

# Boosting Recycling in Mississippi

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**A Recycling Coordinator's Guide to Effective Waste Reduction and Recycling**

Developed by the Southeast Recycling Development Council with assistance from the Mississippi Department of Environmental Quality and the Mississippi Recycling Coalition

**May, 2010**

*Printed on post-consumer recycled content paper.*

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# Agenda

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- 8:30 - 9:00** Registration
- 9:00 - 9:15** Welcome from Mark Williams, MDEQ/MRC; Steve Carreras, SERDC
- 9:15 - 10:00** Fast Pitch Networking
- 10:00 - 10:15** Recycling 101 - 103: Terms, equipment, and material specifications
- 10:15 – 10:45** Understanding markets: How to put the numbers to work for your program
- 10:45 – 11:00** Break
- 11:00 – 11:30** Outlining a successful program: Short and long term planning, making the most of resources
- 11:30 – Noon** Building participation: Building support for cost-effective collection
- Noon - 1:00** Lunch with Southeastern Regional update from EPA Region IV
- 1:00 - 1:30** Program expansion: Moving beyond curbside materials
- 1:30 - 3:00** Presentations from Mississippi commodity representatives
- 3:00 - 3:15** Break
- 3:15 - 4:00** Facilitated problem solving: Using the knowledge of industry to help solve collection concerns



# Who is SERDC?

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The Southeast Recycling Development Council (SERDC) is a 501c3 organization established in early 2005. SERDC's mission is to unite industry, government, and non-government organizations to promote sustainable recycling in the Southeast. We are comprised of members from eleven states including: Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, and Virginia—united to develop and promote sustainable recycling programs. Both the Mississippi Department of Environmental Quality and the Mississippi Recycling Coalition are active members in SERDC.

Our goals are to:

- Increase collection and recovery of quality recyclable materials
- Foster economic development via the recycling industry
- Create a greater awareness of the recycling industry's impact in the Southeast
- Foster communications amongst all stakeholder groups.

SERDC is committed to be the regional leader in joining all levels of government with industry, trade associations and state recycling organizations to make the southeast the national model and example of sustaining long-term successful recycling programs. The resources we have at hand are vast and exemplary; they only need to be pooled and united to make the southeast U.S. the leader in the nation.



# Recycling 101 – Important Terms

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Important Recycling Terms – The bulk of this list was adopted from Kentucky DEP Division of Waste Management’s *Community Recycling Guide* found at [www.waste.ky.gov/recycling](http://www.waste.ky.gov/recycling)

**Coding** – In the context of solid waste, coding refers to a system to identify recyclable plastics materials. The code system is designed to help sort the different types of plastics for recycling purposes. For example, the coding system for plastic packaging utilizes the “three chasing arrows” with a number in the center and letters underneath. The numbers and letters indicate the resin from which each container is made:

- 1 = PETE (polyethylene terephthalate)
- 2 = HDPE (high density polyethylene)
- 3 = V (vinyl)
- 4 = LDPE (low density polyethylene)
- 5 = PP (polypropylene)
- 6 = PS (polystyrene)
- 7 = Other/mixed plastics

**Collection** – The act of obtaining used materials from residential and business sources and hauling them to a facility for processing.

**Composite Packaging** – In the simplest sense, any type of packaging constructed of more than one material. Also may include some packages composed of multi-layered material.

**Contaminant** – Any substance that causes other substances to be unfit for use by the introduction of unwholesome or undesired elements. For example, ceramic is a contaminant to be avoided when recycling glass.

**Cullet** – Furnace-ready, crushed glass, usually added to new raw material to facilitate melting when making glass.

**Densify** – To reduce recyclables’ volume, by compacting, crushing, baling, or other means. This allows for more efficient storage and transportation.

**Detinning** – The process of removing the thin coating of tin on steel food cans. This process can be done optionally prior to steel can scrap being recycled.

**End User** – Mills and other industrial facilities where secondary materials are converted into new materials. Examples include paper mills, steel mills, detinners, and glass manufacturing plants.

**Flake** – Small pieces of plastic bottles and containers which have passed through a grinding system. When plastic containers are collected for recycling they are sorted, ground into small flakes of material, and then washed.

**Feedstock** – A processed material used in manufacturing, which is also called “furnish” for paper mills.

**Ferrous Metal** – Metal alloy containing iron. Ferrous metals, such as steel, will stick to a magnet.

**Generator** – An individual, company, organization, or activity that produces wastes or secondary materials.

**Market** – (1) A firm or operation purchasing secondary materials. (2) The available supply of or demand for goods containing recycled materials. **Intermediary Market** – Scrap dealer, recycling operation, and /or processor that purchase secondary materials from collectors for sale to an end user.

**Materials Recovery Facility (MRF)** – A facility that collects and sorts recyclable materials from multiple collection programs or sources. The facility generally requires both mechanical and labor-intensive processes that separate out reusable and recyclable materials such as plastics, metals, glass, and certain grades of paper for the purpose of beneficial reuse.

**Mill Scrap** – Material generated during primary material manufacturing that is often reused at the point of generation. Also called “Post-industrial Waste”.

**Non-Ferrous Metal** – Metal that does not contain iron, such as aluminum, copper, zinc.

**OCC – Old Corrugated Cardboard** – The official term given to cardboard in the recycling process.

**ONP – Old Newsprint** – The official term given to newspaper in the recycling process.

**Office Paper** – Used paper generated by offices, including stationery and copy paper.

**Pellet** – After recovered plastic bottles are ground into flake and washed, the flakes are often melted into pellets for use by manufacturers in creating new goods.

**Post-consumer Waste** – Materials generated by the final consumer (residential or non-residential) after it has served its intended use and has been collected for reuse or recycling. The term does not include those materials and by-products generated from and commonly used within an original manufacturing process.

**Primary Material** – Virgin or new material used for manufacturing basic products.

**Processor** – A part of the recycling business cycle where operators store, grade, clean, densify, or package secondary materials for sale to an end user.

**Raw Material** - An unprocessed natural resource, a processed secondary material, or a product used in manufacturing.

**Reclamation** – The process of restoring material found in the waste stream to usefulness or productivity. Reclaimed materials may be used for purposes different from their original use.

**Reduction** – see “**Waste Reduction.**”

**Recyclable** – The technical ability of a material to be reused in manufacturing.

**Recycled Content** – Percentage of recycled material used to manufacture a product.

**Recycling** – The diversion of materials from the solid waste stream and the beneficial reuse of such materials. Recycling is further defined as the result of a series of activities by which materials that would become or otherwise remain waste are diverted from the waste stream for collection, separation, and processing. These materials are used as raw materials or feedstock in lieu of or in addition to virgin materials in the manufacture of goods sold or distributed in commerce or the reuse of such materials as substitute for goods made from virgin materials.

**Roll-off** – A bulk container for holding waste materials. Small roll-offs are picked up and emptied into a waste disposal truck; large ones are mechanically pulled into a roll-off bin truck, trailer, or transfer trailer.

**Secondary Materials** – All types of materials handled by dealers and brokers that have fulfilled their original function and usually cannot be reused in their present form or at their present location. Also includes materials that occur as waste from manufacturing or conversion of products.

**Separation** – Sorting material by its physical properties including color, luster, size, shape, or other characteristics.

**Shred** – To cut or tear into long narrow strips. Cans and paper are often shredded.

**Solid Waste Stream** – The total flow of solid waste from homes, businesses, institutions, and manufacturing plants.

**UBC** – Used beverage containers.

**Virgin Materials** – Any basic materials for industrial processing or manufacturing that have not been previously used.

**Waste Reduction** – Products or policies that reduce the amount of waste that must be disposed in landfills, incinerators, or waste-to-energy facilities.



# Recycling 102: Material collection specifics by commodity

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Effectively and responsibly managing a recycling program is greater than buying a baler and tossing in materials. Many communities decide to partner with a commingled collection-based MRF to avoid in-house processing of recyclables. Other communities feel their programs function most efficiently when they can market sorted material directly to a recycler. This material handling guide will help you determine how best to manage your materials. Much of this information is reprinted from Mississippi's material handling guides found online. The website for RecycleNet: [www.recyclenet.net](http://www.recyclenet.net) can be another valuable resource.

## Aluminum

Used beverage containers (UBCs) are typically flattened, then baled or compressed into bales, densified into biscuits, or blown into trailers for loose shipment. It is very important that aluminum cans be free of contaminants before further processing. Contaminants to aluminum cans include iron, lead, foil, other metals, paper, plastic, glass, and dirt. Non-container aluminum such as pie pans and frozen food trays should not be processed with aluminum cans. They are considered a contaminant.

The Curbside Value Partnership's Steve Thompson reports that the Southeast is fortunate to be home to nearly all of the melting facilities in the U.S. for UBC. This helps Mississippi recyclers because these plants want to purchase UBCs from as close to home as possible. Prices move in a fairly constant relationship to virgin prices and are always higher than any other recyclable commodity, sometimes fetching more than \$1.00 per pound.

Possible equipment needs for managing aluminum:

**Can Sorter** - Aluminum cans should be run through a can sorter to remove debris and ferrous metals. The cans are fed into a hopper and carried up a conveyor belt. Cans are carried past a magnetic device that efficiently removes any steel cans in the material and sorts them into a separate container from the aluminum cans.

**Can Handler Basket** - These are steel-framed units with nylon netting to contain the aluminum cans. They can generally be purchased with small wheels so they can be rolled from the can sorter to the scales and then to the can flattener/blower.

**Can Flattener/Blower** - This is a device that aluminum cans pass through in order to flatten the cans to save space. A blower attachment can also be used in order to blow the flattened cans

into a tractor-trailer. They generally weigh several hundred pounds and have a footprint of about 5' X 10'.

**Scales** - Scales are a necessity if paying out money to individuals bringing cans in for sale. Scales that measure up to 1,000 lbs are the recommended minimum.

**Densifier or Baler** - Aluminum cans that are not blown into a tractor-trailer can be densified or baled using one of several types of equipment. Some densifiers can compress several hundred pounds to several thousand pounds per hour. UBC's can be baled using a vertical or horizontal baler or specially manufactured can densifiers. Vertical balers can do the job, but look at the specifications extremely close. The stroke of the vertical baler must be of sufficient length to ensure proper compaction of the cans, otherwise the bale may fall apart when removed from the baler. A horizontal baler can produce a fine bale of aluminum cans and would be preferable over that of a vertical baler. The specially designed can densifiers produce a 35-45 lbs./cubic foot brick that allows efficient loading of a tractor trailer or railcar.

