When Justice Destroys Cement Monsters

ABIGAIL FLEMING & PHOTINI KAMVISSELI SUAREZ*

Abstract

Dusty, toxic "cement monsters"—cement plants—have plagued Black communities in the United States for decades. Spewing air pollutants while contributing to greenhouse gas ("GHG") emissions, cement plants cause detrimental long-term health and environmental effects, making it impossible for Black communities to breathe. In the face of the global climate crisis, Black communities are demanding a radical shift.

This Article explores the impacts of cement production on Black communities, barriers to change, and potential avenues for change. First, it provides an overview of the process of cement production in cement plants, highlighting how pollution is produced and the specific pollutants of concern. Next, it explores a plethora of evidence of the detrimental long- and short- term health impacts of cement plants, as well as the impacts this pollution has on socioeconomic outcomes and overall community well-being. It discusses the disproportionate impact of these effects on Black communities, as well as the disproportionate exposure to this pollution that Black communities face with a focus on how these effects impact specific subsets of the population including children, who are the future of any community. Then, it identifies barriers to justice and potential paths forward. Using Overtown, a historically Black community in Miami, as a case study, this Article explores personal narratives and advocacy strategies to highlight and address the issue of community exposure to cement plant pollution. It argues that transformative, aggressive policy action, along with a

* We are grateful to the community partners and members of Overtown for making this article possible. We dedicate this article to Keith Ivory, a historian, community organizer, and activist

power shift, is required to create healthy and thriving communities and correct historical harms. As a path forward, this Article explores ways that communities can create liberating policy campaigns rooted in equity and community voice.

I. INTRODUCTION....890
II. THE HEART OF MIAMI....892
A. Historical Overtown....892
B. Dorsey Park and Cement Monsters....893
C. Community Driven Action....894
III. TOXIC MONSTERS: HARM TO THE ENVIRONMENT AND HUMAN HEALTH....895
A. Cement Production....896
B. Health Impacts of Cement Production....897
C. Environmental Injustice: Disproportionate Impacts for Black Communities....899
1. Women....900
2. Preexisting Conditions....900
3. Higher Likelihood of Exposure....901
4. Children....902
IV. BARRIERS TO JUSTICE AND PATHS FORWARD....904
A. Barriers....904
1. Challenges of Air Pollution....904
2. Limitations of the Federal and State Law....905
B. Liberating Paths Forward....907
1. Grounded in Reparations....907
2. EJ Driving the Legislative Agenda....908
3. Community-Based, Interdisciplinary Curriculum: Shifting Power Course....909
4. Transformative Policy Campaigns....911
5. Community Data....913
V. CONCLUSION....914

I. INTRODUCTION

Through the lens of one historically Black neighborhood in Miami, Overtown, this Article examines the impacts of pollution produced by cement plants on human health and community well-being

and explores the barriers to justice and potential paths for structural change. To explore transformative changes, the Article follows the journey of one young boy, Boulder, living in Overtown who faces exposure to the noise, smoke, and overall impacts on health and well-being stemming from a cement plant located adjacent to his house.

The process of cement production, detailed in Section II, expels various pollutants which have been found to have negative health impacts on individuals nearby who suffer exposure to these pollutants. These impacts can vary based on preexisting health conditions, levels and time of exposure, and age at exposure. Other factors, including race and gender, can make exposure to pollutants more likely to have detrimental effects. In examining pollutant exposure in Black communities, one fact becomes abundantly clear: Black individuals are more vulnerable physically and socioeconomically to the negative impacts of this pollution due to systemic racism. The many long-term, compounding, and understudied impacts of these inequities exacerbate the negative effects of cement plant pollution, putting the future of Black communities in jeopardy. For this reason, it is vital to understand how to prevent these environmental injustices from occurring in the first place by opposing the repeated and disproportionate exposure of Black communities to high sources of pollution and to learn how to address historical injustices created by the presence of such polluting sources in Black communities.

Section I of this Article will discuss the details of Overtown as a historically Black community as well as the specifics of the cement plant there. This section will also review community and resident actions taken to combat the historical harms caused by local contamination and pollution, including a partnership between the University of Miami Environmental Justice Clinic and the Overtown Parks Group, a resident-led advocacy group. Section II of this Article discusses the process of cement production and the specific pollutants that it produces as well as the health impacts of these pollutants. This section further discusses the disproportionate health and socioeconomic impacts of this pollution on Black communities due to preexisting health conditions, social inequities, and systemic racism, as well as specific subsets of the population who are particularly vulnerable, including women and children. This section then discusses the details of the impacts of cement pollution in Overtown. Section III of this Article discusses the various barriers to justice that exist with

regards to the harm caused by cement pollution in communities. These barriers include limitations of state and federal law in combatting air pollution. Section III then discusses strategies to move forward in achieving justice for communities impacted by polluting plants, including community-led initiatives, community-based data, and policy campaigns, as well as a focus on environmental justice and reparations approaches.

II. THE HEART OF MIAMI

A. Historical Overtown

Black Wall Street. Colored Town. Harlem of the South. All names given to the neighborhood at the heart of Miami—Overtown. During the early 1900s, Overtown was considered the "heart of the black business community" and the center of Miami's culture and economic growth.[1] Despite segregation, the neighborhood prospered and dozens of businesses lined the streets, from grocery stores to jazz clubs.[2] However, preserving Jim Crow segregation laws and mirroring earlier violence against enslaved peoples, Black residents of Overtown were subjected to a plethora of racial violence.[3] Worse yet, in the 1960s, the economic and cultural prosperity was destroyed when the state built Interstate 95, displacing over 15,000 families and businesses.[4] In an attempt to control the displaced, the white elite erected "concrete monsters," or substandard apartment buildings, that were overcrowded and lacked necessities such as air conditioning, forcing Black families into unacceptable and unsafe housing. For decades, Overtown was plagued by disinvestment and erasure of culture. Moreover, Overtown started to face new monsters as it became a host to environmental hazards through racist zoning policies and industrial facilities, including "cement monsters" popping up everywhere.

