



Garbage in Massachusetts Pollutes

Report authored by Chanah Haigh, Policy Intern, MASSPIRG, with collaboration from the Zero Waste Massachusetts Coalition: Clean Water Action MA, Conservation Law Foundation, Community Action Works.

December 2020

There is an aspect of modern life which is mostly hidden from our day to day lives. We use stuff, we throw stuff away. But there is no “away.” Massachusetts disposes of over five and a half million tons of waste annually, including residential, business, institutional, and construction and demolition waste (“Municipal Solid Waste”).¹ This number doesn’t even include so-called “special waste,” which refers to waste such as sewage sludge and incinerator ash. Despite the large volume of this waste, for the most part, no one questions where it goes. As the Department of Environmental Protection drafts the next decade-long plan for dealing with waste in Massachusetts – the 2020-2030 Solid Waste Master Plan – we must take a look at where Massachusetts’ waste goes, what happens to it, and how it impacts our health and our environment. The waste we dispose of (which is not diverted to composting or recycling) has only three paths: 1. It is buried in a landfill here in MA. 2. It is burned in an incinerator here in MA. 3. It is exported to another state to be buried or burned. All of these options are unhealthy, polluting, expensive, and should be phased out.

Incinerators are facilities which burn trash at a very high temperature, about 2,500 degrees fahrenheit.² In Massachusetts we have seven incinerators, whose locations are noted on the map below.

Incinerators, including those which claim to turn waste into energy, have major consequences for nearby residents and the environment. Those consequences include the release of dangerous toxic chemicals and pollutants, such as:

- **acid gas**, which contributes to acid rain and breathing complications,
- **mercury, lead, and dioxins** – toxic and dangerous chemicals, which cause cancer and birth defects and affect nearly every system in the human body,

¹ <https://www.mass.gov/doc/2019-solid-waste-data-update/download>

² <https://www.mass.gov/guides/municipal-waste-combustors#-about-combustion-facilities->

- **nitrogen oxides**, the main ingredient in smog, which contributes to breathing problems,
- **carbon dioxide**, a major contributor to climate change, and
- **ash and soot**, which are released in the air and cause breathing issues and lung damage.³

Waste does not magically disappear just because it is burned. Not only do incinerators produce the air pollution described above, they also generate incinerator ash. The ash produced by the process weighs about a fourth as much as the original waste and must be buried in landfills.⁴ Massachusetts buries 800,000 tons of incinerator ash annually.⁵ Though incinerators companies also generate some energy, they are inefficient, expensive, and emit more carbon dioxide per unit of electricity than natural gas power plants.⁶

Though they may seem benign or passive, landfills are also a harmful method of disposing of waste. The process of creating and filling a landfill causes environmental degradation, air pollution, and water contamination. In Massachusetts we have 15 active landfills, whose locations are noted on the map below. The problems and pollution they cause include:

- **leaking toxic chemicals** into soil, groundwater, and marshland, including neurotoxins like lead and mercury,⁷
- **contributing to global warming**; materials buried in landfills create pollution simply because they are underground. For example, when food waste is buried in a landfill, it produces methane,⁸ a climate change pollutant with a global warming potential 25 times greater than carbon dioxide,⁹ and
- **destroying open space** and ecosystems.

Case Study: Wheelabrator Saugus Ash Landfill

The Wheelabrator Saugus Landfill, which is filled daily with concentrated toxic ash from the incinerator that runs next to it, was scheduled to be shut down in 1996. Despite this, it was given a permit for another five years of use in 2017. This permit allows an expansion of

³ <https://www.mass.gov/guides/municipal-waste-combustors#-about-combustion-facilities->

⁴ <https://www.mass.gov/guides/municipal-waste-combustors>

⁵ <https://www.mass.gov/guides/municipal-waste-combustors#-about-combustion-facilities->

⁶ <https://archive.epa.gov/epawaste/nonhaz/municipal/web/html/airem.html#:~:text=Per%20unit%20of%20electricity%20produced,unit%20energy%20than%20natural%20gas.>

⁷ <https://communityactionworks.org/wp-content/uploads/TAC-toxics-in-massachusetts.pdf>

⁸ <https://www.epa.gov/sustainable-management-food/sustainable-management-food-basics#:~:text=Reduce%20Methane%20from%20Landfills%20%E2%80%93%20When,rots%20and%20produces%20methane%20gas.>