**Trailer** - Forty-five or forty-eight foot van type trailer. Trailer should be in clean and in good condition with swing out type doors.

**Can Conveyor** - Aluminum cans should run over a conveyor so that personnel can remove debris and contaminants. The cans are then fed into a hopper and carried up a conveyor belt. Cans move across a magnetic head pulley that efficiently removes any steel cans and diverts them into a separate container from the aluminum cans.

## Glass

Glass containers are 100% recyclable. The grades of glass include the following:

- Clear (flint)
- Brown (amber)
- Green (emerald)
- Mixed Colors

The contamination issues for glass are straight forward. If colors are not kept separated, there may not be as strong a market for the materials. In addition, other contaminants that can cause problems marketing glass include ceramics, mirrors, rocks, cement, metals, window or plate glass, light bulbs or tubes, cookware, drinking glasses, automotive glass, and medical waste glass. Glass must also be kept away from paper and corrugated boxes because broken glass can get imbedded into the paper and cause quality control problems at the paper mill.

Glass is best handled as a bulk material, hauled in the largest loads possible. Typically that means storing glass in large outdoor bunkers (on a concrete pad) until at least 20 or so tons are accumulated. The most efficient transport is then with an aggregate dump trailer, most often used for handling rock and gravel.

A bunker system is a good investment for any community that handles its own glass. A front end loader is usually also necessary for the loading of glass over the high tops of the dump trailers.

## **Paper**

Paper products including old newsprint (ONP), old corrugated cardboard (OCC), sorted office paper (SOP) and mixed office paper is most often baled. Each buyer of recovered fiber may have individual requirements for bale weights and dimensions or quantity accepted in a tractor-trailer.

Quality control is very important in processing most papers for recycling. Generally the buyer of paper fiber will be interested in the baled weight, moisture content, and contaminants.

Moisture content is generally limited to 10% or less. Special equipment is available to check moisture content, but the buyer will generally determine the need for such testing. Since paper is most often bought by the ton, high moisture content would mean that the buyer is paying too much for a load of wet paper.

Contamination is also a serious issue with paper processing. Contaminants to paper are known as outthrows and prohibitive materials. Outthrows are usually paper of a different type, a small percentage of which may be acceptable. It all depends on the grade of paper you are attempting to generate. Outthrows are limited to 2% contamination. Prohibitive materials are usually non-paper items such as metals, plastics, glass, and dirt. Prohibitive materials are often limited to 0.5% contamination. Sunlight and rain can degrade baled paper stored outside.

## **Plastic**

When collecting and processing PETE and HDPE plastic bottles, there are several contamination issues to consider. These are incompatible resin types, dirt, pumps, hazardous products, and incompatible grades.

An example of incompatible types would be PVC in a PETE line. Although both containers are similar in appearance, they are definitely not compatible. When PETE is being melted down for production of pellets or fiber, any PVC in the batch can cause major problems with equipment since PVC melts at a different temperature than PETE. Learn what comes in PVC containers and make sure they do not mix with PETE being baled. Examples of PVC containers may include translucent pharmaceutical bottles, imported mineral water bottles, salad dressing bottles, and cooking oil bottles. Check the code on the bottom of the container. PVC bottles are marked with a "3."

Contamination such as dirt, trash, caps, lids, and pumps are items that need to be monitored during the processing of plastics. Contact the buyer to see what contamination levels they can live with and work to keep it at or under that level. Often this is an educational process with the consumers who are recycling these products. They need to be taught what is acceptable and what needs to be thrown away. Depending on the facility, these contaminants will often be left behind on the conveyor after all other plastics are picked off. The exception would be when the caps, lids, and pumps are not removed from the container prior to recycling, which then requires the recycler to remove these items which slows down the process. Don't store baled plastics directly on the ground since dirt and rocks will lodge in the bales and become a contamination issue.

Contamination because of incompatible grades is generally limited to HDPE plastics. An example is HDPE milk jugs and HDPE ice cream containers. Both are marked HDPE on the bottom of the container, but are not compatible grades and should not be baled together.

The reason is HDPE can be both blow molded into bottles and injection molded into tubs. The two resins are different in their melt flow index. This can get complicated, so the easiest thing to remember is only accept plastic bottles and not plastic tubs. Incompatible grades can also apply to the color of the plastics depending on the end-use of the material. This color sorting can impact the price you'll receive for your plastic bales. PET is mostly clear, but there is more and more colored PETE coming on the market and the trend is for increasing amounts of colored PETE.

HDPE comes in numerous colors. The highest grade of HDPE is the non-pigmented (opaque) plastic. It also brings the highest dollar value of the HDPE plastics. HDPE that is white, blue, green, red, or any other color is considered pigmented HDPE and carries with it less value. Color sorting the materials will bring a higher value for the bale, while a mixed bale of unsorted colors is of least value. Check with the buyer before you start baling HDPE.

### **PETE PLASTIC (#1) PROCESSING**

PETE - Polyethylene Terephthalate. PETE (or PET) bottles consist of soda and custom plastic bottles including:

- clear and green soft drink bottles
- clear and green liquor bottles
- some cooking oil containers
- some coffee containers
- some small water containers

Approximately 25 cubic yards (16 Gaylord boxes) of PET bottles will equal an 800-pound bale of plastics.

Bales must be:

- clean and dry
- secured with 10 gauge galvanized baling wire
- stored out of the sunlight and weather
- loaded, shipped, handled, and stored maintaining integrity
- dense (at least 10 lbs. per cubic foot)
- a standard size

When loading tractor trailers for shipment remember:

- stack bales properly to facilitate unloading
- load 40,000 lbs., smaller loads with pre-approval
- note trailer number on Bill of Lading
- truck driver must sign the Bill of Lading
- inform buyer of the approximate load weight to avoid freight chargebacks

### **Unacceptable Bales**

All bales of material must not exceed 2% contamination. Contamination in this case includes all of the following:

- any PVC bottles
- any other type of plastic (HDPE, LDPE, PP, PS)
- other PET plastic that is not specified above, i.e. scoops, tubs, etc.
- material that has deteriorated due to sunlight
- dirt and mud
- stones, grease, and glass
- excessive paper
- free flowing moisture (i.e. motor oil, cooking oil, water, detergent, or any other liquid)
- any bales that cannot be processed
- bottles of hazardous material or residue
- bottles that contained pesticides or herbicides
- medical waste

### **HDPE PLASTIC (#2) - Natural Colored Bottle Processing**

HDPE - High Density Polyethylene - Natural Colored Bottles

HDPE natural bottles consist of post-consumer, blow molded, translucent bottles with necks.

This grade of plastic consists of:

- milk containers (natural)
- some juice containers
- some water containers

Bottles should be rinsed with caps or closures removed. Approximately 40 cubic yards (25 Gaylord boxes) of HDPE bottles will equal an 800-pound bale of plastics.

Bales must be:

- clean and dry
- secured with 10 gauge galvanized baling wire
- stored out of the sunlight and weather
- loaded, shipped, handled, and stored maintaining integrity
- dense (at least 10 lbs. per cubic foot)
- a standard size

When loading tractor trailers for shipment remember:

- stack bales properly to facilitate unloading
- load 40,000 lbs., smaller loads with pre-approval
- note trailer number on Bill of Lading
- truck driver must sign the B.O.L.
- inform buyer of the approximate load weight to avoid freight chargebacks

### **Unacceptable Bales**

All bales of material must not exceed 2% contamination. Contamination in this case includes all of the following:

- any other type of plastic (PETE, PVC, LDPE, PP, PS)
- other HDPE plastic that is not specified above, i.e. detergent bottles, tubs, etc.
- material that has deteriorated due to sunlight
- dirt and mud
- stones, grease, and glass
- excessive paper
- free flowing moisture (i.e. motor oil, cooking oil, water, detergent, or any other liquid)
- any bales that cannot be processed
- bottles of hazardous material or residue
- bottles that contained pesticides or herbicides
- medical waste

### **HDPE PLASTIC (#2) - Mixed Colored Bottle Processing**

HDPE - High Density Polyethylene - Mixed Colored Bottles

HDPE pigmented bottles consist of post-consumer, blow molded, bottles with necks.

This grade of plastic consists of:

- detergent bottles
- some juice containers
- pigmented milk containers (yellow or white)
- some shampoo bottles
- well-drained motor oil bottles

Bales must be:

- clean and dry
- secured with 10 gauge galvanized baling wire
- stored out of the sunlight and weather
- loaded, shipped, handled, and stored maintaining integrity
- dense (at least 10 lbs. per cubic foot)
- a standard size

When loading tractor trailers for shipment remember:

- stack bales properly to facilitate unloading
- load 40,000 lbs., smaller loads with pre-approval
- note trailer number on Bill of Lading
- truck driver must sign the Bill of Lading

### **Unacceptable Bales**

All bales of material must not exceed 2% contamination. Contamination in this case includes all of the following:

- any other type of plastic (PETE, PVC, LDPE, PP, PS)
- other HDPE plastic that is not specified above, i.e. tubs, etc.
- material that has deteriorated due to sunlight
- dirt and mud
- stones, grease, and glass
- excessive paper
- free flowing moisture (i.e. motor oil, cooking oil, water, detergent, or any other liquid)
- any bales that cannot be processed
- bottles of hazardous material or residue
- bottles that contained pesticides or herbicides
- medical waste

### **Equipment for Processing Plastics**

Several pieces of equipment may be necessary for processing plastics:

- Plastic Perforator/Flattener - This piece of equipment will simultaneously perforate and flatten containers. This can be important since it will often reduce the time it takes to bale plastics and improves the integrity of the baled plastic. It improves the baled plastic because the bale no longer contains any appreciable amount of trapped air in the

containers. This can be important on a hot day when those bottles that are not perforated begin to expand from the hot air trapped inside putting additional pressure on the bale wire. If sufficient size or quantity of bale wire is not used, the bottles can expand to the point that the bale breaks open.

- Baler - PETE and HDPE bottles should be baled in a horizontal baler if possible. Horizontal balers will do the best job and should be considered strongly if you can afford the cost. Vertical or downstroke balers can do the job, but you'll need to look at the specifications on the baler very carefully. The stroke of the vertical baler must be of sufficient length to ensure proper compaction of the plastic bottles in order to get a sufficient bale weight. If a vertical baler must be used for plastics, acquire one that has at least 90,000 psi platen pressure to ensure plastic bales of 650 pounds or greater. A horizontal baler can easily provide bales in excess of 700 pounds or larger, which is what brokers and end-users prefer.

