


F R O M	Name & Title	Mary Beth Heller, Esq., Interim Commissioner	Health Department AGENCY REPORT	
	Agency Name & Address	Health Department 1001 E. Fayette Street Baltimore, Maryland 21202		
	Subject: Position:	CC #18-0306 FAVORABLE		

To: President and Members
of the City Council
c/o 409 City Hall

January 30, 2019

The Baltimore City Health Department (BCHD) is pleased to have the opportunity to review City Council bill #18-0306, entitled “Health Code – Clean Air Regulation.” This legislation will require more stringent monitoring and reporting practices for commercial solid waste incinerators in Baltimore City than existing State standards. Most importantly, #18-0306 will set emission limits on certain harmful pollutants. It includes four provisions to help monitor the activities of waste incinerators: 1. Facilities must hire Air Monitoring Contractors who are charged with monitoring emissions; 2. Facilities must install the latest continuous emissions monitoring systems; 3. Emissions data from waste facilities must be disclosed to the Health Department for it to be shared publicly and so that it may be determined whether violations have occurred; and 4. Facilities will be subjected to periodic inspections to ensure all systems are functioning appropriately.

From an operations perspective, BCHD is somewhat impacted. BCHD’s Bureau of Environmental Health will be held responsible for certifying Air Monitoring Contractors using criteria developed from public input and best practices, and the Department’s Management and Information Systems division will be responsible for data collection and dissemination. Altogether, most of BCHD’s responsibilities under this bill can be accomplished with existing resources.

From a public health policy perspective, adopting the standards set in #18-0306 is quickly becoming an imperative as Baltimore City has become one of the most dangerous cities in the U.S. with respect to air quality.¹ According to the EPA, the City is in the top 1% of the most air polluted cities in the United States.² In Baltimore City, there are two incinerators under the purview of #18-0306: Wheelabrator Baltimore and Curtis Bay Energy. While only two incinerators, these facilities are responsible for significant amounts of air pollution in the City. Wheelabrator Baltimore is the 10th largest trash incinerator in the nation and the largest in

¹ “Asthma Has a Profound Effect on People and Communities Nationwide.” AAFA, Asthma and Allergy Foundation of America, 2018, www.aafa.org/media/2119/aafa-2018-asthma-capitals-report.pdf.

² “2014 National Emissions Inventory (NEI) Data.” EPA, Environmental Protection Agency, 7 Nov. 2018, www.epa.gov/air-emissions-inventories/2014-national-emissions-inventory-nei-data.

Maryland, burning over 2,000 tons of trash daily.³ Due to its high capacity and usage, it is the City's largest air polluter, contributing 36% of all industrial air pollution or three times the amount of the City's next largest polluter.⁴ It is also the leading air polluter for mercury and lead, toxins that have a history of harming Baltimore citizens.⁵

Moreover, Curtis Bay Energy is the largest medical waste incinerator in the country, almost double the size of the second largest, and burns nearly 170 tons of medical waste daily.⁶ It is one of the last 30 medical waste incinerators in the country.⁷ Over the last 30 years, 6000 similar facilities have been replaced by safer alternatives.⁸ Aside from Baltimore City, Curtis Bay Energy serves 21 different states and Canada, leading to added air pollution for Baltimore City residents.⁹

Many of the most harmful air pollutants emitted by solid waste incinerators will be limited by 18-0306. The pollutants listed range from heavy metals to noxious gasses: dioxins and furans, carbon dioxide and carbon monoxide, hydrochloric acid and hydrofluoric acid, nitrogen oxides, sulfur dioxides, particulate matter, volatile organic compounds, polycyclic aromatic hydrocarbons, arsenic, cadmium, chromium, lead, manganese, mercury, nickel, selenium, and zinc. It is particularly important to understand that each of these named pollutants is associated with negative health consequences when inhaled.

A recent study noted that, in 2016, the Baltimore Metropolitan area had more than 100 days of elevated air pollution including ozone and particulate matter.¹⁰ Emissions from solid waste incinerators, including sulfur dioxide, nitrogen oxides, and particulate matter, have been shown to have a significant negative impact on people with lung diseases such as asthma, chronic bronchitis, and emphysema.¹¹ These health impacts include increased airway inflammation, decreased lung function, worsening asthma attacks, and increased likelihood of emergency department visits and hospitalizations – especially for children and people with asthma.¹² One in five children in Baltimore City have asthma, and one in nine adults are also afflicted by the disease.¹³

³ "2014 National Emissions Inventory (NEI) Data." *EPA*, Environmental Protection Agency, 7 Nov. 2018, www.epa.gov/air-emissions-inventories/2014-national-emissions-inventory-nei-data.

