Pruitt's New Air Toxics Loophole

An Assessment of Potential Air Pollution Impacts in the Houston-Galveston Region

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Photo: Manchester Ship Channel in Houston. Credit: Garth Lenz/International League of Conservation Photographers

Summary

On January 25, 2018, EPA Administrator Scott Pruitt abruptly reversed a long-standing policy – known as "once in, always in" – that was designed to prevent large industrial sources from increasing their emissions of hazardous air pollutants such as mercury and benzene. Under the new policy, which was issued without any opportunity for public comment and with no consideration of air pollution or public health impacts, many industrial facilities now regulated as "major" sources would be allowed to cease complying with protective federal emission standards. Large trade associations representing chemical, mining, pulp and paper and other heavy industries have long sought this "Air Toxics Loophole."

This white paper presents an assessment of the potential air pollution impacts associated with the Air Toxics Loophole, based on publicly available facility-level information from EPA, the most recent National Emissions Inventory, and a review of federal operating permits. We focused this analysis on facilities in the Houston-Galveston area, home to the nation's fourth-largest city and a high concentration of industrial facilities.

In this area alone, our analysis identified at least 18 facilities that are potentially eligible to use the new Air Toxics Loophole. These facilities collectively emitted approximately 366,000 pounds (183 tons) of hazardous air pollutants in 2014.

If all of these facilities used the Air Toxics Loophole to the maximum feasible extent, we estimated that **total annual emissions** of hazardous air pollutants from these facilities would **increase by almost 146 percent over 2014 levels, to a total of 900,000 pounds (450 tons)**.

Many of these facilities are **located in communities that are highly vulnerable to the harmful impacts of air pollution:** half of these facilities are located in areas where more than one in five people live in poverty and where people of color make up more than 30 percent of the population.

We also identified eight additional Houston-area facilities that appear eligible for the Air Toxics Loophole based solely on EPA data, but for which we were unable to obtain federal operating permits that would enable us to verify their eligibility. Including these facilities, we estimate that the Air Toxics Loophole could cause hazardous air pollutant emissions from the facilities analyzed here to reach a total of 1.3 million pounds (**650 tons), an increase of approximately 152 percent over 2014 levels**.

These estimated impacts are subject to important uncertainties and should be regarded as illustrative in nature. Nevertheless, they indicate that the Air Toxics Loophole could apply to a large number of facilities and result in dramatic increases in some of the most dangerous known air pollutants. This analysis underscores the recklessness of Scott Pruitt's EPA in upending a policy that had been in place for nearly a quarter-century without undertaking any analysis of the public health consequences for families and communities affected by this decision.

Background on Pruitt's reversal of the "Once In, Always In" policy

On January 25, 2018, Administrator Pruitt reversed a long-standing policy aimed at preventing major sources of toxic air pollutants from increasing their emissions.[1] The now-rescinded policy, known as "once in, always in," designated which sources are subject to the most protective standards for emissions of hazardous air pollutants under Section 112 of the Clean Air Act. Section 112 requires "major" sources, defined as those that have the potential to emit hazardous air pollutants above certain thresholds, to comply with stringent emission standards based on maximum achievable control technology (MACT).[2] For smaller sources, known as "area" sources, EPA is allowed to establish less stringent emissions limitations – and in many cases, such sources are subject to no Section 112 standards at all.

Since 1995, the "once in, always in" policy required any source that met the major source thresholds as of the date it was required to comply with a MACT standard to continue to comply with those standards, even if it later reduced its emissions to below the thresholds.[3] Because MACT standards often reduce a source's emissions to well below the major source thresholds, this policy was necessary to ensure that major sources would both achieve and maintain maximum achievable emission reductions.[4] Without this policy, major sources that reduce their emissions to below major source thresholds simply by complying with a MACT standard could claim to be "area" sources, stop complying with MACT standards, and potentially increase their emissions to just below major source thresholds, undermining the health and air quality benefits that the standards were intended to achieve.[5]

EPA's new policy – which was demanded by a number of industry trade associations – opens the door to precisely this kind of gaming. As a result of this new "Air Toxics Loophole," major sources that agree to emit below major source thresholds can now reclassify themselves as area sources and skirt compliance with more stringent MACT standards. Because area source standards are frequently much weaker than MACT standards – and do not even exist for many industrial source categories – the result will be potentially significant increases in toxic air pollution. In addition, facilities that exempt themselves from MACT standards by invoking the Air Toxics Loophole will also be able to avoid rigorous monitoring, reporting, and recordkeeping requirements that are associated with those standards. This means that EPA and the public will have even less ability to track emissions from these facilities going forward, or to ensure that these facilities are not exceeding major source thresholds.