Several things to keep in mind while baling plastics include how much plastic is needed to make a bale, how much bale wire is needed per bale, where can baled plastics be stored, and how much plastic is needed for a typical truck load.

It takes 15 cubic yards of plastics to make a 700-pound bale. Typically, 22 Gaylord boxes (3' X 3' X 4') of uncrushed plastic bottles will produce a 700-pound bale. These numbers will change some since PETE and HDPE are of a different weight.

It will take a minimum of 6 bale wires per bale of plastic. The bale wire should be 10-gauge to reduce the chances of the wire breaking. Double up on 12-gauge wire if 10-gauge is unavailable.

Plastic bottles will degrade while unprotected outside. The following is the maximum time to leave bales of plastics outside in the weather and sunlight:

- PETE - 6 months
- HDPE - 1 month
- PVC - 6 months
- LDPE - 1 month
- PP - 1 month
- PS - 6 months

The typical truck load of plastics will be around 40,000 pounds. It is important that the baler can produce bales of at least 600 pounds or greater due to the limited number of bales that can be placed on a tractor trailer. If additional capacity is needed, request a 53-foot trailer. Density of bales is very critical. The target is 10 to 15 pounds per cubic foot.

## Steel

Steel containers and cans generally include food containers, aerosol containers, and paint cans. Steel containers and cans are typically flattened, then baled or compressed into biscuits. It is

very important that steel containers and cans be free of any contaminants before further processing.

Steel mills are generally tolerant of small levels of foreign matter, but processors should guard against contaminants as much as possible. Contaminants to steel containers and cans include liquids (paint and other residues), dirt, mud, plastics, and other debris. Paper labels and plastic nozzles from aerosol containers are not much of a concern since they are burned off in the extreme high temperatures of the steel furnace. Paint cans that have a thin skin of dry paint on the sides and bottom is acceptable, as is the paper label. Processed steel containers and cans should be free of other ferrous scrap metal.

The processing of steel containers and cans for recycling will generally require the purchasing of some of the following equipment:

**Can Sorter** - Often times steel cans are collected commingled with aluminum cans and should therefore be run through a can sorter. The cans are fed into a hopper and carried up a conveyor belt. Cans are carried past a magnetic device that efficiently removes the steel cans from the aluminum cans and puts them into a separate container from the aluminum cans.

**Can Handler Basket** - These are generally round steel-framed units with nylon netting to contain the steel containers and cans. They can generally be purchased with small wheels so they can be rolled from the can sorter to the scales and then to the baler.

**Scales** - Scales are a necessity if the facility will be paying out money to individuals bringing cans in for sale. Scales that measure up to 1,000 lbs. is the recommended minimum.

**Baler** - Steel containers and cans should be baled in either a vertical or horizontal baler. Vertical balers can do the job but the specification on the baler will need to be carefully reviewed. The stroke of the baler must be of sufficient length to ensure proper compaction of the containers and cans, otherwise the bale may fall apart when removed from the baler. A horizontal baler can produce a fine bale of steel containers and is the recommended equipment for this activity. Local markets for steel will general accept the material either whole, loose, flattened, or baled, so exact specifications are not required. Marketing steel materials directly to the steel industry is a different matter and may require specific bale sizes and weight.



# Recycling 103: Equipment

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The equipment needed for a recycling program varies greatly from one town to another. The information listed below overviews many of the more common pieces. The prices listed are provided for comparison only and should not be used for developing quotes or grant applications. Please contact vendors specifically for actual quotes.

Mississippi also maintains a directory of Recycling Container and Trailer Manufacturers: [deq.state.ms.us/MDEQ.nsf/page/Recycling\\_RecyclingContainerTrailerManufacturersWebsites](http://deq.state.ms.us/MDEQ.nsf/page/Recycling_RecyclingContainerTrailerManufacturersWebsites)

## **Eighteen-gallon curbside recycling bins**

- These bins average \$7.50 each.
- Weekly collection needed to prevent overflow and keep participation rate high.
- Will typically not hold a household's weekly recycling supply, so many times two bins per household are necessary.

## **Sixty-five-gallon capacity rolling carts**

- These containers average \$45.00 each.
- Some, but not all, are designed for use in automated collection systems.
- Can be used in drop-off situations and collection of material from commercial or institutional sources, as well as residential.

## **Ninety-five-gallon carts**

- These bins often cost \$65.00 each and are the largest size of roll carts.
- Some, but not all, are designed for use in automated collection systems.
- Can be used in drop-off situations and collection of material from commercial or institutional sources, as well as residential.

## **Six-yard-dumpsters**

- Average about \$800.00 each.
- Need a front load compactor truck to empty.

## **Eight- yard-dumpsters**

- These containers cost around \$1,000.00 each.
- Need a front load compactor truck to empty.
- Some programs choose to lease rather than buy this type of equipment.
- Communities often rely on open top or side open 8-yard collection dumpsters to collect sorted material.

- If these containers are used for collecting cardboard, boxes must be properly broken down to avoid overflow

### **Forty-yard roll-off containers**

- These containers can often be compartmentalized to accept multiple types of materials.
- Many programs choose to lease rather than buy this type of equipment.

### **Forklifts**

- Sell for the high \$20,000 range, but usually there is a good market for used forklifts that cost less.
- Programs that use Gaylord containers or other containers on pallets should have a forklift or a pallet jack.
- Forklifts can use different fuels or electric power depending where they are used. Typically, electric or propane driven forklifts are best for indoor uses.

### **Bobcat steer loaders**

- These generally sell for something like \$38,000.
- Can be fitted with forklift blades and other front attachments that allow covering different material handling needs

### **Gaylords**

- These boxes generally sell for \$5.00 to \$7.00.
- A Gaylord box is 48" x 40" x 36" and fits neatly on a standard pallet.
- In covered facilities, these large, reusable cardboard boxes can be an effective and inexpensive collection tool.

### **Trailers**

- Trailers vary in price, often between \$5,000 and \$25,000 a piece.
- Recycling trailers are available in a variety of styles and sizes, including basic bin style, removable multiple bins, and hydraulic compaction trailers.
- Facilities who manage their own sorting floor often use compartmentalized trailers that can be hauled by a pick-up truck with a standard hitch.
- Trailers often work well for special event recycling.

### **Vertical balers**

- These balers often sell in the \$11,000 - \$12,000 range. Look for good used models for less.
- Vertical balers are most often used for easily compactable materials such as cardboard.
- Sometimes, paper dealers will set balers at no cost at a recycling facility in exchange for the discounted cardboard or other materials. If you have no means to buy a baler, it is a good idea to check with local processors.

### **Horizontal balers**

- These balers often sell in the \$30,000 - \$75,000 range.
- Programs that plan to bale plastics often need the compaction ability of a horizontal baler.
- More advanced versions, including auto-tie single-ram balers, often range from \$100,000 - \$200,000.

### **Feed conveyors for balers**

- from \$18,000 - \$30,000

### **Simple single-stream systems without the baler**

- This system often costs programs something in the range of \$1.8 million.
- Approved for low-volume rated equipment only.

### **Complete glass crushing systems**

- The equipment for this process often costs near \$160,000. Smaller systems can be quite a bit cheaper, but will deliver a less-quality product.

### **Platform scale**

- These small scales generally run \$1,500 to \$3,000.
- They are appropriate for weighing bales and Gaylord containers of materials.

### **Drive-over truck scales**

- These scales often cost \$23,000 – \$29,000, not including installation.



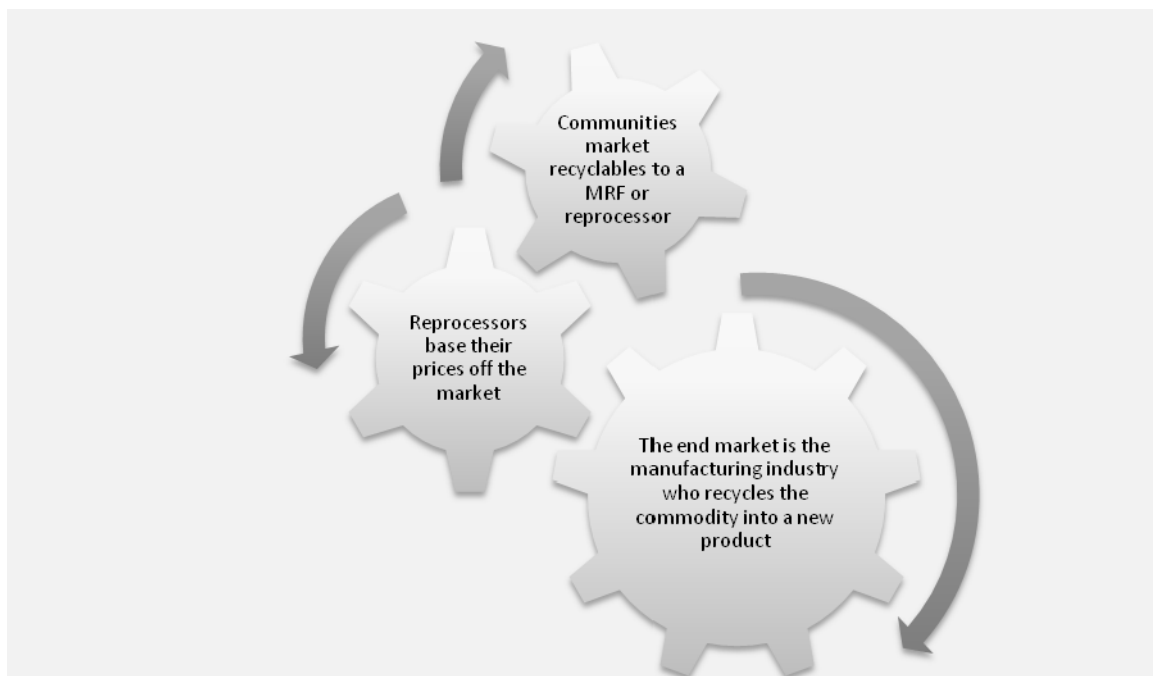
# Understanding Local Markets

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The term “markets” has several different meanings. From a community standpoint, it could be the access to a Material Recovery Facility (MRF) or material processor who will buy the commodity and put the material into the recycling process. But that company who buys material will base their prices off the market. And then of course there is the end market – the final home for that recycled material.

