



Image Credit RitaE via Pixabay

The State of Recycling In Maryland

U.S. PIRG
Education Fund



ZERO WASTE

Written By:

Alex Truelove, U.S. PIRG Education Fund Zero Waste Program Director
Carrie Katan, U.S. PIRG Education Fund Zero Waste Program Associate

November 14th, 2019

U.S. PIRG
Education Fund



Acknowledgements

The authors bear responsibility for any factual errors. The recommendations are those of U.S. PIRG Education Fund. The views expressed in this report are those of the authors and do not necessarily reflect the views of our funders or those who provided review.

 U.S. PIRG Education Fund. Some Rights Reserved. This work is licensed under a Creative Commons Attribution Non-Commercial No Derivatives 3.0 U.S. License. To view the terms of this license, visit <http://creativecommons.org/licenses/by-nc-nd/3.0/us>.

U.S. PIRG Education Fund: With public debate around important issues often dominated by special interests pursuing their own narrow agendas, U.S. PIRG Education Fund offers an independent voice that works on behalf of the public interest. U.S. PIRG Education Fund, a 501(c)(3) organization, works to protect consumers and promote good government. We investigate problems, craft solutions, educate the public, and offer meaningful opportunities for civic participation. For more information, please visit uspargedfund.org.

The Environment Maryland Research & Policy Center is a 501(c)(3) organization. We are dedicated to protecting Maryland's air, water and open spaces. We investigate problems, craft solutions, educate the public and decisionmakers, and help Marylanders make their voices heard in local, state and national debates over the quality of our environment and our lives. For more information about Environment Maryland Research & Policy Center or for additional copies of this report, please visit www.environmentmarylandcenter.org.

Introduction	5
The State of Recycling In Maryland	6
The collapse of international recycling markets	6
Ongoing structural issues	6
Recycled materials lack markets	7
Producers aren't held responsible	7
Consumers lack opportunities to recycle and compost	7
Plastic production has increased	7
Consequences of our weak recycling system	8
Trash incinerators	8
Landfills	8
The need for more raw materials	9
Maryland Findings	9
Waste to Asthma	9
Solutions	11
References	12

Introduction

You toss your plastic water bottle in a recycling bin after coming home from a trip to the beach, hoping the plastic from that bottle will be in next year's plastic bottle, right? It most likely will not. Currently, plastic can only be re-manufactured a limited number of times, at best into a lower quality product because it degrades each time it is recycled.¹ The value of recycled plastic may be low enough that your bottle is instead burned in an incinerator or dumped into a landfill. A few years ago, that plastic might have been sold to China or another foreign nation. However, over the last few years, countries across the Pacific are putting restrictions on importing U.S. waste. Without these export markets, the U.S. recycling industry is in serious trouble, as exemplified by your plastic bottle's likely journey to a landfill or incinerator. Of course, using a reusable water bottle would have avoided this issue, and for that reason, reduction and reuse strategies are preferable to recycling, even when recycling works.

The State of Recycling In Maryland

Across the United States, our recycling system is faltering. Local governments from Jackson, Mississippi to Sierra Vista, Arizona are ending their curbside recycling programs. Many other municipalities have reduced the list of materials they will accept.^{2 3} Even when recycling does end up in a blue bin, it may be immediately landfilled or burned --until earlier this year roughly half of Philadelphia's collected recycling was being sent to incinerators.⁴ These are not isolated incidents but are increasingly our new normal. What went wrong? Why are we moving backwards on recycling, an important tool for fighting environmental pollution and climate change? And why is plastic to blame?

The collapse of international recycling markets

For decades, one of the United States' largest exports to East Asia by weight was waste.⁵ Rapid economic growth, high demand for materials and cheap labor made it economical for these Asian countries to sort through U.S. recyclables that were often commingled with low-value or unrecyclable materials.⁶ And from the U.S. perspective, exporting waste was easier than handling it domestically, so the U.S. sent its waste overseas in massive amounts and counted it as recycled.⁷ This arrangement was far from perfect, however. Once these countries had sorted out the valuable materials from the U.S.' recyclables, they would throw out or incinerate the rest—practices detrimental to both public health and the environment.^{8 9}

Starting in early 2018, East Asian governments began banning, limiting or more heavily regulating U.S. recyclable exports.¹⁰ The era of globalized waste trade came to a sudden end and the U.S. was left to deal with its flawed recycling system.