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[1] William L. Wehrum, Assistant Administrator, U.S. Environmental Protection Agency, Memorandum: Reclassification of Major Sources as Area Sources Under Section 112 of the Clean Air Act (Jan. 25, 2018), https://www.epa.gov/sites/production/files/2018-01/documents/reclassification_of_major_sources_as_area_sources_under_section_112_of_the_clean_air_act.pdf.
[2] 42 U.S.C. § 7412.
[3] John Seitz, Director, Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, Memorandum: Potential to Emit for MACT Standards -- Guidance on Timing Issues (May 16, 1995), https://www.epa.gov/sites/production/files/2015-08/documents/pteguid.pdf.
[4] *Id.* at 9.
[5] *Id.*

The Air Toxics Loophole could increase emissions of some of the most harmful known pollutants

Many major sources now eligible to use the Air Toxics Loophole are located near communities and businesses where people live and work—and could be allowed to increase their emissions of toxic air pollutants that present serious health risks. The hazardous air pollutants regulated through MACT standards include almost two hundred harmful contaminants that are known or suspected to cause cancer or otherwise seriously threaten human health or cause adverse environmental effects. They include pollutants like **benzene**, which EPA classified as a known human carcinogen and that is linked to blood disorders and reproductive effects in women, as well as **mercury, arsenic, xylene, and toluene,** which are linked to effects such as cancer and neurological, gastrointestinal, immune, kidney, and liver impacts, among others.[6]

The new Air Toxics Loophole affects a potentially vast universe of facilities. According to EPA's Enforcement Compliance History Online (ECHO) database, there **are 2,617 facilities nationwide** that are regulated as major sources of hazardous air pollutants and that emit hazardous air pollutants at levels below the highest "major" source threshold.[7]

Despite the potentially wide-ranging and harmful impacts of the Air Toxics Loophole, Administrator Pruitt recently confirmed at a Congressional oversight hearing that EPA has conducted *no* analysis of the number of sources that might increase their emissions or the potential health effects of this decision.[8]

[6] Clean Air Act Section 112(b)(1); EPA, Benzene, https://www.epa.gov/sites/production/files/2016-09/documents/benzene.pdf; ATSDR, ToxFAQs for Mercury, https://www.atsdr.cdc.gov/toxfaqs/tf.asp?id=113&tid=24; ATSDR, ToxFAQs for Arsenic, https://www.atsdr.cdc.gov/toxfaqs/tf.asp?id=19&tid=3; ATSDR, ToxFAQs for Xylene, https://www.atsdr.cdc.gov/toxfaqs/tf.asp?id=295&tid=53; ATSDR, ToxFAQs for Toluene, https://www.atsdr.cdc.gov/toxfaqs/tf.asp?id=160&tid=29.

[7] Under Section 112, a source is "major" if it has the potential to emit at least 25 tons per year of all hazardous air pollutants combined, or at least 10 tons per year of any individual hazardous air pollutant. The most recent emissions data reported in ECHO is from EPA's 2014 National Emissions Inventory, and may not reflect current emission levels.

[8] Testimony of EPA Administrator Scott Pruitt at Senate Environment and Public Works Oversight Hearing (Jan. 30, 2018), https://www.c-span.org/video/?440282-1/epa-administrator-pruitt-testifies-senate-oversight-hearing&live.

Why we prepared this assessment

In light of EPA's own failure to analyze the air pollution and health impacts of the Air Toxics Loophole, we decided to use publicly available facility-level information from EPA to assess the potential impacts. For reasons described below, our assessment is subject to significant uncertainty and should be taken as illustrative rather than definitive. However, even these illustrative findings point to potentially severe impacts from the Air Toxics Loophole – and underscore the recklessness of Administrator Pruitt's decision to create the Air Toxics Loophole without any analysis of the consequences for affected communities.

As noted above, a nationwide search of EPA's ECHO database indicates that there are 2,617 facilities that are subject to MACT standards and emit below the highest "major" source threshold. This gives a rough sense of the number of sources nationwide that could take advantage of the Air Toxics Loophole, but it does not exclude facilities that could be considered "major" because they emit *individual* hazardous pollutants in amounts exceeding 10 tons per year. In order to identify a manageable sample of facilities for deeper analysis, we decided to perform a more targeted search of ECHO records for the Houston-Galveston area.[9]

Houston-Galveston is home to the fourth most populous city in the nation and has a heavy concentration of industrial facilities. Residents of the Houston-Galveston region also face well-documented health risks associated with industrial emissions of hazardous air pollutants[10] – concerns that were only exacerbated in the aftermath of Hurricane Harvey in 2017.

Photo: Refinery in Houston. Credit: Garth Lenz/International League of Conservation Photographers

[9] Our analysis includes facilities located in the following counties: Walker County, Montgomery County, Liberty County, Chambers County, Harris County, Galveston County, Waller County, Fort Bend County, Brazoria County, Austin County, Colorado County, Wharton County, and Matagorda County.