---

1. MARVIN DUNN, BLACK MIAMI IN THE TWENTIETH CENTURY 78 (1997).
2. *Id.* at 78–92.
3. *Id.*
4. *The Harlem of the South: Overtown History,* RED ROOSTER OVERTOWN, https://redroosterovertown.com/about/red-rooster-overtown-story/.

B. Dorsey Park and Cement Monsters

In 1917, as Jim Crow laws ran rampant, Dana Albert Dorsey, Miami's first Black millionaire, sold land to the City of Miami to provide Black residents access to greenspace in Overtown.[5] Located in the heart of Miami, the land is now known as Dorsey Park. In the 1920s, the park served as a refuge for Black baseball players in the Negro League who were banned from playing Major League Baseball.[6] Now, the park is surrounded by more than 6,000 square feet of murals to represent the park's important role in history. The park also features outdoor gym equipment, a baseball field, a basketball court, a playground, and a community center.[7] Seasonal camps, soccer games, and youth programs take place year-round at the park.[8] Community events and conversations happen daily at the park, and it serves as an essential space for community connection.

Unfortunately, adjacent to Dorsey Park sit two cement monsters, or ready-mix concrete batch plants. A ready-mix concrete batch plant is "engaged primarily in the manufacture of portland cement concrete which is delivered to users in a plastic and unhardened state."[9] Only a chain link fence separates the plants from the park's basketball court, where children play daily. A retention pond of stagnant, gooey, green water from the plant sits on the other side of the fence. Initially, there were no signs on the fence warning park-goers to stay away from the retention pond, until residents acted and placed a few signs that stated, "No Trespassing" and "Danger."

During the cement production process, as described below, dust accumulates, and volatile organic compounds are created. Homes across the street from Dorsey Park are consistently covered in dust.[10]

---

5. DUNN, *supra* note 1, at 78–83.

6. *History of Negro League Partly Written at Miami's Dorsey Park*, CBS NEWS (Feb. 16, 2021), https://www.cbsnews.com/miami/news/negro-leagues-dorsey-park-overtown/.

7. *Dorsey Park*, CITY OF MIAMI, https://www.miamigov.com/Parks-Public-Places/Parks-Directory/Dorsey-Park.

8. *Id.*

9. FLORIDA DEPT. OF ENV'T PROTECTION, DOCUMENT 62-621.300(3)(a), GENERIC PERMIT FOR DISCHARGES FROM CONCRETE BATCH PLANTS 1 (1997), https://floridadep.gov/sites/default/files/62-621.300_3a_0.pdf.

10. Interviews with Overtown residents (on file with author). *See also* Robert C. Jones Jr., *Law Clinic Fights for Overtown*, NEWS@THEU (Aug. 29, 2023),

In addition, noise coming from the plants starts as early as 6 a.m. and remains until late into the evening.[11] Worse yet, trucks barrel quickly through the narrow streets of Overtown, threatening the safety of the communities living near the park. Based on resident accounts, children have been struck by passing trucks on more than one occasion.[12]

C. Community Driven Action

In response to residents' desire to create change, build power, and correct historical harms in Overtown, Urban Health Partnerships ("UHP"), a public health nonprofit whose mission is to invest in communities by co-designing sustainable change, collaborated with community partners to facilitate the creation of the Overtown Parks Group.[13] The Overtown Parks Group[14] ("OPG") is a resident-led advocacy group working to improve Overtown's public spaces, including Dorsey Park and four others: Gibson Park, Williams Park, Reeves Park, and Rainbow Village Park.[15] The group is led by Overtown residents who drive community outreach, analyze needs and resources, craft goal setting, and execute OPG's strategies and campaigns.[16] OPG has led sixty-five community park assessments in Overtown parks; developed a Community Action Plan; established a communications network; and began advocating for policy change with elected officials, government agencies, and community partners.

Knowing they needed a variety of expertise, OPG reached out to the community lawyers at the Environmental Justice Clinic ("EJC") at the University of Miami School of Law. Although experts, OPG needed investigative and research support in their investigation of potential contamination issues in the parks and the surrounding

---

https://news.miami.edu/stories/2023/08/law-clinic-fights-for-overtown.html ("The canvassing showed us that, with the cement plants, there were concerns about dust and noise levels.").

11. Interviews with Overtown residents (on file with author).

12. *Id.*

13. *Introducing the Overtown Parks Group*, URB. HEALTH P'SHIP, https://urbanhp.org/project/activate-overtown/ (last visited Apr. 1, 2024).

14. The OPG consists of Urban Health Partnerships, the Overtown Children and Youth Coalition, Catalyst Miami, and community activists.

15. *Introducing the Overtown Parks Group*, *supra* note 12.

16. *Id.*

neighborhoods. A collaborative partnership built on trust and transparency quickly formed, and the coalition has taken on an extensive fact investigation. The investigative process encompasses various activities, including but not limited to, making public records requests, conducting policy trainings, gathering and analyzing data, and conducting legal research. This coalition is an example of an interdisciplinary, community-based team that is seeking structural change for their communities. Throughout this Article, their organizing and advocacy is highlighted, and the team is referenced as "the coalition." Their work is explored below through the lens of Boulder, a young boy living in Overtown.

***

Boulder, a vibrant, confident young boy, lives in Overtown with his grandma. He attends Wheatley Elementary and loves to learn about bugs in science and heroes in literature; and most of all, he enjoys reading at the Dorsey Memorial Library. He shoots hoops at the basketball court at Reeves Park and goes to the after-school program at the Dorsey Park Community Center.