Ongoing structural issues

While many commentators have blamed East Asian import restrictions for our current struggles, the U.S. is at fault for becoming dependent on exporting its recyclables. The United States failed to curb the rise of plastic, failed to build domestic demand for recycled material, and failed to ensure that product designers considered the end life of their products.

Recycled materials lack markets

Recycling depends on the idea that the cost of collecting and sorting certain materials is rational because somebody will want to buy them to make something else. In reality, many plastics have no such market. Without domestic manufacturers creating more goods made from recycled material, we cannot fuel a functional recycling system. If we want to improve our recycling system, we need to use better materials and create a market that is fueled and funded in part by the manufacturers themselves.

Producers aren't held responsible

Currently, most product designers are under no obligation to consider how their products will be disposed of at the end of their useful life. This leads to the creation of unrecyclable products. For example, some flexible drink packaging combines plastic and metal and the two materials are too difficult to separate to be recycled.¹¹ Other products, like compostable plastic containers, may be technically recyclable or compostable, but they are often incompatible with most recycling and composting programs.¹²

Consumers lack opportunities to recycle and compost

Many municipalities lack curbside recycling, while in areas where it is provided, multi-unit apartments are often left out.¹³ As a result of the recent restrictions on recycling exports, additional municipalities have ended their recycling programs. Access to curbside compost is even worse. A 2017 study found that only 326 municipalities out of more than 19,000 had curbside pickup of food waste, less than 2%.¹⁴ For these activities to increase, recycling and composting must be as easy as tossing things into the trash.

Plastic production has increased

For materials like metal and cardboard, the recycling model has historically worked well. There is a healthy market for used cardboard and aluminum, which reduces the environmental impact of extracting and manufacturing new so-called “virgin” materials.¹⁵

Plastic is different. Plastic can only be recycled a few times, because it breaks down each time it's recycled. Recycling plastic is also an expensive and complicated process.¹⁶ As more non-recycled plastic has entered our waste stream, our recycling system has struggled to fund

itself. Over the last three decades, the amount of plastic entering our recycling system has increased dramatically. In 1980, 20,000 tons of plastic was recycled. In 2015, that number skyrocketed to more than 3 million tons. And yet, that same year, more than 5 million tons of plastic was burned, while another 26 million tons was landfilled.¹⁷

Without a market, 8 million tons of plastic waste will continue to find its way into the ocean every year.¹⁸ Ultimately, the best way to handle our plastic waste problem is to dramatically reduce the amount of plastic being produced in the first place.

Consequences of our weak recycling system

In the absence of an effective recycling system, most U.S. waste is landfilled or incinerated instead of recycled, necessitating that new materials be extracted and manufactured.

Trash incinerators

In the wake of recycling export restrictions, many municipalities have begun incinerating their recycling streams instead, a process often termed “waste-to-energy.” While touted by supporters as a “renewable” energy source, incineration is extremely harmful to both the environment and local communities. For every metric ton of plastic burned in an incinerator, 1,980 pounds of carbon dioxide (CO₂) equivalent are released—nearly 15 times more than a ton of plastic waste that is landfilled.¹⁹

The public health effects of incineration are also grave. Emissions include carcinogens and neurotoxins, as well as contaminants that can cause or aggravate respiratory problems, particularly among children, the elderly, and those with pre-existing respiratory problems.²⁰

Landfills

Landfills are the most common way of getting rid of waste and, they also pose environmental and public health challenges. As waste, especially organic matter, breaks down in landfills, it generates the greenhouse gasses CO₂ and methane. Twenty percent of all human-caused methane, a greenhouse gas 84-87 times more potent than CO₂ over a 20-year period, has come from landfills.^{21 22} In addition, landfills can leak fluid that contains a “wide variety of hazardous, toxic or carcinogenic chemical contaminants” into groundwater.”²³

The need for more raw materials

When materials are incinerated or landfilled, more virgin materials are needed to create new products. Using virgin materials often entails significant environmental degradation. For example, extracting and transporting natural gas in the U.S. for virgin plastic production emits an estimated 9.5–10.5 million metric tons of CO₂ equivalent per year.²⁴ Much of this natural gas also comes from fracking, which uses around 3 million gallons of water per well and has been shown to pollute groundwater.²⁵

Maryland Findings

Maryland has recycled and composted at higher rates than some states in recent years with a combined rate of 44.1% in 2017.²⁶ However, Maryland's performance is uneven. The state collected 85% of yard waste in 2016, but only 15% of food waste and 13.7% of plastic waste. Maryland's inconsistencies are also geographic — the recycling rates of Dorchester and Somerset Counties rank well below the state average.²⁷ Eliminating nonrecyclable plastics, offering more curbside food waste collection, and increasing collection rates in underperforming regions would allow the state to continue making progress.