[10] *See* Ken Sexton et al., *Comparative Assessment of Air Pollution-Related Health Risks in Houston,* 115 Environmental Health Perspectives 1388, 1390 (Oct. 2007) (finding that airborne levels of seven carcinogens in the Houston area – including diesel particulates, 1,3-butadiene, chromium VI, benzene, ethylene dibromide, formaldehyde, and acrylonitrile - posed "unacceptable" increased cancer risks, and that five hazardous air pollutants posed unacceptable risks for noncancer disease).

Our findings indicate the Air Toxics Loophole would have significant potential emissions and health impacts

By combining facility-level information from EPA's ECHO database, the most recent National Emissions Inventory (NEI) from 2014, and federal operating permits (see "Methods" section below), we identified 18 facilities in the Houston-Galveston region that may take advantage of the Air Toxics Loophole (see Figure 1). These facilities reported total hazardous air pollutant emissions of 366,000 pounds (183 tons) in 2014.

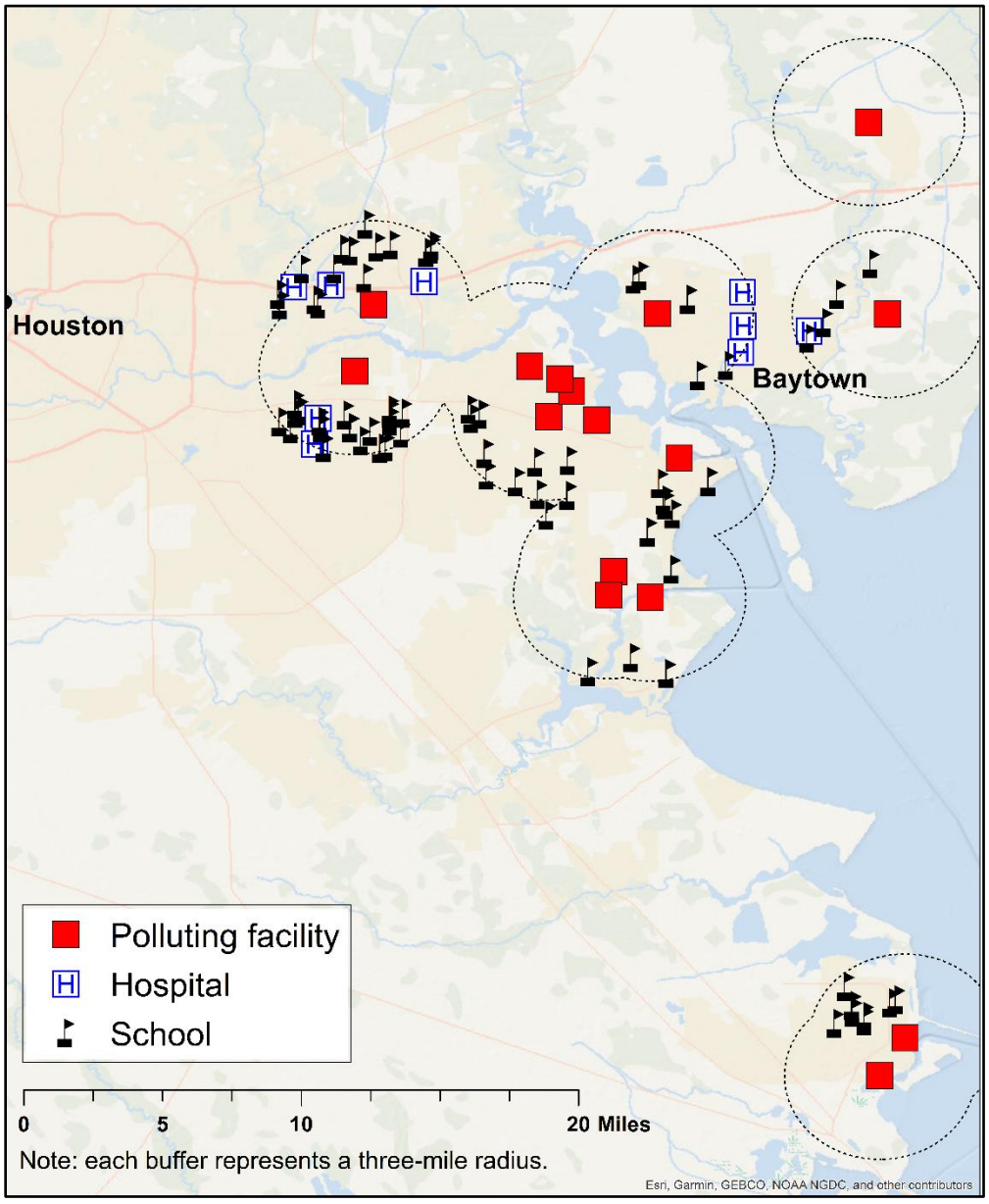

Figure 1: Map of Houston-area facilities that are potentially subject to the new policy, with hospitals and schools within three miles

These facilities are associated with several different industrial sectors. As shown in Figure 2, two-thirds of the 18 facilities we analyzed are in the chemical manufacturing sector. Two of the facilities in our dataset are classified as warehousing and storage facilities. Oil and gas extraction; transportation equipment manufacturing; utilities; and waste management and remediation services each accounted for 1 affected facility.

