EXECUTIVE SUMMARY

Environmental Justice for Delaware

Mitigating Toxic Pollution in New Castle County Communities

HIGHLIGHTS

This report studies the health risks for seven communities located along an industrial corridor in the northern portion of Delaware's New Castle County. These communities have higher percentages of people of color and/or higher poverty levels than the Delaware average. We found that people in the seven communities face a substantial cumulative health risk from exposure to toxic air pollution and their proximity to polluting industrial facilities, hazardous chemical facilities, and contaminated waste sites. These health risks are substantially greater in comparison to those of a predominantly White and affluent Delaware community as well as Delaware as a whole. Significant and expedited improvements in regulatory and public policy are needed at the national, state, and municipal levels to address these issues.

Numerous studies have found that people of color and those living in poverty are exposed to higher levels of environmental pollution than Whites or people not living in poverty. Studies have also found that, compared to national averages, a significantly greater percentage of Blacks (African Americans), Latinos (Hispanics), and people at or near poverty levels tend to live near industrial facilities that use large quantities of toxic chemicals and present a risk of major chemical disasters with potentially severe consequences for nearby communities. Environmental justice requires attention to, and actions to address, the disproportionate health and other quality-of-life impacts on these communities. This harm is amplified by the cumulative impacts from other negative socioeconomic and health factors, such as the lack of access to health care, public transportation, and healthy foods; poor housing conditions; and stress from unemployment, poverty, and crime, among other factors.

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People of color and people in poverty are being disproportionately affected by air pollution in Delaware, due to the motor vehicles, power plants, and chemical facilities in their communities.

CSD Center for Science and Democracy at the Union of Concerned Scientists

Environmental Justice Health Alliance

DELAWARE CONCERNED RESIDENTS FOR ENVIRONMENTAL JUSTICE

COMMUNITY HOUSING AND EMPOWERMENT CONNECTIONS INC.

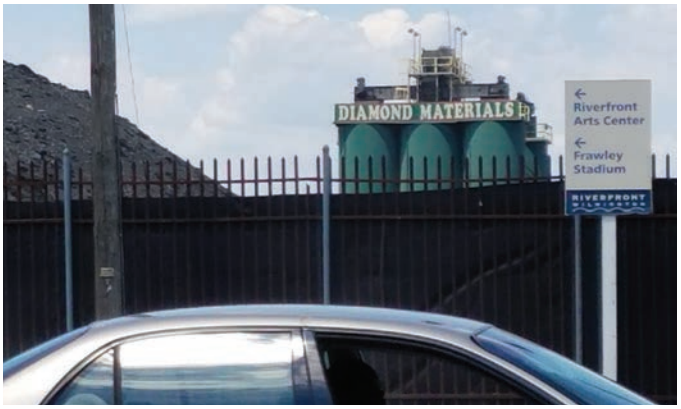
coming clean

Proximity to Major Pollution Sources and Chemical Facilities

This report builds on past work by using publicly available data from the Environmental Protection Agency (EPA) to examine the potential for cumulative negative impacts from health and safety risks for seven communities in Delaware. The seven communities—Belvedere, Cedar Heights, Dunleith, Marshallton, Newport, Oakmont, and Southbridge—have higher percentages of people of color and/or higher poverty levels than the Delaware average and are located along an industrial corridor in the northern portion of Delaware's New Castle County. We compared them to Greenville, a predominantly White and affluent community located outside the industrial corridor and to the population of Delaware overall. While this report focuses specifically on seven environmental justice communities, other nearby environmentally impacted communities such as Rosegate, Rose Hill, and Hamilton Park likely face similar risks to residents' health and safety.

Our analysis looked at potential cumulative impacts from the following health and safety issues for these communities (details of methodology are described in the full report):

- risk of cancer and potential for respiratory illnesses affecting residents in the seven communities that stem from toxic outdoor air pollution;
- proximity to facilities in the EPA's Risk Management Program (RMP) that use large quantities of toxic, flammable, or explosive chemicals and pose a high risk of a major chemical release or catastrophic incident;
- proximity to major polluting industrial sources that report their pollution emissions to the EPA Toxics Release Inventory (TRI); and
- proximity to contaminated hazardous waste sites listed in the EPA's Brownfield and Superfund Programs.



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At home, work, school, pray, and play, the health of community members is put at risk by chemicals and pollution released by industrial facilities.

Dunleith and Oakmont have several brownfield sites as well as close proximity to facilities releasing significant quantities of toxic chemicals into the air. Within its boundaries or within a mile beyond them, the Southbridge community has 2 high-risk chemical facilities, 13 large pollution-emitting industrial facilities, 4 Superfund sites, and 48 brownfield sites. Southbridge is home to more than half of all brownfields in Delaware.

Effects of Toxic Air Pollution on Cancer Risk and the Potential for Respiratory Illnesses

Of the seven environmental justice communities studied, people in Marshallton face the highest cancer and respiratory health risks. Cancer and respiratory health risks there are 33 and 71 percent higher, respectively, than for the comparison community Greenville and are 28 and 55 percent higher than for Delaware overall.

