



## *An Unsustainable Path:* **Restructuring the Recycling Industry**



For an industry that is rooted in **sustainability**, nearly all would agree that the current state is **unsustainable**.

*As the unwanted bales stack higher, it grows increasingly evident that the recycling industry in the United States is at a crossroads. As a result, municipalities, government associations, and companies that are in the business of collecting and processing recycling are taking a hard look at what path to take as this is truly uncharted territory.*

### **How the Costs Stack Up**

If one breaks down the process of how a recyclable item, say a plastic water bottle, gets from a kitchen to becoming the new item, a sweater for instance, there's a slew of steps along the way. Each step has corresponding needs and related costs, and unfortunately, factors that are outside of our country's control are dramatically increasing those costs causing many to question how much longer the current state can fare.

The costs for collecting recyclables from both residents and businesses include the trucks that are dedicated to recycling collection as well as the containers, drivers, operations staff, maintenance parts, labor and we cannot forget fuel.

Once the recycling is collected, it is then transported to a processing facility. Material Recycling Facilities, or MRFs as they are commonly referred, have their own host of moving parts that require a significant workforce, equipment and subsequent maintenance. Sorting machines are complex, require tremendous manpower to assist with the sorting, and often experience a higher rate of stoppage and repairs due to material that comes onto the sort line that should not be there. Things like coolers, diapers and plastic bags get tangled up in the system creating costly delays and repairs.

## Recycling's Own Carbon Footprint

Recycling is by no means cheap and comes with its own carbon footprint. According to Bucknell University economist Thomas Kinnaman, the energy, labor and machinery necessary to recycle materials is roughly double the amount needed to simply landfill those materials. (12) This is due to the impacts of dual collection, traveling further to seek markets which requires fuel, time and labor, as well as the wasted efforts associated with collecting recyclables that are then warehoused or landfilled.

A recent study by Kinnaman evaluated the varying costs associated with recycling common materials and looked at the energy and emissions involved. His controversial conclusion was that the optimal recycling rate in most countries is about 10 percent of goods. (13) He went further to say that in order to receive the most benefit from recycling, we should be recycling more of some items such as aluminum and less, or even none, of others, such as plastic and glass. (13)

## Contamination Concerns with Wishful Recycling

Residential recyclables are typically collected in single pick-ups or "single stream" and separated at processing centers. This means less effort for the public to do their part to recycle, however, with more materials in the mix comes a greater chance that material could be contaminated. Contamination is when items that should be landfilled are tossed in with the recycling – the remnants of a greasy pizza box, paper cups and plastic bags are common offenders.

"We call it 'wishful recycling,'" says Ben Harvey, president of E.L. Harvey & Sons, a family-run business since 1911. "The general public says, 'Hey, let's put it in the recycling barrel; they'll figure out something to do with it.'" (1)

For every 2,000 pounds of material collected, about 450 pounds is contaminated, according to Susan Robinson, director of federal affairs at Waste Management. (5) This is a direct result of contaminated material that is making its way through the MRF, which leads to needing more labor to pull out that material before it ends up in bales.

## A Green Fence, Reinforced by a Red Sword

For years, China has been the single largest consumer of recyclable materials generated in the U.S. (2) Over the past several years, China has taken a number of steps resulting in adverse effects on the global recycling industry. About five years ago, China enacted its "Green Fence," which set initial standards for lower contamination levels for recycling. Then in January 2018, China came down with its new "National Sword" policy, which bans 24 types of solid waste, including various plastics and unsorted mixed papers, and sets an even tougher standard for contamination levels. (1)

Under the Red Sword, China is rejecting shipments with contaminants above 0.5 percent, a level that most U.S. recyclers have difficulty meeting with conventional recycling and sorting methods. (3) To make a grim situation even worse, in May, China suspended all imports of U.S. recycled materials until June 4, regardless of the quality. (4) Many in the industry linked the move to the continued disputes between the U.S. and China over trade policies and tariffs.

