

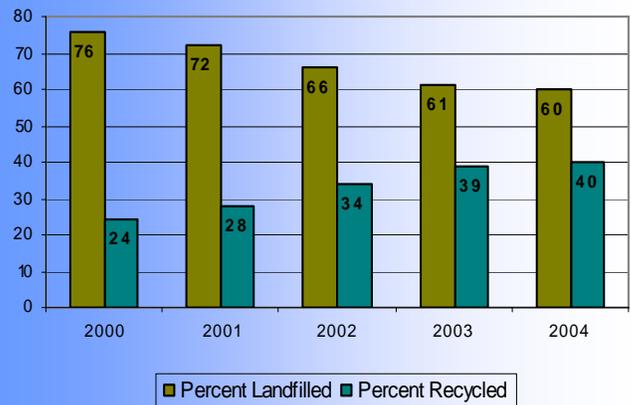
STATE OF RECYCLING IN ARKANSAS—2004

NOVEMBER 2005

Arkansas exceeded the 2005 goal of recycling 40 percent of the municipal solid waste stream a year early! Forty point two percent of the 2004 solid waste stream was collected, marketed and returned back to consumers as usable products through business and community recycling programs. This puts us above the most recently reported national average of 30.6 percent. However, while recycling is gaining ground, landfilling remained the disposal method of choice.

Unfortunately, the amount of waste being created is also going up. In 2003, we reported waste generation of about 7 pounds per person per day. In 2004, that number increased to 9.6 pounds per person per day. While it is great that we are meeting our recycling goals, it is even more important to reduce the amount of waste we are creating in the first place. Remember the order of the three Rs of waste management: reduce, reuse, and then recycle.

Solid Waste Disposal



INSIDE

- **ADEQ Recycling/Market Development Activities** 2
- **Recycling Grants to Communities** 2
- **Jackson County Learning Center** 3
- **Electronics Recycling Program** 4
- **Materials Recycled 2004** 5
- **Recycling's Environmental Benefits** 6

DELTA PLASTICS OF THE SOUTH

Hot, dry summers offering infrequent rain showers cause significant concern among Arkansas' farmers. The potential to lose thousands or hundreds of thousands of dollars in revenue urges farmers to invest in some form of irrigation system. The perpetual search is for an easy-to-use, affordable system.

Until about the last decade, options were limited. Farmers had to consider placement of their rows based on rigid irrigation systems. The equipment itself

was expensive and required storage from year to year. Maintenance, manpower and operation all could be expensive. A system allowing water to be directed to a particular location while controlling water level was an ideal not yet met.

By the mid-1990's, a new era for delta farmers was beginning. Delta Plastics of the South (a Stuttgart-based corporation) created poly tubing, a more easily controlled watering system that was also economical. Poly tubing helped to allevi-

ate many of the delta farmers' concerns, including an irrigation system that allows little loss of water due to sun or wind evaporation.

Although poly tubing is an efficient and economical form of irrigation, discarded tubing at the end of the season soon became an issue for both the farmers and the environment. In the early years, some farmers piled used poly tubing at the edge of fields. Others tried to burn it. Those trying to dispose of it legally were faced with

Continued on page 6

ADEQ RECYCLING/MARKET DEVELOPMENT ACTIVITIES

The ADEQ Solid Waste Management Division's Recycling Section offers general information, technical assistance and educational programs targeted at reducing the amount of waste going into landfills. Although the name focuses on recycling, the section's actual emphasis is on waste prevention including reduction, reuse and composting as well as recycling.