***

III. TOXIC MONSTERS: HARM TO THE ENVIRONMENT AND HUMAN HEALTH

This section provides a brief overview of cement production and how pollution is produced through this process. This section discusses the specific pollutants that are produced by cement plants and how these pollutants affect human health, with a particular focus on the health impacts suffered by children and Black communities due to this type of pollution and the proximity of cement plants to Black communities and places of play, work, and safety. This section further dives into the disproportionate short- and long-term environmental justice and socioeconomic impacts that Black communities may experience because of pollution from cement plants.

A. Cement Production

With the global demand for new infrastructure growing, cement production has become one of the greatest sources of air pollution, particularly carbon dioxide.[17] While concrete and cement are often used interchangeably, they are not the same property.[18] Cement is produced first, through a four-step process described in this section, and then used as a binding agent along with other materials to create concrete.[19] Other air pollutants produced by the cement industry include sulfur dioxide, nitrous oxides, pollutants emitted because of incomplete fuel combustion such as carbon monoxide, ground-level ozone precursors such as non-methane organic volatile compounds, and toxic heavy metals such as lead and particulate matter.[20] The polluting effect of cement plants largely has to do with the way in which cement is produced.[21]

Cement production can be divided into four steps.[22] The first step involves the crushing of raw materials such as chalk or clay, which are then ground and mixed together to meet fineness and chemical composition requirements.[23] The second step is the production of clinker, which are marble-sized pellets that are used as a binder in cement.[24] To produce clinker, the raw material from step one is placed into a kiln at temperatures of up to 1500 degrees Celsius.[25] Step three involves blending the clinker with other additives to produce the actual

17. ALI HASANBEIGI ET AL., GLOBAL EFFICIENCY INTELLIGENCE, AIR POLLUTION FROM GLOBAL CEMENT INDUSTRY: AN INTERNATIONAL BENCHMARKING OF CRITERIA AIR POLLUTANTS INTENSITIES 6 (Aug. 2022), https://static1.squarespace.com/static/5877e86f9de4bb8bce72105c/t/62ef78a371716a77fcb7790f/1659861171704/Cement+CAP+Study-final.pdf.

18. Andrea Arellano, *Back to Basics: Cement vs Concrete*, GIATEC (Nov. 30, 2022), https://www.giatecscientific.com/education/back-to-basics-cement-vs-concrete/#:~:text=In%20short%2C%20the%20difference%20between,water%2C%20sand%2C%20and%20rock.

19. *Id.*

20. HASANBEIGI ET AL., *supra* note 17, at 3.

21. *Id.*

22. Arellano, *supra* note 18.

23. *Id.*

24. *What is Cement Clinker?*, DATIS EXPORT GROUP (June 18, 2020), https://datis-inc.com/blog/what-is-cement-clinker.

25. HASANBEIGI ET AL., *supra* note 16, at 6.

cement.[26] Step four is the storage and transfer of the cement.[27] Air pollution from cement production largely comes from step two, stemming from the use of the kiln.[28] However, additional pollutants are produced throughout the cement production process.[29] Understanding the processes through which these pollutants are produced can help to visualize the many compounding ways in which cement plant pollution can infiltrate and impact surrounding communities. This pollution can have short- and long-term impacts on human health, depending on the specific vulnerabilities of each individual, and can also negatively alter the socioeconomic outcomes and overall well-being of both individuals and communities.

B. Health Impacts of Cement Production

Exposure to air pollution from cement plants has been found to have cardiovascular and respiratory health impacts on individuals exposed to these hazardous sites.[30] Despite multiple studies showing the health risks of air, soil, and water pollution produced by cement plants, these toxic sites continue to be situated near vulnerable communities, risking the health of individuals at their homes, schools, and playgrounds. Some studies have found that women have a greater likelihood of experiencing the negative health impacts of cement pollution. This may be attributable to the increased time spent by women in the home which increases their exposure to the polluting source.[31] Children have been found to be at even greater risk, both spending more time at home and more active time outdoors.[32]

There are a wide variety of negative health impacts from each of the many pollutants produced by cement plants. For example, long-term residential exposure to particulate matter has been associated with reduced lung function, chronic bronchitis development, and premature

26. *Id.*

27. *Id.*

28. *Id.* at 7.

29. *Id.*

30. Martina Bertoldi et al., *Health Effects for the Population Living Near a Cement Plant: An Epidemiological Assessment*, 41 ENV'T INT'L 1, 5 (Jan. 14, 2012).

31. *Id.* at 4.

32. *Id.*

death.[33] Individuals with preexisting cardiovascular or respiratory conditions are particularly susceptible to having these conditions be exacerbated by particle exposure.[34] Short-term exposure can lead to asthma attacks, acute bronchitis, increased vulnerability to respiratory infections, heart attacks, and arrhythmias.[35]

Even individuals without any preexisting conditions can experience temporary symptoms following short-term exposure, including irritation of the eyes, nose, or throat, coughing, chest tightness, phlegm, and shortness of breath.[36] Strenuous, outdoor activity makes negative symptoms from particle exposure more likely; therefore, the Environmental Protection Agency ("EPA") recommends that exposed individuals "reduce [their] activity time" or "substitute another activity that involves less exertion."[37] Additionally, they advised planning activities for days when particle levels are lower.[38] For individuals who live near cement plants, following this advice could lead to lower levels of exercise creating additional health risks as well as decreased quality of life due to decreased outdoor time and active time.[39]

For individuals with asthma, even short-term exposure to sulfur dioxide during moderate exercise can lead to breathing difficulties, wheezing, chest tightness, and shortness of breath.[40] Nitrogen dioxide exposure has also been linked with respiratory symptoms, and "respiratory-related emergency department visits and hospital admissions."[41] Exposure to ground-level ozone can further lead to respiratory health effects, as well as decreased capacity to exercise and susceptibility to respiratory infection.[42] Even short-term ozone

33. U.S. ENV'T PROT. AGENCY, PARTICLE POLLUTION AND YOUR HEALTH 2 (May 2010), https://nepis.epa.gov/Exe/ZyPDF.cgi/P100RQ5N.PDF?Dockey=P100RQ5N.PDF.

