Towns struggle with skyrocketing costs, public confusion as recycling market ‘disappears’

More than a year after the Chinese government said ‘no thanks’ to the world’s millions of tons of recyclables, the industry is still struggling to rebound. And local towns are the ones paying for it.

Most of us in 2019 know that newspapers, yogurt containers and salsa jars should end up in recycling bins; that our soda cans shouldn’t be tossed into trash cans on the street; and that — if disposed of properly — the bottles we use for water, shampoo and condiments can be broken down and turned into new products.

But where does it all go? More than a year after China rocked the recycling world by drastically reducing the quantity of material it was buying — briefly forcing Massachusetts to allow some recyclables to be dumped in landfills — officials say they’ve found new places to send the nation’s recycled goods, but only at a large and growing expense to cities and towns, which once sold the material at a profit. And many experts fear that the countries now buying America’s recycling could soon become more picky about what they take, leaving local officials scrambling to clean up consumers’ recycling habits and looking at other options.

“We’re in a vise,” John MacLeod, Weymouth’s director of asset management, said. “We have a big problem, and the recyclers know it.”

The nation recycled about 67.8 million tons of waste in 2015, according to the most recent data by the federal Environmental Protection Agency.

In Massachusetts, more than 2.2 million tons of municipal solid waste was recycled in 2011, or about 28 percent of all solid municipal solid waste generated that year, according to the most recent data available from the state. The state Department of Environmental Protection no longer reports how much solid waste is recycled in Massachusetts on an annual basis.

Historically, those recyclables were picked up by municipalities or their contractors, given to processors to sort and shipped to China, where they were broken down, turned into new products and sold. Towns and processing companies would split the profits.

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But the implementation of strict policies by the Chinese government in recent years means that barely any recyclable products from America make it into the country anymore, which has meant a year of scrambling for towns and processors as they try to figure out how to adapt to a practice that is now costing way more than it’s making.

Communities throughout the South Shore have largely adopted what is known as single-stream recycling, a system that allows residents to put all recyclables in the same bin, rather than sorting them into plastic, paper, glass and metal. But that “just throw it all in” mindset led to bins filled with things like paper towels, plastic foam and plastic grocery bags — all of which are not recyclable and gum up the machinery that sorts the items. Also, products must be clean. Still-sticky jam jars and grease-stained pizza boxes are considered contaminated goods.

Chris Lucarelle, Waste Management’s recycling operations director for New England, said last year that about 15 percent of recyclables brought to the company’s Avon plant wasn’t recyclable and had to be removed. For individual towns, the contamination rate ranges from as low as 5 to as high as 35 percent, he said.

Weymouth, for example, had a contamination rate of 29.5 percent at its peak, but MacLeod, the town’s director of asset management, estimates the town has gotten that rate down to 21 or 22 percent. In Braintree, the contamination rate is about 15 percent, and Quincy’s is 15 percent, said John Sullivan, the city’s manager of waste and recycling.

China’s new regulations require a contamination rate of less than 0.5 percent and the country has said it won’t import 24 types of materials — including mixed paper and several types of plastic — at all. The change left the entire world in a lurch. Some 45 percent of all plastic waste on Earth had been going to China since the mid-1990s, according to Science Advances.

Several other East Asian nations have stepped in to accept the recyclables, including Vietnam, Malaysia and Indonesia, but the huge influx of materials headed their way has them considering further restrictions on what they’ll accept. That would put the industry right back to where it was in January of last year, waste management experts say.

“Several other countries initially said, ‘Sure, we’ll take it,’ but they also can’t handle the high rates of contamination,” Jeff Kunz, Braintree’s solid waste adviser, said. “And there really aren’t any new international markets that are taking up the slack.”

Lucarelle, the Waste Management recycling director, says the company has been able to find secondary markets for most of its fourth-shares-collected recyclables, but at a price well below the costs of processing it. Those days, baled plastics are sent to domestic mills, as is the vast majority of cardboard and metals. Most mixed paper recycling is exported to India, where it is manufactured into rolled recovered pulp for making new fiber products.

The turmoil in the recycling industry has turned a once-lucrative — or at least break-even — practice into a money drain for local towns.

“The market for recycling has pretty much disappeared. The white paper market is gone and the plastic market has disappeared,” Tom Reynolds, Marshfield’s public works director, said. “We used to make $10,000 per year for the white paper we recycled, at least, but that’s gone now.”

Reynolds said it used to cost the town $43 per ton to get rid of recycling, and $93 per ton of regular trash. Now, the costs for recycling are just as high as for regular trash. The town’s contract with its trash company — Republic Services — expires next summer, and Reynolds said that if the cost to dispose of recycling keeps going up, it may end up meaning higher rates for residents.

