

What is the ONE THING we can do that will:

- Reduce demand on global resources
- Reduce greenhouse gas emissions
- Spark innovation in manufacturing
- Create local jobs
- Strengthen Missouri's economy
- Reduce business operating costs

The answer is recycle – of course! Recycling is a very diverse industry and a strong economic driver in Missouri. Even when competing in a global economy, we can advance toward full economic recovery, job creation, and a healthy environment by diverting valuable resources away from landfills and back into production. The need has never been more critical.

In the Show-Me-State, 75% report recycling. What's more, growing numbers of business and industry are realizing that designing products from recovered materials can reduce costs and increase their competitive edge. By recycling Missouri can meet the need for manufactured goods, with far fewer environmental impacts, so we don't have to choose between good, local jobs and sustaining resources for our children and grandchildren.

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Recycling Works!

The 2010 Missouri Green Jobs Report issued by the Missouri Department of Economic Development cites Missouri as being on the cutting edge of the new Green Economy. In many regions green jobs represent a sizeable 4.8 percent of total employment. The surveyed employers list waste minimization as one of the top three skill sets needed for green workers.

- Green jobs are expected to grow at a far faster rate than other types of jobs within our state.
- Recycling protects and expands Missouri manufacturing jobs and increases competitiveness.
- Recycling adds value to materials which creates jobs.
- Recycling represents a diverse industry and spurs "downstream" economic benefits.

Recycling in Missouri

		
Expands the Economy	Strengthens Communities	Protects the Environment
<ul style="list-style-type: none"> • 265,000,000 in export sales of recyclables • 1,228 firms/over 28,000 employees • \$2,895,101 in cost savings to business from recycling market development 	<ul style="list-style-type: none"> • 575 Sheltered Workshop employees • Builds public-private partnerships • Fosters civic pride and volunteerism 	<ul style="list-style-type: none"> • Saves enough energy to power 125,000 homes a year • Conserves water and natural resources • Reduces greenhouse gas emissions

Funding for this guide provided by the St. Louis-Jefferson Solid Waste Management District and the Missouri Department of Natural Resources.

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Missouri Department of Natural Resources



“Where Is Away?” The Modern Landfill

Waste has been around as long as humankind, but when we moved from caves into cities, it became apparent that waste had to be “managed.” You may be surprised to learn that the first known municipal dump was created in ancient Athens in 400 BC. Our modern waste management systems evolved from this first attempt. Following is an explanation of the workings of a modern landfill, why we need to conserve landfill space, and the most recent look at what Missourians are throwing away.

Landfills

The new sanitary landfills are designed to prevent many public health and environmental problems from decomposing trash by controlling leachate and landfill gas for the life of the landfill and beyond its closure.

Leachate

Leachate is generated when precipitation and liquids disposed in trash seep through the waste. Often acidic, this liquid can “leach” out heavy metals and other pollutants that are contained in the wastes. Today’s landfills are engineered to prevent leachate from contaminating groundwater, rivers and streams.



Leachate control begins before a landfill is even permitted with an extensive study to characterize the hydrology of the site. The study results will determine the groundwater monitoring requirements that are implemented for the life of the landfill.

As the landfill is constructed, a liner system consisting of 24 inches of compacted clay is topped with a puncture-resistant, synthetic liner. Perforated pipes laid over the liner carry the leachate out of the landfill for treatment, usually at a wastewater treatment plant.



Synthetic plastic liner

In some landfills, called bioreactor landfills, the leachate is recirculated to enhance waste decomposition and increases methane gas production, which is then recovered for energy.

Landfill Gas

The bacteria that break down waste generate gases as a by-product. Landfill gas is practically 50 percent methane and 50 percent carbon dioxide with small amounts of other gases such as nitrogen, oxygen and hydrogen sulfide which gives the gas its characteristic odor. To remove the gases, a series of collection pipes are embedded within the landfill.

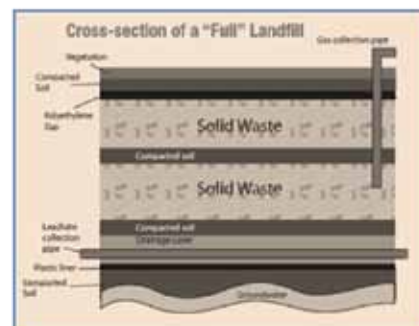
It was common to vent or burn the gas, however it is now recognized as an usable energy source.

The methane can be extracted from the other gases and used as fuel, as is done at many Missouri landfills.

Even with beneficial use of gas, the EPA reports that landfills are the second largest contributors of methane, a green house gas 21 times as harmful to our atmosphere as carbon dioxide. See page 13 for more information on the waste connection to climate change.

Landfill Closure

A landfill permit allows waste to be received until a defined amount of “air space” is used. Once the space is filled, the landfill is closed with an approved final cap. The owner of the landfill is responsible for gas and leachate management and monitoring, in addition to maintenance of the final cap for 30 years after closure.



To see a map of landfills located in Missouri visit: www.dnr.mo.gov/env/swmp/docs/pfmap.pdf

Since 1999, \$31,175,900 in cost savings to businesses and 425 new recycling jobs created in Missouri through the Missouri Market Development (EIARA, 2011).

Waste Composition - What Is In The Landfill?

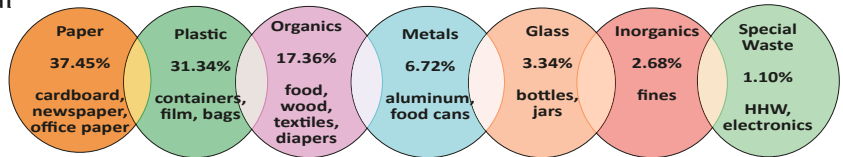
What Is In A Landfill?

In 2008 the Missouri Department of Natural Resources Solid Waste Program released results of a study that found nearly 45% of waste in our landfills had the potential to be recycled. The study was conducted by the Midwest Assistance Program Inc. on wastes deposited in Missouri landfills and transfers stations from 2006-2007.

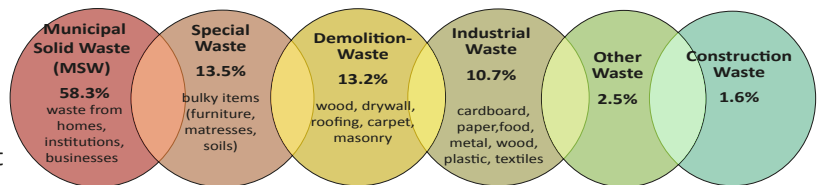
If the recyclable materials in Missouri's municipal solid waste were recovered instead of landfilled, nearly **28 billion** BTUs of energy could have been saved, equivalent to the annual amount of energy used by

262,000 houses. Based on the average cost of propane, 28 billion BTUs would equate to cost savings of more than \$500 million. Further, if the recyclable materials had been diverted and used in new products instead of using virgin materials, more than 1.1 million tons of greenhouse gas emissions could have been avoided. View the report at: www.dnr.mo.gov/env/swmp/rrr/wastecompositionstudies.htm

Composition of Municipal Solid Waste



Categories of Wastes in Landfills



Zero Waste



The EPA describes "Zero Waste" as a philosophy to minimize waste and resource consumption to conserve energy, mitigate climate change, reduce water usage, prevent toxics creation, and minimize ecosystem destruction. The Zero Waste International Alliance defines "Zero Waste" as achieving 90% waste diversion from landfills and incinerators.