34. *Id.*

35. *Id.*

36. *Id.*

37. *Id.*

38. *Id.*

39. *Id.*

40. HASANBEIGI ET AL., *supra* note 17, at 8.

41. *Id.*

42. *Id.*

exposure has been linked to premature mortality.[43] Long-term exposure may lead to the development of asthma and permanent lung tissue damage.[44] Carbon monoxide exposure has been found to reduce the capacity of blood to carry oxygen leading to a decreased supply of oxygen to tissues and organs.[45] This is particularly dangerous for people with preexisting heart disease and can lead to further symptoms such as myocardial ischemia and chest pain.[46]

During canvassing in Overtown, the coalition talked to residents who are plagued by asthma, respiratory infections, heart disease, and skin irritations.[47] Numerous individuals experienced one or more of these health concerns. Even more telling, these conditions had worsened over time for most. Most concerning, residents expressed frustrations with the cement dust covering their homes and cars but did not connect this as a potential cause for their health concerns. A few residents even mentioned having undiagnosable conditions that their doctor could not pinpoint but expected chemical exposure. Upon hearing about the health impacts, residents immediately wanted more information to share with their doctor about their potential exposure.

C. Environmental Injustice: Disproportionate Impacts for Black Communities

Scientific testing has established that proximity to cement plants, both occupational and residential, can lead to both short-term symptomology and long-term debilitating health as well as socioeconomic impacts on individuals and communities. When Black communities are exposed to the toxic presence of the cement industry, they are put at higher risk for the negative health impacts of cement pollution. This harm is further compounded by additional barriers and medical or judicial prejudices faced by Black communities.

43. *Id.*
44. *Id.*
45. *Id.* at 9.
46. *Id.*
47. Interviews with Overtown residents (on file with author).

1. Women

Studies have shown that women may be particularly susceptible to the negative health impacts of cement plant pollution.[48] Black people, particularly Black women and mothers,[49] often face medical racial bias,[50] which puts them at risk of inadequate treatment or poor health outcomes[51] and can discourage them from seeking further medical care.[52] Studies have even found that medical professionals are less likely to recognize pain in the facial expressions of Black faces compared to other races.[53]

2. Preexisting Conditions

As discussed earlier in this article, cement plant pollution can not only lead to new symptoms and conditions, and diminish quality of life, but can also exacerbate preexisting cardiovascular and respiratory conditions, placing individuals with these conditions at serious health risk. According to the United States Department of Health and Human Services ("DHHS"), in 2019, Black people were thirty percent more likely to have asthma than white people.[54] In 2020, Black people were nearly three times more likely to die due to asthma-related causes.[55] This means that cement plants situated near Black communities place

---

48. Bertoldi et al., *supra* note 30, at 4.

49. Jamila K. Taylor, *Structural Racsim and Maternal Health Among Black Women*, 48 J. L., MED. & ETHICS 506, 508–09 (Oct. 6, 2020).

50. Eleesha Lockett, *Racial Bias in Healthcare: What You Need to Know*, HEALTHLINE (June 23, 2022), https://www.healthline.com/health/racial-bias-in-healthcare#racial-bias-fuels-healthcare-disparities.

51. Khiara M. Bridges, *Implicit Bias and Racial Disparities in Health Care*, 43 HUM. RTS. 19 (2018).

52. Annie Sciacca, *Black Patients Adjust Behavior to Reduce Chance of Discrimination in Health Care Settings, Survey Finds*, PBS (Mar. 17, 2023), https://www.pbs.org/newshour/health/black-patients-adjust-behavior-to-reduce-chance-of-discrimination-in-health-care-settings-survey-finds.

53. Peter Mende-Siedlecki et al., *Perceptual Contributions to Racial Bias in Pain Recognition*, 148 J. EXPERIMENTAL PSYCH. 863, 865 (2019).

54. *Asthma and African Americans*, U.S. DEPT. OF HEALTH AND HUM. SERVS. OFF. OF MINORITY HEALTH, https://minorityhealth.hhs.gov/asthma-and-african-americans.

55. *Id.*

individuals in that community at greater risk of experiencing a range of asthma-related symptoms following exposure to cement pollutants, including asthma attacks, breathing difficulties, wheezing, chest tightness, and shortness of breath. Furthermore, because these pollutants can lead to the development of asthma, a cyclical trend may take place in which individuals develop asthma due to pollutant exposure and later experience an exacerbation of this condition due to further exposure to pollution from cement plants.

Black people are also more likely to suffer from cardiovascular conditions. According to the DHHS, in 2019, Black people were thirty percent more likely to die due to heart disease compared to White people.[56] Additionally, Black people were thirty percent more likely to have high blood pressure; this number jumped to fifty percent for Black women.[57] Black people were also less likely than White people to have their blood pressure under control.[58] Given the impact of cement pollutants on individuals with preexisting cardiovascular conditions, these statistics are especially concerning as they could lead to increased rates of heart attack, arrhythmia, myocardial ischemia, and chest pain.

3. Higher Likelihood of Exposure

Black people also more likely to live in areas with higher particulate matter pollution.[59] Given the EPA's advice that individuals avoid such pollution by decreasing activity time, in the instance where pollution levels are always high and avoidance is impossible, this decrease in physical activity and outdoor activity could lead to decreased mental health and well-being and pose additional health risks. For example, decreased physical activity has been associated

56. *Heart Disease and African Americans*, U.S. DEPT. OF HEALTH AND HUM. SERVS. OFF. OF MINORITY HEALTH, https://minorityhealth.hhs.gov/heart-disease-and-african-americans.