> ***Formaldehyde was by far the most significant chemical contributing to cancer risk, accounting for approximately one-half of the overall cancer risk in most cases.***

The communities of Dunleith, Oakmont, and Southbridge, whose residents are predominantly people of color and that have a substantial low-income population, have cancer risks 19 to 23 percent higher than for Greenville and 14 to 18 percent higher than for Delaware overall. Respiratory hazard in these three communities is 32 to 43 percent higher than for Greenville and 20 to 30 percent higher than for Delaware overall.

Cancer risks in Newport, Belvedere, and Cedar Heights, which have a substantial proportion of people of color and poverty rates above the Delaware average, are 21, 15, and 12 percent higher than for Greenville, respectively, and are 16, 10, and 7 percent higher than for Delaware overall. Respiratory hazard in Newport, Belvedere, and Cedar Heights is 44, 30, and 24 percent higher than for Greenville, respectively, and 31, 18, and 13 percent higher than for Delaware overall.

The top five chemicals that contributed the most to cancer and respiratory hazard risks were generally consistent across all communities. Formaldehyde, which in outdoor air is

Health Risks for Delaware Environmental Justice Communities Compared with the Wealthier and Predominantly White Community of Greenville and Delaware Overall

Community	Increase in cancer risk, compared to Greenville	Increase in respiratory hazard, compared to Greenville	Increase in cancer risk, compared to Delaware overall	Increase in respiratory hazard, compared to Delaware overall
Marshallton	33%	71%	28%	55%
Dunleith	19-23%	32-43%	14-18%	20-30%
Oakmont	19-23%	32-43%	14-18%	20-30%
Southbridge	19-23%	32-43%	14-18%	20-30%
Newport	21%	44%	16%	31%
Belvedere	15%	30%	10%	18%
Cedar Heights	12%	24%	7%	13%

The seven environmental justice communities studied, all located along an industrial corridor, experience much higher health risks than wealthier and predominantly White community of Greenville as well as Delaware as a whole.

commonly emitted by gasoline-fueled cars and trucks, industrial boilers, incinerators, residential energy combustion, and manufacturing facilities that use urea formaldehyde in their processes, and is formed from the breakdown of organic outdoor air pollutants, was by far the most significant chemical contributing to the cancer risk, accounting for approximately one-half of the overall cancer risk in most cases. Although formaldehyde also contributed the most to cancer risk in Marshallton (the community with the highest cancer risk in the study), the cancer risk related to benzene, a common ingredient in gasoline and emitted by motor vehicles and oil refineries and from burning coal and oil, was about 40 to 70 percent higher than in the other environmental justice communities and more than twice that of Greenville. In addition to being classified by the EPA as a carcinogen, benzene is also a neurotoxin.

Acrolein, which is produced from the breakdown of burning gas and oil in cars and trucks as well as in power plants, contributed the majority of respiratory hazard in all the study communities, typically accounting for approximately 70 percent or more of the total respiratory hazard. As was the case with the higher cancer risk from benzene, acrolein-related respiratory hazards in Marshallton were about 25 to 50 percent higher than in the other environmental justice communities and about twice that of Greenville.

Children at Risk

Children are especially vulnerable to the effects of toxic air pollution. In addition to daily exposure to toxic pollution in the

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Air pollution exposure can lead to significant risk for developing respiratory disease and cancer. Children are especially vulnerable.

air, children in these communities are at risk of being exposed to toxic chemicals accidentally released from hazardous chemical facilities in or near their communities. For example, the John G. Leach School and Harry O. Eisenberg Elementary School near Dunleith, with a total of 661 students, are located within one mile of a high-risk chemical facility.

Particularly concerning is that seven schools within one mile of Southbridge, with a total of more than 2,200 students, are in locations with substantially higher cancer risks and respiratory hazards than schools in all other communities in this study. The almost 300 elementary-school-aged students in the Kuumba Academy Charter School near Southbridge have cancer risks due to toxic air pollution that are almost three times higher, and respiratory hazards that are more than three times higher, than schools in Greenville. Students at six other schools within one mile of the Southbridge area have cancer risks that are 55 to 74 percent higher, and potential respiratory hazards that are 81 to 125 percent higher, than those at schools in Greenville.

Conclusion

People in the seven communities along the industrial corridor in the northern portion of Delaware's New Castle County face a substantial potential cumulative health risk from (1) exposure to toxic air pollution, (2) their proximity to polluting industrial facilities and hazardous chemical facilities, and (3) proximity to contaminated waste sites. These health risks are substantially greater than those of residents of a wealthier and predominantly White community in Delaware and for Delaware as a whole.