Since the most recent statewide data collection in 2017, local news reports suggest that Maryland has continued to fare better than neighbors Virginia and Pennsylvania in the wake of foreign waste import restrictions. Unlike those states, major municipalities in Maryland have not ended curbside recycling or been forced to limit acceptable materials.²⁸

Waste to Asthma

Baltimore's two trash incinerators illustrate many of the problems with burning trash, from negative health impacts to high costs.

The public health effects of burning trash on an industrial scale in Baltimore are strongly illustrated by local asthma cases. Just one of Baltimore's incinerators pumped out 64% of the nitrogen oxide pollution emitted from smokestacks in the city in 2014. Nitrogen oxide pollution has been connected to asthma, and Baltimore's asthma rate is almost 50% higher than the national average in adults and more than double the national average among minors.^{29 30}

In addition to the dire public health effects, trash incinerators in Maryland are costly. Incinerators are subsidized by the State of Maryland, and classified as a renewable energy source, despite their emissions. This pulls resources away from wind and solar projects that could actually

reduce greenhouse gas emissions.³¹ Incinerators also contribute to costly externalities. In 2017, the Chesapeake Bay Foundation estimated that one trash incinerator engendered almost 22 million dollars of medical expenses in Maryland every year.³² Maryland can solve its dependency on burning trash on an industrial scale by increasing its waste reduction, composting and recycling efforts.

Solutions

Reduce, reuse, recycle.

It’s important to remember that recycling is only our third best option. While recycling reduces our need to produce from virgin materials, it is also a manufacturing process that requires the use of water, energy, and other natural resources. For that reason, we need to redesign our systems to reduce and reuse, first and foremost. The following policies can help us towards reaching our goals:

Reduce	Reuse	Recycle
Ban unnecessary single use plastics, such as plastic bags.	Pass Right to Repair Laws, giving consumers and independent repair shops the ability to fix their stuff when it breaks.	Pass Extended Producer Responsibility Laws that make manufacturer responsible for dealing with the waste their products will become.
Require unnecessary single-use plastic accessories such as straws, utensils, and condiment packets, to be given only upon customer request	Encourage the use of reusable bags and bottles through customer rebates	Expand curbside recycling and composting efforts.
Oppose the creation of new plastic production infrastructure.	Require sit down restaurants to use reusable plates and foodware.	Mandate new products contain a certain percentage of recycled material.
Enact “Pay As You Throw” programs that charge consumers less if they throw out less trash.		Ban food waste from landfills and encourage the creation of a comprehensive composting system.

References

1. Sedaghat, Lilly. "7 Things You Didn't Know About Plastic (and Recycling)." *National Geographic Society Newsroom*, 13 Apr. 2018, <https://blog.nationalgeographic.org/2018/04/04/7-things-you-didnt-know-about-plastic-and-recycling/>.
2. Rosengren, Cole. "Mississippi's Largest City Ends Recycling, Extends Waste Management Landfill Contract." *Waste Dive*, 19 Aug. 2019, <https://www.wastedive.com/news/jackson-mississippi-cancel-recycling-waste-management/560827/>.
3. Eubank, Johanna. "Curbside Recycling Comes to an End in Sierra Vista." *Arizona Daily Star*, 28 May 2019, https://tucson.com/news/local/curbside-recycling-comes-to-an-end-in-sierra-vista/article_c463d5c3-cfce-5e4e-a224-ec97eda00bae.html.
4. Kummer, Frank. "At Least Half of Philly's Recycling Goes Straight to an Incinerator.", *The Philadelphia Inquirer*, 26 Jan. 2019, <https://www.inquirer.com/science/climate/recycling-costs-philadelphia-incinerator-waste-to-energy-plant-20190125.html>.
5. 86-87, Minter, Adam. *Junkyard Planet: Travels in the Billion-Dollar Trash Trade*. Bloomsbury Press, 2013.
6. Ibid, page 147
7. Ibid, page 94
8. Ibid, page 154-158
9. McCormick, Erin, et al. "Americans' Plastic Recycling Is Dumped in Landfills, Investigation Shows." *The Guardian*, Guardian News and Media, 21 June 2019, <https://www.theguardian.com/us-news/2019/jun/21/us-plastic-recycling-landfills>.
10. Ives, Mike. "Recyclers Cringe as Southeast Asia Says It's Sick of the West's Trash." *New York Times*, 7 June 2019, <https://www.nytimes.com/2019/06/07/world/asia/asia-trash.html>.
11. See note 5, page 256
12. Peters, Adele. "Will Compostable Packaging Ever Be Able to Solve Our Waste Problem?" *Fast Company*, Fast Company, 30 Aug. 2019, <https://www.fastcompany.com/90393297/will-compostable-packaging-ever-be-able-to-solve-our-waste-problem>.