57. *Id.*

58. *Id.*

59. Ihab Mikati et al., *Disparities in Distribution of Particulate Matter Emission Sources by Race and Poverty Status*, 108 Am. J. Pub. Health 480–85 (2018); *Study Finds Exposure to Air Pollution Higher for People of Color Regardless of Region or Income*, ENV'T PROT. AGENCY (Sept. 20, 2021), https://www.epa.gov/sciencematters/study-finds-exposure-air-pollution-higher-people-color-regardless-region-or-income.

with the development of heart disease and type 2 diabetes.[60] These conditions have further been found to create increased susceptibility to the health effects of cement plant pollution, in particular ground level ozone, carbon monoxide, and particulate matter.[61]

4. Children

Studies have found that children may have a higher susceptibility to air pollution, specifically the air pollution produced by cement plants.[62] This is due to a variety of factors, including the increased time spent by children outdoors, often playing and exercising, which leads to increased ventilation rates.[63] Children are also more susceptible to harm from certain pollutants. For example, young children face risks to their central nervous system development when exposed to lead, which in turn can impact neurodevelopment.[64] Children who suffer this exposure may experience lowered IQ or behavioral issues as a result.[65]

Long-term, ground-level ozone exposure can also lead to the development of asthma in children, particularly those with genetic vulnerability or those who are often active outdoors.[66] This can further exacerbate the impacts of sulfur dioxide on these children, as people with asthma are more vulnerable to these impacts; even short-term exposure to sulfur dioxide can lead to increased respiratory symptoms, hospital admissions, and emergency department visits for children with asthma.[67] Moreover, exposure to pollutants that exacerbate respiratory illnesses can also lead to increased absences from school.[68]

---

60. *Physical Inactivity*, CTRS. FOR DISEASE CONTROL AND PREVENTION (Sept. 8, 2022), https://www.cdc.gov/chronicdisease/resources/publications/factsheets/physical-activity.htm.

61. HASANBEIGI ET AL., *supra* note 19, at 7–8.

62. Bertoldi et al., *supra* note 30, at 4.

63. *Id.*

64. HASANBEIGI ET AL., *supra* note 17, at 8.

65. *Id.* at 9.

66. *Id.* at 8.

67. *Id.*

68. *Id.*

Children are the future of any community—when industrial poison targets children, it targets this future. In Black communities, educational and judicial bias can exacerbate the long-term socioeconomic impacts of cement pollution on children. Lead pollution can impact children's central nervous system development and can lead to behavioral issues and lowered IQ. This is particularly concerning in families and communities where institutional racism may lead to an increased likelihood to blame and punish the children or parents for these impacts. School discipline that removes students from classrooms and school settings has been found to increase their likelihood of entering the criminal justice system. This pattern is known as the school-to-prison pipeline.[69] According to the United States Department of Education Office for Civil Rights, Black students are 3.5 times more likely to be suspended or expelled from school compared to their White peers.[70]

Increased likelihood of medical conditions in childhood, or a child having to care for a family member due to illness, can lead to more missed school and increased punishments, further fueling the school-to-prison pipeline.[71] Minority students have been found to be more likely to be punished for missing school or being late to school.[72] These punishments, usually suspensions or expulsions,[73] further push students who may already be struggling against socioeconomic barriers or dealing with personal challenges out of the classroom and, oftentimes, into the criminal justice system.[74] Given that Black individuals are already vastly overrepresented in the criminal justice

69. Marilyn Elias, *The School-to-Prison Pipeline*, LEARNING FOR JUSTICE (2013), https://www.learningforjustice.org/magazine/spring-2013/the-school-to-prison-pipeline.

70. *Id.*

71. *Truancy Takes a Higher Toll on Black Families*, THE WASH. INFORMER (Sept. 2, 2015), https://www.washingtoninformer.com/truancy-takes-a-higher-toll-on-black-families/.

72. Tara Garcia Mathewson, et al., *Civil rights at Stake: Black, Hispanic Students Blocked from Class for Missing Class*, THE HECHINGER REP. (Dec. 8, 2022), https://hechingerreport.org/black-and-latino-students-get-suspended-more-for-missing-school-is-it-a-civil-rights-violation.

73. *Id.*

74. Elias, *supra* note 69.

system,[75] the exacerbation of this statistic should be avoided at all costs, including by paying close attention to instances of childhood pollution impacts by clement plants.

Given the disproportionate likelihood of Black individuals to suffer from cement plant pollution due to preexisting cardiovascular and respiratory conditions that lead to serious health complications, combined with the risks resulting from medical racial bias as well as other compounding social inequities on children and families, situating cement plants in Black communities can have detrimental effects on individual, family, and community health and social outcomes. To address these issues and inequities, it is essential to understand the barriers to justice for these communities and how to overcome these challenges.

***

On his walks from school, Boulder hears the buzzing of the utility facility and the thumping of cement trucks. He sees cement dust glide through the air as light reflects off the particles and smells the leftover scent of stale gas in the air.

***

IV. BARRIERS TO JUSTICE AND PATHS FORWARD

A. Barriers

1. Challenges of Air Pollution

Air pollution exists on the backdrop of numerous pollutants spewing from a variety of sources and slogging vast distances. Because a variety of pollutants plague Black communities, and air pollution is caused by an intersectional web of emissions, weather, and topography,[76] it is often difficult for residents to discover the source

75. *Racial and Ethnic Disparities in the Criminal Justice System*, NAT'L CONF. OF STATE LEGISLATURES (May 24, 2022), https://www.ncsl.org/civil-and-criminal-justice/racial-and-ethnic-disparities-in-the-criminal-justice-system.

76. TODD AAGAARD ET AL., PRACTICING ENVIRONMENTAL LAW 159 (1st ed. 2017).

and extent of the pollution.[77] In addition, as the climate crisis entrenches on the lives of Black communities, whether through flooding or flames, this challenge only intensifies.[78] Moreover, the health effects that occur from exposure to air pollution are often hard to identify for those impacted due in large part to the fact that air pollution exacerbates health conditions that are already occurring, such as asthma. This makes it close to impossible for Environmental Justice ("EJ") communities to connect the health effects they are facing with environmental hazards in their neighborhoods.

