



Increasing Accountability and Transparency in Local Policy Making as a Pathway to Reduce Asthma Disparities Among Children in North Carolina©

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POLICY BRIEF

Executive Summary

As the Greensboro Health Disparities Collaborative has shown through our [prior cancer research](#), when system-level changes designed to address racism in healthcare are implemented effectively, we not only resolve racial inequities but we improve outcomes for all patients (Cykert et al., 2020). Our successful approach to resolving inequities in cancer treatment completion relied on the principles of *accountability* and *transparency* applied to system-level policy change using an antiracism analysis of power and authority. We have previously written about the potential transferability of this approach to other health outcomes and systems, including pregnancy-related morbidity and mortality, as well as K-12 educational outcomes (Baker et al., 2021). This brief explores opportunities to apply those same principles in the context of environmental racism and illuminates policy changes that could mitigate racial inequities in asthma among North Carolinians, particularly children.

Environmental Racism is a Public Health Crisis

While there are several aspects of environmental racism that contribute to health inequities, air pollution is now considered to be the world's largest environmental health threat impacting humanity (United Nations Economic Commission for Europe, n.d.). Air pollution is a racial justice issue. Frontline communities of color are disproportionately impacted by air pollution caused by various point sources (Thompson, 2019). There are several toxic hot spots that have been identified that are contributing to staggering health disparities. In the United States (U.S.), Cancer Alley in Louisiana is historically known for the volume of petrochemicals that have inundated the lives of several frontline communities (Moses & Excell, 2020; Paradise, 2019).

Although the present-day policies that affect air quality in these settings are shaped by several distinct agencies at different levels of government, the historical thread that weaves it together is the institutional racism that drew the zoning and real-estate lending maps of the early 20th century. Municipal ordinances specifying within a community where different types of development could be located first began to appear in the late 1800s. By 1916, New York City introduced a comprehensive zoning ordinance that subsequently became the model for a policy disseminated by the U.S. Department of Commerce in the 1920s. As these new zoning ordinances were adopted during the Jim Crow era, they imprinted the racial climate of the day into the spatial DNA of cities and counties across the country.

There were initially only three categories of zoning districts: residential, commercial, and industrial. Permitted uses were 'cumulative' such that residential districts only permitted housing, but commercial districts could have both business and housing developments, and industrial districts could have all three. This established a hierarchy of desirability, based on proximity to the noise and pollution of industry (Owens, 2013). This pyramidal zoning structure, combined with the widespread use of racially restrictive covenants and redlining in the housing market, meant that communities of color were consistently forced to reside in the least valuable,

most polluted neighborhoods.

Historically, the mid-20th-century practice of redlining created racist housing policies, which undergird the environmental injustices impacting communities of color today. Redlining refers to race-based exclusionary tactics used in real estate that involved using color-coded maps that determined loan credibility in more than 200 cities across the U.S. Redlining, practice combined with zoning and other land-use policies, steered people of color to purchase homes in environmentally hazardous locations, while conversely affording white people opportunities to purchase homes in desirable suburban areas (Jackson, 2021).

Although this practice has been outlawed, its legacy persists through entrenched segregation, divestment of resources from historically redlined communities, and poor air quality as a result of urban highways, industrial plants, and landfills (Cusick, 2020). Often referred to as the urban heat island effect, it has been documented that air pollution and extreme heat have increased the overall mortality rate by 21%, risk of death by cardiovascular disease by 29.9%, and risk of death due to respiratory issues by 38% (Abrams, 2022). These adverse environmental conditions continue to exacerbate chronic conditions impacting the health of communities of color, especially for children of color.

Air Pollution & Asthma Among Children

There are two primary settings where children in North Carolina (NC) are exposed to environments that can cause or worsen asthma symptoms: home and school. As described above, the established patterns of housing segregation directly determine levels of available funding for public schools today, due to the centuries old practice of relying on property taxes to pay for public education (Greenbaum, 2013). This multiplies the harmful impact on redlined communities, in that low-quality housing stock and economic divestment leads to underfunded, poorly-maintained schools, and areas with underfunded schools drive homebuyers to seek to purchase in historically green-lined communities – perpetuating the cycle.

Poor ventilation in underfunded schools affects the health of both teachers and students via the presence of mold, allergens, and exposure to off-campus sources of contamination (Angelou-Gaetz et al., 2016; Mirabelli et al., 2006). A study conducted by researchers at the University of North Carolina at Chapel Hill (UNC Chapel Hill) and RTI International found that hog farms (i.e., concentrated animal feed operations - CAFOs) near schools were nearly 3 times as prevalent around schools with low percentages of white enrollment and high percentages of students on free and reduced lunch. Many of these schools were not only near a single swine CAFO but were located within a three-mile radius of five or more – with one school being surrounded by 27 swine CAFOs.

A 2021 report from the 21st Century School Fund estimates that more than half of the school buildings in 41% of the school districts across the country need their HVAC systems replaced or upgraded. The report estimates that for the same year, NC school districts' spending on facilities fell short of the benchmark necessary to

maintain the health and safety of students by \$2.1 billion dollars (21st Century School Fund et al., 2021). HVAC renovations alone represent nearly \$7 million dollars of the necessary renovations reported by school districts in the NC Department of Public Instruction's 2021 Facility Needs Survey (School Planning North Carolina Department of Public Instruction, 2021). It is worth noting, these shortfalls of spending on maintenance and capital expenditures are in reference to pre-pandemic ventilation standards and recommendations.