⁹ <https://www.unece.org/energy/welcome/areas-of-work/methane-management/the-challenge.html#:~:text=Methane%20is%20a%20powerful%20greenhouses,a%20greenhouse%20gas%20than%20CO2.>

its size by 25%.¹⁰ Sitting in the designated “Area of Critical Environmental Concern” of Rumney Marsh, the 140 acre landfill is unlined. It is the only active landfill in Massachusetts in that condition, as more recent landfill regulations have made unlined landfills illegal.¹¹ Linings help prevent chemicals from leaching out into surrounding land and water. Today, over 100,000 tons of toxic ash are buried in the Wheelabrator Saugus landfill annually.¹² This has had a profound effect on the health of the people in Saugus, as well as the neighboring towns of Lynn and Revere.¹³ In Saugus, as compared to the rest of the state, there are significantly elevated instances of brain and nervous system cancers in women and testicular cancer in men.¹⁴

Case Study: Wheelabrator Saugus Incinerator

Despite the fact that incinerators have a life expectancy of 20-30 years,¹⁵ The Wheelabrator Saugus Plant has been burning waste for 46 years. It suffers from almost yearly fires, posing a threat to workers at the incinerator and families nearby. These fires release toxic smoke, which can quickly enter the lungs of those nearby. The aging facility is costly to fix and that cost is often passed on to the nearby towns and their residents who use it for waste disposal. As incinerators age, they become more and more polluting, as they break down often and the process of restarting the incinerator spews higher amounts of carbon monoxide, a highly dangerous gas.¹⁶

Case Study: Southbridge Landfill

At a government hearing in 2008, experts from Casella, the owner of the Southbridge Landfill, admitted that toxics from the landfill had entered the groundwater and were migrating into the town of Southbridge.¹⁷ By 2017, 19 local wells in the nearby neighboring town of Sturbridge had been found to have high levels of lead and six had dioxane, a likely carcinogen.¹⁸ To this day, residents must rely on bottled water to drink, brush their teeth, and do their dishes. Many still have to bathe in the polluted water. The leachate also polluted the nearby wetlands, an integral part of Massachusetts’ ecosystem.¹⁹ This is not a

¹⁰<https://web.archive.org/web/20180710135846/https://www.citylab.com/environment/2018/02/an-incinerator-divides-a-town-near-boston/552053/>

¹¹ <https://www.clf.org/blog/saugus-ma-landfill-dangerous/>

¹² “Annual Solid Waste Facility Reports: Landfill Summary.” Department of Environmental Protection, 17 Aug. 2020.

¹³ <https://www.clf.org/blog/wheelabrator-landfill-community-massachusetts/>

¹⁴ <https://www.mass.gov/doc/evaluation-of-cancer-incidence-in-saugus-ma-march-2016-0/download>

¹⁵ <https://www.no-burn.org/wp-content/uploads/Incinerators-in-Trouble.pdf>

¹⁶<https://www.clf.org/blog/aging-incinerators-pose-a-danger/#:~:text=As%20older%20incinerators%20break%20down,fi red%20up%2C%20or%20undergo%20maintenance.>

¹⁷ <https://www.clf.org/blog/southbridge-residents-make-clear-dont-want-casellas-polluting-landfill/>

¹⁸ <https://www.clf.org/conservation-matters-articles/talking-trash/>

¹⁹<https://environmentmassachusetts.org/news/mae/environmental-groups-sue-casella-waste-systems-over-pollution-south-bridge-mass-landfill>

situation unique to Southbridge; this is the course that all landfills take as they age and emit more and more toxic chemicals into the ground and water.

Flat Disposal Rates and Increased Export

In 2010 the Commonwealth of Massachusetts disposed of 5,430,000 tons of solid waste.²⁰ In 2019 we disposed of 5,510,000 tons.²¹ This appalling lack of progress to reduce waste means that Massachusetts is now shipping waste out of state to be burned or buried -- in 2019 we exported a net total of 1.6 million tons of waste as far away as South Carolina, with the bulk of it being buried in Ohio, New Hampshire, and upstate New York.²² We have failed to reduce, reuse, compost, and recycle. Instead, we are passing our problem on to be buried in other people's backyards.