2. Limitations of the Federal and State Law

Signed by President Nixon in 1970, the Clean Air Act is a federal environmental law that regulates hazardous air pollutants.[79] It is a complex, comprehensive beast, consuming over 300 pages in the U.S. Code. The Act requires the EPA to establish National Ambient Air Quality Standards ("NAAQS")[80] "for certain common and widespread pollutants based on the latest science."[81] To date, EPA has only established standards for six different pollutants: carbon monoxide, lead, nitrogen dioxide, ozone, sulfur dioxide, and particulate matter.

Compliance with the NAAQS is measured in air quality control regions ("AQCRs"), which extend across large geographic areas and monitor air quality through networks of monitoring stations.[82] This regional framework does not distinguish between regional and local air quality data for compliance purposes, and thus, encourages hotspots, or small geographic areas with disproportionately poor air quality, which

77. MICHAEL B. GERRARD, THE LAW OF ENVIRONMENTAL JUSTICE: THEORIES AND PROCEDURES TO ADDRESS DISPROPORTIONATE RISKS 542 (Michael B. Gerrard & Sheila R. Foster eds., 2d ed. 2008).

78. *Id.*

79. 42 U.S.C. §§ 7401–7438.

80. 42 U.S.C. § 7409.

81. *Clean Air Act Requirements and History*, ENV'T PROT. AGENCY (Aug. 8, 2023), www.epa.gov/clean-air-act-overview/clean-air-act-requirements-and-history.

82. 42 U.S.C. § 7407.

tend to form in minority communities.[83] Worse yet, due to the regional structure, gathering localized data often proves impossible for EJ communities.

Although the federal government sets the standards to regulate hazardous air pollutants in the Clean Air Act, the states really do the heavy lifting, as most sources of air pollution are regulated by State Implementation Plans ("SIP").[84] Through these individualized plans, states are required to achieve the federal standards using methods and frameworks that are consistent with their own policies and practices.[85] These plans vary by method and sometimes include state air permit programs, making it difficult for communities to identify violations of the Clean Air Act.[86]

In Florida, the SIP, called the Infrastructure State Implementation Plan ("ISIP"), "provides Florida's plan for the implementation, maintenance, and enforcement of a new or revised National Ambient Air Quality Standard."[87] Codified in Florida Statutes, the plan is a large framework of state permitting and monitoring programs and regulatory projects.[88] A regulated facility cannot be constructed or expanded without a state permit, and enforcement is governed by what is in the permit.[89] Often times during the permitting process, negotiations or compromises are made, and thus, an otherwise clear standard may not apply.[90] Narrowing into Miami, both cement plants in Overtown are in compliance with their

83. Magdalena Filipiuk Gonzalez, Note, *A Breath of Fresh Air: Using the Clean Air Act to Eliminate Air Pollution Hot Spots*, 12 GEO. WASH. J. ENERGY & ENV'T. L. 137, 139 (2021).

84. 42 U.S.C. § 7410.

85. *See* Helen Sprainer, Note, *Air Quality Equity: Why the Clean Air Act Failed to Protect Low-Income Communities and Communities of Color from COVID-19*, 30 N.Y.U. ENV'T L.J. 123, 153 (2022) ("The Clean Air Act currently relies on state-specific plans to implement the federal NAAQS by requiring states to use their discretion to achieve the federal NAAQS in accordance with their priorities by creating and implementing a State Implementation Plan.").

86. *Id.* at 152–54.

87. *Infrastructure State Implementation Plans (iSIPs)*, FLORIDA DEPT. OF ENVT'L PROTECTION (Apr. 29, 2022), https://floridadep.gov/air/air-business-planning/content/infrastructure-state-implementation-plans-isip.

88. *See* FLA. ADMIN. CODE ANN. r. 62.

89. *See* FLA. ADMIN. CODE ANN. r. 62-210; 62-212.

90. GERRARD, *supra* note 77, at 542–45.

permits. Thus, despite resident complaints of dust and noise, residents have no avenue for redress under the Clean Air Act.

B. Liberating Paths Forward

1. Grounded in Reparations

When discussing paths forward, reparations must be addressed. EJ communities throughout the U.S. are demanding reparations for the terrors and historical legacies of slavery and land dispossession.[91] "Abolished yet alive, as many activists and scholars have demonstrated, slavery in one form or another has persisted and lingered like an untreated virus . . . ."[92] And "Black people's lives remain vulnerable and unprotected by the very government that abolished the institution and practice of slavery."[93] Reparations can come in many forms, whether through regulatory and legal reform, social mindset shifts, or political strategy. More specifically, they may include:

> (1) political reparations: restorative and reparative historically informed advocacy transforming government and political representation and participation; (2) intellectual reparations: the purposeful and public recognition and acknowledgment of the creations, inventions, and ideas of formerly enslaved people and their descendants; (3) legal reparations: restorative justice, and racial equity established and authorized in laws and policies; (4) economic reparations: pecuniary and/or monetary assistance, subsidy, restitution, and debt relief; (5) social reparations: restoration and repair of the social contract to end racism and mindsets premised on racial and ethnic hierarchy, thus affirming the dignity of human beings; (6) spatial reparations: a restorative and reparative geography socioeconomic and political opportunity, and land healing, particularly for those displaced and dispossessed by American slavery and

91. MARCUS ANTHONY HUNTER, RADICAL REPARATIONS: HEALING THE SOUL OF A NATION 17 (2024).

92. *Id.* at 301.