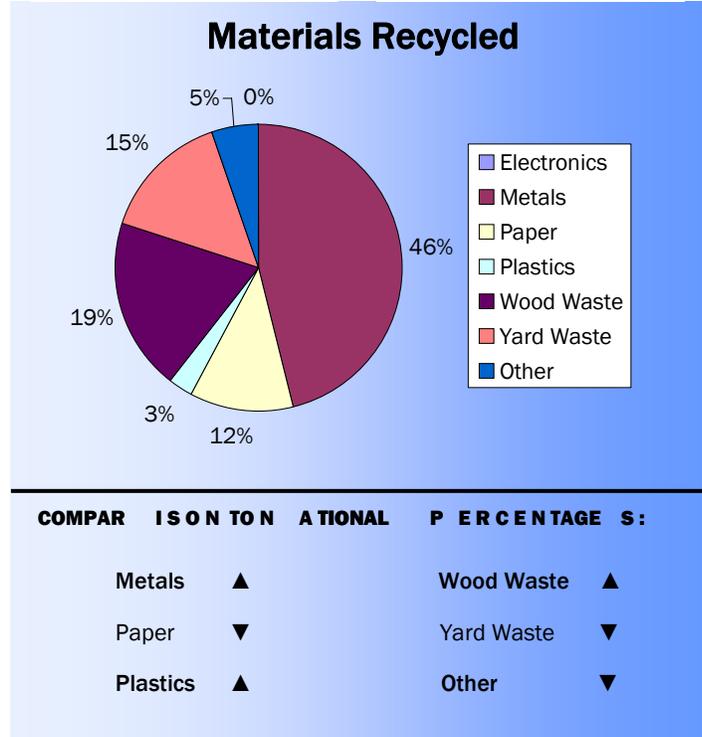
Recycling Section staff members gave more than 250 educational presentations reaching more than 6,000 Arkansans. This included conducting 12 full- or half-day environmental education workshops for teachers, as well as several other special events. These events are generally held in cooperation with one or more of

the 17 Regional Solid Waste Management Districts.

Other activities enhancing recycling in Arkansas were undertaken by the Recycling Market Development Section, also part of the Solid Waste Management Division. Each year, this Section targets a different waste for special attention. Agricultural plastic pipe was the focus for 2004, and the amount recycled increased more than 20 percent, moving from 5,760 tons in 2003 to 6,923 tons in 2004. Old newspaper is the targeted material for 2005.

In addition, Recycling Market Development administers the Recycling Equipment Tax Credit program, which helps Arkansas businesses, both large and

small, invest in recycling. More than 154 companies have invested nearly \$378 million, creating at least 1,877 jobs since the recycling tax credit program began 13 years ago. In 2004, the section certified 47 tax credit applications totalling nearly \$10 million.



RECYCLING GRANTS TO COMMUNITIES

The Solid Waste Management and Recycling Grants Program has funded 1,112 grants since 1994. In 2004, more than \$3.7 million was awarded, resulting in a total 11-year investment of more than \$29 million.

Nearly 225 public recycling centers offer citizens, schools, businesses, and industries in all 75 counties the opportunity to reduce waste by making the choice to recycle. These facilities

are often funded, at least in part, by recycling grants.

During the past 11 years, recycling grant recipients have diverted nearly 1.8 million tons of waste from Arkansas landfills – more than 1/2 ton (1,287 pounds to be exact) for every Arkansan. In 2004, grantees recycled 22,630 tons, earning \$1.4 million in revenue and saving more than \$600,000 in landfill disposal costs.

In 2004, the direct economic benefits from the recycling grants program continued to increase. Of the \$29 million granted since 1994, more than \$27 million has been expended with a direct economic benefit of nearly \$50 million to the citizens of Arkansas. For each dollar expended in the program, citizens have realized a direct return of \$1.83 and 131 pounds of waste recycled.

For each dollar expended in the program, citizens have realized a direct return of \$1.83 and 131 pounds of waste recycled.

JACKSON COUNTY LEARNING CENTER

City and county officials are searching for economically feasible ways to meet state law requiring them to offer recycling, and special workshops, learning centers and human development centers need work for their clients. Through the years, the State of Arkansas has benefited from partnerships allowing developmentally disabled adults to operate community recycling programs. Leaders in Baxter, Cross and Nevada counties visualized early on how their communities' recycling programs would prosper through such cooperative agreements.

Everyone benefits from the partnerships: citizens have recycling available, communities comply with state law, and developmentally-disabled adults have work.

Tapping into the knowledge base created by these visionaries, the Arkansas Department of Environmental Quality created a training manual and hosted a state-wide conference to bring together facilities working with developmentally-disabled adults. From that conference developed a new plan of action for several facilities; among them, the Jackson County Learning Center (JCLC) in Newport.

Previously operated by the Jackson County Sheriff's Office with inmate labor, the county recycling program was moderately successful. A limited number of items were recycled, and expenses were quite low for a recycling program. Yet, with the program's focus being shifted from solely a service to the community, even more materials are being accepted from Jackson County residents.

The JCLC recycles various types of paper, including newsprint and cardboard, at The Paper Drop. Plastic containers and magazines are also accepted. Through the center's thrift store, Old Treasures, citizens drop off and purchase far more items – clothing, housewares, toys, books and more. Everything sold in Old Treasures is something less to be disposed in a landfill.