Waste Is Not Inevitable The beginning of the Zero Waste journey is committing to the principle that most discards are potentially valuable resources. Rather than merely taking recyclables out of the trash, Zero Waste considers trash as the remaining residue following practices to reduce, reuse, recycle and compost everything possible.

Beyond Recycling Our current system of delivering goods and services creates 71 tons of waste "upstream" for every one ton of waste we dispose in Missouri landfills. Those wastes are produced from mining, manufacturing, and distribution. Moving to Zero Waste requires designing waste out of systems, to reuse as much as possible, and recycle or compost the rest. The environmental benefits are obvious, and it makes increasingly economic sense.

Zero Waste

- redesigns the current, one-way industrial system into a circular system modeled on nature's successful strategies
- challenges badly designed business systems that "use too many resources to make too few people more productive"
- addresses, through job creation and civic participation, increasing wastage of human resources and erosion of democracy
- helps communities achieve a local economy that operates efficiently, sustains good jobs, and provides a measure of self-sufficiency
- aims to eliminate rather than manage waste

Grassroots Recycling Network
www.grrn.org

Looking Forward

Exceeding the 40% waste diversion goal set in 1990 was a huge milestone for Missouri and a direct result of regional planning. Over \$70 million dollars in landfill tipping fees was invested in local recycling programs, equipment, facilities and market development through Missouri's twenty solid waste management districts. Missouri's environment, economy and workforce have benefited from this investment.

We have made progress, but as the recent Waste Composition Study demonstrates, valuable resources are being buried at a cost to our environment and economy. Some countries across the globe are already launching projects to mine landfills for scarce resources! The U.S. is fortunate but we cannot escape that we are part of a global economy. However, we can meet the challenges ahead if we invest now in the proven economic, social, and environmental solutions brought through recycling.

Organics - The Next Generation

Organics are wastes that can be broken down into nutrient rich humus through the natural compost process. Organics in the municipal waste stream include yard waste, paper, food and wood waste.



Missouri is one of 22 states that ban yard waste, – the largest category of organic wastes - from landfill disposal, unless the landfill is classified as a bioreactor landfill (see page 2). The ban was part of the strategy to help Missouri reach the 40% waste diversion goal set in 1990. In addition to saving landfill space and generating beneficial compost, the yard waste ban created a vital industry throughout the state that according to a 2005 Truman State study, directly employs 3,468 and indirectly employs 7,452 Missourians.

The next step in organic waste diversion is likely to move us closer to 75% waste diversion. Many communities striving for Zero Waste (see page 3) have adopted a 3 container residential waste collection that includes:

1. Recyclables
2. Organics (yard waste, soiled paper, and food)
3. Residuals- the remaining discards that cannot be recycled or composted.

Food Waste: A Growing Challenge

The EPA estimates that 100 billion pounds of food – about 3,000 pounds per second – is wasted each year in the U.S. A 2009 study reports that U.S. per capita food waste has progressively increased by 50% since 1974, reaching more than 1400 calories per person per day. Food is a valuable resource that that should be handled following the 3R's, reduce, reuse, recycle. The EPA recommends the following hierarchy for food waste management:



Composting and Vermicomposting

Benefits of Composting

Compost enriches soil by introducing humus that increases nutrient content, increases higher yields, and reduces the need for artificial and chemical fertilizers.

Compost helps soil retain moisture, decreasing the need for watering lawns and gardens. It can suppress plant disease and pests, and is an effective erosion control measure when used on embankments, roadsides, hillsides, playing fields and golf courses.

Finally, diversion of compostable organics avoids the production of methane and leachate formulation in our landfills.

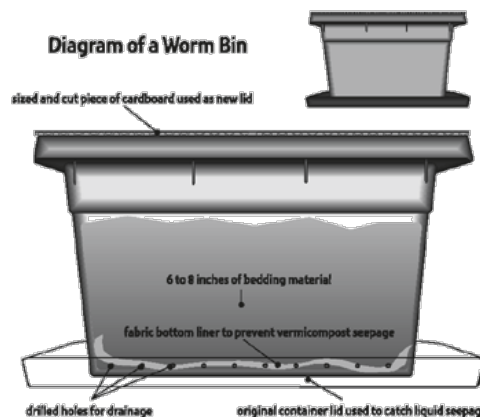
www.epa.gov/wastes/conservation/rrr/composting

Vermicomposting is Fun!

Did you know worms are some of nature's very best recyclers, simply by providing them with food, water, air, and a place to live? By vermicomposting with red worms you can convert your kitchen waste into a nutrient rich soil for your plants and reduce the food waste in the landfill. Instead of throwing away stale bread, leftover vegetables, coffee grounds and filters (also tea bags) - let your worms do the recycling! Composting with worms is fun for kids too!

Vermicomposting can be done in a very small space, year round, and requires minimal maintenance.

Add food by lifting up the bedding, depositing the scraps, and then always cover it with the damp bedding. This will prevent any odors or fruit flies. Rotate food in alternate areas of the box. To harvest your worm castings, begin feeding on one side of the worm bin and the worms will move to the food source. Remove the castings and apply to plants, lawns, and gardens. Also see: <http://www.epa.gov/osw/conservation/rrr/composting/vermi.htm>



Recycling and Jobs

The National Recycling Coalition estimates that for every job created by landfill disposal, four are created by recycling. Per the EPA and the Missouri Green Jobs Report, the U.S. has more than 56,000 recycling and reuse establishments employing over 1.1 million people, generating an annual payroll of nearly \$37 billion, and grossing over \$236 billion in annual receipts.

Recycling: A Diverse Industry

An EPA study cites 26 different types of recycling organizations, some of which might not commonly be seen as “recycling” businesses, such as steel mills, plastic bottle manufacturers, and pavement producers. Recycling is an integrated system that starts with curbside collection of materials by municipalities, involves processing of recycled materials, and leads to manufacturing of new products with recycled content.

Four major manufacturing industries account for over half of the economic activity of the recycling and reuse industry: paper mills, steel mills, plastics converters, and iron and steel foundries. But the recycling industry also includes companies that are quickly finding a market niche, including computer de-manufacturing, organics composters, and plastic lumber manufacturers.

Local Recycling and Reuse Spur “Downstream” Economic Impacts

Investment in local recycling collection and processing, as well as strong government policies, spurs significant private sector investment in recycling manufacturing and promotes economic growth. The study tallied this “indirect” impact of recycling on support industries, such as accounting firms and office supply companies, for a total of 1.4 million jobs supported by the recycling and reuse industry. These jobs have a payroll of \$52 billion and produce \$173 billion in receipts.