The Path Forward

We must set a goal of phasing out dirty disposal and aggressively move to a redesign/reduce/reuse/recycle system. If you look at the 'slices of the pie' that make up the 5.5 million tons of garbage we generate in MA each year, the vast majority of it could and should be diverted from disposal.²³ The waste stream includes:

- **30% food and yard waste** that could be reduced through food rescue, composted in yards, and/or diverted to large scale composters called anaerobic digesters.
- **15% plastic**, such as single use bags, styrene, and other containers, that could be banned or replaced with sustainable alternatives.
- **20% paper and cardboard** which can and should be recycled.²⁴

Given the health and environmental risks, all incineration of solid waste should be phased out and landfills should only be used for any materials that cannot be composted, reused, recycled, or redesigned. We need to shift to reusable products and rid ourselves forever of "single-use" anything. Above all, we need to make producers responsible for their waste, we need to hold decision makers to a higher standard for enforcing waste bans of materials that can be recycled, and we need to reduce our use of materials and products. We are in a critical moment in the Commonwealth where we can make these changes. The DEP is set to release the Solid Waste Master Plan for the next ten years, and it is vital that this plan not be a continuation of decades of waste, but the path to a Zero Waste future.

²⁰ <https://www.mass.gov/files/documents/2016/08/vn/10swdata.pdf>

²¹ <https://www.mass.gov/doc/presentation-2019-solid-waste-waste-reduction-data/download>

²² <https://www.mass.gov/doc/presentation-2019-solid-waste-waste-reduction-data/download>

²³ <https://www.mass.gov/doc/2019-solid-waste-data-update/download>

²⁴ <https://www.mass.gov/guides/solid-waste-master-plan#waste-characterization-&capacity-studies->

The numbers below refer to waste that is burned or buried in Massachusetts annually. They exclude the over a million tons of waste that is shipped out of Massachusetts to be burned or buried by states with less rigorous regulations.

List of Incinerators: 3,304,137 tons of waste annually (by 2019/2020 numbers)²⁵

- 1.COMMUNITY ECO SPRINGFIELD LLC RRF, Agawam. 133,716 annual tons.
- 2.COVANTA HAVERHILL WASTE TO ENERGY FAC, Haverhill. 596,048 annual tons.
- 3.WHEELABRATOR MILLBURY INC, Millbury. 480,821 annual tons.
- 4.WHEELABRATOR NORTH ANDOVER INC, North Andover. 460,571 annual tons.
- 5.PITTSFIELD RESOURCE RECOVERY FACILITY, Pittsfield. 81,553 annual tons.
- 6.SEMASS RESOURCE RECOVERY FACILITY, Rochester. 1,122,011 annual tons.
- 7.WHEELABRATOR SAUGUS INC, Saugus. 429,417 annual tons.

