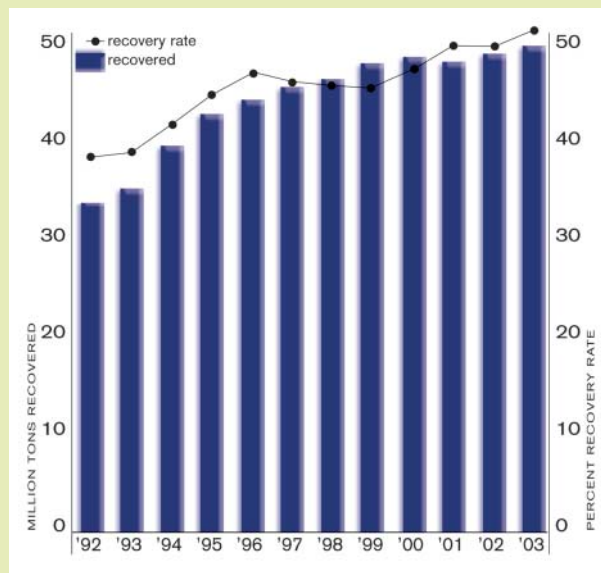
**Recycling positively impacts a community and its environment. And, each resident can make a significant contribution.**

### Consider these facts:

- **Recyclables have value to manufacturers** – More than 80 percent of U.S. papermakers use some recovered fiber to make their products. Recovered paper supplies more than 37 percent of the raw material used to make new paper products.
- **Recyclables become everyday products** – Recycled materials are used to make millions of products. For example, old newspapers become new paperboard packaging and newsprint. Corrugated boxes are turned into shipping containers and cereal boxes.
- **Recycling reduces dependence on landfills** – Recycling helps communities preserve existing landfill space by saving 3.3 cubic yards of landfill space for each ton of recovered paper. Today more paper is recovered for recycling than landfilled.
- **Recycling is good for the environment** – Recycling improves tomorrow's environment today. Recycling paper diverts it from landfills and incinerators and helps to reduce greenhouse gases, such as methane emissions from landfills.

### Paper Recovery By The Numbers

The recovery rate for paper and paperboard reached 50.3 percent in 2003, a new record high. This recovery level is even more impressive since approximately 10 percent of paper and paperboard cannot be recovered because it winds up in permanent uses (paper and paperboard used in building construction); ends up in a sewer (bathroom tissue); or is highly contaminated (oil filters).



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More than 85 percent of Americans have access to recycling programs. In 2003 about half of the U.S. population was served by more than 8,875 curbside collection programs. Another 170 million Americans have access to drop-off collection locations.

Nearly 80 percent of the material in a community recycling program is paper. An average household annually recovers about 45 pounds of newspapers, writing papers, magazines, catalogs, packaging, and shipping containers. However, more than 100 pounds per year, per household, is a realistic recovery goal.

More than 50 percent of all paper Americans used in 2003 was recovered for recycling, and the paper industry has set a goal to recover 55 percent by 2012. Recycled paper is returned to households as new products used daily in items such as cracker and cereal boxes, grocery bags, corrugated boxes, newspapers, and tissue.

Successful community recycling programs are able to maximize the amount of paper recovered while minimizing the contaminants that lower the quality and value of recovered paper. Use the best practices in this guide to improve the value of your community recycling program.

# Strategies For Success

## 1. Examine What's Recycled

### Gather the facts

Understand what's in your community's recycling stream. Obtain accurate, up-to-date information about the types of materials generated, the quantities, and how much can realistically be recycled. Determine what recyclables are abundant and most easily accessible. Common recyclables include newspaper, corrugated boxes, magazines, catalogs, office paper and paperboard packaging.

### Identify potential contaminants

Ensure that your collection method produces material that meets end market requirements. The market value of recyclables is significantly reduced when they are contaminated by food, hazardous materials, dirt, broken glass, and other non-recyclables. Materials that become mixed together and cannot be efficiently separated, or materials that are too contaminated or damaged to meet an end market specification, increase processing costs and reduce the value of recyclables. Identify all the potential contaminants in your recycling stream and then determine how to work them out of the system, starting at the source of generation.