Recycling Manufacturing Industry Employment by Major Material Group

- * Organics: 10,000
- * Glass: 25,000
- * Nonferrous metals: 125,000
- * Plastics: 200,000
- * Paper: 150,000
- * Ferrous Metals: 250,000

EPA Study, updated July 23, 2007

Think Beyond the Bin

The EPA lists the following industries that create jobs through recycling, reuse and remanufacturing:

- Private and government staffed collection centers
- Compost and miscellaneous organics producers
- Material recovery facilities
- Recyclable material wholesalers
- Glass container manufacturing plants
- Other glass product producers
- Nonferrous secondary smelting and refining mills
- Nonferrous foundries and product producers
- Paper mills/de-inked pulp producers
- Paper-based product manufacturers
- Pavement mix producers (asphalt and aggregate)
- Plastics re-claimers and converters
- Rubber product manufacturers
- Steel mills
- Iron and steel foundries
- Computer and electronic de-manufacturers
- Used motor vehicle parts re-manufacturers
- Retail used merchandise sales
- Textile recyclers
- Tire re-treaders
- Wood reuse organizations
- Materials exchange services

Missouri Recycling Economics

- \$265,000,000 in export sales of recyclables from Missouri companies in 2009, up more than 300% from 2004 (Dept. of Economic Development, 2010).
- \$7,500,000 generated in recycling contract revenues from Missouri Sheltered Workshops.
- Over 575 full time jobs are created through recycling in sheltered workshops (DESE – Sheltered Workshop, 2010).
- Since 1999, \$31,175,900 in cost savings to businesses and 425 new recycling jobs created in Missouri through Missouri Market Development (EIERA, 2011).
- \$4.9 million program investment helped to leverage an additional \$29.3 million investment in Missouri’s business economy.
- 1,228 firms with 28,026 employees directly involved in Missouri recycling, remanufacturing and reuse firms (Truman School of Public Policy, 2005)

Buying Recycled Content Products



Look for recycling information on products and packaging. Items that have the “filled-in” recycling symbol means the product has some recycled content. Buy products that contain a high percent of “post consumer” recycled content.

“Closing the Loop” is a very important part of the recycling process – and one that’s good for both our environment and our economy.

As consumers, we have many choices in the products we purchase. Buying recycled products for home, work or school is one way that each of us can help the environment. Each time we buy recycled, we create more demand for products produced from the materials collected in recycling programs, and less demand on natural resources.

Recycled content products have the same quality and performance as equivalent non-recycled content products. American companies have invested heavily in technologies to use secondary materials in manufacturing processes to make new products. These products have to maintain quality specifications to be competitive in today’s marketplace.

Increasingly, high performance products such as new construction and building products, carpet, and automotive assembly components are made with recycled materials that were diverted from solid waste. It may take a little detective work to find some categories of recycled content products already in the market that contain recycled materials, but consumers have more choices all the time.

Most recycled content products are priced competitively with their non-recycled counterparts. In fact, many recycled products are less expensive. Recycled products produced in Missouri not only create local jobs but eliminate the environmental and economic costs of transporting products long distances to market.

Businesses and institutions might have the option to request recycled content products in bid specifications. As increasing numbers of large buyers purchase recycled content products, it helps bring the cost down for everyone.



Consumers can also ask local stores to carry more items with recycled content or contact consumer information numbers (on product labels) to encourage companies to use more recycled materials. You can also call to thank companies **that already do work to close the loop.**



Components of the Recycling Industry

Missouri is home to a number of important industries that use the commodities we recycle to make new products — from greeting cards and glass bottles to plastic decking. While not all recyclables are made into new products here in Missouri, a great many are. Other commodities are further processed, sorted and densified into upgraded materials that are converted into new products in other parts of the nation.

Your community may have a material recovery facility (MRF – pronounced “MURF”), to take materials directly from residential and commercial collection programs, and process these commodities into a form that can be readily marketed. There may also be a local scrap dealer that buys and processes metals, paper, and other materials into industrial raw material grades that are shipped to various manufacturers. The industry user and the “middle man” processor are important components of a viable recycling system that contributes to Missouri’s economy.

The last, and most important component of the recycling system is YOU! We are all consumers of goods and services, and our purchasing choices influence the economy. Consumer purchases of recycled content products stimulates the markets for collected materials. It’s important to be informed about choices in products and packaging. Making conscientious and informed decisions to purchase recycled content products and packaging whenever practical, will help sustain the recycling system – and the environment. To find Missouri manufacturers, visit the EIERA Recycled Products Directory at:

www.dnr.gov/eiera/mmpd-recycled-products-directory.htm

Recycled-Content Products Available in Stores

Product/Package.....	Examples	% Recycled Content/Source
GROCERY STORE		
Steel cans	Canned vegetables, coffee	25% cans, steel scrap
Glass jars/bottles	Sauces, pickles, mayo, jellies Beer, juices	Typ.30%; other glass jars
Aluminum cans...	Soft drinks, cat food, beer	100 %, other alum. cans, aluminum scrap
Paper towels, napkins	Some brands of towels, napkins	100% office paper
Paperboard boxes	Cereal, dry grains, cake mixes	100%, office paper, newspaper, crackers, cookies
Tissue/toilet paper	Most brands of toilet paper	100%, office paper, other high grades
Disposable diapers	Many brands of diapers	100%, office paper
HDPE Plastic bottles	Laundry detergent, shampoos, cleaners	Type.25%: HDPE milk jugs
PET plastic bottles	Liquid soaps/detergents	25%; soft drink bottles
PET plastic boxes	Berry/tomato plastic boxes	100%; soft drink bottles
Egg cartons	Most fiber egg cartons	100%; newspaper

OFFICE SUPPLY STORE		
Office/copier paper	Other office paper	20% - 100%
File Folders	Office paper, corrugated	20% or more
Padded mailing envelopes	Newspaper, office paper	100%
Note pads	Office paper, newspaper	100%
Scissors	Steel cans, steel scrap	100%
Overhead transparencies	PET soft drink bottles	25 %
Plastic mailing envelopes	HDPE milk jugs	Typ. 25%
Desk furniture	Steel, alum. Plastic, wood	Up to 100 %
Desk top organizers	Steel, plastic	Up to 100 %
Mailing tubes	Corrugated boxes, office paper	Up to 100 %

MASS MERCHANDISER / RETAILER/ BUILDING SUPPLIES		
Garden "Soaker" hose	Recycled tire rubber	Up to 100 %
Rubber door mat	Recycled tire rubber	Up to 100 %
Lawn edging	Recycled HDPE plastic	Up to 100 %
Flower pots	Polystyrene or HDPE	Up to 50 %
Truck bed liner	HDPE plastic	Up to 100 %
Compost/mulch	Recycled organics	100 %
Sleeping bags (fiber fill)	PET plastic bottles	Up to 100 %
Backpacks (polyester)	PET plastic bottles	Up to 100 %
Fleece sweaters/jackets (polyester)	PET plastic bottles	Up to 100 %
Residential carpet (polyester)	PET plastic bottles	Up to 100 %
Garbage cans, wastebaskets, buckets	PP, HDPE	Up to 100 %
Thermal insulation	Newspapers (blown in)	Up to 100 %
Thermal fiberglass insulation	Glass containers	Up to 35%
Gypsum wallboard	Newspapers/corrugated	Up to 100 %
Lawn Patch (grass seed/mulch)	Newspaper	100%
Ceramic Tile	Glass containers	Up to 50%
Glass decorative blocks	Glass containers	Up to 100 %
Three-ring binders	Cardboard, Craft paper, vinyl, HDPE, or PET plastic	Up to 100 %
Outdoor furniture	HDPE plastic	Up to 100 %
Steel garden tools	Food/aerosol/paint cans	Up to 40 %
Ceiling Tiles	Phone books	Up to 100 %
Steel interior framing studs	Food/aerosol/paint cans	Up to 40 %