⁴ *Ibid.*

⁵ *Ibid.*

⁶ *Ibid.*

⁷ *Ibid.*

⁸ *Ibid.*

⁹ *Ibid.*

¹⁰ Ridlington and Leavitt, "Trouble in the Air: Millions of Americans Breathe Polluted Air." U.S. PIRG, 2018, <https://environmentamerica.org/sites/environment/files/reports/Trouble%20in%20the%20Air%20vUS.pdf>.

¹¹ "Asthma Has a Profound Effect on People and Communities Nationwide." *AAFA*, Asthma and Allergy Foundation of America, 2018, www.aafa.org/media/2119/aafa-2018-asthma-capitals-report.pdf.

¹² "Asthma Has a Profound Effect on People and Communities Nationwide." *AAFA*, Asthma and Allergy Foundation of America, 2018, www.aafa.org/media/2119/aafa-2018-asthma-capitals-report.pdf.

¹³ "Public Health Heroes Spotlight: Chronic Disease Prevention Team's Community Asthma Program." Baltimore City Health Department, 23 Mar. 2018, health.baltimorecity.gov/news/bmore-healthy-blog/2018-03-23-public-health-heroes-spotlight-chronic-disease-prevention-team%E2%80%99s.

For some context, Baltimore City child asthma rates are twice the national average.¹⁴ From a disparities perspective, a 2015 study informs that Black children are 10 times more likely to die due to asthma-related complications as compared to other races, and Black women are 20 percent more likely to have asthma than other women.¹⁵ Altogether, African Americans are more likely to die from asthma-related issues in Baltimore than any other race. Likewise, a 2013 MIT study found that, "[t]he city of Baltimore in particular is characterized by the highest total mortality rate from all combustion sources: about 130 early deaths attributable to PM 2.5 per year per 100,000 inhabitants."¹⁶

Again, 18-0306 will regulate some of the most harmful air borne toxins released through commercial solid waste incinerators in Baltimore City. For example, in the public health field, "dioxin is considered to be the most toxic man-made substance."¹⁷ It is associated with "cancer, birth defects, diabetes, developmental disabilities, sexual reproductive disorders (including endometriosis, small penis, low sperm counts, delayed puberty, and malformed and mixed-sex genitalia), lowered testosterone levels, impaired immune system, allergies, low birth weight, dental defects, loss of intelligence and learning ability, ADHD and increased withdrawn/depressed behavior."¹⁸

Another pollutant emitted by waste incinerators is carbon dioxide. Although it is a natural component of our atmosphere, elevated levels of carbon dioxide in the air can cause difficulty breathing, drowsiness, and toxicity.¹⁹ Similarly, carbon monoxide, another pollutant emitted by incinerators, decreases the level of oxygen that reaches organs and tissues when absorbed into the bloodstream. It is associated with several adverse health effects including chest pain and other cardiovascular symptoms, difficulty breathing, reduced mental alertness, and decreased vision.²⁰ Also of paramount concern for Baltimore City residents are nitrogen oxides, which can be responsible for triggering asthma attacks.²¹ In addition to triggering asthma attacks and furthering the progression of the disease, nitrogen oxides also lead to coughing, choking, nausea, headache, abdominal pain, and difficulty breathing.²²

As mentioned above, commercial solid incinerators are also responsible for emitting various heavy metals that have toxic health effects. Solid waste incinerators increase the levels of these metals in Baltimore City's atmosphere. Among the items regulated in 18-0306, arsenic,

¹⁴ "Asthma Has a Profound Effect on People and Communities Nationwide."

¹⁵ Ibid.

¹⁶ Caiazzo, Fabio, et al., "Air Pollution and Early Deaths in the United States. Part I: Quantifying the Impact of Major Sectors in 2005," *Atmospheric Environment*, Volume 79, Pages 198-208, Nov. 2013.

¹⁷ Mocarelli, et. al., "Paternal concentrations of dioxin and sex ratio of offspring," *Lancet*, 2000 May 27;355(9218):1838-9. <http://www.ncbi.nlm.nih.gov/pubmed/10866441> "2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD or dioxin), is commonly considered the most toxic man-made substance."

¹⁸ Center for Health, Environment & Justice, American People's Dioxin Report pp.15-20, 1999. <http://chej.org/wp-content/uploads/Documents/American%20Peoples%20Dioxin%20Report.pdf> (accessed 3/19/2011).