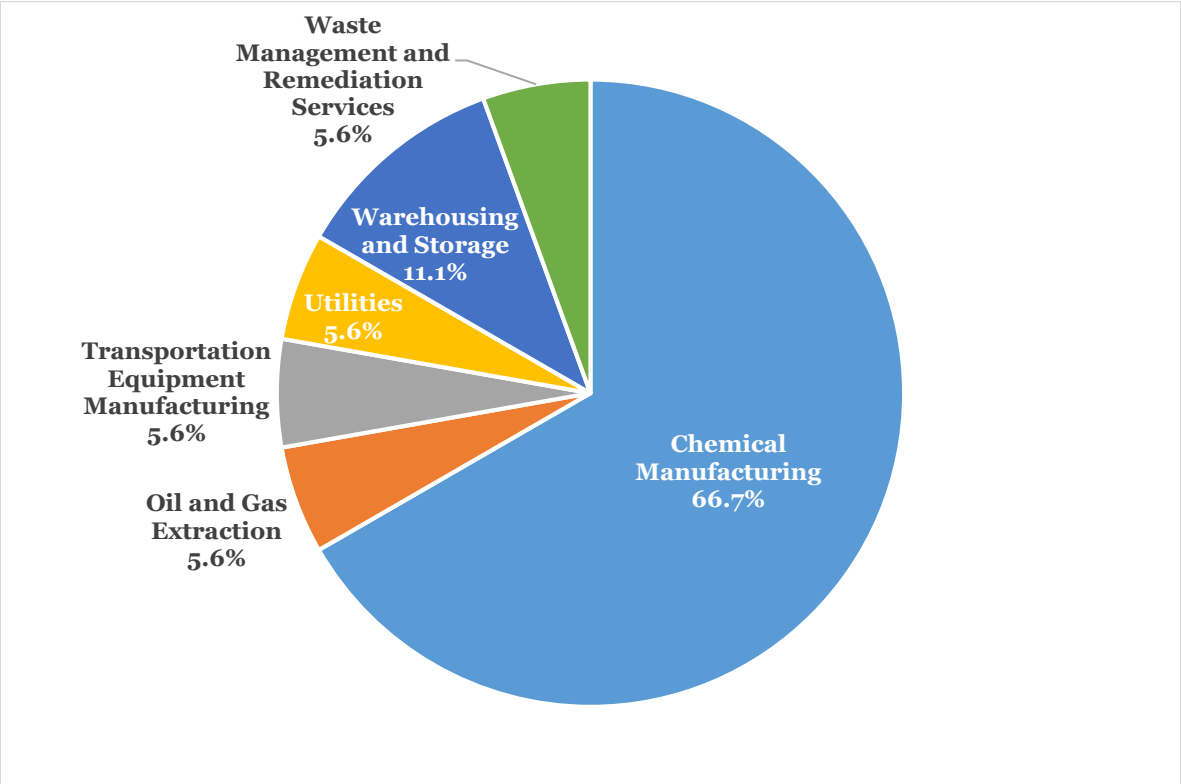

Figure 2: Distribution of affected facilities by sector

Chemical manufacturing also represented the bulk of hazardous air pollutant emissions from these facilities in 2014, accounting for 127 tons or 69% of the total. Warehousing and storage is the next most significant category, accounting for 34 tons or 19% of the total, followed by utilities and oil and gas extraction at roughly 10 tons or 5% each. Transportation equipment manufacturing accounted for 2 tons, while waste management and remediation services accounted for 1 ton.

Potential emissions increases from the Air Toxics Loophole

If these facilities all invoked the Air Toxics Loophole and used it to increase emissions from the levels reported in the 2014 NEI to the major source threshold of 25 tons per year, we estimate that total hazardous air pollutant emissions from these facilities would *increase* by 534,000 pounds (267 tons) – to a level almost two and a half times higher than 2014 emissions from these sources. As shown in Figure 3, the majority of the emissions increase would come from chemical manufacturing (346,000 pounds per year emissions increase), followed by waste management and remediation services (48,000 lb/yr) and transportation equipment manufacturing (46,000 lb/yr). Warehousing and storage as well as oil and gas extraction could contribute 32,000 lb/yr in emissions increase while facilities in the utilities sector could contribute 30,000 lb/yr.

