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Trash rehashed

By Jeffrey Sheban and Tim Meko | THE COLUMBUS DISPATCH

Ever wonder what happens to bottles, cans and paper set aside for recycling? We have, too.

In central Ohio, the contents from 100,000 curbside recyclers and 200 neighborhood collection boxes make their way for sorting and distribution to a recycled building on the North Side.

As it has since 1992, Rumpke Recycling on Fields Avenue processes about 270 tons of recycling a day in what used to be an overhead-door factory. The $4 million center turns mountains of mixed waste into reusable piles of paper, plastic and metal in as little as three minutes.

▶ To see a video of the recycling plant, visit Dispatch.com/video.

Anticipating the annual commemoration of Earth Day on Wednesday, *The Dispatch* set out to explore the road that our trash travels.

Here, we explain how recycling works and what becomes of reused materials; on **Page D2**, we offer tips for better recycling and clarify what isn't recycled by Rumpke.

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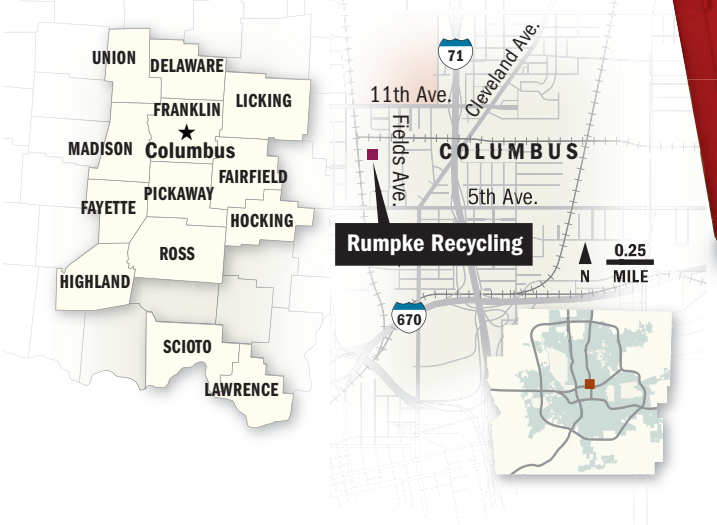
1. Where trash originates

Under its contract with the Solid Waste Authority of Central Ohio, the Rumpke plant processes recyclables from Franklin County (90 percent of the total) and 12 other central and southern Ohio counties.



2. How it's recycled

Day after day, dozens of people, machines and 600 feet of conveyor belts transform truckloads of mixed recyclables into clean piles of paper, glass, metal and plastic. Here's a look at the "single-stream" separation process, which removes one category of trash at a time unil only glass remains.

8 tons recyclables per truckload

77,000 tons processed in 2008

DORAL CHENOWETH III | DISPATCH

▲ Christopher Johnson, left, and Kenneth Lattimore sort cardboard out of the recycling stream in the Rumpke Recycling facility on Fields Avenue.

GLASS | METAL | PLASTIC | PAPER

1 DUMP & CHURN — **1.** Trucks dump 7 to 8 tons of mixed, compacted recycling onto the indoor tipping floor. A front-end loader scoops the mixture into a steel drum, measuring 6 feet in diameter, that loosens the material for sorting. Recyclables exit on a single conveyor belt.

2 HAND SORT — **2.** As many as 10 conveyor-belt workers remove cardboard for recycling and non-recyclables for dumping.

CARDBOARD GOES TO A SEPARATE MILL.

LARGE CARDBOARD AND NON-RECYCLABLE TRASH

TRASH GOES TO THE LANDFILL.

3 MACHINE SORT — **3.** The remaining mixture is fed into rows of spinning rubber wheels ("disc-screen separator"), pushing paper to the top. Everything else drops onto another conveyor belt.

PAPER IS BALED AND SHIPPED TO MANUFACTURERS.

PAPER FLOATS ON TOP.

ALL MATERIAL

PAPER ONLY

4 PAPER — **4.** From the separate conveyor belt, workers remove stray plastic and other non-paper materials. What remains drops onto the warehouse floor for baling.

65% of recycled material is paper (newspaper, magazines, cardboard).

1 ton of recycled paper saves 17 trees.

GLASS, PLASTIC AND METAL FALL AND CONTINUE THROUGH THE STREAM.

GLASS, PLASTIC & METAL

5 PLASTIC — **5.** As many as eight workers sort plastic bottles by type into piles. Most plastic is recycled, but some is sent to the landfill.

6 STEEL — **6.** An overhead magnet lifts steel cans and bottle caps to a third conveyor belt; aluminum and glass remain on the main line.

OVERHEAD MAGNET

STEEL IS PICKED UP BY THE MAGNET.

METAL & GLASS

7 ALUMINUM — **7.** An eddy current ejects aluminum from the line; it's collected and baled into 1,000-pound squares.

ALUMINUM & GLASS

EDDY CURRENT REPELS ALUMINUM.

SEPARATOR PLATE

8 GLASS — **8.** Intact and broken bottles are shipped to a Rumpke plant in Dayton for processing.

3. Where it goes

The primary end-users as well as products made from the recyclables:

PET No. 1 | *Polyethylene terephthalate*

▶ Soft-drink bottles, water bottles

HDPE No. 2 | *High-density polyethylene*

▶ Milk bottles, laundry-detergent jugs

Plastic bottles (PET No. 1)

Made into: high-strength plastic strapping by Signode Plastic Recycling Alliance of Florence, Ky.

Other reuses: polyester fiber for clothing and carpeting, new bottles, plastic sheeting for packaging of tools and toys

Plastic bottles (HDPE No. 2)

Made into: drainage pipe by Haviland Drainage Products of Haviland, Ohio

Other reuses: more bottles, plastic lumber, picnic tables, floor tiles, fencing

Aluminum cans

Made into: more cans by Anheuser-Busch of St. Louis

Other reuses: aluminum foil, auto parts, appliances, aircraft, gutters and downspouts

Glass bottles, jars

Made into: fiberglass insulation by Johns Manville of Defiance, Ohio

Other reuses: more bottles, bricks, ceramics, reflective highway paint, beach sand restoration

Steel cans

Made into: appliances and automotive parts by several companies via I.H. Schlezinger Inc., a Columbus scrapyard

Other reuses: construction parts, gas cooking canisters, structural steel

Paper

Made into: boxboard for cereal boxes by Recycled Fibers of Ohio of Franklin

Other reuses: newspaper, toilet paper, paper towels, office copy paper, stationery

Sources: Rumpke, Solid Waste Authority of Central Ohio, Signode, Johns Manville, Association of Postconsumer Plastic Recyclers, *Popular Mechanics*, Whole Foods Market, *Dispatch* research