¹⁹ "Carbon Dioxide: Your Environment, Your Health | National Library of Medicine." *U.S. National Library of Medicine*, National Institutes of Health, toxtown.nlm.nih.gov/chemicals-and-contaminants/carbon-dioxide.

²⁰ *Air Quality Index*. Environmental Protection Agency, 2014, www3.epa.gov/airnow/aqi_brochure_02_14.pdf.

²¹ "Nitrogen Oxides: Your Environment, Your Health | National Library of Medicine." *U.S. National Library of Medicine*, National Institutes of Health, toxtown.nlm.nih.gov/chemicals-and-contaminants/nitrogen-oxides.

²² "Nitrogen Oxides: Your Environment, Your Health | National Library of Medicine." *U.S. National Library of Medicine*, National Institutes of Health, toxtown.nlm.nih.gov/chemicals-and-contaminants/nitrogen-oxides.

when inhaled, “can lead to throat and lung irritation, skin changes, and cancer.”²³ Additionally, cadmium can “lead to coughing, chest pain, throat irritation, lung and kidney damage, seizures, and cancer.”²⁴ Chromium “can cause breathing problems, skin changes, pneumonia, kidney and liver damage, pregnancy complications, and cancer.”²⁵ Manganese, similar to the other heavy metals listed, can cause impaired “neurologic function such as memory and coordination, cough, chest pain, fatigue, and kidney damage.”²⁶

Correspondingly, nickel is a metal that has been associated with irritation of the respiratory tract and cancer.²⁷ Selenium has been associated with negative health effects such as eye irritation, vision changes, difficulty breathing, and liver and kidney damage.²⁸ Zinc, when inhaled, can cause irritation of the throat, cough, difficulty breathing, pulmonary fibrosis, and lung or heart damage.²⁹ Mercury leads to lung irritation, nausea and vomiting, diarrhea, numbness, eye irritation, kidney and brain damage, fetal damage, changes in vision, muscle weakness, and motor and developmental effects in children.³⁰

Lead, a continuous issue in the City, is also released into the air via solid waste incinerators. Over the last two decades, over 65,000 children in Baltimore have been exposed to dangerous levels of lead.³¹ Some of the negative health effects of lead include anemia, irritation of the eyes, headache, tremors, organ damage, nerve disorders, fertility problems, learning and developmental difficulties in children, and cancer.³²

All the above-mentioned pollutants cause an array of negative health consequences. Although some of these pollutants occur naturally or can be attributable to other manmade sources, commercial solid waste incinerators are still a readily identifiable and significant source of toxic emissions. These emissions, in turn, lead to increased asthma rates among Baltimore City residents. Furthermore, the costs of asthma are not limited to individuals-it costs the city of Baltimore 156 million dollars annually in lost economic activity and treatment expenses.³³ For the country, it means 10 million workdays and 14 million school days lost each year.³⁴

²³ “Toxic Substances Portal - Arsenic.” Centers for Disease Control and Prevention, Centers for Disease Control and Prevention, www.atsdr.cdc.gov/toxfaqs/TF.asp?id=19&tid=3.

²⁴ *Ibid.*

²⁵ *Ibid.*

²⁶ “CDC - NIOSH Pocket Guide to Chemical Hazards - Manganese Compounds and Fume (as Mn).” Centers for Disease Control and Prevention, Centers for Disease Control and Prevention, www.cdc.gov/niosh/npg/npgd0379.html.

²⁷ *Ibid.*

²⁸ *Ibid.*

²⁹ *Ibid.*

³⁰ “Toxic Substances Portal - Chromium.” Centers for Disease Control and Prevention, Centers for Disease Control and Prevention, www.atsdr.cdc.gov/toxfaqs/TF.asp?id=113&tid=24.

³¹ “Baltimore's Toxic Legacy Of Lead Paint.” *FiveThirtyEight*, *FiveThirtyEight*, 7 May 2015, fivethirtyeight.com/features/baltimores-toxic-legacy-of-lead-paint/.

³² “Toxic Substances Portal - Chromium.” Centers for Disease Control and Prevention, Centers for Disease Control and Prevention, www.atsdr.cdc.gov/toxfaqs/TF.asp?id=93&tid=22.

³³ “Asthma Has a Profound Effect on People and Communities Nationwide.” *AAFA*, Asthma and Allergy Foundation of America, 2018, www.aafa.org/media/2119/aafa-2018-asthma-capitals-report.pdf.

³⁴ *Annals of the American Thoracic Society*, news release, Jan. 12, 2018.

Noting the many potential negative health consequences associated with solid waste incinerator emissions, BCHD urges a **favorable report** on Council Bill #18-0306.