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American recycling is stalling, and the big blue bin is one reason why

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A forklift operator stacks bales of recyclables at Waste Management's facility in Elkridge, Md. The District and other local jurisdictions are paying to dispose of products that once turned a profit. (Ricky Carioti/The Washington Post)

Tucked in the woods 30 miles north of Washington is a plant packed with energy-guzzling machines that can make even an environmentalist's heart sing — giant conveyor belts, sorters and crushers saving a thousand tons of paper, plastic and other recyclables from reaching landfills each day.

The 24-hour operation is a sign that after three decades of trying, a culture of curbside recycling has become ingrained in cities and counties across the country. Happy Valley, however, it is not.

Once a profitable business for cities and private employers alike, recycling in recent years has become a money-sucking enterprise. The District, Baltimore and many counties in between are contributing millions annually to prop up one of the nation's busiest facilities here in Elkridge, Md. — but it is still losing money. In fact, almost every facility like it in the country is running in the red. And Waste Management and other recyclers say that more than 2,000 municipalities are paying to dispose of their recyclables instead of the other way around.

In short, the business of American recycling has stalled. And industry leaders warn that the situation is worse than it appears.

“If people feel that recycling is important — and I think they do, increasingly — then we are talking about a nationwide crisis,” said David Steiner, chief executive of Waste Management, the nation's largest recycler that owns the Elkridge plant and 50 others.



A worker walks through the Waste Management facility in Elkridge, Md. (Ricky Carioti/The Washington Post)

The Houston-based company's recycling division posted a loss of nearly \$16 million in the first quarter of the year. In recent months, it has shut nearly one in 10 of its biggest recycling facilities. An even larger percentage of its plants may go dark in the next 12 months, Steiner said.

The problems of recycling in America are both global and local. A storm of falling oil prices, a strong dollar and a weakened economy in China have sent prices for American recyclables plummeting worldwide.

Environmentalists and other die-hard conservation advocates question if the industry is overstating a cyclical slump.

“If you look at the long-term trends, there is no doubt that the markets for most recyclables have matured and that the economics of recycling, although it varies, has generally been moving in the right direction,” said Eric A. Goldstein, a lawyer with the Natural Resources Defense Council who tracks solid waste and recycling in New York.

“And that’s without factoring in the external impact of landfilling or anything else,” he added. “There aren’t a lot of people saying, ‘Send more material to landfills.’ ”

Still, the numbers speak for themselves: a three-year trend of shrinking profits and rising costs for U.S. municipalities — and little evidence that they are a blip.

Trying to encourage conservation, progressive lawmakers and environmentalists have made matters worse. By pushing to increase recycling rates with bigger and bigger bins — while demanding almost no sorting by consumers — the recycling stream has become increasingly polluted and less valuable, imperiling the economics of the whole system.

“We kind of got everyone thinking that recycling was free,” said Bill Moore, a leading industry consultant on paper recycling who is based in Atlanta. “It’s never really been free, and in fact, it’s getting more expensive.”

The problem with blue bins

Many of the problems facing the industry can be traced to the curbside blue bin — and the old saying that if it sounds too good to be true, it just might be. Anyone who has ever tossed a can into a bin knows what’s supposed to happen: Anything recyclable can go in, and then somehow, magically, it’s all separated and reused.

The idea originated in California in the 1990s. Environmental advocates believed that the only way to increase participation in recycling programs was to make it easier. Sorting took time and was messy. No one liked it. So-called Material Recovery Facilities, or MRFs, were created to do what consumers wouldn’t.

With conveyers, spinning flywheels, magnets and contraptions that look like giant Erector Sets, companies found that they could recycle almost everything at once. Lightweight newspaper and cardboard were sent tumbling upward, as if in a clothes dryer. Glass, plastic and metal fell into a series of belts and screens. Automation was adopted to sort, bale and send to manufacturers all those tons of paper, bottles and cans.

From the start, it was hard to argue that glass should have been allowed in the curbside mix. It's the heaviest of recyclables but has always been of marginal value as a commodity. In the rough-and-tumble sorting facilities, a large share of it breaks and contaminates valuable bales of paper, plastic and other materials.

Today, more than a third of all glass sent to recycling facilities ends up crushed. It is trucked to landfills as daily cover to bury the smell and trap gases. The rest has almost no value to recyclers and can often cost them to haul away.

In recent years, the problem of contamination has spread beyond glass. The problem was exacerbated when municipalities began increasing the size of bins, believing that bigger was better to keep more material from landfills.

Consumers have indeed been filling the bigger bins, but often with as much garbage as recyclable material.

With the extra room, residents stopped breaking down cardboard boxes. Because a full shipping box sometimes fits inside, even with foam and plastic wrap attached, all of it more frequently shows up at sorting facilities.

Residents have also begun experimenting, perhaps with good intentions, tossing into recycling bins almost anything rubber, metal or plastic: garden hoses, clothes hangers, shopping bags, shoes, Christmas lights.