## Markets, Markets, and More Markets!

*Is it a noun or a verb? The answer is yes!*



## Why should I consider markets from the get go?

Before you work to expand your recyclable collection, be sure you know where your material will end up. That will help guide your program’s operations and material collection decisions. You’ll only want to accept recyclables that you can quickly move through to a processor.

Transportation is an issue, too. Knowing where your markets are can help you answer some important questions such as: How must my material be prepared? Will I need a baler? What types of trucks, trailers, or equipment are required? Will the market pick up materials or must my program deliver them? Where is the price of the material set – at pickup or delivery?

Talking to your nearest MRF and neighboring programs will help you understand what resources are available to you.

## How do I know if I'm getting a good price?

First, take a look at recent market prices and reflections published in journals like *Waste News*<sup>1</sup> and *Resource Recycling*<sup>2</sup>. Both offer regular updates on material prices paid, generally by bale price. SCRAPindex.com and recylenet.net can also be good resources. The Official Board Markets "Yellow Sheet" is the main source of paper pricing. It is expensive for a community, but often prices are pegged to those numbers. For instance, you may receive a quote that says, "90% of Yellow Sheet for OCC."

Then call a recycler of a specific commodity and ask specific questions. Many buyers of commodities will work with you to help your program increase efficiency, co-op (or partner) with neighboring communities, or improve collection technique. How do you find a recycler near you? Contact one of the following commodity groups for a listing of processors in your area:

- **Glass Packaging Institute (GPI):** [www.gpi.org](http://www.gpi.org)
- **Association of Postconsumer Plastic Recyclers (APR):** [www.plasticsrecycling.org](http://www.plasticsrecycling.org)
- **American Forest and Paper Association (AF&PA):** [www.afandpa.org](http://www.afandpa.org)
- **Institute of Scrap Recycling Industries (ISRI):** [www.isri.org](http://www.isri.org)
- **Steel Recycling Institute (SRI):** [www.recycle-steel.org](http://www.recycle-steel.org)

## Recy-culator

Looking to justify your recycling program? Maybe the Recy-culator from Curbside Value Partnership can help! Just type in some basic collection and community information (or even goals!), and this free tool can help estimate:

- Money saved
- Landfill space reserved
- Trees not harvested
- Energy conserved
- Gas reserved

Put this free tool to work for your program by visiting:  
[www.recyclecurbside.org/content/u/recy-culator](http://www.recyclecurbside.org/content/u/recy-culator)

<sup>1</sup> Waste News: [www.wastenews.com](http://www.wastenews.com)

<sup>2</sup> Resource Recycling: [www.resource-recycling.com](http://www.resource-recycling.com)

## What should I ask a potential recycling partner?

EPA WasteWise<sup>3</sup> suggests that recycling programs ask potential buyers of recyclables the following questions:

- What types of recyclables will the company accept, and how must they be prepared?
- What contract terms will the buyer require?
- What type of contract will be required?
- Who provides transportation?
- What is the schedule of collections?
- What are the maximum allowable contaminant levels, and what is the procedure for dealing with rejected loads?
- What are the maximum allowable levels for food, chemicals, or other contaminants?
- Are there minimum quantity requirements?
- Where will the waste be weighed?
- Who will provide containers for recyclables?
- Can "escape clauses" be included in the contract?

Considerations for each of these questions can be found at: [wastewise.tms.icfi.com/plan/feasible.htm](http://wastewise.tms.icfi.com/plan/feasible.htm)

### **Public and Private Partnership at Work -**

There are numerous examples of Public and Private partnerships at work throughout the State of Mississippi. A couple of these include:

- The City of Jackson has a partnership with Waste Management (WM) and Recycling Services, Inc. (RSI). WM collects the recyclables curbside for the City and transport the materials to RSI's Materials Recovery Facility for sorting and processing and marketing.
- The City of Starkville has a partnership with Starkville Recycling Services. The City Sanitation Department collects recyclables curbside and transports the materials to the MRF operated by Starkville Recycling Services.

There are numerous other partnerships in the State in various cities across Mississippi that feature public and private partnerships.

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<sup>3</sup> EPA WasteWise: [www.epa.gov/epawaste/partnerships/wastewise/index.htm](http://www.epa.gov/epawaste/partnerships/wastewise/index.htm)

## The Power of Participation

In their *REACT* guide for recycling coordinators, North Carolina's RE3.org campaign studied an important question. Would it be better to try to get 10 percent more for recyclable materials or increase the number of participants by 10 percent? For this example they looked at a town of 6,000 households with a 55% participation rate and found:

If the town receives 10% more for recyclable materials, the new revenue from materials will be \$27.50 per ton. The existing revenue of \$15,468.75 would then increase to \$17,015.63 with a total improvement of \$1,546.88.

But if the town got 10% more participants for a new participation total of 3,630 households (60.5 %), what would the effect be?

The new participation rate would result in the recycling of 680.63 tons (or 61.88 new tons at \$25 recycling revenue rate would equal \$17,015.75 or an increase of \$1,547 in revenue. In addition, the town would save \$1,856.40 in avoided disposal costs. Greater participation has a two-fold impact – more recycling revenue and less disposal costs.

*Conclusion:* The net improvement over the old program is \$3,403.37, or about \$1,856 more than if the price paid for the materials alone went up.

Source:  
[www.epa.gov/region4/waste/rcra/mgtoolkit/improving.html](http://www.epa.gov/region4/waste/rcra/mgtoolkit/improving.html)

[www.re3.org/React/2.pdf](http://www.re3.org/React/2.pdf)

## What are the factors behind a good market price?

What helps you get a good return on your material? Full trucks and clean loads. Your goal as a program should be to have high community participation and low contamination rates so that your routes make the most of hopper space – trucks coming back in partially full or full of non-recyclable materials are missing the opportunity for economic return. The same is true for drop-off centers – the more clean material you move through, the better your economic investment will pay off. Clean material can make a significant price difference in your program. Why is that? Less handling of the material.

How do you build high participation and low contamination? Education, outreach, signs, and communication. Communicating the specifics of your program and encouraging stronger participation are smart ways to invest in your program.

When marketing baled material directly to a recycler, be prepared for them to ask you how often you can get a tractor trailer load full of clean bales to them. If your community, like many others, doesn't manage a tractor trailer load of a single commodity on a regular basis, maybe it's time for you to consider regionalization.

## How can regionalization help communities like mine?

It is always a good idea to try to join forces with other local governments in your area to help your program be as effective as possible. Regionalizing your efforts can take many forms. Not all of them may prove feasible, but the ones you choose will be extremely helpful.

Here is a list of some regionalization examples to consider:

### **Networking**

Regular meetings with fellow local recycling coordinators are excellent ways to share information about markets, program initiatives, financing, and grant ideas. The best recycling programs are ones that regularly seek to learn from others.

### **Joint Contracting**

Markets prefer large, singular sources of supply over many small sources. Combining your materials with others local programs in one “request for bids” or “request for proposal” will help attract better offers.

### **Marketing Cooperatives**

Similar but broader than joint contracting, marketing cooperatives are formal arrangements across the range of materials collected by regional programs. By establishing an ongoing framework for joint marketing, cooperatives keep you from having to reinvent the wheel with every material contract.

### **Shared Facilities**

Material recovery facilities or other large scale processing centers can be expensive and often beyond the means of smaller communities. By working together to capitalize and run a MRF, local recycling programs can procure much-needed processing capacity and an advantage in the marketplace.

## **Does partnering up really help? You bet!**

The Recycling Marketing Cooperative of Tennessee (RMCT) works to partner up rural Tennessee communities for increased recycling returns.

In 2005, RMCT partner communities saw economic successes including:

- 600 tons of material per month was recycled instead of landfilled
- An average of \$42,000 of revenue generated for most participating recycling programs
- An average of \$18,000 of landfill tipping fees saved for each participating recycling program.

Mississippi communities can use the RMCT model as one to help build regional partnerships. In addition, Mississippi state law was amended in 2009 to set aside grant funds for Regional Nonprofit Cooperatives of local governments. More information will be released on this grants program in the near future.

Visit RMCT at [www.rmct.org](http://www.rmct.org) .

## **Solid Waste Authorities**

Communities in a given area with common needs may find it best to form a legal organization that takes care of those needs. An authority can be a good way to organize, finance, and govern a set of combined facilities, such as a MRF, landfill, and a compost yard all accessible and shared by number of local governments. Authorities can also be good ways to cover ongoing capital and operational costs through the ability to raise and collect fees. Mississippi state law includes requirements on how to set up a solid waste authority in the state. Mississippi currently has 4 regional solid waste authorities involving multiple counties and cities and 4 local solid waste authorities that involve individual counties and the cities in those counties.

## **Are there markets for materials in Mississippi?**

The Southeast has plenty of manufacturing and many of those companies process or use recycled materials. The Southeast is particularly rich in users of plastics, paper, aluminum and steel, with some of the largest facilities in the country right here in our region. Even those you might not think of as “green” see recycled content sources as an economically viable option for their production. When those companies seek out and use recycled materials it strengthens the economic impact of our communities. Why? Recycling creates jobs – people haul, sort, and remanufacture the material right here in the Southeast.

What’s more, when companies from our region of the country use recycled material from nearby locations, they cut down on transportation costs making for a strong economic return. That, of course, leads to reduced fuel consumption and pollution prevention. And by becoming a stronger company, that organization is more likely to grow adding jobs and tax revenue to a community.

## **Redirecting Material from Landfills**

Where are the main recyclable commodities? Some are already in the recycling stream but many more are still heading to landfills for disposal. In fact, Curbside Value Partnership estimates that the eight states that make up EPA Region 4 dispose of \$1.2 billion worth of recyclables each year.