### Work with commodity end markets

Existing markets for recycled commodities dictate the types of material that a community collects, whether a city operates its own recycling program or contracts for these services. Recyclables are subject to the same supply and demand dynamics as other natural resources used to manufacture products. Estimate the potential revenue and stability of markets and then decide what items to recycle. Lower quality materials may limit options for end markets and could lower the value of your recycling program.

Base collection decisions on a clear understanding of the recyclables market system:

- **Price** – Structure the program to be healthy when markets are high and when markets are low.
- **Specifications** – Have a clear understanding of how materials must be prepared.
- **Contamination** – Agree on the amount of contamination that is acceptable; develop open lines of communication and work closely with the brokers and mills who buy your materials.
- **End market** – Select an end market or buyer that matches your program's output.
- **Market fluctuations** – Understand trends and changes in the domestic and foreign markets.

### Keep It Clean

To ensure materials are able to be recycled, keep contaminants out during collection. Common paper contaminants include:

- Food and items covered with food, such as cups, plates and wrappers
- Glass, wood, and metals, including foil
- Tapes, glues, and pressure-sensitive labels
- Plastic films and other plastic material
- Specialty papers, like photographs, blueprints, and foil decals
- Medical or hazardous materials
- Cloth or fabrics with natural or synthetic fiber
- Used tissues, napkins and paper towels

## 2. Design Collection for High Quality

Recycling collection systems vary according to a community's budget, the size and scope of a collection area, resident expectations, and collection goals. While collection systems may differ, recyclables are commodities, so design a collection system that preserves their value.

Also, it is wise to take into account the separation and processing technologies at the community's materials recovery facilities (MRF) or other processing facility. Once you understand how the materials will be processed it is easier to determine how

recyclables need to be collected to produce high value materials. For example, if collected paper is mixed with other recyclables, additional processing may be required downstream (in this case, at the MRF, and even at the paper mill where the recovered paper is used).

Consider the following when designing your collection program:

- **Collection containers** – Provide residents with collection containers to increase participation, improve the quality of materials collected, and streamline the collection process. Whether it's one container or three, make sure containers match what you want to collect and how you want to have it picked up. Use signage on containers, as well as color and size, to help residents know what goes where.

Frequency of collection as well as the amount and types of materials collected, determine the optimum container size and number of containers to provide residents. An 18-gallon bin may be appropriate for weekly collection. For a program that collects recyclables less frequently, a 35-gallon cart or larger may be appropriate. You may want to perform a test case to determine what type of collection containers would best serve your program.

- **Monitor collection** – Decisions about how residents prepare recyclables for pickup and the methods used to collect materials must be coordinated to achieve high quality recyclables. Clear communication about these procedures to collection teams and residents will help reduce the amount of contaminants in the recycling stream and will provide guidance regarding what the program will and won't accept. Additionally, consider having recycling collection personnel leave a note explaining why contaminated recyclables were not picked up.

- **Equipment needs** – Choose equipment appropriate to the materials being collected, the collection logistics, and how materials need to arrive at the processing plant. Lighter compaction, less handling, and reduced distance help ensure the integrity of recyclables.

## **3. Make Educating Residents a Priority**

Never assume the public knows how to recycle. Use these tools to boost outreach to residents:

### **Budget to get the message out**

While keeping costs low provides value to a recycling program, designate a budget for education and outreach.

### **Understand your audience**

Design an education program that speaks to your unique community. Conduct a resident survey to understand attitudes and knowledge about recycling. Target communications to reach specific populations, including those who do not speak English, and senior citizens.

Educate residents about collection requirements and how contaminants impact the end product. Provide a recycling hotline or other method for residents to get help when they have a question or encounter a difficulty. Respond to resident feedback and try to address specific concerns. Use active language, visuals, and simple instructions to improve participation in your program.

### **Do it again**

Don't let up. Education is an ongoing process. Employ a variety of communications methods to target specific audiences and regularly promote the recycling message. Newspaper and magazine articles and ads, newsletters, and messages in utility bills work well for urban areas, while brochures and direct mail may be better in suburban and rural areas. Use a mix of vehicles such as:

- Utility bill inserts or direct mail
- Radio, TV, newspaper, magazines, billboards, and other media
- City or county websites and local presentations
- Door hangers or other delivery to each household
- Contests, recognition, and other incentive programs

# 4. Evaluate Program Costs

## Budget conservatively

For some communities, the cost of recycling can exceed revenue from the sale of recyclables. However, a combination of revenues, landfill tip fee savings, and extending the life of the landfill, may exceed the cost of running a recycling program and actually produce a profit.