ONLINE RESOURCES

American Forest & Paper Association
afandpa.org

American Plastics Council
americanchemistry.com/plastics

Aseptic Packaging Council
aseptic.org

Can Manufacturers Institute
cancentral.com

Glass Packaging Institute
gpi.org

Missouri Department of Natural Resources
dnr.mo.gov

Missouri Recycling Association
mora.org

National Association for PET Container Resources (NAPCOR)
napcor.com

National Recycling Coalition
nrrecycles.org

American Beverage Association
ameribev.org

Solid Waste Association of North American (SWANA) swana.org

Steel Recycling Institute
recyclesteel.org

Composting Council
compostingcouncil.org

US Environmental Protection Agency (EPA) epa.gov

Product Stewardship, Manufacturers and YOU

Many consumer products require special end-of-use handling because they contain toxic components or result in large volumes of waste that stress the capacities of local waste systems. Product stewardship shares the management responsibility and costs among all who play a role in a product's lifecycle—manufacturers, retailers, consumers and government. Working together, we can reduce environmental impacts of the products we use.

Manufacturers' Role

Manufacturers have the most control over how consumer goods are produced, marketed and sold. Product stewardship motivates manufacturers to decrease toxicity, design for recycling, and rethink the life-cycle impacts of their products. Many companies voluntarily incorporate the principles of product stewardship in their business model to encourage innovation, reduce costs, and grow consumer loyalty. Increasingly, businesses who adopt and advance sustainable design principles enjoy a global competitive advantage, not only from economic efficiencies, but through sustainability mandates spreading around the world.

Examples of Products Targeted for Product Stewardship

- Batteries
- Carpet
- Electronics
- Fluorescent Lighting
- Gas Cylinders
- Mercury Containing Devices
- Paint
- Pesticides
- Pharmaceuticals
- Phone Books



Retailers' Role

Retailers are critical to product stewardship efforts by providing convenient opportunities for customers to return old products when purchasing replacements. Retailers now provide return outlets for spent batteries, ink cartridges, old cell phones and other electronics, fluorescent lamps, pharmaceuticals and gas cylinders. The retail model enables end-of-use products to be returned for recycling through the same distribution channels bringing new products to market. A growing number of retailers provide rebates or incentives to encourage consumers to participate in take-back programs, which in turn encourage repeat customers.

Consumers' Role

Consumers are ultimately responsible for bringing end-of-use products to a collection point. Consumers also drive future product design with every purchasing decision. Marketing research clearly shows computer brands with manufacturer take-back programs sell better than those with no end-of-life options. Purchasing choices signal to manufacturers that consumers desire products that are nontoxic, resource-efficient, safe to use and easy to recycle. The market is responding with a wider selection of greener choices than ever before.

Governments' Role

Often the burden of responsible end-of-life management of consumer products falls to local governments to ensure adequate collection systems to manage toxicity and landfill diversion.

Many states have mandated product stewardship, often referred to as Extended Producer Responsibility, through legislation requiring manufacturers to implement take-back programs or advance disposal fees on the purchase price of hard-to-manage products. These product stewardship tactics lessen the end-of-life financial burden on both government and the consumer.

The federal government promotes product stewardship through voluntary public-private partnerships to encourage more environmentally-preferable design, standards and purchasing. As major purchasers, all levels of government can adopt and advance procurement policies to give preference to products and services that minimize life cycle impacts and encourage sustainability.



Protecting public health and the environment.

Practicing sustainable waste management strategies.

Partnering with industry and the community to grow our economy.



Visit our website at
www.RecycleSaintLouis.com.

REDUCE • REUSE • RECYCLE!
GO GREEN!

From Recycle Bin to Product - The Journey of Commodities

Steel Cans

The economic and environmental value of recovering steel from old vehicles, appliances and construction has helped to make steel the most recycled material in the U.S. 94% of all steel cans are used as food packaging. Recycling steel cans saves energy and natural resources.



Bin to Product

Once steel cans arrive at the materials recovery facility, a large magnet pulls them from the processing line. Cans are then baled and shipped to a steel mill to be turned into new steel products. Labels can be left on because they will burn when the cans are re-melted.

Aluminum Cans

A popular and convenient package since 1960, aluminum cans have a 52% recycling rate, more than 10,000 recycling centers nationwide, and cans are able to be recycled endlessly into new cans or other aluminum products.

Bin to Product

The illustration to the right (courtesy of Novelis Corporation) describes the process. 95% less energy is expended when cans are made from recycled aluminum, by eliminating extraction, refining and smelting of virgin ore.

Steel and Aluminum Facts:

- Americans use about 100 million steel cans every day, which contain about 25% recycled steel.
- The energy saved by recycling one pound of steel cans will power a 60-watt light bulb for more than one day.
- Aluminum cans are getting lighter. In 1972, there were 22 cans per pound compared to 33 cans per pound today.
- The energy saved by recycling one aluminum can will run a television for 4 hours.

Life-Cycle of the Aluminum Can



The Composting and Organics Association of Missouri is a non-profit corporation of public and private organizations and individuals dedicated to increasing the quality, value and usage of recycled organics in Missouri by providing education, information and resources and promoting activities and legislation that build healthy soils, benefit people and minimize negative environmental impacts.

For more information about COAM or membership
email dstevens@cityofsedalia.com

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From Recycle Bin to Product - The Journey of Commodities



Plastics

Plastic Resin Code

	Polyethylene Terephthalate water, soda & shampoo bottles, plastic jars
	High Density Polyethylene milk, detergent bottles, health & beauty containers, dairy containers
	Vinyl Polyvinyl Chloride clear food packaging, squeeze bottles, shampoo bottles
	Low Density Polyethylene plastic bags, mustard bottles
	Polypropylene yogurt and dairy tubs, syrup and medicine bottles
	Polystyrene styrofoam containers, egg cartons, nursery pots, cups, bowls
	Other - has multiple resins or a resin not listed above, ketchup bottles, juice containers.

Plastics are in our computers, toys, toothbrushes, phones, utensils...the list seems endless. Plastic is versatile, lightweight, flexible, moisture resistant, durable, strong and relatively inexpensive, making it ideal for food and product packaging. Not all plastics are the same, and when it comes to recycling, it is important to know what type of resin is accepted in your community program. Many, but not all, plastic containers have a number - the resin identification code molded, or imprinted in or on the container, often on the bottom. The seven plastic resin codes are each briefly described to the left.

Bin to Product

At the recycling center, plastics have to be sorted manually or with an optical scanner. For #1 and #2 plastic, the next step is shredding into small flakes. After contaminants are removed, the flakes are washed, heated and melted. This liquid plastic is forced through an extruder to form the plastic that will either be cut into pellets for new containers, molded into plastic lumber for benches and decks or made into strands that are crimped into thread for sleeping bags or polyester carpeting.