About three years ago, Braintree was earning $20 a ton for recyclables and at one point Quincy was pulling in $125,000 per year selling recyclable materials. Now, Braintree is paying $88 per ton just to have it removed and has invested nearly $60,000 over the last year in mailers, magnets, reusable bags and other materials that outline what is and isn’t recyclable.

Sullivan said recycling hasn’t been profitable in Quincy for a decade. He said the city pays a base rate of $87 per ton of recycling, but a $61 fee is tacked on per ton because the contamination rate is above 10 percent.

Some communities also pay extra if they exceed a contamination limit. In Weymouth, for example, the town pays about $40 per ton for recycling if the contamination rate is less than 10 percent.

But when the rate is more than that, the cost shoots up to $225 per ton. Last year, Weymouth hired an inspector to check curb-side recycling bins and make sure people weren’t tossing contaminants into blue bins. Braintree has a similar system, and its inspector will leave a rejection sticker on certain bins to let people know why their recycling wasn’t picked up. He said some people will go through and fix the problem, but others will just throw it all into the trash.

“People don’t want to hear that we have to throw all the recycling away,” McLeod said, adding that the state Department of Environmental Protection also prohibits communities from having too much recyclable material in their trash.

The state has long imposed waste bans on certain recyclable and compostable materials, and it’s up to local municipalities to make sure the trash that comes out of their town complexes. Banned materials include recyclable paper and cardboard, as well glass, aluminum, metal and plastic containers. The bans mean that towns have no choice but to cough up the money to have recyclables taken away.

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<th>By the numbers</th>
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<tr>
<td>Americans produce an average of 4 pounds of trash per day</td>
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<tr>
<td>About 75 percent of trash is recyclable, but only 30 percent is actually recycled</td>
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<tr>
<td>There are more than 45,000 pieces of plastics for every square mile of ocean</td>
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<tr>
<td>Americans, on average, use enough paper and wood to account for 7 trees per year</td>
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Source: Recycle Nation
Greg Cooper, director of hazardous material and solid waste for the Department of Environmental Protection, said the state has largely recovered from the initial damage caused by China's refusal to accept recycling. Initially, the state issued waivers to towns that allowed some recyclables to be tossed in landfills or incinerated, but hasn't in recent months.

“When the industry was first hit with that change, we allowed some disposing of recyclables because of the turbulence in the market, but we’ve stopped doing that,” he said. “We still have significant problems with the value and the price of recyclables, but we have found places for all of it to go.”

Finding new places to send the goods solved a major problem for towns, but the high costs will remain until the industry adjusts and comes up with new ways to handle the millions of tons of recyclable materials the world produces each year, experts worry.

Kunz, Braintree’s solid waste adviser, says machinery in the U.S. that sorts recyclables can’t handle any batch that is more than 10 percent contaminated, so the up-charge to towns comes from the labor needed to sort the trash. He said newer, upgraded plants would be able to handle batches with higher contamination, but that’s a big ask of the industry.

"Like most large industries, these companies can’t just change on a dime. It’s $40 million, $50 million to put in a new plant, and nobody wants them in their backyard," he said. “Everybody is kind of caught in the middle as to what they should and shouldn’t do as their next move.”

Cooper said one way the domestic market has adjusted to the drastic changes is through investments in paper mills. Late last year, the Northeast Recycling Council announced that 15 American paper mills have increased their capacity to process recycled paper, and the state has also invested in infrastructure that helps municipalities deal with some of their own waste.

Last summer, the state gave two grants totaling $257,000 to the towns of Dennis and Groton to help develop regional glass processing facilities that turn recycled glass into useful products such as construction aggregate.

Over the last decade, the Department of Environmental Protection has also explored reducing towns’ solid waste by providing, or requiring, the composting of organic waste.

A 2014 law bans commercial kitchens from tossing food scraps and other compostables into the trash, and the towns of Hamilton and Wenham have been offering curbside compost pickup to residents since 2012.

“I think we'll continue to see growth in that area,” Cooper said.

While it can take years and even decades for the industry to change, officials are turning to residents.

Education programs and inspectors such as those in Braintree and Weymouth will continue, town officials say, and Cooper thinks cleaning up the residential recycling stream could be key to making the practice profitable for towns again.

"Regardless of where the recycling goes or how the industry reacts, the market is telling us that they want a cleaner product," he said. “So we need to work at the consumer and municipal level to teach people what goes into the bin and what doesn’t. The more we can clean up recycling streams, the more valuable those recycled products will be.”

Reach Mary Whitill at mwitill@patriotledger.com.