The recycling center and thrift store now employ part-time 16 people with developmental disabilities, proving the vitality of JCLC's program. In a year's time, the center has collected and sold more than 400 tons of materials. For many, the paychecks they earn at JCLC are the first ever. While the employment doesn't make the employees completely independent, it does help

them become less dependent on the government.

Facilities similar to JCLC employ more than 150 persons to operate community-based recycling programs. According to their most recent reports, four other developmental centers have recycled more than 6,500 tons of materials.

In what is best described as a win-win situation, JCLC and other learning centers, special workshops and development centers are providing employment for willing workers while offering the community the opportunity to reduce the amount of materials landfilled. The JCLC recycling program has enhanced the existing recycling program, affording Jackson County residents even more opportunities to reduce, reuse and recycle.

... providing employment for willing workers while offering the community the opportunity to reduce the amount of materials landfilled.



Representatives of organizations assisting in the Jackson County Learning Center's recycling efforts gather for a ribbon-cutting ceremony.

Jackson County Learning Center is just one of the dozen or more recycling programs run by Arkansas facilities for people with developmental disabilities.

ELECTRONICS RECYCLING PROGRAM

According to the U.S. Environmental Protection Agency, 1.5 million computers currently enter the waste stream each year. By 2005, most people will trade in their computers for newer models every two years. Add in all the televisions that will be discarded for High Definition Televisions – as well as the cellular phones, stereo equipment, etc. that will be discarded for the latest electronic gadgets – and you can see the magnitude of the problem.

Where do all these waste electronics go? For many individuals, organizations and businesses, the answer has been to store the unwanted items until there is no more room, then take them to a landfill. There is a better way – recycling.

The ADEQ Solid Waste Management Division's Recycling/Market Development Section has partnered with

UNICOR, the Federal Prison Industries, Inc., for the recycling of waste electronics from schools and municipalities. The only cost to the school/municipality is packaging and transportation to UNICOR. UNICOR processes the equipment for free; most recyclers charge \$10 and up per unit.

Prisoners at the federal prison in Texarkana evaluate each piece of equipment for its usefulness. If it can be reused, or repaired and re-used, the equipment is refurbished and resold to government agencies. Otherwise, it is completely disassembled and the parts are saved to fix other computers, sold for reuse, or sold for their scrap value.

Robert Hunter, Recycling/Market Development Section Manager, sees this as a "Win-Win-Win" situation. "The schools and municipalities have a relatively

inexpensive, environmentally friendly disposal method for electronic equipment that no longer fits their needs. The prisoners learn transferable skills and earn a paycheck. The state keeps potentially hazardous mate-

old electronics to UNICOR, paying a small processing fee. The result is that 347 tons of waste electronics were sent to UNICOR for recycling in the last fiscal year, for a total of 384 tons since the program began.



Before recycling electronics at Cabot schools, classrooms were being used for storage of outdated computers.

materials out of landfills and conserves landfill space."

The partnership first formed in late 2003, and originally targeted school systems. A test run at Cabot schools helped work out the bugs, especially in palletizing equipment for transport. By the end of the fiscal year, nearly 37 tons of electronics had been transported to Texarkana for recycling.

The program really took off in the latter part of 2004, and it was expanded to include municipalities. Twenty schools and municipalities took advantage of the program before the end of the fiscal year. In addition, several businesses took their

Dealing with waste electronics will be an issue for the foreseeable future. The Department of Environmental Quality continues to explore environmentally sound ways of disposing of them. At the end of the fiscal year, plans were nearly complete on a pilot program which will provide convenient, free e-waste recycling to Arkansans. The program, known as Project Green-Fed, will operate until at least August 2006. The department will also distribute the first "E-waste Grants" during the upcoming fiscal year. Look for details about these programs in next year's State of Recycling report.



Schools brought truckloads of outdated electronics to a collection event at Recycle Works in Clarksville.