Plastic Facts

- PETE is the most recycled plastic worldwide
- It takes 36 2-liter PETE bottles to make one square yard of polyester carpet
- Every ton of plastic bottles recycled saves about 3.8 barrels of oil
- Recycling 1 ton of plastics saves 7.4 cubic yards of landfill space

Plastic Recycling and the Missouri Economy

Gainesville, Spickard, O'Fallon, and Hartville all have companies using plastics we recycle to make a variety of products such as drain pipe and skirting for manufactured homes.

Glass Containers

Glass Packaging Institute Facts

- Recycling one ton of glass saves over one ton of raw materials.
- Recycling one glass bottle saves enough energy to light a 100-watt light bulb for four hours.
- Glass is 100% recyclable and can be recycled endlessly with no loss in quality.



Bin to Product

From bins, glass goes to a processor who crushes it into small pieces called "cullet". Special equipment is used to wash and remove non-glass residue such as labels and lids. Clean cullet is then mixed or "batched" with sand, soda ash, and limestone, heated to temperatures up to 2800 degree Fahrenheit, and molded into the desired shape. Manufacturing new glass from cullet saves natural resources and energy compared to virgin glass. Some recycled glass is used to manufacture fiberglass insulation, reflective beads for highway safety products, tiles and flooring, abrasive materials and decorative applications. Please recycle glass containers only in community programs! Window glass, Pyrex glass, light bulbs, and ceramics have different melting points that can cause a multitude of problems if mixed into the process.



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From Recycle Bin to Product - The Journey of Commodities



The chasing arrows that represent recycling form a complete loop for a reason. A material is not recycled until it is used again. In the U.S. recycling businesses employ 1.1 million people, generate an annual payroll of nearly \$37 billion, and gross more than \$236 billion in annual receipts. Recycling is economic development and green jobs.

Paper

Paper, widely used everywhere for communication, packaging, sanitation and other uses, is being recycled in record quantities! In 2010, 70.4% of paper used in the U.S. was recycled.



The paper industry used over 31.3 million tons of recovered paper to manufacture new paper products. This significantly reduces the use of natural resources and energy required for the production of virgin paper. Two-thirds of the recovered paper was used here in the U.S. for cereal boxes, cardboard boxes, tissue, and newsprint. In fact, de-inked recycled paper is the most efficient source of fiber for the manufacturing of new paper products.



These facts and figures from the American Forest and Paper Association illustrate that the simple act of paper recycling pays huge dividends.

Manufacturing With One Ton of Recycled Paper Fiber vs. Virgin Tree Fiber Saves:

- 17 Trees
- 380 gallons of oil
- 3.3 cubic yards of landfill space
- 4,100 kilowatts of energy
- 7,000 gallons of water

Paper Recycling and the Missouri Economy

Springfield, Joplin and St. Louis all have manufacturing companies that use recovered newsprint to make insulation, packaging, pet litter and other products.

Bin to Product

The first stop after recycling bins is a material recovery facility (MRF) where paper is sorted and baled for transportation to the end market. Recovered paper destined to become new paper is directed to mills where the paper is loaded into a pulper and turned into a slurry, best described as a paper milkshake! The slurry is then screened to remove staples, plastics and other contaminants. The pulp is de-inked and rinsed. The clean fibers are sprayed onto screens called forming wires, and run through rollers to remove the water and create a strong interlocking mat of clean fibers. The "mat" of fibers is rolled through felt covered drying rollers that press the new sheet to a unified thickness and give it a smooth surface. The paper is then wound into big rolls, containing over a mile of paper on each roll. The process varies to make tissue or cereal boxes, but the end result is the same- jobs created to make new products from a recovered resource.

Pharmaceuticals

Most of us have some type of outdated over-the-counter or unused prescription medicine in our homes. Proper disposal and handling of these materials is important for two reasons:



- Studies have shown that pharmaceuticals present in our nation's lakes, rivers and groundwater are causing environmental harm
- Prescription and over-the-counter drug abuse is a growing concern in our communities and among our youth

Environmental Concerns

Drugs used in treating human medical conditions, and those used in agribusiness, are not totally absorbed by the body and end up in the environment through municipal sewage and animal waste. Sewage treatment plants are not engineered for drug removal or for other contaminants. The EPA suggests pharmaceuticals have probably been present in the environment since their first use, but concentrations are now reaching levels where the negative effects can be observed in aquatic species.

Proper Disposal

We can help prevent environmental problems or drug misuse following these guidelines for proper disposal, issued by the Office of National Drug Control Policy:

1. Do not flush prescription drugs down the toilet or drain unless the label or accompanying information specifically instructs you to.
2. Contact your pharmacy. Many offer take-back programs for unused pharmaceuticals.
3. If a take-back or collection is not available:
 - a. Take your prescription drugs out of their original containers.
 - b. Mix drugs with undesirable substances such as cat litter or used coffee grounds.
 - c. Put the mixture into a disposable container with a lid, such as an empty margarine tub, or a sealed bag.
 - d. Conceal or remove any personal information including Rx number, on the containers by covering it with black permanent marker or duct tape, or by scratching it off.
 - e. Recycle plastic container where possible.

For more information visit:
www.dnr.mo.gov/pubs/pub2291.pdf

Partner - \$5,000

- Includes six annual memberships
- Logo and link to your business website from the MORA website
- Recognition in each monthly MORA e-message
- Recognition during MORA functions which require a registration fee (excluding the annual conference)
- Accoutrements and recognition associated with \$1,000 sponsorship during MORA's annual conference.
- One feature story in April or November MORA e-message
- Opportunity for recognition as a "Proud Member of MORA"
- PLUS all other benefits included in the Associate membership level.

Sustainer - \$2,500

- Includes four annual memberships
- Recognition in each monthly MORA e-message
- Recognition at MORA's annual conference
- Opportunity for recognition as a "Proud Member MORA"
- PLUS all other benefits included in the Associate membership level.

Leader - \$1000

- Includes three annual memberships.
- Two complimentary mentions: April and November MORA e-messages.
- Recognition at MORA's annual conference
- Opportunity for recognition as a "Proud Member of MORA"
- PLUS all other benefits included in the Associate membership level.

Associate - \$150

- Includes one annual membership.
- Monthly e-mail messages with timely news including legislative watch.
- Access to membership directory.
- Discount registration fees for MORA activities and events.
- Access to all Show-Me Recycling tools and templates
- America Recycles Day and Missouri Recycles Day coordination
- A web site: www.mora.org
- Recycled-content product displays for use at meetings, fairs, conferences, and other special events.
- Recycled-content fashion show kit for loan
- A toll-free organizational phone number with personal assistance: (866) 667-2777

Friend - \$35

- Receive the monthly e-message and announcement of upcoming conferences and workshops.
- 48-hour free trial membership navigation through restricted web pages. (Membership fee applied toward Associate rate if upgraded within 48-hour trial.)