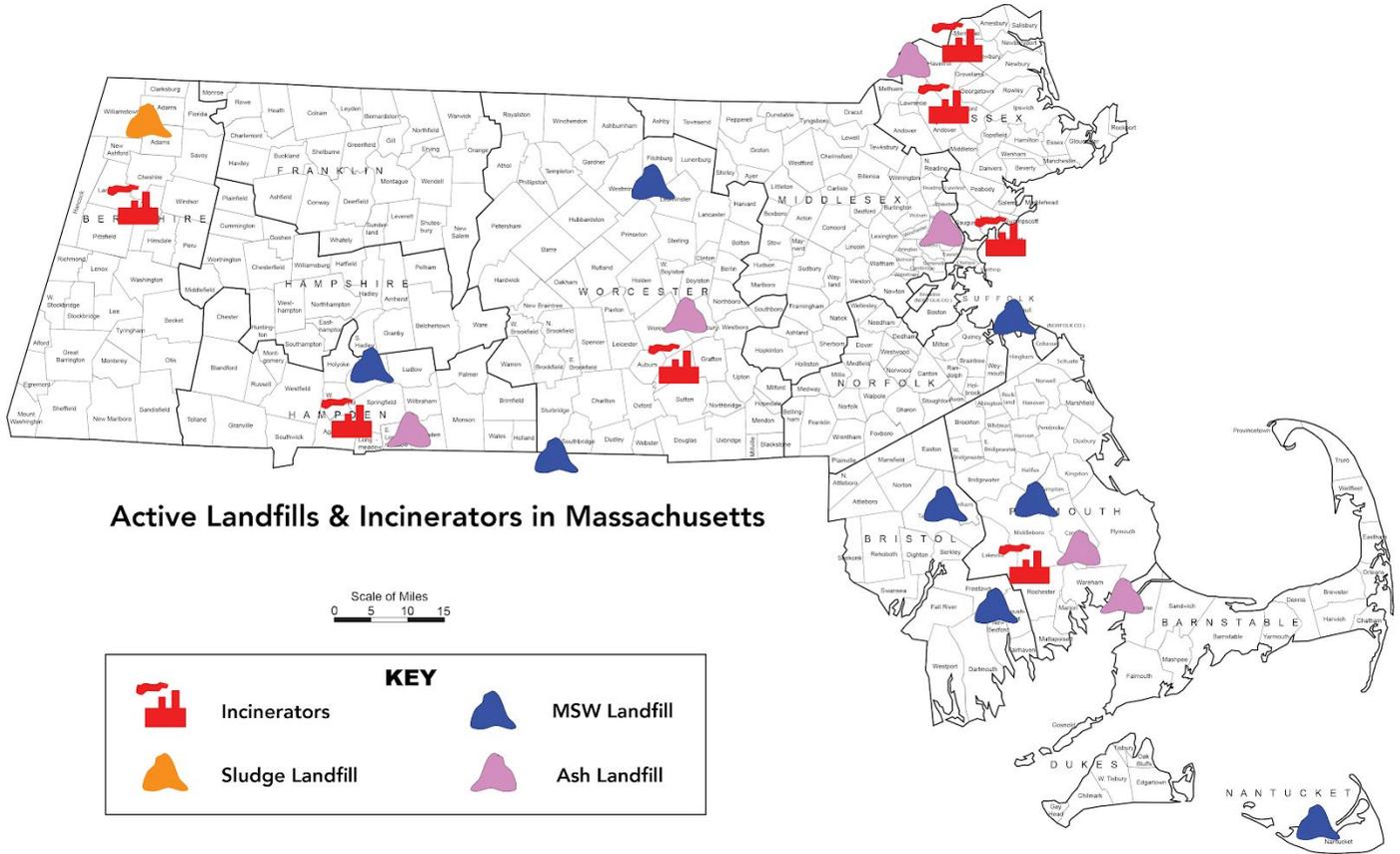
List of Landfills: 1,885,615 tons annually (by 2019 numbers)²⁶

1. SPECIALTY MINERALS COMBINED NOTCH RD LF, Adams. 100,000 ton. Sludge landfill.
2. BONDI'S ISLAND ASH LANDFILL, Agawam. 97,331 tons. Ash.
3. BOURNE LANDFILL, Bourne. 209,987 tons. Primarily ash.
4. CARVER MARION WAREHAM ASH LANDFILL, Carver. 116,598 tons. Primarily municipal solid waste.
5. CHICOPEE LANDFILL, Chicopee. 40,730 tons. Primarily municipal solid waste.
6. CRAPO HILL LANDFILL, Dartmouth. 99,802 tons. Primarily municipal solid waste.
7. WARD HILL NECK LANDFILL, Haverhill. 161,575 tons. Primarily ash.
8. HULL LANDFILL, Hull. 320 tons. Primarily municipal solid waste.
9. MIDDLEBOROUGH LANDFILL, Middleborough. 55,849 tons. Primarily municipal solid waste.
10. NANTUCKET LANDFILL, Nantucket. 3,300 tons. Sludge, municipal solid waste residue.
11. WHEELABRATOR SAUGUS INC ASH LANDFILL, Saugus. 111,213 tons. Only Ash.
12. SHREWSBURY LANDFILL, Shrewsbury. 362,822 tons. Primarily ash.
13. STURBRIDGE LANDFILL, Sturbridge -- accepts a very small amount of local municipal solid waste.
14. TAUNTON LANDFILL, Taunton. 116,191 tons. Primarily municipal solid waste.
15. FITCHBURG WESTMINSTER LANDFILL, Westminster. 409,897 tons. Primarily municipal solid waste.