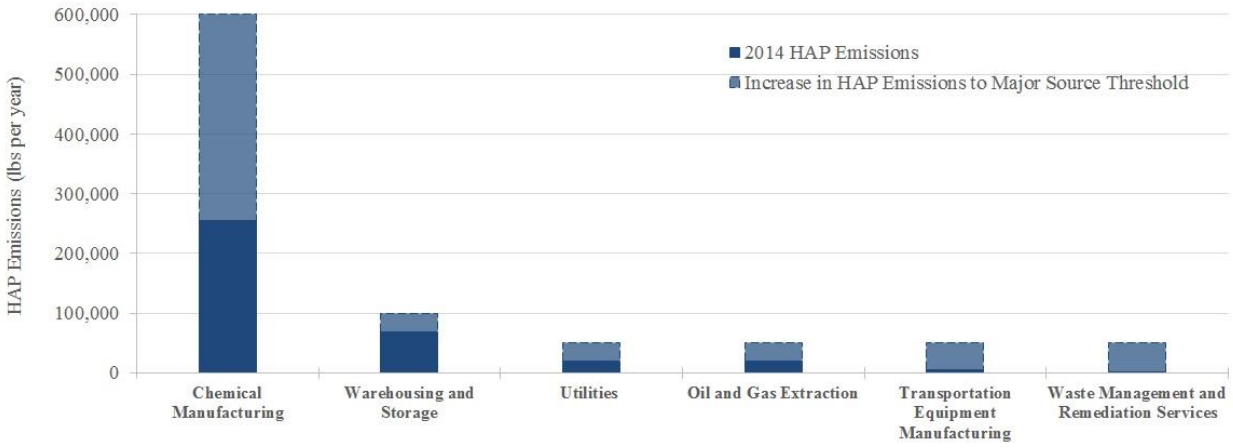

Figure 3: Impacts of the Air Toxics Loophole on Hazardous Air Pollutant Emissions, by Sector

As noted below, we also estimated the impacts of the Air Toxics Loophole under the more conservative assumption that each facility would increase the emissions of its most significant individual hazardous air pollutant to the major source threshold for any single hazardous air pollutant of 10 tons per year (with no changes to any other hazardous air pollutant emissions). Even under this alternative assumption, we estimated that the facilities in our dataset would increase their hazardous air pollutant emissions by a total of 180,000 pounds (90 tons) – causing total hazardous air pollutant emissions from these facilities to increase by almost fifty percent.

In addition to the 18 facilities discussed above, we identified 8 facilities that are potentially eligible for the Air Toxics Loophole based on the information in ECHO and the 2014 NEI. However, we were unable to obtain federal operating permits for these facilities to verify their eligibility. These facilities had total hazardous air pollutant emissions of 150,000 pounds (75 tons) in 2014. Although we do not include these 8 facilities in our core estimate of the impacts of the Air Toxics Loophole, accounting for potential increases at these facilities would increase our estimate of additional hazardous air pollutant emissions by 86,000 to 250,000 pounds (43 to 125 tons). In other words, the total additional hazardous air pollution associated with the Air Toxics Loophole would be as high as 784,000 pounds (392 tons), representing an increase of 152 percent over the levels reported in the 2014 NEI.

Impacts on vulnerable communities

The 18 facilities we examine in this report are located near thousands of people, as well as communities that are most vulnerable to the health impacts of toxic air pollution – including low-income households and communities of color. Yet, EPA has provided no analysis of whether this policy would have inequitable impacts on such vulnerable communities.

According to EPA's ECHO database, on average 19,787 people live within three miles of the facilities in our dataset. Nearly 68,000 people live within three miles of just one of the facilities in our dataset.

Half of the facilities we examined are located within three miles of areas where minorities make up more than 30% of the population *and* people below poverty level make up more than 20% of the population. Indeed, as can be seen from Figures 4A and 4B, one-third of affected facilities lie within 3 miles of areas where minorities make up more than 50% of the population and sixty-one percent of affected facilities lie within 3 miles of areas where 20% or more of the population is below poverty level.