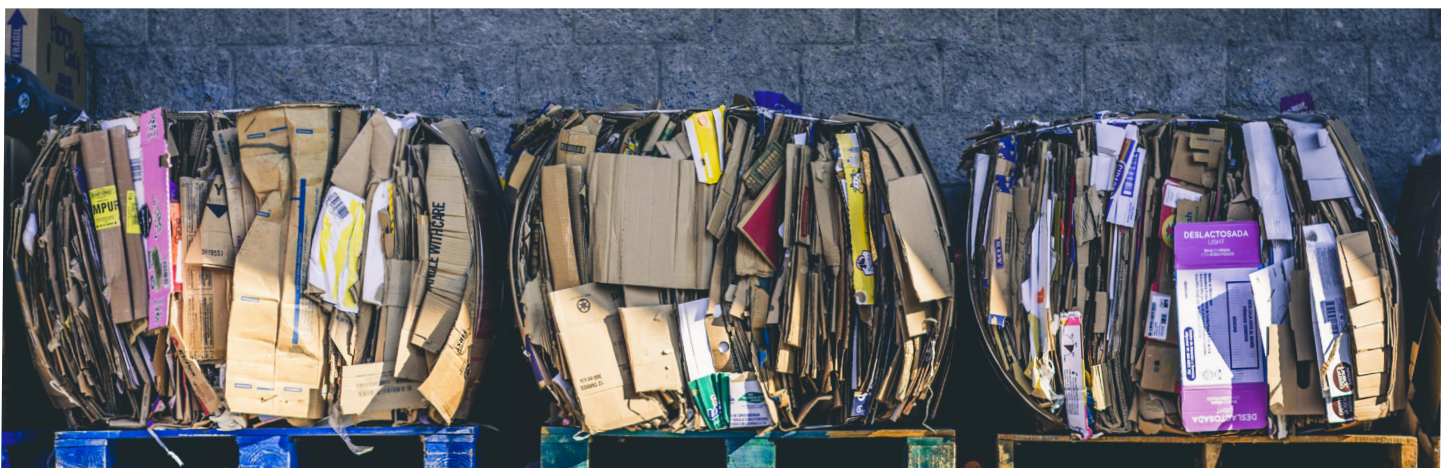
Those who work in the recycling industry stateside are weary about what is on the horizon considering that China's communist party recently affirmed its intention of eliminating imports of recyclables by 2021. (5)

These policies have had detrimental impact on global recycling, effectively creating more supply than the global marketplace demands or can even use. And because of this imbalance, commodity prices have plummeted and simultaneously, processing costs have increased as companies work to produce the high-quality product that satisfies the stringent guidelines put in place by China. (11)

The largest waste company in the U.S., Waste Management, saw a 36 percent decrease in average recycling commodity prices at its recycling facilities during the first quarter of 2018. (6)

Additionally, the company saw an increase in operations costs because they are transporting materials to areas like Vietnam and India, which are now setting criteria of their own. (6)

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## Left Without a Choice

Materials that once held value have seen pricing collapse. Newspaper, cardboard boxes and plastic bottles for instance are piling up at recycling plants, which have lead local officials across the country to charge residents more to collect recyclables and send some of the stockpiled materials to landfills. (4)

Paper is becoming increasingly worthless, even relatively pure loads. Michael Barry, president of Mid America Recycling, a processing-plant operator in Des Moines, Iowa, stockpiled paper bales at his company’s warehouse, hoping prices would improve. They didn’t, so he had no other choice - he recently trucked 1,000 tons of paper to a landfill. (4)

## Actions Cities are Taking

Waste companies, recycling processors and municipalities are trying a myriad of options to change the tide of the drastically declining profitability of recycling.

