Solid Waste Trends In 2020

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Ten years ago, most people thought garbage was boring; even industry professionals thought it was at least predictable.

But the past few years have been tumultuous for the garbage industry. China's National Sword campaign — an import ban on recycling commodities — threw the U.S. waste system into a tailspin from which it is still recovering. The future of solid waste and recycling is much less certain now, but there are a few trends that we can expect to see continue in 2020 and beyond.

Domestic Processing

One positive trend whose effects we can hope to begin seeing in 2020 is the expansion of the domestic processing of recyclables. Shuttered paper mills around the United States, like McKinley in Washington state, have begun retooling to process waste paper.

At least $1 billion in new investments has been sunk into U.S. paper processing plants. Plastic and scrap metal recycling plants have also seen increased investment. Ironically, much of that investment is coming from Chinese companies. But regardless of the funding source, domestic recycling capacity will help stabilize the system.

Materials recovery facilities (MRFs) have also begun to improve their systems. Some MRFs have already diversified and broadened their services by, for example, purchasing advanced scanners that sort paper into 15 grades instead of the usual two.

Shrinking Local Programs

Community curbside recycling programs will continue to struggle. Even when more domestic processors are up and running, U.S. environmental and labor standards will require cleaner commodities and higher operating costs than foreign processors.

Many communities have already abandoned curbside recycling in the past two years, and more are likely to give up on recycling in the future. We can expect those that continue to refocus on the most profitable commodities while refusing to collect problematic or unprofitable materials like glass or plastic.

Seattle, Washington, known for its enthusiasm for recycling, has already stopped accepting plastic bags and plastic film in its curbside recycling program. Residents must now take these recyclables to drop-off sites, but it is likely that some will simply discard the materials in their garbage with other solid waste.

If recycling rates drop, the U.S. could run out of landfill space by 2031. Photo: Adobe Stock

New Business Models

The industry's major players are too deeply invested in MRFs to return to source-separated recycling for curbside customers. But the materials MRFs can no longer afford to handle will provide opportunities for new approaches.

Innovative new businesses are already springing up to take advantage of the industry's disruption. Companies like Ridwell are connecting residents to recyclers for materials that curbside programs don't accept. As governments struggle to maintain curbside recycling services, they are likely to step up efforts to encourage product stewardship programs, in which manufacturers design for and fund the recycling of their own products. Take-back programs like those for plastic bags at grocery stores and toner cartridges at office supply stores will serve as a model for additional materials.

Landfill Loss

In the United States, landfilling is by far the dominant disposal method. But the number of landfills has been decreasing for decades.

In 1988, there were nearly 8,000 landfills in the U.S. and in 2017 the number of operating landfills was closer to 1,250. Some of this attrition may be due to a movement away from small, local landfills toward large, regional ones. But it's also true that the siting and permitting of new landfills is nearly impossible. If the current pattern continues, the U.S. could run out of landfill space by 2036. If recycling rates drop further as a result of the Chinese import ban, it could be 2031.

As the next decade progresses, communities will increasingly be challenged to find affordable disposal options for our solid waste. This will lead to increased interest in and support for alternative disposal methods. It may also result in communities becoming more open to hosting new landfills, eventually reversing the decades-old trend.

Technological Transformations

In recent years, numerous technologies have emerged as potential alternatives to landfilling or incinerating our solid waste. Thermal technologies like pyrolysis and gasification and biological methods like anaerobic decomposition have shown real promise. So far, these technologies are either limited to certain segments of the waste stream or have not been successfully scaled up to manage municipal quantities. But research and testing continue, and we can expect more pilot projects and possibly even scaled rollouts of these methods in the next decade.

After years of incremental improvements, new recycling technologies are also on the horizon, especially for plastics. In 2019, IBM, PureCycle, and BP all made strides in developing new post-consumer plastic recycling processes. Easily recycled new plastic formulas have the potential to replace some of the common problematic plastics in use today.

Technological advances will also continue in traditional sectors of the disposal industry. Robots and scanners will sort waste and recyclables with increasing accuracy. And equipment from household recycling bins to landfill compactors will join the internet of things, providing ever more granular data for governments and processors.

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