93. *Id.*

> their descendants; and (7) spiritual reparations: the purposeful and intentional recognition, representation, and recovery of the religious and spiritual cosmologies, practices, and beliefs harmed and lost in the triangle slave trade and American slavery.[94]

Through this lens, EJ communities are seeking "dynamic, multi-dimensional policies, rooted in equity" and advocating for a "holistic redistribution of power back to the hands of the most vulnerable."[95]

2. EJ Driving the Legislative Agenda

EJ communities, like Overtown, do not need piecemeal frameworks and watered-down, unenforceable legislation. Rather, EJ communities should drive the legislative agenda through regulation and implementation plans. First, the Office of Information and Regulatory Affairs should dismantle the mindset of cost-benefit analysis and "create a regulatory review process that promotes social welfare, racial justice, and equity."[96] As intended, this process would require the EPA to mitigate impacts or recraft their rules to address environmental injustices, serving as a backstop.[97] Second, the EPA could craft regulations that "would require states to research environmental injustices, come up with a plan to alleviate these inequities, and meaningfully include environmental justice communities in this process."[98] And finally, "U.S. Congress should amend CAA's SIP provision, 42 U.S.C. § 7410, to require states to identify air pollution hot spots . . . and implement local air quality monitoring plans to improve local air quality."[99]

***

94. *Id.* at 17.

95. Abigail Fleming & Catherine Dremluk, *Armoring the Just Transition Activist*, 25 RICH. PUB. INT. L. REV. 172, 173–74 (2022).

96. Sprainer, *supra* note 85, at 152.

97. *Id.* at 129.

98. *Id.* at 129.

99. Gonzalez, *supra* note 83, 138.

Picking up a flyer from school, Boulder rushes home. Passing Dorsey Park, he sprints down 1st Avenue. He lunges through his front door and runs right into his grandma. The flyer glides through the air as Boulder stumbles back. "Sorry!" Boulder exclaims. "What's this?" his grandma asked, catching the flyer. "Got it at school. It's about the dust! Says there will be a meeting tonight."

Later that night, Boulder and his grandma attend a public meeting at the Dorsey Community Center. At the meeting, they are introduced to a community organizer from UHP who tells them that the dust is toxic and could cause health issues. The organizer mentions a training called "shifting power" that Boulder and his grandma can attend to learn more.

***

3. Community-Based, Interdisciplinary Curriculum: Shifting Power Course

Anchor institutions, such as the University of Miami, have the responsibility to ensure that research and scholarship are interdisciplinary and community based. Moreover, we must ensure that curriculum meets people where they are. As the climate crisis rages, institutions are under pressure to craft urgent solutions rooted in equity and science and assist with community education. To create systemic change, research, scholarship, and curriculum on climate, environmental, and energy justice must connect disciplines and go beyond the walls of the institution. At the University of Miami, the Laboratory for Integrative Knowledge "supports teams of scholars from multiple disciplines in collaborative, problem-based inquiry to address the complex challenges of society."[100] Known as U-LINK, this branch of the University provides funding and opportunities for researchers to create scholarship and curriculum.

As part of an interdisciplinary team, the EJC was given an opportunity through U-LINK to create a community-based, interdisciplinary curriculum. After extensive research and surveying,

100. *Addressing the World's Most Compelling Problems*, UNIV. OF MIAMI: LABORATORY FOR INTEGRATIVE KNOWLEDGE, https://ulink.miami.edu (last visited April 1, 2024).

the team launched the Shifting Power Course in spring 2024. The course is designed to create a transformative impact, offer an extraordinary learning experience, and foster meaningful interdisciplinary collaboration.

It brings together residents, local organizers, activists, and researchers in Miami-Dade County. The course includes educational sessions, advocacy tools and resources, and access to direct services. Students are partnered with a local community organization to assist with a current project or policy campaign. The overarching mission is co-creating a community-based, interdisciplinary curriculum focused on climate, energy, and environmental justice advocacy. The course results in a community hub with research, policy guides, and community organizing resources. Rather than simply seeing a billboard or posted flyer, residents can connect and collaborate with others to discuss injustices within the community and potential solutions.

***

Boulder and his grandma attend their first shifting power class. At the class, they meet new people from their neighborhood, young and old. They share dinner from a local Haitian restaurant. As they eat, they talk about some of the issues they have noticed around the neighborhoods. "No trees! It's hot as hell," says one man. "Dust all over my house from that stupid noisy cement plant," states another woman. Boulder realizes that everyone shares a lot of the same problems and wants change, just like him and his grandma.

After dinner, the leader of the class discusses building power as a collective. They talk about the history of America, white supremacy, and forms of oppressive power. Boulder cannot believe that people like him were "chained, held captive, tortured, kidnapped, raped, bought, and sold."[101] *But the leader says to have hope, and they discuss ways to "unlock a new foundation and pathway to truth, love, justice, racial healing, and freedom in America and everywhere Black people are." Boulder leaves the meeting full of food and excitement.*

101. *See generally* HUNTER, *supra* note 91.

***

4. Transformative Policy Campaigns

Training community residents, organizers, and advocates (or power builders) to craft and execute liberating policy campaigns is one avenue to create structural change. These campaigns are grounded in a community or group's theory of change and values and seek to build people power while shrinking oppressive power.[102] More specifically, liberating policy campaigns are a limited-time effort to win a policy change that moves our communities toward liberation.[103]

The training enables power builders to create a landscape map containing key information to design strategies, such as historical reforms, polling and anecdotal evidence, media coverage, power players, and the backdrop of their relationships and interests.[104] It requires those building the campaign to narrow in goals, decision-makers, oppositions, and supporters.

It brings these four elements together and teaches the "the tug-of-war," or the power plays and influences on the goal of the campaign. First, power builders draw a horizontal line, creating their tug-of-war. Then, they must state their goal and then draw a vertical line in the middle of their tug-of-war representing the campaign goal. Power builders then identify their flag, or the person or entity that has the power to make the policy change they desire. In the context of tug-of-war, the entire premise of the campaign is to move the flag (or influence the person with power to make a change).