Recommendations and Solutions

The first four recommendations that follow aim to improve the safety of high-risk industrial facilities, expand communities' access to information about the acute hazards posed by nearby facilities, and improve communities' preparedness for responding to a toxic chemical release. These actions may have the additional benefit of reducing the daily load of toxic air pollution that affects these communities. The next two recommendations address both the acute risks from chemical facility accidents as well as the risks from daily chronic exposure to toxic air pollution. The last recommendation addresses the need to reduce motor vehicle air pollution in these communities.

1. **Require chemical facilities to use safer chemicals and technologies.** Companies that own chemical facilities should adopt inherently safer chemicals and technologies wherever feasible, as this is the most effective way to prevent deaths, illnesses, and injuries from chemical disasters. The EPA should enforce its requirement that high-risk chemical facilities assess the use of safer processes and, further, should require that these safer alternatives be adopted wherever feasible.
2. **Ensure that facilities share information and their emergency response plans with nearby communities.** Chemical facilities should provide nearby local communities with essential information on hazards posed by their operations and their planned response in the event of an unplanned release of hazardous chemicals. Communities should be included in emergency response planning and implementation. Emergency response facilities and the measures devised under these plans should be ready for operation should a chemical release occur. The EPA as well as state and local agencies should ensure that communities have access through effective and purposeful outreach to information on facility hazards and emergency planning under its Risk Management Program and have information on facility hazards submitted to states under the Emergency Planning and Community Right-to-Know Act.
3. **Require large chemical facilities to continuously monitor and publicly report their fenceline-area emissions and health hazards.** Nearby communities should be able to easily access information (based on validated continuous monitoring) on the toxic emissions coming from industrial facilities, along with information about the chemicals' health hazards. The EPA or state or local pollution control agencies should expand current

People in the seven communities along the industrial corridor in Delaware's New Castle County face a substantial potential cumulative health risk from toxic pollution.

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Mobile air monitoring stations like this one from the Delaware Department of Natural Resources and Environmental Control can allow communities to obtain air pollution data from locations without permanent monitoring but where pollutant levels may be high.

requirements for oil refineries to monitor benzene at their fenceline by including other toxic air pollutants such as toluene and xylene, and should require fenceline monitoring at other major industrial sources.

4. **Prevent the construction of new or expanded chemical facilities near homes and schools and, conversely, prevent the siting of new homes and schools near dangerous chemical plants.** The siting of new chemical facilities or expansion of existing ones in close proximity to homes, schools, or playgrounds significantly increases the possibility that an incident will result in significant and serious harm. Similarly, new homes, schools, and playgrounds should not be sited near dangerous chemical plants. Municipal authorities should adopt and enforce local ordinances that require an assessment of the potential cumulative health and safety risks when siting homes, schools, and other public facilities.

5. **Require that publicly accessible, comprehensive health-impact assessments and mitigation plans be conducted to evaluate the cumulative impact of hazardous chemical exposures on nearby communities.** A focus on cumulative impacts is a cornerstone of environmental justice. Environmental and public health agencies in Delaware and at the federal level should assess the potential impact of unplanned chemical releases and the cumulative impacts of daily air pollution exposures on the health of nearby communities, especially vulnerable populations such as the elderly, children, and people with existing health conditions, and incorporate such assessments into agency decision-making to protect public health. Delaware's Coastal Zone Act should be amended to include an environmental justice analysis. A science-based stakeholder process that includes communities and other affected stakeholders should be created before any changes to the legislation can be voted on.

A focus on cumulative impacts is a cornerstone of environmental justice.

6. **Strengthen the enforcement of existing environmental and workplace health and safety regulations.** Environmental and workplace safety enforcement is historically underfunded.

   Congress should increase funding to the EPA, the Occupational Safety and Health Administration, and the states for expanding inspections and improving the enforcement of environmental and workplace health and safety laws, so that problems in chemical facilities can

Gretchen Goldman/UCS

Regular monitoring of air quality near pollution sources is crucial to understanding community exposure to harmful pollutants.

be identified before they lead to disasters. Locally, cities and counties must do a better job of enforcement in areas of "jurisdictional overlap." There must be an accountability mechanism in place for communities to enforce existing ordinances, especially those with a goal of protecting public health.

7. **Adopt and enforce strict motor vehicle emissions standards and limit heavy-duty truck traffic and idling in residential areas.**

   In 2014 the EPA adopted strict motor vehicle emission limits ("Tier 3" standards) to reduce hazardous air pollution from motor vehicles that phase in over the model year 2017–2025 timeframe. These emissions standards complement the EPA's 2012 greenhouse gas limits and fuel economy standards, and together these rules are expected to substantially reduce motor vehicle toxic air and climate pollution over the next decade. It is essential that the EPA effectively enforce these current standards, and future standards be adopted that further reduce motor vehicle air pollution. Further, heavy-duty truck traffic should be limited and idling eliminated in residential areas to reduce community exposures to truck emissions.

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FIND THE FULL REPORT ONLINE: www.ucsusa.org/EJDelaware

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