Looking at Mississippi’s Southeastern neighbors, we see recycling’s value and potential:

- Georgia reports that it annually spends \$100 million to landfill \$300 million worth of recyclables. Think of the potential.
- South Carolina reports that 2006 saw \$69 million in tax revenue from recycling alone.<sup>4</sup>

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<sup>4</sup>EPA Region 4 Economics of Recycling Fact Sheet:  
<http://www.epa.gov/region4/waste/rcra/mgtoolkit/economic.html>

- In 2007 Tennessee estimates that lost revenues of \$150,256,731 may have been realized had the “Top 4” commodities been recycled at today’s current market rates instead of being disposed. This assumed a 75% recovery rate of landfilled commodity materials.<sup>5</sup>

## **Some other things to remember about markets and marketing materials.**

- **Recyclables are commodities that are globally traded and so their pricing often follows economic trends.** In late 2008, when the global economy took a nose dive, manufacturers around the world dramatically slowed down their purchases of all commodities and recycling material prices plummeted. Now, as the economy recovers, recycling prices have risen back to historically average or above average levels.
- **How can you survive down markets?** One school of thought is to maintain loyalty to your main markets even when you might get a slightly better price somewhere else. These markets will then remember your good faith when markets get tight. It also is important to always provide the highest quality material possible, so it always maintains its value.
- **How about when markets are good?** Sometimes market prices are exceptional and exceed what you might be expecting in your budget. If you enjoy a market windfall, that is a good opportunity to pay down debt or make critical capital purchases. Replacing an old baler when prices are good is a whole lot easier than trying to buy one when revenues are down.
- **Remember that markets are always evolving and opportunities to start collection of other materials may become available.** For example, there is a growing market for electronics that should allow many communities to start and maintain collection programs. Carpet is an example of another product that may become more recyclable in the near future. Attending conferences, reading trade journals, talking with fellow recyclers – these are ways to stay aware of new opportunities to recycle new stuff.

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<sup>5</sup> Figure reported by TDEC Division of Solid Waste Management, Planning, Reporting, and Waste Reduction Section



# Outlining a Successful Recycling Program

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## **EPA REGION 4'S MUNICIPAL GOVERNMENT RECYCLING TOOLKIT**

EPA Region 4's Municipal Government Toolkit (MGTK) can be a valuable tool for any Southeastern recycling program.

The MGTK provides a centralized Web-based resource for recycling-related information including economic data, sample legislation, waste reduction efforts, guidance resources, and case studies regarding the impacts of recycling in the Southeast.

The Web site focuses on six areas related to recycling in our region: economic impacts, climate change aspects, community benefits of recycling, and recycling hot topics, as well as modules on starting a recycling program, and improving a recycling program.

[www.epa.gov/region4/recycle](http://www.epa.gov/region4/recycle)

## **A successful program**

What does a successful recycling program look like? The answer is different in each community. But successful programs have a few things in common. They have the support from their elected officials. They communicate regularly with the public. They remain flexible to react to industry changes. And they are constantly looking for ways to improve.

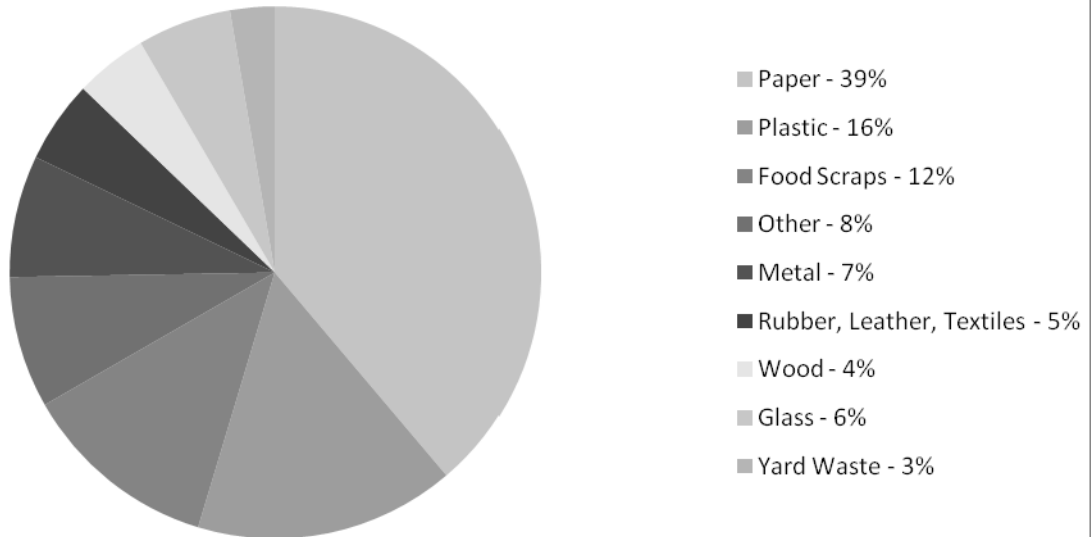
By outlining short and long term program goals, you can help to ensure that your community's program will be a champion example of the state.

## **Where to start?**

Let's start by taking a look at your waste stream. Before planning ahead, we need to know what's what. Start with your waste stream – what and in what quantities does your community throw away?

Not sure what's in your waste stream? In 2005, Georgia conducted a lengthy waste characterization study to find out exactly what's in their waste stream. Looking at their numbers can be a very helpful start.

## Georgia's 2005 Waste Characterization Study



### What makes your community different?

Using Georgia's figures as a base for your own, think about what makes your community unique. Consider questions such as:

- What manufacturing operations are in town? What do they produce? What wastes do they generate?
- What types of agriculture are in the area? What programs exist to help those farmers manage their bio-wastes?
- Is my community rural or urban? What's the economy like in my part of town?
- Are there business parks with easy access to lots of paper?
- Is there an active downtown that may be easy to tap for route in-fill?
- What's going on at the local college or university? Would there be a partnering option there?
- Are residents used to hauling their trash? Could a drop-off center be expanded to include recycling?

#### Conversion Rates

MDEQ has a handy tool to help you convert recycling totals into tons. Their conversion rates cover yard waste, phone books, appliances, glass, plastic, aluminum, steel, paper, cardboard, and more.

Go to:

[deq.state.ms.us/MDEQ.nsf/page/Recycling\\_MaterialDensityandVolumeConversion](http://deq.state.ms.us/MDEQ.nsf/page/Recycling_MaterialDensityandVolumeConversion)

- How close is a major transportation corridor? For instance, those communities along the routes towards Atlanta may be able to leverage partnerships with other communities.
- Most community waste streams break down into four main kinds of waste: residential, commercial, industrial, and construction and demolition. Getting a basic sense of how big each of these pieces of the pie are helps determine how to prioritize your recycling efforts.

### **Bigger Recycling Bins Help Show a Commitment to Recycling**

Nearly four years after the transition of their curbside program from 18-gallon recycling bins to 95-gallon carts, the city of Norfolk, Virginia experienced a jump in participation from 25% in 2004 to 56% in January 2007.

Nicknamed “The Big Easy,” the service features collection of recyclables in blue, 95-gallon rolling carts that resemble the city’s refuse containers.

With the new service, additional materials such as corrugated cardboard, magazines, office paper, and discarded mail are accepted and the city saved \$100,000 in tipping fees (fees paid per ton to dispose solid waste) in January 2007 due to the 57% participation rate.

*Source: EPA Region 4 MGTK*

### **How do you identify potential for recycling?**

Many communities tend to focus most of their efforts on the residential waste stream. What is your potential for recycling household materials? North Carolina’s recycling program estimates that each household generates about 745 lbs of recyclable materials each year. A good way to measure your program’s potential and how well your program is doing is to track total pounds recycled divided by all the households that are served in your program. Because it is very difficult to get 100 percent participation and sometimes harder to recycle some materials than others, 400 lbs per household served is a good benchmark for a high performing program.

### **How can you move materials through the fastest?**

Now that you know what you have and have a fresh perspective on what your community looks like, the next step is to match your assets with local markets. The goal of a recycling program isn’t necessarily to take every possible commodity. A strong program should start first with the materials that they can collect a lot of and move through the easiest. For much of the state, this probably includes aluminum, steel, HDPE plastic, PETE plastic, newspaper, and cardboard.

How do you know what materials you can move through the fastest? It goes back to the previous chapters on markets. Finding out who will take what materials and in what way will help you shape how to start or improve your program.

## What are my short- and long-term goals?

Goals can come in many forms for recycling programs. Regardless of what goals you choose, it is important to set goals and even more important to consistently measure against them. Here are some examples of community recycling goals:

- Total tonnage goal – “we want to recycle 1,000 tons of material this year”
- Percentage increase goal – “we want to increase our materials collection by 10% over last year.”
- Participation goal – “we want to achieve a 65% participation rate in our curbside recycling program
- Materials collection goal – “we want to add mixed paper to our collection program in 2012”
- Programs services goal – “we want to conduct an HHW collection event in 2011”
- Diversion goal – “ we want to divert 20% of our waste stream from disposal by 2015”

Setting a number of goals in sequence over time can help drive program improvement. Getting your governing board to endorse your program goals also helps them commit to funding those programs over time.

A common goal of many recycling programs is to be cost efficient. How do you know how cost efficient your program is? An obvious measure is total cost-per-ton, which includes accounting of all program expenses. A good method for doing this measurement is “full cost accounting.”

When it comes to growing a program, EPA’s Full Cost Accounting<sup>6</sup> for solid waste and recycling programs can help you make the most of your money. What is full cost accounting? EPA describes it like this, “**Full cost accounting** provides a common-sense approach to:

- Identifying and assessing the cost of managing solid waste operations, and
- Aiding decision-makers with short- and long-term program planning to help identify measures for streamlining and improving operations.”

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<sup>6</sup> EPA’s Full Cost Accounting: [www.epa.gov/epawaste/conserve/tools/fca/index.htm](http://www.epa.gov/epawaste/conserve/tools/fca/index.htm)

## What's involved in a residential program?

Residential programs collect materials from households using curbside collection, drop-off centers, or both. But effective programs include more than just putting out bins or carts. Communities should be prepared to engage in regular communication with the public to keep interested people informed, educate those new to the community, and appeal those who are not currently recycling.

They should also be ready to discuss their value with elected officials. Building support from the top down is equally important.

## Is a curbside collection program for me?

Curbside collection programs most often collect single stream, or commingled. Some communities still operate curb-sort programs where recycling employees sort the materials in the bin into a compartmentalized truck. Still other communities operate using both techniques – maybe they pull out one commodity, such as cardboard, and commingle the rest.

While most curbside programs target residential communities, some tie in business recycling into residential routes. Infilling a residential route with business parks or down town buildings can help programs maximize collection space.

How you decide to manage your curbside program will depend in large part how you can move through and market materials.

Curbside collection programs often manage the following equipment:

- Collection bins. 18-gallon bins are a minimum. Many communities see a strong return from larger containers or multiple bins. Roll carts can be used instead of bins and are easier for citizens to use, giving them convenience and more capacity. Carts also allow for automation of the collection process. But carts are generally only usable if there is access to a single stream MRF for processing
- Curbside collection trucks. Rear-load compactor trucks are often used for programs that use laborers to empty bins. Compartment trucks allow for curbside sorting. In an automated system, the driver will maneuver the side arm to lift, empty, and replace the collection container.