Based on diversion calculations completed by the Missouri Department of Natural Resources (MDNR) for 2009, the State diverted 53% of municipal solid waste from landfills. This is a significant achievement and Missourians should be proud! However, there is still a great deal of room for improvement in the area of resource recovery. As illustrated on page 3, a 2006-2007 waste composition study estimated that nearly 45% or 1.9 million tons of the materials disposed of in Missouri landfills could be recycled. The potential economic value of these materials as commodities would have been approximately \$208 million dollars!

The 20 Solid Waste Management Districts, in partnership with MDNR, MORA, institutions, communities, agencies and industry will continue to improve solid waste management and diversion. For examples of Missouri success stories that illustrate how recycling expands our economy, strengthens our communities and protects our environment, visit the MORA website at www.mora.org and click on "Show-Me-Recycling"



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Recycling and Climate Change

Climate Change



You might not realize that recycling helps address climate change.

How?

Waste is the end result of global resource extraction, transportation, processing, manufacturing, and inefficient materials use. All of these steps between resources and waste use energy, which is the major source of greenhouse gas emissions.

If recycled materials are used in the production of new products, it eliminates the significant environmental impacts associated with the initial extraction, transportation, and processing of virgin resources.

MORA also supports solid waste reduction, which involves eliminating inefficient uses of our natural resources. Some products are necessary and important in our lives, but waste has no value to consumers but encapsulates all the impacts above that produce greenhouse gas emissions.

Waste disposal practices also contribute to climate change. Landfills produce methane, a greenhouse gas at least 21 times more damaging to the atmosphere than carbon dioxide. The anaerobic (lacking oxygen) bacteria in landfills produce methane gas as a by-product of waste decomposition. Methane released from landfills and other sources traps heat in the atmosphere. Global temperatures have increased by 1.3° F over the past century and, without intervention, could increase an additional 2 to 6° F in the next century. Though that many not sound significant, consider that at the peak of the ice age temperatures were only 7° F colder than today's average.

Many feel helpless when thinking of the global challenge of climate change. One action we can all take is to recycle and reduce waste. The simple practice of recycling waste is as important for slowing climate change as vehicle fuel efficiency, energy efficiency, planting trees, and protecting forests. For more information visit:

www.beyondrecycling.org

www.stoptrashingthecollegeclimate.org

Climate Change- any significant change in measures of climate (such as temperature, precipitation, or wind) lasting for an extended period (decades or longer).

Global Warming- an average increase in the temperature of the atmosphere near the Earth's surface and in the troposphere, which can contribute to changes in global climate patterns

Greenhouse Gas- Any gas that absorbs infrared radiation in the atmosphere. Greenhouse gases include water vapor, carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), halogenated fluorocarbons (HCFCs), ozone (O₃), perfluorinated carbons (PFCs), and hydrofluorocarbons (HFCs)

Greenhouse Gas Effect- A general warming effect felt on Earth's surface, produced by greenhouse gases. These gases allow incoming solar radiation to pass through the Earth's atmosphere, but trap heat by preventing some of the infrared radiation from the Earth's surface from escaping to outer space.

www.epa.gov/climatechange/

Recycling Pays!



Keeping Missouri Green

St. Louis-Jefferson Solid Waste Management District
www.swmd.net

Construction and Demolition Material Recovery



The EPA defines construction and demolition materials (C&D) as the debris generated during the construction, renovation, and demolition of buildings, roads, and bridges. The materials, including concrete, wood, metals, glass, and salvaged building components, are further described as “a treasure trove of resources that can be used in more efficient ways than disposal.” couldn’t agree more!

Across the state shingles are being turned into asphalt roads, wood waste ground into mulch, dry wall turned into soil amendment, carpet recycled into new floor coverings, and concrete crushed for road beds. Discount home stores sell salvaged windows, doors and sinks to benefit Habitat for Humanity.



This shed was built from materials recovered from a Missouri landfill.

Recovering C&D materials follows the same hierarchy as all solid waste- **Reduce, Reuse, Recycle, and Compost** as



much as possible to minimize what is sent to the landfill. Commercial structures seeking LEED certification (see sidebar) must employ these concepts, but increasingly contractors are finding implementation of a waste management plan designed to recover materials is an economical alternative to landfilling. The added bonus is job creation.

Deconstruction and salvage require more manual labor compared to simply knocking a building down and hauling it away. Saves money and creates jobs...what could be better?

Reduce

Work sites are planned to reduce damage to construction materials and to increase salvage potential. Before purchasing new products, local outlets can be explored for salvaged materials that are in good condition at a greatly reduced price. Architectural artifact stores in particular can be a gold mine for unique pieces that set a project apart from the run of the mill construction.

Reuse

Planning for a deconstruction project to be completed in stages as opposed to demolition of a whole structure allows flooring, ceiling tiles, fixtures, windows, doors and bricks to be salvaged for reuse.

Recycle

Metals such as wiring, siding, fasteners, and roof flashing are routinely recycled. **Cardboard**, which can account for up to 30% of the waste stream by volume, is another easy commodity to recycle that frees up valuable space in construction containers for the non-recyclable waste. Local options vary, but shingles and unused drywall are also recyclable. **Shingles** can be processed into new asphalt shingles and used as aggregate for new asphalt hot mix. Unused **drywall** can be ground and also used as a soil amendment and as an ingredient in Portland cement.

Compost

Wood waste not suitable for reuse on the project or salvage can be ground and composted.

What is LEED?

The U.S. Green Building Council has established national standards for environmentally sound building design and construction, as well as everyday operational practices. These LEED (**Leadership in Energy and Environmental Design**) standards are being widely applied across the building industry, in both commercial and residential developments.

LEED is a point-based rating system created for use by building professionals and owners, to guide building project planning and implementation. For certification, rigorous documentation is required, but if certifying is not a goal, the LEED standards can be applied as best practice guidelines, to make any building a more energy efficient, healthier, sustainable working or living environment.

Recycling and waste reduction practices are integral to the LEED criteria. Establishment of a collection system for all commonly recycled commodities is a non-negotiable requirement for earning LEED certification for any commercial building! Optional LEED points may be earned by:

- Documented diversion of construction and demolition waste
- Purchasing of recycled-content furnishings, office supplies, and building materials
- Use of salvaged or reconditioned building materials
- Documenting percentages of waste diversion through recycling or composting, relative to daily practices of building occupants
- Documented recycling of special wastes such as light bulbs, batteries, shipping pallets, etc.
- Documented composting of landscape waste, during construction and routine maintenance
- Use of composting toilets!

For more information on the U.S. Green Building Council, LEED and new voluntary guidelines for green homes, visit www.usgbc.org.



Markets for C&D recovery vary. Contact your Solid Waste Management District (page 3) for C&D options in your area. The “Design for Reuse Primer” is a free e-book by Public Architecture that focuses on C&D building material reuse and design for reuse. <http://www.designforreuse.org>

Household Hazardous Waste

Many products around the home contain chemicals that are toxic, corrosive, flammable or reactive. When these products are no longer usable or wanted, they become household hazardous waste (HHW). Missouri households produce 100 million pounds of HHW each year!



When is a Product Hazardous?