“Recycling as we know it isn’t working,” said James Warner, chief executive of the Solid Waste Management Authority in Lancaster County, Pennsylvania. (4)

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### A small sample of actions some cities and companies are taking to try and recover from the downturn include:

- Kent County, Michigan, is considering doubling the rate of tipping fees at its sorting facilities citing a \$1 million shortfall from low commodity prices. (7)
- A trash hauler and recycler near Los Angeles slowed its sorting equipment by 20 percent and hired more people to manually pick waste from conveyor lines [to reduce contamination] drastically adding to the cost of doing business. (8)
- Officials in Arab, Alabama, are asking for feedback from residents about whether to continue its recycling program now that their contracted service provider is requesting a fee increase. (9)
- Fort Worth, Texas, is conducting audits to help educate residents and businesses on proper recycling by leaving tags on bins to inform which materials cannot be recycled. (5)
- Flagstaff, Arizona, now limits curbside recycling collection for plastics to only #1 and #2. (9)
- Residents in Roanoke and New River Valley regions in Virginia can no longer recycle plastics #3-7. (9)
- Contamination has gone up sharply since Orlando switched to single-stream in 2016 and has led to rejection rates as high 90 percent. Annual fees will soon be going up \$10
- with nearly \$6 of that dedicated to education in an effort to counter the trend. (9)
- Florida’s Department of Environmental Protection expected that mixed plastics and paper could eventually be dropped from local programs across the state’s 67 counties. (9)
- Portland, Oregon, a recycling pioneer, for the first time asked the state for permission to dump material that used to go into recycling bins straight into the trash. The state said yes. (10)
- The Associated Recyclers of Wisconsin is launching a new “Recycle Right” campaign and found MRF operators have seen up to a 60 percent decline in revenues. Milwaukee is projecting a \$870,000 drop in recycling revenue for the year. (9)
- Between November and February, Columbia, Missouri, ended up stockpiling its mixed plastics because no buyers were available. (9)

*We are in this together, and together, we have to find a way to realign our recycling programs and thought processes to better benefit the economic and sustainability environments of today.*



## Where to from here

Most will agree that the industry has reached a crisis. For new markets within the U.S. to begin to tackle and absorb the recycling issue stateside, the infrastructure needs to be identified, permitted and built which takes years. Plus, the manufacturing industry needs to be clear with communicating the materials it's willing to purchase and at what quality standards to help shape the recycling industry of tomorrow. In the meantime, the viable options being explored range from drastic price increases, changing the recycling mix by eliminating glass, paper, plastics and certain other commodities, or suspending recycling collection until more favorable markets return. Education is important to help curb contamination trends, however, even clean bales are not guaranteed to make it to China nor are they commanding the same return.

## Resources

1. Mountains of US recycling pile up as China restricts imports, Public Radio International, Jan. 1, 2018
2. China's changing policies on imported recyclables, National Waste & Recycling Association, April 2018
3. Amid Trade Feud, Recycling Is in Danger of Landing on Trash Pile, Wall Street Journal, April 12, 2018
4. Recycling, Once Embraced by Businesses and Environmentalists, Now Under Siege, Wall Street Journal, May 13, 2018
5. Industry Builds the Future of Recycling Amid China Ban Woes, Waste 360, June 29, 2018
6. Waste Management Feels Impact of China's Contamination Standard, Import Ban in Q1 2018, Waste 360, April 20, 2018
7. Kent County, Mich., Considers Doubling the Cost of Recycling, Waste 360, June 11, 2018
8. 'We Got Lazy': U.S. Recyclers Try Cleaning Up Their Scrap, Wall Street Journal, June 6, 2018
9. What Chinese import policies mean for all 50 states, Waste Dive, June 29, 2018
10. Recycling Is Religion in Portland. But It's in Crisis Because You're Doing It Wrong, Willamette Week, June 6, 2018
11. Time to Recycle Smarter, Waste360, July 6, 2018
12. Are we recycling too much of our trash?, October 22, 2015
13. It is time to rethink recycling?, Ensia, February 8, 2016