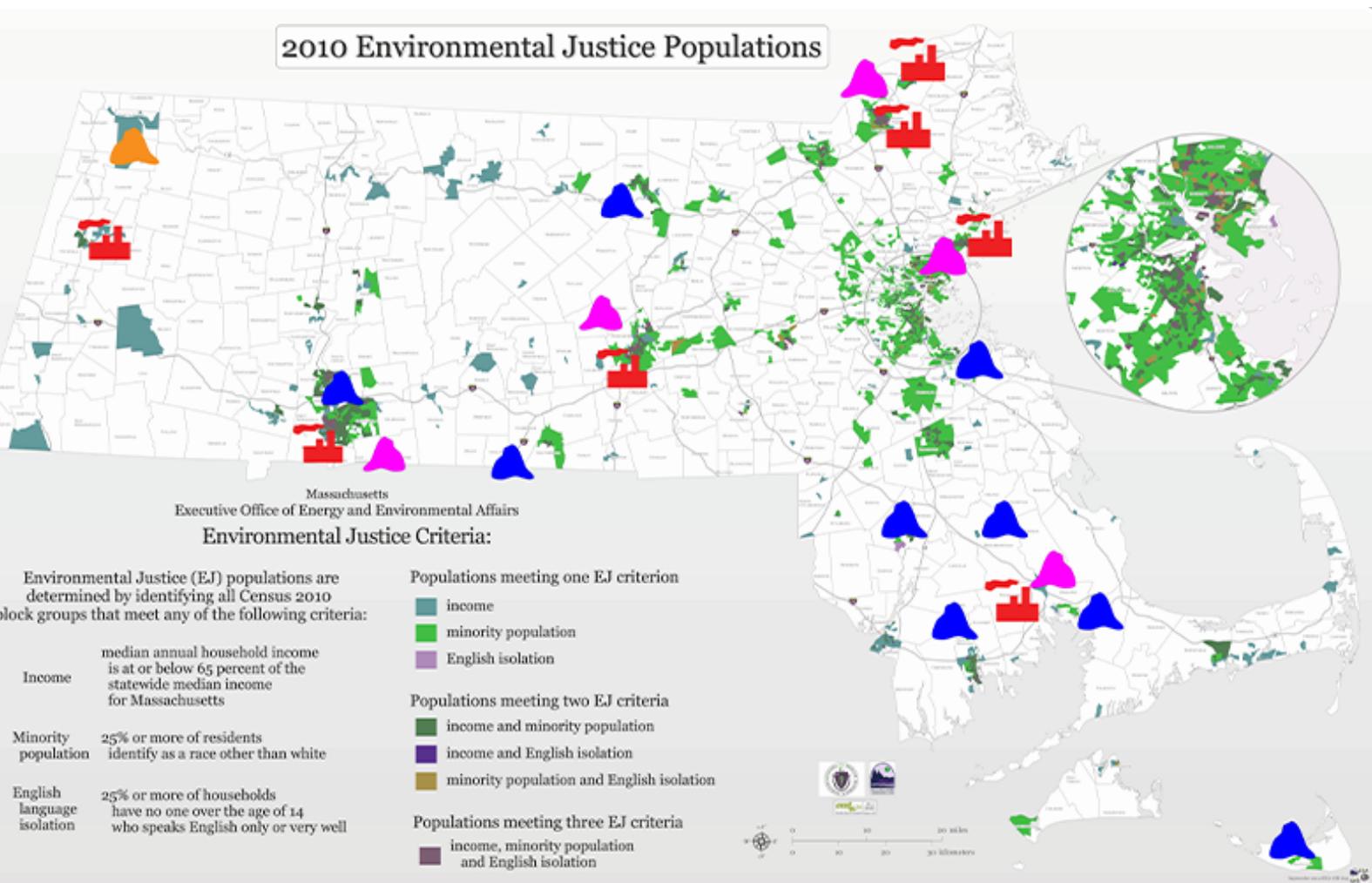
²⁵ <https://www.mass.gov/doc/list-of-active-combustion-facilities-in-massachusetts-january-2020/download>

²⁶ “Annual Solid Waste Facility Reports: Landfill Summary.” Department of Environmental Protection, 17 Aug. 2020.

Map of Active Landfills & Incinerators in Massachusetts



Map of Massachusetts' Environmental Justice Communities Where Active Landfills & Incinerators are Located



Maps provided by Conservation Law Foundation