Product labels provide the information regarding safe use, storage and disposal of the product. Look for “signal words” on the label to help you identify the hazard and select the least hazardous product for the job at hand:



Toxic or poison: Highly poisonous or toxic

Danger: Extremely flammable, corrosive or highly toxic

Warning: Moderately toxic or product has fewer hazards

Caution: Slightly toxic or product has minimal hazards

Examples of Household Hazardous Products

TOXIC AND FLAMMABLE

- Pesticides and herbicides
- Oil-based paints
- Gasoline, used oil and anti-freeze
- Mercury containing items (fluorescent tubes, thermometers)
- Furniture strippers, varnishes, and stains

CORROSIVE AND REACTIVE

- Pool Chemicals- corrosive, reactive
- Rechargeable batteries - corrosive, reactive

Don't Make Waste in the First Place!

1. Buy only as much of a product as needed and use products up entirely when possible.
2. Store properly to maintain them in usable condition.
3. Share or swap leftovers with others who can use them.
4. Recycle whenever you can.

Storage of Household Chemical Products

Proper storage keeps your family safe and can prevent products from becoming unusable. Always read the label for proper storage. General guidelines include:

- Store products out of reach of children and pets.
- Store products in cool, dry areas with adequate ventilation.
- Keep products in their original containers with readable labels.
- Do not reuse containers for other purposes.
- Close lids tightly so that products will not dry out, evaporate or leak.
- Store away from sources of heat, spark or flame.

Still Have Leftovers?

Not all household hazardous product leftovers can be shared or recycled. Follow label directions for safe disposal, which may require saving for a community household hazardous waste collection program. For information on collection programs in your area, contact your Solid Waste Management District office listed on page 19.

Paint



BUY ONLY WHAT YOU NEED

A gallon of paint is estimated to cover 400 square feet. Some factors that may impact this number are surfaces that are part of new construction, priming and texturing on the surface.

STORE PAINT TO KEEP IT FRESH

Cover the paint can lid with plastic wrap and make sure the lid fits securely over the plastic so the paint doesn't leak. Store the can upside down and the tight seal keeps the paint fresh. Store paint at a temperature to avoid freezing.

USE UP LEFTOVER PAINT

Paint out the last inch-or-two of paint in the bottom of the can at the end of your project. Save larger amounts for touch-up jobs and small projects. You can also blend or mix smaller quantities of similar colors of latex paint to use as a primer on larger jobs or jobs where the final finish is not critical.

If you can't make use of the paint yourself, donate your usable leftover paint to a worthwhile community association, theatre company, church group or other local organizations that may be in need of good paint. Always call the entity to determine if they can use it. Never just drop it off. Latex paint is also accepted for recycling at most HHW chemical collection centers.

DISPOSAL

Contact your Solid Waste Management District for recycling options for paint in your area. Liquid paint should never be disposed of in the trash or poured down a drain. If there are no other options, air dry latex paint in a safe location away from children and pets. Larger volumes of latex paint can be mixed in with absorbent material such as shredded paper or kitty litter. Once latex paint is solidified all the way through, it can be placed safely in the trash.

Thinners, Turpentine, Mineral Spirits and Solvents

Never pour these products down drains or in storm sewers.

These items can be reused by following these steps:

1. Put used product in a closed container in a safe place until all the paint particles settle to the bottom.
2. Pour off the clear liquid into a clean container that has a lid for reuse.
3. If recycling is available, check with your provider to see if the empty containers are accepted in your program.
4. Save for a Household Hazardous Waste collection.



Automotive Products



The American Petroleum Institute estimates that 60 percent of those who change their own oil dispose of it improperly. Improper disposal results in needless damage to ground and surface waters and wastes a valuable resource that could be recycled. **NEVER** dump used motor oil or leftover gasoline down a storm sewer or sanitary sewer or on the ground. A quart of motor oil can contaminate 250,000 gallons of drinking water.

MOTOR OIL

Used motor oil can be poured into a plastic container with lid and taken to a household hazardous waste collection center, a local automotive service store, (auto parts store or oil change shop). There may be a slight fee for recycling your oil in an environmentally safe manner.

GASOLINE

Gasoline is one of the most hazardous materials we use around our homes. **Never** let children handle gasoline. **Never** use gasoline for any other purpose than as fuel in a combustion engine. Store gasoline in safety approved containers, away from children and pets, heat and flame sources. Avoid left-over gasoline at the end of the mowing season, by purchasing less and using it up. If you do have leftovers use first in the next mowing season mixing old gasoline to new in a 1:5 ratio.



Auto Batteries

Recycle your used automotive batteries when purchasing a new battery. All retailers sell automotive batteries will accept them for recycling; sometimes, rebates are offered. Automotive batteries contain lead which is harmful to the environment.

Household Batteries

Every year, more than 3 billion batteries (125,000 tons) are used and then thrown away by American households. Household batteries contain heavy metals, including nickel, zinc, cadmium, lithium, magnesium, and copper.

Recycle Rechargeable Batteries

Rechargeable batteries also contain heavy metals, such as cadmium, nickel, lithium and lead, but there are better options because they last so much longer, thus reducing waste. Most rechargeable batteries can be recharged up to 1,000 times and will save money in the long run when compared to non-rechargeable batteries. All rechargeable batteries are recyclable at most retail outlets that sell electronics. Visit www.call2recycle.org or call 1-800-8-BATTERY for collection locations near you. **Never** dispose of rechargeable batteries in the trash, as they contain toxic heavy metals such as cadmium and lead.

Non-Rechargeable Batteries

Non-rechargeable batteries can be used an average 25 times before they must be replaced. Alkaline and carbon zinc batteries can be safely disposed of in the trash. These batteries do contain materials with value, but the recovery process often exceeds the value. Below are some options for battery collection programs. Please visit the websites below for more details and fees.

- Battery Solutions, Inc.: www.batteryrecycling.com
- Think Green From Home: www.thinkgreenfromhome.com/batteries.cfm
- The Big Green Box: www.biggreenbox.com
- EasyPak: www.lamprecycling.com

Fluorescent Lights



Fluorescent lights contain mercury and should not be disposed of in the trash. The EPA estimates that only 24% of fluorescent bulbs are recycled. Though compact fluorescent bulbs (CFL) and some brands of fluorescent tubes contain only small amounts of mercury, recycling is the preferred disposal option for all fluorescent bulbs.

Recycling

Many HHW collection programs accept fluorescent lights. More and more retail outlets (Home Depot, Lowe's, Ace Hardware) collect CFL's and in some cases, fluorescent tubes. Contact your Solid Waste Management District (on page 19) for locations in your area.

Note

The energy efficiency obtained with CFL's greatly out-weighs the small amount of mercury in the bulb. Coal-fired power plants cause as much as 40% of mercury emissions in the United States. Coal-fired electricity production for one CFL generates 3.3 milligrams of mercury compared to 13.6 milligrams for one incandescent bulb.



Household Hazardous Waste collection event.

Information on collection events and locations of HHW facilities available at:

www.dnr.mo.gov/env/swmp/hhw/hhw.htm

Electronics

Electronic products often contain hazardous materials that pose environmental risks if they are landfilled or incinerated. The old televisions and monitors with cathode ray tubes contain significant amounts of lead. Printed circuit boards contain tin, copper, chromium, lead solder, nickel, and zinc. In addition, many electronic products have batteries that contain lithium, nickel, cadmium, and other heavy metals. Some “conflict metals” used in electronics originated from countries where trade may have helped finance brutal wars. We can minimize the impacts on the environment, economy, and society by taking responsibility for the electronics we purchase and use.