13. Marshal, Cody. *THE 2016 STATE OF CURBSIDE REPORT*. THE RECYCLING PARTNERSHIP, 2016. Online
<https://recyclingpartnership.org/wp-content/uploads/2018/05/state-of-recycling-report-Jan2017.pdf>
14. Virginia Streeter and Brenda Platt, "Residential Food Waste Collection Access in The U.S.," *BioCycle*, 58(11), December 2017.
15. Gelles, David. "Big Companies Put Their Money Where the Trash Is." *The New York Times*, The New York Times, 28 Nov. 2015,
<https://www.nytimes.com/2015/11/29/business/energy-environment/big-companies-put-their-money-where-the-trash-is.html>.
16. Franklin-Wallis, Oliver. "'Plastic Recycling Is a Myth': What Really Happens to Your Rubbish?" *The Guardian*, Guardian News and Media, 17 Aug. 2019,
<https://www.theguardian.com/environment/2019/aug/17/plastic-recycling-myth-what-really-happens-your-rubbish>.
17. "Plastics: Material-Specific Data." *EPA*, Environmental Protection Agency, 7 May 2019,
<https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/plastics-material-specific-data>.
18. Parker, Laura. "The World's Plastic Pollution Crisis Explained." *National Geographic* , 7 June 2019, <https://www.nationalgeographic.com/environment/habitats/plastic-pollution/>.
19. Hamilton , Lisa Anne, and Steven Feit . *Plastic and Climate The Hidden Cost Of A Plastic Planet*. Center For Environmental Law , 2019.
20. Azoulay, David, et al. *Plastics and Health The Hidden Cost Of A Plastic Planet*. Center For Environmental Law , 2019.
21. Danthurebandara, Maheshi, et al. "Environmental and Socio-Economic Impacts of Landfills." *ResearchGate* , Jan. 2013,
https://www.researchgate.net/publication/278738702_Environmental_and_socio-economic_impacts_of_landfills.
22. Voiland, Adam. "Methane Matters." *NASA*, NASA, 8 Mar. 2016,
<https://earthobservatory.nasa.gov/features/MethaneMatters>.
23. See note 21
24. See note 19
25. Ridlington, Elizabeth, et al. *Fracking by the Numbers The Damage to Our Water, Land and Climate from a Decade of Dirty Drilling*. Environment America, 2019.

26. "Maryland State, County and City Recycling." *Maryland Department of the Environment*, <https://mde.maryland.gov/programs/LAND/RecyclingandOperationsprogram/Pages/recyclingrates.aspx>.

27. "MARYLAND SOLID WASTE MANAGEMENT and DIVERSION REPORT – 2017 – ." *Department of the Environment*, Resource Management Program Land and Materials Administration, 2017, <https://mde.maryland.gov/programs/LAND/SolidWaste/Documents/MSWMR'17.pdf>.

28. Rosengren. "How Recycling Is Changing in All 50 States." *Waste Dive*, 5 June 2019, <https://www.wastedive.com/news/what-chinese-import-policies-mean-for-all-50-states/510751>

29. Dance, Scott. "How a Trash Incinerator - Baltimore's Biggest Polluter - Became 'Green' Energy." *Baltimoresun.com*, 15 Dec. 2017, <https://www.baltimoresun.com/news/environment/bs-md-trash-incineration-20171107-story.html>.

30. "Asthma." *Baltimore City Health Department*, 4 Jan. 2019, <https://health.baltimorecity.gov/node/454>.

31. See Note 29

32. O'Dowd, Peter. "Baltimore's Burning Question: What To Do With Its Trash Incinerator." *Baltimore's Burning Question: What To Do With Its Trash Incinerator | Here & Now*, WBUR, 25 Apr. 2019, <https://www.wbur.org/hereandnow/2019/04/25/baltimore-waste-incinerator-garbage>.