Both the NC Unified Building Code requirements and the Department of Public Instruction's (DPI) facilities recommendations for ventilation (ICC Digital Codes, 2018; School Planning North Carolina Department of Public Instruction, 2021) fall well below the Centers for Disease Control and Prevention's (CDC) new standard of 5 air exchanges per hour for all buildings and MERV level 13 air filters (Centers for Disease Control and Prevention, 2023). The DPI recommendations are also not binding – meaning there are no consequences for districts that construct or fail to maintain school facilities that meet them. In fact, the DPI guidelines specifically acknowledge that “school facilities must last for fifty or more years, and school systems generally do not have funds available to cover the costs required to maintain and repair systems that do not perform as expected” (North Carolina Department of Public Instruction, 2019).

Given this context, it should be unsurprising that asthma rates among Black children in NC are 1.6 times as high as those for white children. In 2007, the rate of Black children suffering from current asthma was more than twice that of white children (17.4% vs. 8.3%) (Liao & Chappell, 2008). Residents in low-income communities tend to rent rather than own their homes (Ganesh, 2017), and poorly maintained rental property is a significant risk factor for asthma attacks among children from low-income households (Ganesh et al., 2017). Racially, the inequities in home ownership parallel those seen across socio-economic status. A Census report from August 2023 shows that 46% of Black households own their homes compared with 75% of white households (U.S. Census Bureau, 2023).

Recommendations: Transparency and Accountability in Environmental Protection Policies

Air pollution is a known risk factor for asthma and there are a multitude of ways that structural racism influences the levels of risk that children are exposed to in their homes and at school. It is imperative to explore opportunities that could make these systems (e.g., development regulations, building codes, and housing codes) more transparent and accountable to the communities whose lives they affect. These systems are complicated, and they should be. We cannot fully simplify these complex systems as they must cater for a range of conditions. However, we can strive to make them more understandable for citizens and ensure accountability of decision-makers to those affected by policy choices.

To safely and fairly govern the wide variety of literal terrain and social enterprise needed to address zoning ordinances and building codes it is imperative that they are detailed. Simplifying these ordinances and codes may increase transparency among citizens, yet some complexity serves our other goal of accountability. For

example, projects requiring permits to be reviewed by 10 state and 4 federal agencies for health, safety, and other concerns is a method for ensuring developers do not inadvertently or cavalierly harm environmental or public health when plans are implemented. Detailed requirements for permits create a barrier of protection for the public and serve as a measure of accountability too.

State law authorizes cities and counties to use broad flexibility when crafting development ordinances to tailor them to each community's unique needs. This is a feature of state law that has the potential to allow governing boards to design significant accountability measures into their local ordinances, which many do, but it also allows governing boards to design a lack of such measures into their rules as well. Although state statute requires that decision-making boards consider the public interest when setting and interpreting policy, zoning laws primarily consider the interests of landowners with little consideration given to renters.

NC statutes provide stringent requirements for holding public hearings and notifying property owners within and adjacent to an area being considered for rezoning, but there is no state-level mandate to notify members of the public who reside, but *do not own land* in the district (Lovelady et al., 2023). In 2021, the NC Housing Finance Agency analyzed the racial homeownership gap and found that in 94 of 100 counties the home ownership rate among white households was more than 25% greater than among Black households. This translates overall to 75% of white households in the state paying mortgages, while 53% of Black households pay rent (Baumann-Mitchell, 2021). This results in Black residents, the majority of whom are renters, often lacking the legal clout to prevent proposals with the potential to harm the environment and health of the community health.

Mechanisms of accountability can occur before or after decisions on proposed changes to development ordinances are finalized. Required public hearings are the primary mechanism for community members to hold decision-makers accountable, but such hearings are only effective at facilitating accountability if community members know about them. There is a peculiar exception in the statutory requirement to give notice, providing governments the option to substitute a half-page newspaper advertisement for the required mailing when the number of property owners affected exceeds 50 people (Lovelady et al., 2023). Given the changes in newspaper readership over the last 20 years, this exception has the potential to allow a regulation change to be quietly slipped past numerous affected community members.

One way to promote further transparency and accountability would be to require that all residents – not only owners – be notified by mail when an amendment to a development ordinance has been proposed, and to expand the dissemination channels for notification requirements to include other media with a wider reach than newspapers. Developers should also use existing tools (e.g., Environmental Justice Mapping Tool) to gain a better understanding of the public health implications of their development plans. In some states, an environmental justice analysis is required before engaging in projects with a potential environmental health impact. Further, integrating more stringent oversight and self-audits can prevent future public health issues (Wang, 2022).

North Carolina land-use law specifies how many people should be appointed to municipal regulatory boards, but apart from requiring historic preservation commissions to have members with expertise in historic building design, there are no other requirements for members to bring specific expertise (Lovelady et al., 2023). Cities with extrajudicial territories (unincorporated areas that are subject to select city regulations) are required to include members who live in those territories, but county and city planning boards do not have to be representative of the communities over which they exert influence. Mandating that planning board membership include renters, as well as property owners and requiring representation by residents from all regions of a jurisdiction could increase the board's transparency and accountability to the broader community.

Conclusion

Ultimately, to tackle racial inequities impacting public health, including childhood asthma rates linked to air pollution, there must be a concerted effort by all levels of government to establish environmental justice-focused policies that are transparent and accountable to communities of color, which disproportionately suffer. Yet, we must also consider local, state, and federal policies that are not directly linked to environmental justice, such as housing practices, so that we can address air pollution more holistically. It is imperative to eliminate structural racism linked to air pollution from an array of angles and systems that directly and indirectly influence this dire environmental justice issue. Improving air quality helps everyone. Yet, communities, families, and children of color will particularly reap the benefits of environmental justice-focused policies that protect them from living, working, learning, and playing in toxic filled environments that increase their risk of adverse health outcomes.

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