That was exactly the case last year, when the District replaced residents' 32-gallon bins with ones that are 50 percent larger.

"Residue jumped a ton," said Hallie Clemm, deputy administrator for the city's solid waste management division. In fact, so much nonrecyclable material was being stuffed into the bins that after an audit by Waste Management last fall, the share of the city's profit for selling recyclables plummeted by more than 50 percent.

That has driven up the city's processing price for recyclables to almost \$63 a ton — 24 percent higher than if it trucked all of its recycling material, along with its trash, to a Virginia incinerator.

The D.C. Council recently approved a payment of \$1.2 million to Waste Management for the contract year that ended in May. In 2011, the city made a profit of \$389,000.

Little demand for newsprint

A large part of the problem for recyclers is falling global commodity prices — a phenomenon largely out of recyclers' hands. But the negative impact of that trend is amplified by the contents of most recycling bins, because the composite of what Americans try to reuse has changed dramatically over the past decade.

Dwindling have been the once-profitable old newspapers, thick plastic bottles and aluminum cans that could be easily baled and reused.

With oil prices driving up transportation costs, manufacturers have engaged in a race to make packaging more lightweight. Coffee cans disappeared in favor of vacuum-packed aluminum bags; some tuna cans went the same way. Tin cans and plastic water bottles became thinner, too: The amount of plastic that once came from 22 bottles now requires 36.

There was an even more pronounced drop in newsprint. Long a lucrative recycling commodity, it's not a key commodity market. In its place is something known as mixed residential paper: the junk mail, flattened cereal boxes and other paper items that these days can outweigh newspaper in a one-ton bale.

One bright spot has been an increase in cardboard. Analysts say that with more people buying items through online merchants, cardboard can account for up to 15 percent of cities' recyclable loads — more than double that of a decade ago.

The demand for that paper and cardboard, however, remains at a near-decade low. In China, containerboard, a common packaging product from recycled American paper, is trading at just over \$400 a metric ton, down from nearly \$1,000 in 2010. China also needs less recycled newsprint; the last paper mill in Shanghai closed this year.

With less demand, Chinese companies have become pickier about the quality. Last week in Elkridge, an inspector from a Chinese company studied bales of paper being loaded into shipping containers bound for the port of Baltimore and, eventually, Asia. If the inspector found more than five nonpaper items protruding from any one side of the

bale, it was rejected, forcing workers to break down the material and send it all back through the processing facility.

The lightweight vacuum packs for food and paper-thin plastic bottles are increasingly part of the problem. They are so light that they get blown upward with the paper.

“We’ve seen economic downturns in the value of material in the past, but what’s different now is that the material mix has changed,” said Patty Moore, head of California-based Moore Recycling Associates, which specializes in plastic recycling. “The problem is, to get the same value out of your scrap, you have to shove a whole lot more material through the facility. That was fine when scrap values were high, but when they dropped, we realized it’s expensive to push all of this lightweight stuff through, and we’re in trouble.”

Brent Bell, Waste Management’s vice president for recycling, said the company has yet to see municipalities abandon recycling, and the company is maintaining its ability to recycle whatever cities send their way. But it is downsizing its operation and expecting little increase in recycling rates nationwide.

Last week, the Environmental Protection Agency announced a nationwide tally for recycling in 2013 that showed overall recycling had contracted for a second straight year, to 34.3 percent of the waste stream.

With those trends, Bell said the company is beginning tough discussions with cities about what it sees as a long-term economic reality: Cities must bear more of the financial impact of falling commodity prices. That’s the only way, Bell said, for recyclers like his company to invest in the business.

Steiner, Waste Management’s chief executive, went further. “We want to help our customers, but we are a for-profit business. We won’t stay in the industry if we can’t make a profit,” he said.

Clemm, the District’s recycling chief, said small efforts can begin to turn the tide. The District must begin by getting more garbage out of its recycling stream.

“Residents have a way to influence this by making sure they are recycling right,” she said.

Another possibility is to follow the urgings of the environmental community by expanding recycling programs to include composting — the banana peels and grass clippings degrading in landfills that by some estimates have become the nation’s third-

biggest source of methane gas contributing to global warming. Composting is partly credited with the success of such cities as San Francisco, Portland and Seattle in increasing the share of the waste stream that is recycled each year.

There are also a few encouraging signs downstream in the recycling market. A recycled-plastics company in Troy, Ala., processes more than 500 million pounds of recycled material annually from plastic bottles — and with 450 employees, the company is growing. In the Midwest, another company opened two additional facilities this month to feed an Indiana paper mill that churns out 100 percent recycled cardboard.

Turning a profit on the initial, dirty task of sorting and processing the nation's recyclables, however, may take a larger overhaul, said Patty Moore. Governments may need to set standards or even consider taking over part of the process to better encourage investment and ensure that profits remain a public benefit.

"If we're going to be serious about secondary-materials management, we're really going to have to address it as a state or preferably national level," she said. "We need to harmonize what we're doing and make it work in a way that we're not spending all this money and spinning our wheels."