### **Recycling Program Planning Guide**

In their Community Recycling Guide, Kentucky recycling officials outline effective recycling program among other handy things. Download this free resource at:  
[www.waste.ky.gov/recycling](http://www.waste.ky.gov/recycling)

## What should be included at an effective drop-off center?

Drop-off recycling centers often target rural communities but can also serve populated areas. However, even municipalities with curbside programs may find it worthwhile to have drop-off centers to serve multi-family households, small businesses, and folks that miss their curbside day or have extra stuff not picked up curbside. While participation rates at drop-off centers are often capped by the distance and difficulty perceived by the recycler, they can often have fairly low contamination rates. This is especially true where facilities are staffed and the attendants are helpful. Unstaffed locations often have to deal with illegal dumping, higher contamination rates, and lower participation. Good, clear signage is a must at unstaffed centers.

Communities that require residents to haul their trash to a dumpster drop-off location can often easily expand these drop-off locations to include recyclables. Smaller collection facilities may need a single covered trailer designed to collect commodities separately. Larger facilities may look instead towards 8- or 40-yard dumpsters to collect sorted materials. Just like in curbside collection programs, drop-off centers may be able to collect some materials commingled, even single stream. This helps hold down the capital expenses of buying multiple roll-off containers or dumpsters.

How many drop-off centers does your community need? A lot has to do with wise placement for easy access. MDEQ's website encourages communities to provide one drop-off location per every 3,000 to 3,500 people.

EPA Region 4's MGTK<sup>7</sup> encourages recycling coordinators with drop-off centers to ask themselves the following questions:

- Have you provided the public with adequate facilities to drop off recycling? Where are these facilities located? Schools are a prime spot for recycling with the opportunities to educate children and easy access for parents to drop off home recycling. School yards also often have large parking lots and ample space for storage bins. Fire departments are also popular spots, as they receive high visibility in the community, and the funds are often returned to the community through charitable purposes. Washington County, Kentucky has seen success with their drop-off bins located at local churches. Members of their community often frequent the local church they attend upwards of twice of week. This tactic targets all ages. Lastly, another possible location are shopping centers – for example, Wal-Marts will often allow a community to establish drop-off containers in their parking lots.
- How many drop-off facilities do you have throughout your community? Does everyone have easy access? Regardless of whether your community is extremely remote or just the opposite and in an urban location, drop-off facilities can make an impact on recycling numbers. In Oxford, Mississippi, the city saw a 308,750-pound boost to their recycling numbers in 2006-2007 simply by adding in a second drop-off center.

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<sup>7</sup> EPA's MGTK Drop Off Center Information:  
<http://epa.gov/region4/waste/rcra/mgtoolkit/improving.html#techniques>

Many drop-off facilities contract with a hauler to remove and recycle all or some of their sorted materials. See contracting information below.

Drop-off facilities often maintain the following equipment:

- Trailers. Facilities that manage their own sorting floor often use compartmentalized trailers that can be hauled by a pick-up truck with a standard hitch.
- Gaylords. In covered facilities, these large, reusable cardboard boxes can be an effective and inexpensive collection tool. A Gaylord box is 48" x 40" x 36" and fits neatly on a standard pallet.
- 8-yard dumpsters. Communities often rely on open top or side open 8-yard collection dumpsters to collect sorted material. Be sure to communicate with your recycler to discuss moisture concerns for specific materials.
- Roll-off containers. Forty-yard containers can often be compartmentalized to accept multiple types of materials. Often smaller roll-offs are more easily accessible and are better fits for a drop-off center. Rolloffs can be covered or open-top, depending on your needs.
- Attendant's booth. Staffed recycling centers have the most effective and public-friendly recycling.
- Forklift. Programs that use Gaylord containers or other containers on pallets should have a forklift or a pallet jack.
- Pick-up truck. Facilities that use trailers often use in house trucks to move the trailers.
- Front-load or roll-off truck. Programs that do not contract with a hauler should be prepared to empty and haul material in house.
- Compactors. While not necessary, some drop-off centers utilize a compactor on-site for bulky materials like cardboard.

## **Should I bale and market my material myself?**

Before buying a baler and deciding to manage and market materials in-house, ensure that you understand the specifics of handling recyclable materials. The best way to do that is to communicate with the recycler you anticipate working with. They'll walk you through equipment options and baler specs.

## **Writing an effective contract: Tips for a strong partnership**

EPA WasteWise Resource Management<sup>8</sup> encourages communities who contract for solid waste and/or recycling services to think of their contract not just as a way to move trash but instead to manage resources. What's the difference? Here's how they explain it: "Unlike traditional solid waste service contracts, resource management (RM) compensates waste contractors based on performance in

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<sup>8</sup>EPA Resource Management Hauler Contracting: [www.epa.gov/epawaste/partnerships/wastewise/wrr/rm.htm](http://www.epa.gov/epawaste/partnerships/wastewise/wrr/rm.htm)

achieving your organization's waste reduction goals rather than the volume of waste disposed. As a result, RM aligns waste contractor incentives with your own goals as you both explore innovative approaches that foster cost-effective resource efficiency through prevention, recycling, and recovery.”

This chart, adopted from EPA WasteWise, further explains the differences:

<i>Feature</i>	<i>Traditional Hauling and Disposal Contracts</i>	<i>RM Contracts</i>
<b>Contractor compensation</b>	Unit price based on waste volume or number of pick-ups.	Capped fee for waste hauling/disposal service. Performance bonuses based on value of resource efficiency savings.
<b>Incentive structure</b>	Contractor has a profit incentive to maximize waste service and volume.	Contractor seeks profitable resource efficiency innovation.
<b>Waste Generator-Contractor Relationship</b>	Minimal generator-contractor interface.	Strategic alliance: waste generator and contractor work together to derive value from resource efficiency.
<b>Scope of Service</b>	Container rental and maintenance, hauling, and disposal or processing. Contractor responsibilities begin at the dumpster and end at landfill or processing site.	Services addressed in traditional hauling and disposal contracts plus services that inform and influence waste generation (i.e. product/process design, material purchase, internal storage, material use, material handling, data management, reporting).

*Source: EPA WasteWise*

Looking for a local example of contracted collection done well? One such example is the Huntsville, Alabama Solid Waste Disposal Authority<sup>9</sup>. They operate their curbside program through BFI/Allied Waste. Their program has been operating for a decade and they’ve learned a lot along the way. What tips does program manager Dixie Bray suggest to other communities working on a hauler contract? She encourages you to:

- Identify your goal. Is it to provide comprehensive recycling or to pick up trash?
- If you don’t have a market, don’t pick it up.
- Remain flexible and ensure that your contract is amenable to change.

<sup>9</sup> Huntsville Solid Waste Authority: [www.swdahsv.org/](http://www.swdahsv.org/)

- Be sure your contract is super-clear as to everyone's responsibilities. Outline consequences if objectives are not met.

## **Suffering from collection stagnation? Don't worry – there's a cure.**

In a recent article for *Resource Recycling Magazine*, North Carolina's Division of Pollution Prevention and Environmental Assistance, (DPPEA) reported findings from both a targeted study and ongoing assistance work with mid-sized community recycling programs with flat recovery rates.<sup>10</sup> Based on the findings DPPEA encourages NC collection programs to consider a few key best management practices geared at refueling recycling recovery rates:

- Providing additional household recycling storage capacity to match the amount of recyclables in a typical household.
- Moving to a different collection format, in particular going from bins to carts.
- Increasing the range of materials included in the curbside mix.
- Altering post-collection material handling techniques.
- Changing to different Material Recycling Facilities (MRFs) or processing service providers.
- Looking for opportunities to generally improve on-route collection efficiency.

The DPPEA report continues that in many North Carolina communities, flat participation has been a major cause for program stagnation. A commitment to education is absolutely critical to good curbside program performance. The elements of education and outreach that DPPEA emphasizes include:

- Investment of additional resources and a refocus on outreach efforts.
- Creation and use of outreach mechanisms new to the community – for example, truck advertisements.
- Creation and use of basic educational materials, especially in support of operational program changes.
- Development of new types of messages to reach different demographics and to teach citizens why recycling is important.
- Integration of the state's Recycle Guys and RE3.org outreach programs into local educational programs.
- Implementation of award programs to incentivize citizen participation.

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<sup>10</sup> <http://www.p2pays.org/ref/45/44983.pdf>



# Boosting Participation for Effective Economics

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## What's the value of outreach?

Communicating with your public is more than clip art and factoids. When you promote your recycling program, you're really working to increase participation and decrease contamination. What happens when you successfully do those two things? Right - Your program becomes more cost efficient.

Why is that? The fixed costs of recycling can be high – trucks, man power, equipment, buildings. The more “throughput” you have over those fixed costs, the more value you get out of them. If you buy and use it just one day a week to pick up two tons of recyclable, the cost of that truck per use and per ton is very high. Pick up 10 tons on five days of the week, and you per use and per ton costs get much better. Another way to look at it is if you purchase 100 rollout carts and only 50 get used on a regular basis, you are wasting half of your investment.

## How much should my community invest in outreach?

When you invest in outreach with your public, you're making a sound investment. How much should you consider spending? In its *Recycling Professionals Certification Training Manual*, South Carolina encourages communities to allocate about \$1.00 per household per year. If changes are occurring to a

program, then the figure would be higher than that. If your community can't spend that amount per household, you will need to be more creative in finding no-cost or low-cost outreach methods to get the public's attention.

### **EPA's Resource Conservation Challenge has free outreach materials**

A quick visit to [www.epa.gov/epawaste/rcc](http://www.epa.gov/epawaste/rcc) will help recycling programs round up free PSAs, posters, and ideas for boosting participation.

## What are the two types of people in your town?

There are two types of people in your town – those who recycle and those who do not. The same message may not reach each group – in fact it often does not. Telling your public what, where, and when to recycle is a great way of appealing to those who want to recycle. Convincing the non-recyclers to start takes

understanding the barriers these groups have and planning a way to help them overcome those perceived and actual barriers.

One way to look at this difference is think about recycling “education” versus recycling “promotion” Education is like an owner’s manual that tells you how to use a product; promotion is what a company does to convince you to buy the product in the first place.

## **How do you design a recycling campaign?**

In the old days, promo materials for recycling programs looked about the same: blue, green, a picture of the earth, a sapling, and a cute little kid. Some of that kind of stuff can be very effective. But now we know that it takes a little more creativity to reach our audience.