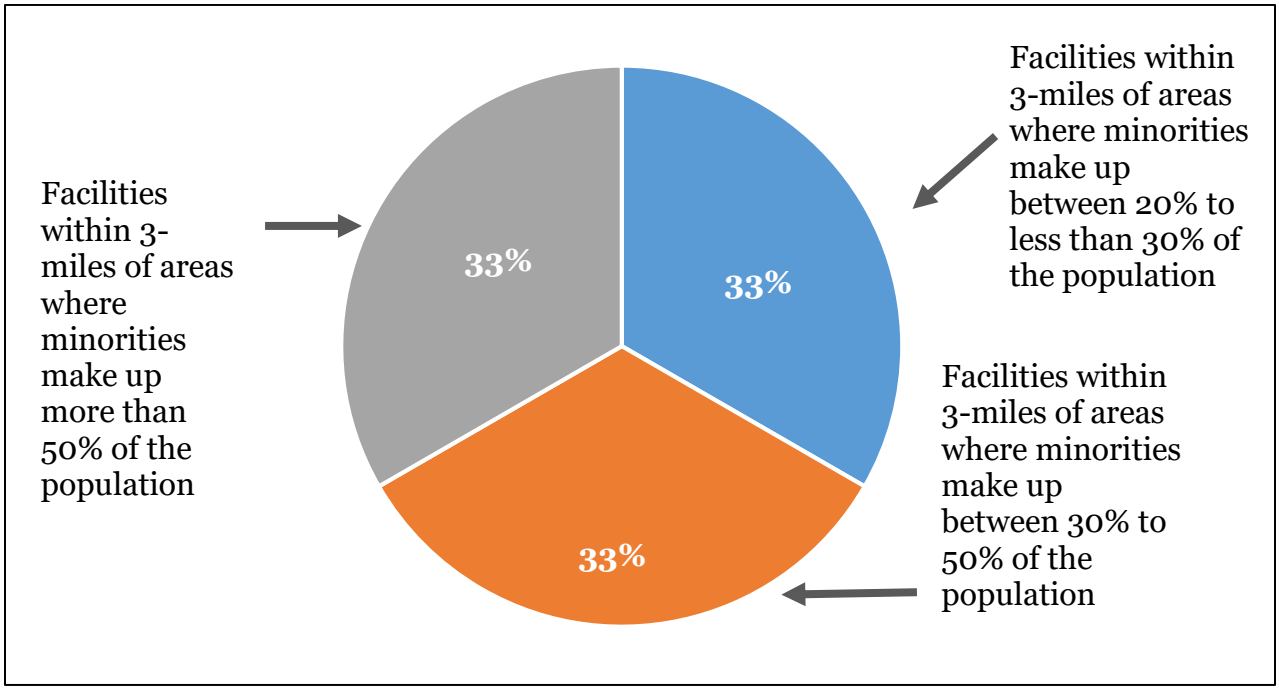

Figure 4A: Impacts of the Air Toxics Loophole on minorities in Houston

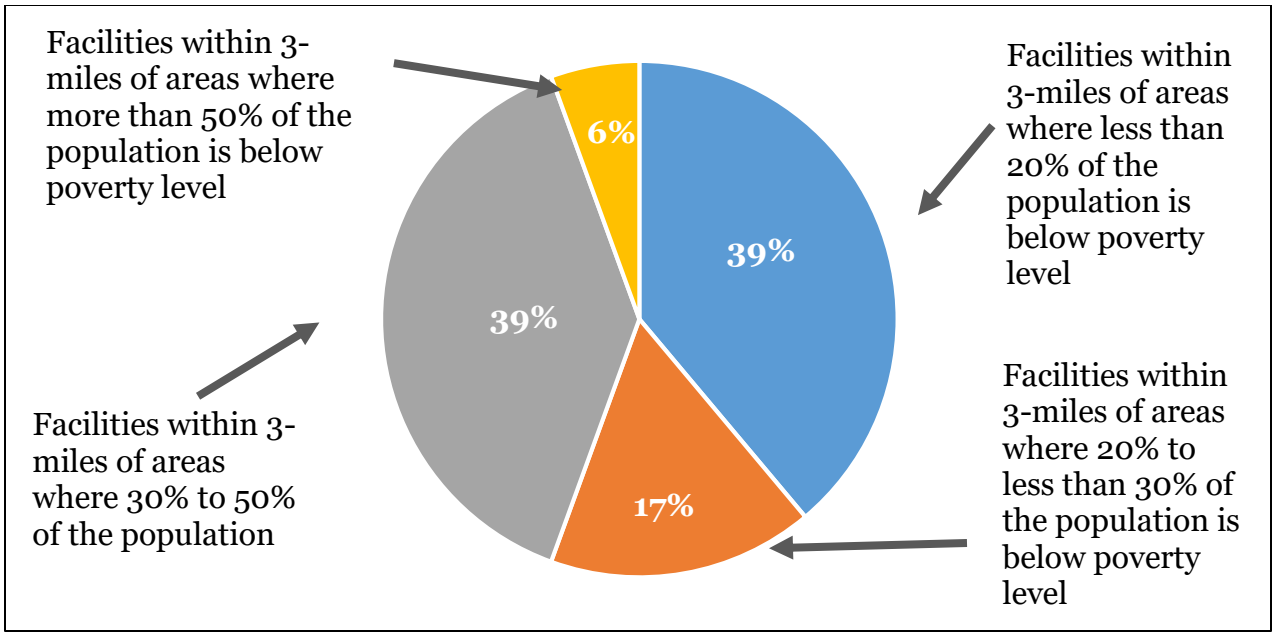

Figure 4B: Impacts of the Air Toxics Loophole on people below poverty level in Houston

Significant numbers of children and elderly individuals – two groups that are disproportionately threatened by air pollution — also live near the facilities we examined. In fact, all of the facilities we examined lie within 3 miles of areas where more than 10% to 20% of the population consists of children five years or younger and individuals sixty-five years or older. On average, 1,586 children five or under and 1,746 seniors sixty-five or older live within three miles of each facility in our dataset. Nearly 6,100 children five or under and 4,100 seniors sixty-five or older live within three miles of just one of the facilities in our dataset.