Avoid “Disposable” Electronics

One way to make recycling electronic products easier is to make wise purchasing decisions. Not all electronics are the same. Some may be very inexpensive but cannot be upgraded or serviced if something goes wrong. Ask questions before buying. Compare brands and purchase electronics that can last for more than one or two years. Extending the life of electronic products minimizes the pollution and resource consumption associated with producing new products. Most computers can be tuned up to improve efficiency and many electronics stores offer this service. You may also consider leasing equipment that can be returned to the manufacturer when it is no longer needed.

Reuse Electronics

If an item is working but no longer needed, it can be donated to numerous nonprofit and charitable organizations that provide electronics (especially computers and cell phones) to schools, community organizations, and needy individuals. Donations may be tax deductible.

Recycle Electronics

Recycling electronic equipment also conserves energy and raw materials and reduces pollution in manufacturing by allowing product constituents, such as metals and plastics, to be reclaimed and used in new products. These materials include plastic, glass, steel, aluminum, copper, gold, silver and other metals.

Recycling must be done by a company that specializes in disassembling electronics, salvaging parts and selling reclaimed materials. Since electronics recycling operations typically require a mix of automated processing and manual labor, there may be a charge associated with recycling

some items. Before choosing a recycler, check to make sure that the firm meets all applicable state and local regulatory requirements and that it properly manages the recovered materials.

Whether you are an individual with a single item or a small business with many different types of electronics, you should ask a reuse organization or a recycler questions about what will happen to your electronic equipment. The following are some questions to consider when selecting an electronics recycler.

- What does the organization do with the electronic equipment it receives? Does it refurbish the equipment and sell it to another user?
- Does the company offer data security?
- Does the company dismantle the equipment and sell the disk drives, memory chips, etc?
- Does it send materials to a metals reclamation plant or smelter? Does it process the plastic, metal and glass or ship to other companies that use the materials to produce new recycled products?
- How much of the equipment does the organization send to disposal (landfill or incinerator)? If some material is sent to disposal, who is responsible for paying related transportation and disposal costs?
- If donated, does the organization provide you with documentation of your donation so that you may apply it toward your federal tax return?
- Does the organization have the necessary state and local permits or otherwise meets the relevant state and federal requirements for transporting and handling hazardous materials and end-of-life electronic equipment?
- For small businesses: Does the organization provide you with a complete inventory of the equipment you are sending to be recycled, including property tags?
- Does the organization provide a certificate that indicates how much material was received and how it was processed? This information is important for your tax records and to contest any future liability claims.
- Does the recycler have a documented hazardous waste disposal plan?
- Does the company offer environmental liability protection?

You can find out more about e-scrap recycling by visiting the Department of Natural Resources Web site or the e-cycle Missouri Web site at www.ecyclemo.org/ Some communities have ongoing programs or collection events for electronics. Many retailers of electronics now offer take-back services as well. Take back and asset management services are already available for large purchasers of computer equipment.

Missouri Solid Waste Management Districts Contacts



The 20 solid waste management districts (formed by state statute) take a regional approach to solid waste planning and encourage local governments, citizens, institutions, and industry to work cooperatively toward meeting a 40% reduction goal. The districts manage funding from a statewide tipping fee that provides local grants in each district to expand waste reduction, reuse and recycling. These programs, as of 2009, have reached a 53% diversion rate. The solid waste districts have made a significant impact on resource recovery in the state. In partnership with MDNR, MORA and other agencies and industries, the districts intend to continue improving solid waste management throughout Missouri.

REGION A - Northwest Missouri SWMD

114 W. Third Maryville, MO 64468
660-582-5121 www.nwmorcog.org/

REGION B - North Missouri SWMD

1104 Main Street Trenton, MO 64683
660-359-5086 www.ghrpc.org/Programs/solidwaste.htm

REGION C - Northeast Missouri SWMD

326 E. Jefferson, Box 248 Memphis, MO 63555
660-465-7281 www.dnr.mo.gov/env/swmp/swmd/Distc.htm

REGION D - Region D Recycling & Waste Mgt. Dist.

114 Main P.O. Box 139 Clarksdale, MO 64430
816-393-5250 www.regiondrecycling.com/

REGION E - Mid-America Reg. Council SWMD

600 Broadway, Ste 300 Kansas City, MO 64105
816-474-4240 www.marc.org/Environment/SolidWaste/

REGION F - West Central Missouri SWMD

802 S. Gordon, P.O. Box 123 Concordia, MO 64020
660-463-7934 www.trailsrpc.org

REGION G - Mark Twain SWMD

42494 Delaware Lane Perry, MO 63463
573-565-2203 www.marktwaincog.com/

REGION H - Mid-Missouri SWMD

P.O. Box 6015 Columbia, MO 65205
573-874-7574 www.mmswmd.org/

REGION I - East Central SWMD

P.O. Box 429 Warrenton, MO 63383
636-456-3473 www.boonslick.org/pages/services.asp

REGION J - Quad-Lakes SWMD

908 N. Second Street Clinton, MO 64735
660-885-3393 www.kaysinger.com/qlswmd.php

REGION K - Ozark Rivers SWMD

#4 Industrial Drive St. James, MO 65559
573-265-2993 <http://meramecregion.org/>

REGION L - St. Louis-Jefferson SWMD

7525 Sussex Avenue St. Louis, MO 63143
314-645-6753 www.swmd.net/

REGION M - Region M SWMD

800 E. Pannell, P.O. Box 388 Webb City, MO 64870
417-649-6400 www.regionm.org/

REGION N - Southwest Missouri SWMD

205 15th St., P.O. Box 27 Monett, MO 65708
417-236-9012 www.dnr.mo.gov/env/swmp/swmd/Distn.htm

REGION O - Solid Waste District O

850 Rifle range Rd. Marshfield, MO 65706
417-859-5786
www.greencountymmo.org/resource_management/district_o.php

REGION P - South Central SWMD

5436 Highway 17 Eunice, MO 65468
417-932-5345 www.dnr.mo.gov/env/swmp/swmd/Distp.htm

REGION Q - Ozark Foothills Regional SWMD

3019 Fair St. Poplar Bluff, MO 63901
573-785-6402 www.dnr.mo.gov/env/swmp/swmd/Distq.htm

REGION R - Southeast Missouri SWMD

1 West St. Joseph St., P.O. Box 366 Perryville, MO 63775
573-547-8357 <http://semorpc.org/>

REGION S - Region S Bootheel SWMD

105 E. North Main Dexter, MO 63841
573-614-5178 www.bootrpc.com/

REGION T - Lake of the Ozarks SWMD

#1 Courthouse Circle, Ste. 12 Camdenton, MO 65020
573-317-3839 www.dnr.mo.gov/env/swmp/swmd/Distt.htm

Re·think Re·do Re·new

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Solid Waste Management District
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www.marc.org/Environment/SolidWaste

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SYNETIC
TECHNOLOGIES

Ozark Rivers Solid Waste
Management District

AMERICAN WATER