Where do you start? You start not by making an ad or sign but by evaluating your audience. Host a couple of focus groups (a classroom, a club, a church group, people at the mall) and try to figure out what the perceived and actual barriers to recycling are. Not everyone will have the same barriers so as you talk to people, try to find relationships between pockets of your population and their reaction to your community’s recycling program.

## **How do you know what your public thinks they know?**

Understanding the public’s perception to your program will help you define your audience, craft a message, and plan an outreach approach. What sorts of things do you want to find out? Here’s a start:

- Who recycles regularly? Most research shows that 60-somethings have high participation rates and kids in elementary school love to recycle. Those 18-35 year olds tend to participate less frequently. South Carolina’s 2006/2007 “Residential Recycling Study” found that people who classify themselves as light or non-recyclers tend to live in rural areas, come from lower income households, have lower education levels, and only have access to drop-off recycling facilities.
- Who thinks recycling is hard? Is it really hard (little or no access) or is it a perceived difficulty (I get tired of tossing my can into a different bin)?
- Do people know when, where, and what to recycle?
- What myths do people have about recycling?

### **Earth 911 – Free online tool**

How do visitors, new community members, and established program users alike find your program? Earth 911 allows you to upload your locations to people can find you by your zip code.

## How do you reach the recycling enthusiast?

When working to improve your recycling outreach, it's often easiest to make sure you're reaching the audience who want the information. You'll want to be sure that people know when to recycle, where to recycle, and what to recycle. How do you do that? Here are some basics:

- **Signs on bins.** Clear signage at drop-off centers is a must. Photos help with language barriers. Some communities go so far as to create stickers for every curbside bin but those can become outdated as your program grows.
- **Brochures or fliers.** A program overview can be handy for distribution at festivals, workplaces, or by your drop-off center attendants. They help interested people know the basics and can reduce contamination.
- **Annual newsletter.** If you operate a curbside program, have your collection crew tape a one-page newsletter directly to the container. Many programs use utility bill stuffers as an inexpensive distribution method. A well-designed large ad in the paper can serve the same purpose. Highlighting local recycling success stories can be a fun twist.
- **Web site.** While a Web site won't often convince the non-recycler to start recycling, it's often very handy for helping dedicated members of your public get the information they crave. Remember, public advocates can be a communication tool for your program. Don't feel up to designing a Web site? Hire a part-time college student to get the job done!
- **Welcome package.** Does your community have a service that contacts new residents? Be sure your recycling information is included in that basket of goodies!
- **Helpful attendants at drop-off centers.** Want to know the public face of your recycling program? Look at your attendants. Those are the people your public associate with your program. The more you can encourage them and help them educate others, the stronger your program will be.
- **Publicize program changes.** Add a new material? Get the word out! Not only will this reduce contamination, it helps the public to understand that their community is committed to having a fresh program.

### Curbside Value Partnership

Looking for fresh tools to help build public support? Be sure to go to [www.recyclecurbside.org](http://www.recyclecurbside.org) for PSAs, outreach ideas, conversion tools, Web-based seminars, and other handy materials. Curbside Value Partnership is gaining partners across the Southeast.

## Georgia Uses Shock Value to Promote Discussion

**I Don't Recycle** is Georgia's approach to appealing to the non-recycler. Designed for 18-30 year olds, this campaign is heavy on the social media tools. Check it out at [www.yougottabekidding.org](http://www.yougottabekidding.org)

## How about those who are not so enthusiastic?

In their MGTK, EPA Region 4 reminds us that:

*When speaking to non-recyclers, it's often better to appeal to their sense of positive gain more than address what they're missing by not recycling. How can you achieve this? Here is a list of ways you can help make recycling the social norm:*

- *Non-recyclers often don't see the immediate benefit of recycling so getting your message across via a different voice can be influential.*

*How can you help church leaders, civic group leaders, and business bureaus to voice your information? Hearing a message from a respected, but unexpected person can make a world of difference.*

- *What is on the side of your recycling trucks? If they are not promoting recycling, they should be! This serves as a reminder, or prompt, that recycling is available in your community. It also helps to stress that your program is current. Remember that people pay big bucks to advertise on the sides of busses and trucks – you get to do it for next to nothing!*
- *Encourage a commitment to recycling – and then publicize it! Getting permission to print a new recycler's name in the newspaper (or your newsletter) can help form a long lasting commitment.*
- *Have you thought about incentives? Some communities offer monthly cash prizes to randomly selected citizens who put full, contaminant-free recycling containers on the curb. Do you work with a hauler? Write a citizen incentive program into your contract.*
- *Recycling factoids appeal to current recyclers but rarely do they sway the mind of a staunch non-recycler. Make sure that your outreach materials use diverse approaches. EPA Region 4's Municipal Government Toolkit offers current information on recycling impact on your community, the climate and energy use, and the economy.*
- *Consider that elected officials might fit into your non-recycler category.*

It is important to consider what message might work best in recycling promotion. Recycling is a powerful strategy to combat climate change, but that won't convince climate change skeptics to recycle. But you may be able to talk to folks about the energy benefits of recycling, since everyone pays a gas and electric bill. Recycling as a job creator may appeal to people focused on the economy. Patriotic citizens might want to know that recycling helps keep Americans employed and helps wean us from foreign sources of oil. Recycling is as red, white, and blue as you can get!

## What's this I've heard about social marketing?

Reaching out to appeal to the non- or light-recycler takes more creativity. That's where the concepts of social marketing can help you. What is social marketing? It's the idea that we're working to change behavior, not sell a product, so our communication approach should be different than that of standard marketing. Here's an overview of the steps:

- **Identify an audience.** Is it a neighborhood, a generation, a business type, or something else all together?
- **Identify the barriers to behavior.** Surveys, face-to-face interviews, and focus groups can help.
- **Outline an approach to increasing participation.** Are you going to appeal for help from local clergy? Start a school recycling program? Work with the Lions Club? Partner with grocery stores to collect bags and film? Network construction companies with C&D recycling facilities? Partner with a local college for increased resources?
- **Test that approach.** It's easy to skip this step but it's worth the effort!
- **Roll out the outreach technique.** Who in your community can help you spread your message?
- **Regularly monitor the results.** You may need to tweak your message or approach to remain flexible.

## What about incentives?

In its *REACT* workbook, the RE3.org campaign sites the success of cash incentives. Many communities include cash-type incentives as a component of their hauler contract. Here's an example from RE3.org:

*Monroe city officials launched a new program in late 2004 to increase recycling rates. It's a year-long incentive-based program aimed at reducing the city's waste volume. Families agree to be in the program and are eligible for cash prizes ranging from \$25 to \$75, earning points for the amount of recyclables and trash-to-recyclables ratios. Each month the program eligible pick-up routes rotate to give all citizens a chance to participate. The monthly winner is featured in the local newspaper. At the end of the year, the overall winner gets a cash prize of \$500 from BFI, the city's trash and recycling hauler.*

*Source: RE3.org*

So how does this apply to your program? It means that after you've established the basics above, you can work at identifying approaches that may best help you increase participation. Some key social marketing terms include:

- **Commitment.** Studies show that getting a written commitment can help keep people involved. Need ideas? How about a sticker that people can put on their trash can that says, "This family recycles!" Or take names of people who plan to recycle more while at a local

festival, then print those names in the paper (with permission). We love to see our name in print! This works really well with businesses in a partnership with the chamber of commerce.

- **Social Norms.** When people feel that their neighbors do something, it makes them more likely to participate. Why? It feels normal, expected, and accepted. Think of it like positive peer pressure. Some communities choose to partner with the local newspaper to highlight one family each month who does a good job recycling. This helps recycling feel normal, helps to encourage participation, and is free press for you!
- **Prompts.** Signs on bins, ads on recycling trucks, and articles in the paper all act as prompts to remind people that recycling is something they've committed to and that it's part of the social norm.
- **Communication.** Talk to your public, and when you do, know your audience - including their beliefs, attitudes, and behavior. Use a credible source and look for partners such as clergy, elected officials, teachers, and club leaders. Always include your phone number and Web site, but remember that only the dedicated persons will make the effort to call.

## Are your elected officials supportive?

The EPA Region 4 MGTK reminds us that building support from elected officials is crucial to developing the upper-level program support needed for your recycling program to flourish. When looking to improve your program, consider the following questions:

- **Does your city and community council have a good understanding of the local and regional impact of recycling?** Sure recycling is good for the environment, but do your city or county officials understand its impact on energy use? If not, EPA Region 4's Municipal Government Toolkit has extensive climate and energy information that can help ensure your governmental partners understand the modern picture of recycling. The EPA WARM model <sup>11</sup>can further evaluate your community's energy and green house gas savings.
- **Do they know that regional markets are strong and that recycling has a strong impact in the local and regional economy?** EPA's Jobs through Recycling<sup>12</sup> site reports that for every job collecting recyclables, there are 26 jobs in processing the materials and manufacturing them into new products. The Southeast has a strong focus on manufacturing and recycling supports local jobs. Remember that recycling adds up to tax revenue.
- **Do your leaders know of recycling businesses located within or near your community that benefit from your recycling program?** Partnering with a recycler or an end user/manufacturer in your area can help capture the ear of an elected official.
- **Your elected officials might be interested to learn that recycling helps improve your public's perception of their community.** For more information on the social impact of recycling, see EPA

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<sup>11</sup> EPA WARM Model: [www.epa.gov/climatechange/wycd/waste/calculators/Warm\\_home.html](http://www.epa.gov/climatechange/wycd/waste/calculators/Warm_home.html)

<sup>12</sup> EPA Jobs Through Recycling: [www.epa.gov/epawaste/conserves/rrr/rmd/index.htm](http://www.epa.gov/epawaste/conserves/rrr/rmd/index.htm)

Region 4's Community Development and Recycling<sup>13</sup> link. This resource is part of the Municipal Government Toolkit.

Remember, recycling is a growing industry with strong potential. Your council members are interested in growing businesses that result in more tax revenue and jobs. Conveying the value of recycling to elected officials is not always easy. Many officials are not aware of the powerful dynamics of the recycling industry. By arming yourself with the facts, you are one step closer to getting the support you need to make recycling a reality.

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<sup>13</sup> MKTK Social Impact Fact Sheet: [www.epa.gov/region4/waste/rcra/mgtoolkit/Community.html](http://www.epa.gov/region4/waste/rcra/mgtoolkit/Community.html)



# Specialized Collection for Program Growth

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## How can I build support from schools?

As EPA Region 4 points out in its school recycling Web page<sup>14</sup>, a lifelong support of recycling often starts with what students learn and practice in school. This site includes examples from many Southeastern states.