Table 1: Average demographic profile within three miles of affected facility

Population	19,789 people
Percent minority (population-weighted)	55% of population
Percent of people below the federal poverty level (population-weighted)	35% of population
Number of children five or under and individuals 65+	3,333 people
Percent of children five or under and individuals 65+ (population-weighted)	17% of population

As indicated in Figure 1, the eighteen facilities we examined are also located near a significant number of schools and hospitals. There are a total of 9 hospitals and 78 schools located within a three-mile radius of these facilities. Moreover, some of these schools and hospitals are located within three miles of more than one facility that might increase its emissions of hazardous air pollutants under the Air Toxics Loophole.

Methods

We compiled a dataset for this analysis by searching ECHO for facilities in the thirteen counties of the Houston-Galveston area, and by using several additional data sources to isolate facilities that would potentially be able to use the Air Toxics Loophole. We initially searched ECHO for facilities that the database designates as "major"; that are subject to MACT standards; and that emit less than 25 tons per year of total hazardous air pollutants according to the 2014 NEI. We then used the 2014 NEI data to exclude any facility that would be "major" because its emissions of an individual hazardous air pollutant exceeded 10 tons per year.

Lastly, we reviewed the most recent federal operating permits for each of the remaining facilities — where those permits were available from the Texas Commission on Environmental Quality (TECQ) website — to verify that these facilities are regulated as major sources of hazardous air pollutants. We also used the federal operating permits to verify that each of these facilities is subject to at least one MACT standard that applies only to major sources, and that would cease to apply to the source if it were to reclassify itself as an area source.

In addition to the 18 facilities identified through this series of steps, we identified 8 facilities that are potentially eligible for the Air Toxics Loophole based solely on the information in ECHO and the 2014 NEI. However, we were unable to obtain federal operating permits for these facilities to verify whether those facilities are being regulated as major sources of hazardous air pollutants and are subject to MACT standards that would differ if the source were to become an area source. As explained above, we have separately accounted for potential emissions increases at these 8 facilities and have not included them in our core estimate of the impacts of the Air Toxics Loophole.

To estimate the potential air pollution impacts of the Air Toxics Loophole, we assumed that all facilities eligible for the Air Toxics Loophole would increase their hazardous air pollutant emissions from the level reported in the 2014 NEI to the major source threshold of 25 tons per year. In order to generate a lower-bound estimate of air pollution impacts, we also adopted the more conservative assumption that each facility would increase the emissions of its most significant individual hazardous air pollutant from the 2014 NEI level to the major source threshold of 10 tons per year (without any change in other hazardous air pollutant emissions).

Limitations and uncertainties of our analysis

Because of the nature of the publicly available data on facility-level characteristics and hazardous air pollutant emissions, our approach has several important limitations and uncertainties. This assessment should therefore be viewed as illustrative of the potential impacts of the Air Toxics Loophole. Key uncertainties include:

- We have assumed that the 2014 NEI data that is provided in the ECHO database reflects current conditions. Although this is the most recent NEI data on hazardous air pollutant emissions from the facilities we analyzed, current emissions for any individual facility in our dataset may be higher or lower than the levels reported in ECHO. Using more recent emissions data to identify sources eligible for the Air Toxics Loophole might also have affected the composition of the facilities in our dataset.

- A recent report by the Environmental Integrity Project highlighted significant discrepancies between the amount of emissions that facilities report to the NEI and the Toxic Release Inventory (TRI), as well as concerns about the rigor of emissions monitoring and reporting for some major source categories.[11] Although these federal emissions databases are the best public sources of emissions data that we know of, EIP's findings underscore the uncertainty associated with federal emissions data and the need for more accurate monitoring and reporting.

- The Air Toxics Loophole was requested by a number of industry trade associations who filed comments with EPA last year, indicating strong industry interest in taking advantage of this policy. However, we have no information indicating that the affected facilities examined here *will* take advantage of the change in policy.

- The facilities in our dataset may be subject to other Clean Air Act protections, such as New Source Review permits or state implementation plan requirements, that would influence the degree to which these sources can increase emissions of hazardous air pollutants. Our analysis does not account for such other standards.

Despite these limitations, we believe this analysis sheds useful light on the number and type of facilities in one of our nation's largest metro areas that could emit additional hazardous air pollution as a result of the Air Toxics Loophole. Although not definitive, our analysis is also indicative of the range of air pollution increases that could occur if these facilities were to take full advantage of the Air Toxics Loophole.

This analysis underscores the need for EPA itself to evaluate carefully the consequences of the Air Toxics Loophole for families and communities who live and work near sources of hazardous air pollutants – and to withdraw this destructive new policy until the Agency can demonstrate that it will not harm human health and the environment.

[11] *See* Environmental Integrity Project, *Toxic Shell Game: EPA Reversal Opens Door to More Hazardous Air Pollution* 5 (Mar. 26, 2018).