They then must decide how far away their flag is from their campaign goal or policy position. Once their tug-of-war line is drawn, and their goal and flag are identified, power builders, using circles along their tug-of-war, identify their opposition and supporters, along with their respective spheres of influence. The size of the circle indicates the amount of power the person has over the flag, and the placement of the circle is how close or far away the flag is from their campaign position.

---

102. Campaign Strategy for Movement Lawyers at Movement Law Lab led by Kung Li (Apr. 22, 2022) (on file with Movement Law Lab).

103. *Id.*

104. *Id.*

After power builders explore and map their tug-of-war, they find and strengthen a champion. A champion is the person who will spearhead the policy change. A solid champion is aligned with the campaign goal, has influence over the flag, is responsive to the campaign goals, and will follow the campaign's lead. Finally, the power builders craft a strategy chart. This chart breaks down how the campaign will motivate and activate supporters, how the campaign will neutralize the opposition, and who will take the lead.

Within Overtown, the OPG has already organized three liberating policy campaign trainings for the group. During the sessions, members of OPG strategized on current issues and prioritized them to align with campaign goals. Using the community action plan created by OPG, members discussed current political efforts and drafted a landscape map to utilize during campaign efforts. Members of OPG immediately implemented strategies used during the trainings. One of the participants mentioned that the trainings "changed her view of the world and her work."

***

A few weeks after the initial meeting, Boulder, after school one day, is sitting at home when his grandma's cellphone lights up and blasts the latest text notification. "It's the OPG group chat," she exclaims. "It seems there is a meeting tonight with the mayor. That letter and protest must have worked!" Boulder gets excited. He remembers the time and effort his grandma put into writing the letter about the cement dust with other members of OPG, and he loved going to the protest. His grandmother calls a member from OPG to discuss the strategy for the meeting.

At the meeting, Boulder cannot believe all the people packed into the Dorsey Park Community Center, standing shoulder to shoulder. He sees the mayor and a bunch of people in navy suits who look serious. Boulder hides behind his grandma. The residents start to talk about their concerns, including the dust and noise from the plants. Some residents yell at the mayor and some storm out, but members of OPG stand strong and stick to "the plan." OPG members share additional concerns and avenues for change. The mayor, although indifferent, promises change. To continue building

relationships, OPG members invite the mayor and his staff to a community event at Williams Park.

***

5. Community Data

Community-based data collection is a powerful tool for communities as it allows for the data to be housed in communities rather than institutions, which often allows greater access to data and resources.

Understanding this, OPG set up a PurpleAir, an outdoor monitor, in Dorsey Park. PurpleAir "makes sensors that empower Community Scientists who collect hyper-local air quality data and share it with the public."[105] PurpleAir sensors measure particle pollution (PM2.5) and allow residents to track air quality in their surrounding area on an interactive map. The OPG team collaborated to install the monitor at Dorsey and monitor the results. Findings showed that the air quality at and around Dorsey Park was only acceptable on most days and not satisfactory on other days, in contrast to most neighborhoods in Miami-Dade County.

Next, OPG partnered with the Institute for Data Science and Computing ("IDSC") at the University of Miami to collect data of Dorsey Park. To explore the usefulness of using high resolution aerial imagery to support the OPG team, they used a drone to collect imagery of Dorsey Park and created a georeferenced orthomosaic image and other data products. For context, orthomosaic images are scaled composite images where all perspective has been removed through a computational process. These images are suitable for use in making accurate measurements of features within the image (e.g., building rooftop dimensions, sidewalk widths, etc.) and can also be used to create geospatial datasets. IDSC brought a hard copy of the

105. *PurpleAir Makes Sensors That Empower Community Scientists Who Collect Hyper-local Air Quality Data and Share It with the Public*, PURPLEAIR, https://www2.purpleair.com/?campaignname=Pmax-new&adgroupid=&creative=&matchtype=&network=x&device=c&keyword=&gad_source=1&gclid=CjwKCAjwtqmwBhBVEiwAL-WAYfdWXh2H8rxjaXjHixPBuTcEOrvSRa20bwDMusZm6ZaCrw_xv7MK4xoCJ6EQAvD_BwE.

georeferenced orthomosaic image to an OPG community meeting. Members of OPG and residents engaged with the images and discussed the layout around Dorsey Park through a community mapping activity. As residents analyzed the image, it inspired conversations about the history and future of Overtown.

***

Boulder can't wait for the event tonight at Williams Park. His friends told him there would be cotton candy and a bounce house! When Boulder arrives, he sees large pieces of paper on the park tables. Everyone is gathered around with markers. He sees one of his friends drawing trees on the paper. "What's this?" Bolder asked. "A map of our place," the friend states. Boulder peers down. "WOW! There is our house and the park!" Boulder exclaims. Boulder hears loud chuckles behind him. Some older people are laughing about things that occurred "back in the day," and talking about the icebox and the seamstress that used to be on the corner. Boulder loves hearing these old stories about his hometown.

***

V. CONCLUSION

The disproportionate and disruptive presence of cement plants in EJ communities leads to exacerbated impacts of the pollution produced by these plants. These impacts include long- and short- term health impacts, which Black communities are more susceptible to for a multitude of reasons that are rooted in systemic racism. Further, these impacts include socioeconomic barriers and injustices that can permanently alter the course of people's lives and have overall negative impacts on community well-being. Given the extensive and complex negative health implications of this exposure, particularly long-term exposure for Black communities situated near polluting sources, it is essential for advocates to locate and partner with communities who are suffering from exposure to polluting sources, particularly cement plants. Despite the limitations that state and federal laws may have in addressing air pollution, local advocacy support and community-driven partnerships have the potential to raise awareness about the specific

instances of injustice, such as the plant located in Overtown, and address the root causes of this widespread harm. Increased understanding of the impacts of the harm done by cement plants will further allow for preventative advocacy efforts to ensure that such plants are not located near communities that will suffer disproportionate impacts from the plant's presence.