Many communities find success when they assist schools in a specific recycling partnership. One example would be school milk container recycling. Those little cartons we all associate with school cafeterias are being replaced with small HDPE bottles. Along with that switch comes a recycling opportunity and free resources<sup>15</sup> to help make it happen. In addition to plastic bottles, all the paper that a school generates in classrooms and offices is an obvious target for recovery.

The City of Fairhope, Alabama<sup>16</sup> has had a successful school recycling program for years. Recycling coordinator April Westervelt explains that they build momentum by kicking off the school year by awarding the school with the highest recycling rate of the previous year a prize. The schools get to choose the prize of choice, but past options have included everything from a school-wide cotton candy party to a recycled content bench for the school grounds. This prize often gains free press and builds even further enthusiasm. To maintain progress throughout the year, they give report cards to the schools. How does the City of Fairhope promote program to schools? They tout recycling as cost avoidance, community service, and a way to get free support like those benches.

In Mississippi, the Mississippi Recycling Coalition is currently developing plans to assume the successful school recycling grants program that had been managed for years in the state by a corporate sponsor. Information on how schools can apply for these grants will be made available on the organization's website at: [www.msrecycles.org](http://www.msrecycles.org).

### **Harness the Power of Recycle Guys**

Looking for free, award-winning materials that resonate with kids? You're in luck! The Recycle Guys were created by South Carolina and have been boosting recycling rates for years. Look for their materials and information about how to adopt the free campaign at:  
[www.scdhec.net/environment/lwm/recycle/resource\\_center.htm](http://www.scdhec.net/environment/lwm/recycle/resource_center.htm)

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<sup>14</sup> School Recycling Resources for Southeastern States [www.epa.gov/region04/recycle/schools.htm](http://www.epa.gov/region04/recycle/schools.htm)

<sup>15</sup> School Milk Jug Recycling Materials: [www.nutritionexplorations.org/sfs/schoolmilk\\_recycling\\_faqs.asp](http://www.nutritionexplorations.org/sfs/schoolmilk_recycling_faqs.asp)

<sup>16</sup> City of Fairhope Recycling : [www.cofairhope.com/publicworks.html](http://www.cofairhope.com/publicworks.html)

## School Specific Tools – EPA’s School Chemical Cleanout Campaign

Sometimes partnering with schools for waste reduction programs can include specific approaches – such as chemical clean outs. EPA’s SC3 campaign can give you the free tools to make it a snap<sup>17</sup>.

## Is my community ready to manage construction and demolition waste?

As EPA describes on their construction and demolition (C&D) Web site<sup>18</sup>, “C&D materials consist of the debris generated during the construction, renovation, and demolition of buildings, roads, and bridges. C&D materials often contain bulky, heavy materials, such as concrete, wood, metals, glass, and salvaged building components.” It’s the bulky and heavy that should raise your interest level. As outlined in Mississippi’s C&D Recycling information<sup>19</sup>, keeping bulky, heavy and often readily recyclable materials out of your landfill is a wise investment.

C&D materials tend to have low market value so remember that in planning recovery efforts. Metals are often the easiest material to target, but increasingly paving companies are interested in shingles, and you may also be able to find local companies interested in grinding brick and concrete for aggregate.

## What about metals and white goods?

While not banned statutorily in Mississippi, communities are nevertheless encouraged to recycle the material. With metal markets often the strongest of the recycling commodities, it’s common for communities to recycle white goods. Diverting their bulk and weight from disposal can ease a tipping fee budget. MDEQ’s White Goods Recycling Information is found on line.<sup>20</sup>

### One Electronics Collection Option: Year-Round Collection

The City of Jackson, Mississippi operates an ongoing drop-off collection location for computer equipment and household hazardous wastes at the City’s Environmental Service Center. In addition, the City participates with the Metro Chamber Partnership to help with “amnesty days” where households and businesses can drop off any sort of electronic equipment.

<sup>17</sup> EPA School Chemical Cleanout: [www.epa.gov/epawaste/partnerships/sc3](http://www.epa.gov/epawaste/partnerships/sc3)

<sup>18</sup> EPA C&D Web site: [www.epa.gov/epawaste/conserves/rrr/imr/cdm/index.htm](http://www.epa.gov/epawaste/conserves/rrr/imr/cdm/index.htm)

<sup>19</sup> MDEQ’s C&D Recycling Information:

[http://www.deq.state.ms.us/MDEQ.nsf/page/SW\\_Special\\_Waste\\_Guidance](http://www.deq.state.ms.us/MDEQ.nsf/page/SW_Special_Waste_Guidance)

<sup>20</sup> MDEQ’s White Good Recycling Information:

[www.deq.state.ms.us/MDEQ.nsf/page/SW\\_Special\\_Waste\\_Guidance](http://www.deq.state.ms.us/MDEQ.nsf/page/SW_Special_Waste_Guidance)

## What about phonebooks?

Letting your public know that they can opt-out of receiving a printed phone book may be a helpful tool in your education and outreach.

[www.yellowpagesoptout.com](http://www.yellowpagesoptout.com)

Make sure you plan for the safe removal of coolants or “CFCs” from refrigerators, freezers, and air conditioners. Remember also that the cleaner the metal, the more value you will receive – put metals on a concrete pad instead of dirt.

## Who can I go to for information about electronics recycling?

Commercially generated e-wastes are not allowed in C&D landfills in Mississippi. Although e-wastes from residences and CESQG's are exempt from Hazardous waste regulations and can legally be disposed in municipal solid waste landfills, MDEQ discourages the landfill disposal of these materials and encourages recycling.

MDEQ's e-waste website provides program materials online at [www.deq.state.ms.us/electronics](http://www.deq.state.ms.us/electronics). These program materials<sup>21</sup> include:

- MDOT Cell Phones for Soldiers Program
- State Auction Information for government-generated electronics
- Local Collection/Recycling Programs
- Manufacturer Take-Back Programs
- E-Cycling Directory

The key to successful e-waste recycling programs is partnering with a trust worthy private sector partner. . EPA's eCycling<sup>22</sup> materials include regulations and standards for communities looking to recycle electronics.

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<sup>21</sup> MDEQ E-waste Recycling Information: [www.deq.state.ms.us/electronics](http://www.deq.state.ms.us/electronics)

<sup>22</sup> EPA eCycling: [www.epa.gov/epawaste/conservematerials/ecycling/rules.htm](http://www.epa.gov/epawaste/conservematerials/ecycling/rules.htm)

## What if I'm not ready for a full blown electronics or HHW program?

That's okay. There are a number of good producer-responsibility programs that you can look to for help with specific waste reduction approaches.

- Call2Recycle: [www.call2recycle.org](http://www.call2recycle.org) Call2Recycle is a program of the Rechargeable Battery Recycling Corporation (RBRC) promoting environmental sustainability by providing free battery and cell phone recycling in North America.
- Thermostat Recycling Corporation (TRC): [www.thermostat-recycle.org](http://www.thermostat-recycle.org). The TRC works to recover and recycle mercury containing thermostats.
- Dispose My Meds: [www.disposemymeds.org](http://www.disposemymeds.org) The National Community Pharmacists Association manages this website to help community members learn not to flush their old medications.

## How can I best collect materials from special events?

Away from home recycling is a growing focus point for the recycling community. One way your program can boost recycling totals and help build community support for recycling is to offer event recycling. Your program could be as simple as providing a trailer that events can check out for free. You deliver empty, pick up full. It can also be more involved such as partnering with sporting events.

Either way, EPA's Recycle on the Go<sup>23</sup> program has free how-to guides, promotional materials, and success stories to make your job easier. Recycle on the Go focuses on these locations:

- Convention Centers
- Parks
- Shopping Centers
- Special Events
- Stadiums
- Transportation Hubs (Airports, Bus and Rail Stations, Highway Rest Stops)

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<sup>23</sup> EPA Recycle on the Go: [www.epa.gov/epawaste/conserve/rrr/rogo/index.htm](http://www.epa.gov/epawaste/conserve/rrr/rogo/index.htm)

## **We're interested in mulching our community yard waste.**

Did you know that MDEQ solid waste assistance grants are available for communities interested in establishing yard waste mulching programs<sup>24</sup>? Keeping mulch-able materials out of your landfill conserves space and reduces the production of landfill methane gas, a powerful greenhouse gas.

Interested in learning more about landfill methane production? As stated on their website, the EPA's Landfill Methane Outreach Program (LMOP)<sup>25</sup> is a voluntary assistance program that helps to reduce methane emissions from landfills by encouraging the recovery and beneficial use of landfill gas (LFG) as an energy resource. LFG contains methane, a potent greenhouse gas that can be captured and used to fuel power plants, manufacturing facilities, vehicles, homes, and more. By joining LMOP, companies, state agencies, organizations, landfills, and communities gain access to a vast network of industry experts and practitioners, as well as to various technical and marketing resources that can help with LFG energy project development.

### **Backyard composting**

Many communities find success in encouraging townspeople to compost their yard and kitchen wastes at home. It's easy to build a bin – see EPA's guide: [www.epa.gov/osw/conserves/rrr/composting](http://www.epa.gov/osw/conserves/rrr/composting) Or a Web search can help you find companies that will partner with you to sell back yard composting bins during a community event.

## **Other Types of Materials to Consider**

Depending on local markets and users of materials, communities may easily be able to add other commodities to their collection programs. For example, if you have pallet recyclers in your area, establishing a pad or drop-off area for pallets may be worthwhile. Pallets can also be ground for use in mulch, compost, and boiler fuel (as can other types of wood waste).

Some communities have also had luck in recycling textiles, sometimes in conjunction with a thrift store, Goodwill, or Salvation Army. Small items like toner cartridges and cell phones are good possible additions to collection efforts and tend to present a lot of choice in marketing options. The Rechargeable Battery Corporation offers free programs for collection of that material, as does the Thermostat Recovery Corporation for mercury thermostats. Even eyeglasses can be collected and given to Lions Clubs for their vision assistance programs.

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<sup>24</sup> MDEQ Grant information: [www.deq.state.ms.us/MDEQ.nsf/page/SW\\_Grants\\_Program\\_Information](http://www.deq.state.ms.us/MDEQ.nsf/page/SW_Grants_Program_Information)

<sup>25</sup> EPA Landfill Methane Outreach Program: [www.epa.gov/lmop](http://www.epa.gov/lmop)

Any number of materials may be recyclable – staying in touch with your local peers across the state is the best way to learn what might be possible.