No matter how fees are structured, always budget conservatively. If market prices swing upward and produce a windfall, reinvest those resources into your program by paying off equipment, making capital improvements, or implementing other changes to increase the program's cost effectiveness. Do not, however, count on favorable markets to always cover operating costs.

## Transporting recyclables

Costs to collect and transport recyclables represent a large portion of a community recycling program's budget. To offset costs consider changing the number of collection days, employing different or fewer collection vehicles, or changing the method of collection. Recycling is most successful if the method of collecting recyclables mirrors the method of waste collection in terms of frequency.

Work with end markets to determine the most cost-effective quantities and methods for shipping collected recyclables. The cost to move recyclables from a transfer station or processing center to the buyer is a key element in a program's cost effectiveness. The amount of materials shipped at one time also affects transportation costs.

## Decrease residuals

Residuals are materials that are not accepted by the program but are picked up during collection, also known as outthrows. Residuals also include recyclables that are too damaged or contaminated to be shipped to an end user.

While a community may be collecting more recyclables, it may also be collecting more contaminants resulting in a higher rate of residuals. Asking residents to separate materials requires more effort but can result in cleaner materials and minimizes the amount of processing required.

Communities may choose to collect mixed recyclables because it is simpler for residents and can increase participation, as well as the amount of recyclables collected. This collection method, however, can increase contamination and the amount of residual materials landfilled after processing recyclables.

### Low Cost Ways To Boost Your Community's Recycling Rate

- Make recycling convenient
- Try innovative public outreach
- Add small businesses
- Invest in multifamily recycling
- Motivate collection personnel
- Establish long-term market partnerships
- Create a financial incentive to recycle

## Recycling Program Descriptions

The type of recycling program a community chooses impacts the amount of residuals generated as well as the overall program costs. If different recyclables are collected together, there is a higher likelihood of increased contamination. Consider these statistics:

**Source separation** – In these programs recyclable materials (e.g., papers, glass, plastic, aluminum, and steel) are separated and set out by residents for collection. A recent recycling study found that source separated collection resulted in a very low residual rate that did not exceed 1.6 percent.

**Dual stream** – These programs collect paper recyclables separately from all other recyclables. Dual stream, or two-stream, collection averaged 6.4 percent residuals, based on a survey of 215 facilities nationwide.

**Single stream** – In these types of programs, all recyclables are placed in one bin and collected together. In some programs, glass is kept separated from paper products or not collected. A recent study of 70 single stream facilities nationwide found an average "residue percent" of 16.6 percent. This compared to 4.3 percent for source separated, and 6.6 percent for dual stream collection. Additionally, another recent study found an overall system-wide net increase of \$3 per ton for paper collected in single stream programs.

# 5. Measure and Publicize Success

While many communities track recovery results to ensure they meet specified diversion goals, results are also effective in showing the merits of recycling and motivating residents.

## Gather data

Track data to monitor program effectiveness:

- **Recovery rates** – Gather data on the amount recovered for each material. Use a database or other system to record and store data.
- **Participation** – Monitor participation and use this information to help guide education and outreach efforts to residents.
- **Program costs** – Recycling adds collection and processing services that may increase costs. More material going to recycling rather than disposal, however, may lower overall recycling costs. Track these costs along with expenses to operate the program.

## Tell residents how they're doing

Provide feedback to residents on the effectiveness of the program and how their participation makes a difference:

- **The community** – Announce recycling program results to the community. Provide regular updates about program success through media articles, community newsletters, websites, and local recycling events.
- **Nationally** – Enter the community's recycling program in a national competition to bring recognition to the program's best practices and results.

### Get Community Recycling Tools Online

As you get ready to begin your recycling program you may want to visit online resources for more information.

Check out [www.afandpa.org/recycling](http://www.afandpa.org/recycling) to find:

- Tips to boost your community's recycling rate
- Community recycling case studies
- Collection studies
- State recycling goals and paper procurement policies
- Contests to bring national recognition to your recycling program



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