APPENDIX

Table A1. Emissions Characteristics for Houston-Area Facilities Potentially Subject to the Air Toxics Loophole

Facility	2014 Total HAP Emissions (lb)	Top 3 HAPs Emitted	Potential Increase (Low)	Potential Increase (High)
Clean Harbors Deer Park *La Porte, TX*	1,893	Hydrochloric acid, Lead, Mercury	18,599	48,107
Braskem America *La Porte, TX*	2,954	Hexane, Formaldehyde, Nickel	17,059	47,046
Morgans Point Complex *La Porte, TX*	3,074	Hexane, Methanol, Benzene	17,064	46,926
Texas Barge & Boat Freeport Facility *Freeport, TX*	4,203	Xylene, Methyl isobutyl ketone, Ethylbenzene	17,679	45,797
Air Products Baytown Plant *Baytown, TX*	12,973	Carbonyl sulfide, Methanol, Formaldehyde	12,405	37,027
Eastman Chemical Texas City *Texas City, TX*	14,720	Methanol, Toluene, Hexane	7,916	35,280
Huntsman Petrochemical Conroe Plant *Conroe, TX*	15,972	Ethylene oxide, Methanol, Ethylene glycol	14,661	34,028
La Porte Methanol *La Porte, TX*	17,498	Methanol, Glycol ethers	2,504	32,502
Enterprise Mont Belvieu Complex *Mont Belvieu, TX*	18,761	Hexane, Xylene, Methanol	13,613	31,239

Oiltanking Texas City Terminal *Texas City, TX*	21,381	Vinyl acetate, Benzene, Diethanolamine	10,720	28,619
Pasadena Plastics Complex *Pasadena, TX*	21,933	Hexane, Acetaldehyde, Methanol	55	28,067
Equistar Chemicals La Porte Complex *La Porte, TX*	23,837	Vinyl acetate, 1,3-Butadiene, Methanol	11,429	26,163
Covestro Industrial Park Baytown Plant *Baytown, TX*	24,089	Chlorobenzene, Methylene chloride, Hydrochloric acid	13,955	25,911
Air Liquide Large Industries US *Pasadena, TX*	29,903	Formaldehyde, Hexane, Toluene	4,200	20,097
GB Biosciences Greens Bayou Plant *Houston, TX*	42,644	Chlorine, Hydrochloric acid, Methylene chloride	1,290	7,356
Bayport Facility *Pasadena, TX*	19,643	Methanol, Xylene, Polycyclic aromatic hydrocarbons	12,290	30,357
Geon-Oxy Vinyl *La Porte, TX*	44,579	Hydrochloric acid, 1,2-Dichloroethane, Vinyl chloride	2,558	5,421
LBC Houston Bayport Terminal *Seabrook, TX*	46,727	Benzene, Propylene oxide, Methanol	932	3,273

Table A2. Demographic Characteristics within Three Miles of Houston-Area Facilities Potentially Subject to the Air Toxics Loophole

Facility	Population Nearby (3 mi. radius)	% 5 years or younger	% 65 years or older	Persons below poverty level	% Minority
Clean Harbors Deer Park *La Porte, TX*	9,288	7%	10%	1,375	28%
Braskem America *La Porte, TX*	27,295	7%	9%	5,000	30%
Morgans Point Complex *La Porte, TX*	11,262	7%	11%	4,235	55%
Texas Barge & Boat Freeport Facility *Freeport, TX*	5	0%	20%	1	20%
Air Products Baytown Plant *Baytown, TX*	27,485	9%	10%	11,692	66%
Eastman Chemical Texas City *Texas City, TX*	23,892	8%	12%	9,273	54%
Huntsman Petrochemical Conroe Plant *Conroe, TX*	10,560	9%	10%	4,439	47%
La Porte Methanol *La Porte, TX*	14,907	8%	6%	3,382	37%
Enterprise Mont Belvieu Complex *Mont Belvieu, TX*	2,868	6%	9%	696	20%

Oiltanking Texas City Terminal *Texas City, TX*	18,311	8%	12%	8,643	58%
Pasadena Plastics Complex ***Pasadena, TX***	48,028	10%	7%	26,145	82%
Equistar Chemicals La Porte Complex *La Porte, TX*	9,761	7%	7%	1,658	33%
Covestro Industrial Park Baytown Plant *Baytown, TX*	23,814	8%	11%	7,442	46%
Air Liquide Large Industries US *Pasadena, TX*	16,535	6%	9%	2,811	31%
GB Biosciences Greens Bayou Plant *Houston, TX*	67,693	9%	6%	31,096	82%
Bayport Facility *Pasadena, TX*	17,629	5%	12%	2,696	22%
Geon-Oxy Vinyl *La Porte, TX*	7,508	7%	7%	1,123	29%
LBC Houston Bayport Terminal *Seabrook, TX*	19,317	6%	10%	3,301	23%