MATERIALS RECYCLED 2004

Material	Weight in tons	
Batteries—Lead Acid	1,	811
Computers/Electronics	954	
Cooking Oil	14	
Glass	2,	716
Metals	892,	622
Aluminum Cans/Non-ferrous	86,454	
Oil Filters	220	
Steel Cans	2,089	
White Goods/Ferrous	803,859	
Motor Oil		52,162
Pallets and Other Wood Waste	97,	783
Paper	228,	280
Cardboard	148,611	
Colored Ledger	2,161	
Mixed	14,130	
Newsprint	23,948	
White Ledger	5,809	
Other (including computer printout)	33,621	
Plastic		52,217
HDPE (High Density Polyethylene)	9,298	
LDPE (Low Density Polyethylene)	33,117	
PET (Polyethylene Terephthalate)	987	
Poly Pipe	6,923	
Other	1,892	
Sawdust	277,	651
Textiles and Leather	368	
Tires		28,982
Yard Waste		287,578
Other (Carpet padding, solvents, etc.)	14,	578
Total	1	,937,716

2,883,303 tons landfilled in 2004

2,883,303 + 1,937,716 = 4,821,019 total municipal solid waste stream in 2004

1,937,716/4,821,019 = 40.2 percent recycling rate

Change from 2003:

Computers ▲ 230%

Glass ▲ 179%

Metals ▲ 86%

Plastics ▲ 427%

RECYCLING'S ENVIRONMENTAL BENEFITS

Recycling provides a variety of environmental benefits that are rarely reported except in general statements such as "saves energy" and "reduces greenhouse gases." The National Recycling Coalition has provided an Environmental Benefits Calculator which allows users to quantify these environmental benefits. Using information specific to Arkansas provides the following results of recycling in 2004:

- Energy Savings due to recycling and remanufacture versus disposal and manufacturing from virgin materials amounted to 34,227,500 million Btus. That's nearly 28.5 million Btus for every Arkansas household, approximately 27 percent of an average annual energy bill. Put another way, it's equivalent to saving 8,346 kilowatt hours, or approximately \$751, per household during the year.
- Greenhouse Gas Emissions were reduced by 1,033,776 metric tons of carbon equivalent, a metric measure used to compare the emissions of different greenhouse gases

based on their global warming potential. The increased temperature and changes in precipitation associated with global warming could have adverse effects on human health and the economy as well as many ecological systems.

- Other Air Emissions and Waterborne Wastes were also reduced. Air emissions were reduced by 1,458,942 tons. This includes gases such as sulfur oxides, which contribute to acid rain, and particulates, which contribute to ozone. Waterborne wastes, including ammonia and cyanide, were reduced by 5,431 tons.
- Natural Resources are conserved when recycled materials are used instead of virgin materials in the manufacturing process. For instance, the steel recycled in Arkansas saved 1,005,099 tons of iron ore; 562,855 tons of coal; and 48,245 tons of limestone. Arkansans also saved more than 2.5 million trees by recycling paper products.

Delta Plastics – Continued from page 1

enormous costs to transport and landfill it. Farmers had few options to manage the waste tubing. Obviously for environmental, health and legal reasons, neither burning nor piling the used poly tubing is recommended. Yet, the cost savings seen at the front-end usage of poly tubing could easily have been eaten away by properly managed disposal in a landfill.

As the piles grew, industry leaders began searching for answers to the disposal problems. Farmers needed an economical and efficient way to dispose of the tubing, and the industry wanted an environmentally-preferable method of disposal.

Through years of trial and error, Delta Plastics of

the South eventually formulated a patented process to turn used, dirty poly tubing into clean, highly-desired post consumer resin. Although quality standards prevent manufacturing the recycled resin into new poly tubing, it is perfectly suited to commercial and retail bag manufacturers.

Today, almost 160 collection sites accept the used tubing in five states. Farmers may participate in the recycling one of three ways: by taking used Delta poly tubing to a distributor's collection site, taking or developing a community collection site, or on-farm collection.

Delta Plastics of the South recycled more than 83 million pounds of used poly tubing between 1998 and 2002. The process continues to improve as collections are streamlined and markets

are secured. During the first eight calendar months of 2005, Delta collected almost 35 million pounds of poly tubing for recycling. Nineteen million pounds were collected and recycled from Arkansas alone.

Delta Plastics continues to expand and improve its recycling operations. Currently, the company employs 85 people in its recycling and film operations and operates 24 hours a day, seven days a week.

Arkansas Department of Environmental Quality

Marcus C. Devine, Director

Solid Waste Management Division

Steve Martin, Chief

Recycling/Market Development Section

Robert Hunter, Manager

Phone: 501-682-0812

www.adeq.state.ar.us