

Baltimore Clean Air Act; the need for a new waste management system in Baltimore

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Executive Summary: The passage of the Baltimore Clean Air Act and impending closure of the Wheelabrator trash incineration facility both reveal the need to reinvest in new waste management programs in Baltimore. We discuss three main policy recommendations which are informed by other cities' "Zero Waste" practices. Policies should encourage waste reduction by residents and businesses, invest in updated waste disposal infrastructure, and end subsidy programs for trash incineration.

I. Introduction

Baltimore city suffers from widespread air pollution with large contributions from the nearby waste-to-energy (WTE) incineration site. Set up as a "green" option for waste disposal, the Wheelabrator Baltimore facility gives a modest energy return while releasing greenhouse gasses and harmful pollutants at a similar level to the average landfill.¹ In addition, highly toxic incineration byproducts, including particulate matter, nitrogen oxides (NO_x), sulfur dioxide (SO₂), lead, mercury, and manganese are released by the facility, posing a significant health hazard to the local inhabitants^{2,3}. The Baltimore City Council recently passed the Baltimore Clean Air Act^{4,5}, targeting Wheelabrator Baltimore and the nearby medical waste incinerator, Curtis Bay Energy. Wheelabrator Technologies has publicly stated that the new regulations will force the facility to close⁶. With the goal of reducing waste incineration to zero over the coming years, this legislation is a step towards improved local air quality and public health. The removal of incineration options for waste disposal, however, poses a new set of challenges. Proactive measures are a necessity to combat the inevitable increase in landfill capacity demands.

In this memo, we outline necessary policy options for a city-wide waste management effort, similar to strategies used in cities including Oakland, San Francisco, and Austin⁷. Strategies include 1) encourage waste reduction at the source, 2) update waste disposal infrastructure, 3) end current subsidy programs for incineration based WTE.

II. Recommendation I: Encourage waste reduction by businesses and residents

Baltimore City should use financial incentives to reduce waste from businesses and residents. Much of what is thrown away does not have to be. Nationwide, 28% of all waste can be composted but the vast majority ends up in landfills⁸. In 2017, the city recycling rate was below the rate required by the Maryland Recycling Act.⁹ Encouraging residents and businesses to reduce and sort their waste will cut down what has to be sent to a landfill. More than half of all municipal waste was burned at Wheelabrator before going to the Quarantine Road Landfill; the unburned waste went directly to the landfill¹⁰. Baltimore city has the opportunity to greatly reduce

its waste and improve public health by moving away from trash incineration.

i. Short-term focus on business

In the short term, efforts should focus on larger producers of waste, namely hotels, restaurants, grocery stores, and commercial businesses. Businesses are more likely to respond quickly to financial incentives. Currently, city waste disposal is paid through property taxes. A program should include:

- A three-bin system, 1) recyclables, 2) compost (food waste and yard trimmings), 3) landfill waste
- A 'Green Business' designation for including waste reduction and sorting (e.g. recyclables and compost) in business practice
- Reduce waste disposal costs and/or offer rebates for 'Green Businesses'

ii. Long-term focus on resident programs

Programs focusing on residential recycling should be introduced over time to improve participation. Other American cities have had success by using similar models in 'zero-waste' initiatives¹¹. Strategies include:

- A three-bin waste system provided to all residents - homeowners and renters¹²
- Free pick-up of recyclables and compost
- Positive incentives, such as:
 - Different sizes of landfill bins with corresponding rebates/tax refunds (i.e. smaller bins earn the resident a greater refund)
 - City compost available for residents to use in home/school gardens, lawns, etc.

Advantages: Fast-acting programs for large waste producers (hotels, restaurants, etc.) are important when faced with nearly-filled landfills. Policies focused on resident participation enable people to invest in and benefit from their community. Public outreach and education are especially effective through school curriculum and extracurricular activities. Some school outreach programs are already in place and should be expanded¹³.

Disadvantages: Baltimore must invest time and money to accomplish these policies. At the same time, community and business participation are necessary for this system to work¹⁴. Some might feel unmotivated to change old habits. However, business incentives and public outreach can help counteract this. Baltimore city should consult with and help businesses develop waste reduction plans. A 'Green Business' designation can be awarded and advertised by businesses that participate.

III. Recommendation II: Update waste management and energy production infrastructure

Expand current waste sorting facilities, focusing on recycling and compost. Place a moratorium on building WTE power stations in Baltimore. New compost facilities should be built and based on the planned biogas BTS BioEnergy plant in Howard County, Maryland.¹⁵ The BTS BioEnergy plant will produce natural gas, such as methane, that can then be burned for fuel.

iii. Advantages

Moving towards biogas plants would reduce the amount of heavy metal and organic toxins released into the atmosphere since the biogas production does not involve combustion¹⁶. Biogas can be used as a carbon neutral energy source of natural gas. The facility would also produce compost, which can be sold to the local farmers¹⁵.

iii. Disadvantages

The loss of WTE stations would cause existing landfills to reach capacity faster. The closure is expected to increase the City's solid waste costs by as much as \$16 million dollars a year¹⁷. Over 70 jobs could be lost due to station closures¹⁸, but these losses may be offset by the creation of new waste management facilities. The construction of new environmentally friendly power stations and sorting facilities will require outside investment.

IV. Recommendation III: End outdated subsidies for biomass and waste incineration

The Maryland General Assembly should remove biomass (plant or animal material) and waste incineration from the Tier 1 renewables category.

This designation put these facilities on the same level as solar and wind energy, resulting in over \$100 million in subsidies through 2015^{16,19,20}. According to EPA's 2014 National Emissions Inventory, biomass and waste incineration are responsible for 23% of the total air pollution emitted in Maryland, including 38% of the mercury pollution, 41% of the SO₂ pollution, and 15% of the NO_x pollution²¹. Given the harmful public health and environmental impacts of these emissions, biomass and waste incineration facilities should no longer be supported by tax dollars.

i. Advantages:

By removing biomass and waste incineration from Tier 1, these facilities will no longer compete with cleaner sources of energy for renewable subsidies¹⁹. The emissions associated with biomass and waste incineration have been linked to increased rates of asthma, cardiovascular disease, respiratory infections, and lung cancer.^{20,22-24} Biomass and waste incineration release more carbon dioxide than coal.²⁵

ii. Disadvantages:

Without biomass and waste incineration, which currently provide about a tenth of Maryland's

renewable energy supply,¹ it will be more difficult to achieve Maryland's Tier 1 renewable standards, resulting in a fee for electricity suppliers that may be passed on to consumers. Additionally, waste that would have been incinerated must be disposed of in other ways.

V. Conclusion:

We recommend immediate waste-reduction policies, investment in new waste management infrastructure, and the removal of subsidies for waste incineration. At least ten major cities in the U.S. have begun zero-waste initiatives in the past 17 years.⁷ Baltimore has the chance to lead waste reduction efforts in Maryland and improve local air quality. The existing zero-waste initiatives provide an excellent roadmap for overall waste reduction. Baltimore should use the best parts of those programs to upgrade its own waste management system.²⁶ The imminent closure of WTE facilities and the low capacity of local landfills requires that policies make substantial short-term impact while laying the groundwork for long-lasting community-driven programs. We believe the waste control and disposal options discussed above will benefit the residents of Baltimore and other communities in Maryland.

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