

April 22, 2024

*Via email*

Governor's Environmental Justice Advisory Council  
c/o Jeff Hart  
Policy Advisor  
Office of Governor Roy Cooper  
jeff.hart@nc.gov

Secretary Joey Hopkins  
North Carolina Department of Transportation  
jhopkins@ncdot.gov

**Re: Comments on the North Carolina Department of Transportation's Draft Environmental Justice Goals**

Dear Council Members, Secretary Hopkins, and Mr. Hart,

We write on behalf of the undersigned organizations to comment on the North Carolina Department of Transportation's ("NCDOT") Draft Agency Goals for Advancing Environmental Justice in North Carolina.<sup>1</sup> These draft goals are a great start, and we commend NCDOT for setting more than the bare minimum of three goals required by Executive Order 292. We particularly commend the Department for prioritizing public participation, safety, and equitable access to transportation, and we have suggestions to strengthen those goals.

The goals, however, overlook a few critical sources of environmental injustice that need to be included if North Carolina is to truly advance environmental justice in the transportation sector. In particular, NCDOT should more explicitly address (1) historic transportation-related harms, including transportation-related air pollution and the impact of highway expansion on communities, (2) climate resilience issues such as emergency access and flooding, and (3) disproportionate impacts to and meaningful engagement of people with disabilities. Finally, NCDOT should ensure all goals are outcome-oriented, measurable, and quantifiable, so NCDOT can be held accountable for making progress on these critical goals.

I. Addressing Historic and Ongoing Transportation-Related Harms

The draft goals make some mention of how Black, Indigenous, Latinx, and low-wealth communities have historically been excluded from transportation decisionmaking, but they are mostly silent on the harms this exclusion caused. This omission must be corrected in the final draft by acknowledging how transportation infrastructure, and specifically highway projects, have contributed to the displacement and fragmentation of Black, Indigenous, Latinx, and low-wealth communities. These projects continue to harm underserved populations through traffic-related air pollution, urban heat islands, stormwater runoff, more frequent flooding, and higher rates of vehicle collisions, deaths, and injuries.

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<sup>1</sup> *Agency Goals for Advancing Environmental Justice in North Carolina*, N.C. Dep't of Transp. (Feb. 23, 2024), <https://governor.nc.gov/transportation-environmental-justice-goals/download?attachment>.

The goals should specifically acknowledge and address these historic injustices.<sup>2</sup> NCDOT must take responsibility for the destructive effects of bisecting communities for highway projects, including the loss of whole neighborhoods, business districts, and generational wealth. These harms have not been borne equally. In North Carolina, there are far too many examples of predominantly Black communities bearing the brunt of building or expanding highways. To name a few, NC 147 destroyed the historic Black neighborhood of Hayti in Durham.<sup>3</sup> One of the centers of Black culture in Asheville, the Burton Street community, was cleaved by highway expansion decades ago and is currently threatened once again by the planned expansion of I-26.<sup>4</sup> And Charlotte's historic Black West End community was decimated by I-77 in the 1960s and 70s, displacing more than 240 families.<sup>5</sup>

The harmful effects of highway expansions continue today.<sup>6</sup> The location of highways in and near Black, Indigenous, and Latinx communities has resulted in ongoing, disproportionate exposure to traffic-related air pollution from vehicles—including fine particles, carbon monoxide, ozone, benzene, polycyclic aromatic hydrocarbons, and nitrous oxides.<sup>7</sup> As a result, impacted communities experience higher risk of illnesses like asthma, atherosclerosis, coronary heart disease, and other adverse health outcomes.<sup>8</sup>

In light of these historic and ongoing environmental injustices, NCDOT should revise its environmental justice goals to:

- Acknowledge the legacy of harm caused by divisive highway projects, and the ways in which the siting of highways in and near Black, Indigenous, Latinx, and low-wealth communities affect people today;
- Commit to identifying, mapping, and seeking federal support to address transportation-related sites with legacy pollution;
- Include in the goals' objectives and outcomes measures that remedy these harms more explicitly; for example, setting goals related to reducing illness caused by

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<sup>2</sup> Federal programs and initiatives, including the Reconnecting Communities Pilot and Neighborhood Access and Equity grant programs, and the Justice40 initiative, acknowledge and seek to address some of these historic harms.

<sup>3</sup> See, e.g., Joel Brown, *Durham's Hayti Community: A Black Business Mecca Crushed by Empty Promises Reckons with the Past*, ABC 11 Eyewitness News (Feb. 22, 2021), <https://abc11.com/durham-hayti-community-freeway-history-black/10362504/>.

<sup>4</sup> See, e.g., Johnnie Grant, *I-26 and What's Next for the Burton Street Community*, The Urb. News (Dec. 14, 2015), <https://theurbannews.com/our-town/2015/i-26-and-whats-next-for-the-burton-street-community/>.

<sup>5</sup> See, e.g., *Highways and the West End*, Johnson C. Smith Univ. (last visited Apr. 1, 2024), <https://www.westendcharlotte.org/highway>.

<sup>6</sup> See generally Letter from Chandra T. Taylor-Sawyer, SELC to USDOT (June 30, 2023) (attached).

<sup>7</sup> See, e.g., Lara P. Clark et al., *National Patterns in Environmental Justice and Inequality: Outdoor NO<sub>2</sub> Air Pollution in the United States*, 9 PLoS One e94431 (Apr. 15, 2014) (nitrogen dioxide); Ying Liu et al., *Revisiting the Estimations of PM<sub>2.5</sub>-Attributable Mortality with Advancements in PM<sub>2.5</sub> Mapping and Mortality Statistics*, 666 Sci. Total Env't 499 (May 20, 2019) (particulate matter); Gregory M. Rowangould, *A Census of the US Near-Roadway Population: Public Health and Environmental Justice Considerations*, 25 Transp. Rsch. Part D: Transp. & Env't (Dec. 2013).

<sup>8</sup> See, e.g., Allison J. Burbank et al., *Environmental Justice and Allergic Disease*, 151 J. Allergy Clinical Immunology 656 (2023); Miranda R. Jones, *Race/Ethnicity, Residential Segregation, and Exposure to Ambient Air Pollution*, 104 Am. J. Pub. Health 2130 (2014); Wen Qi Gan, *Long-Term Exposure to Traffic-Related Air Pollution and the Risk of Coronary Heart Disease Hospitalization and Mortality*, 119 Env't Health Persps. 501 (Apr. 2011); Gregory C. Pratt, *Traffic, Air Pollution, Minority and Socio-Economic Status: Addressing Inequities in Exposure and Risk*, 2015 Int'l J. Env't Rsch. Pub. Health 5355 (2015).

traffic-related air pollution or increasing investment in projects to reconnect impacted communities;

- Ensure NCDOT complies with the Uniform Relocation Assistance and Real Property Acquisition Act, a federal law establishing minimum standards for certain federally funded programs to protect and assist people whose property is acquired using eminent domain; and
- When it updates transportation infrastructure like roads, commit to working with local government entities to extend other municipal amenities like safe drinking water, sewer, and internet service, and paved residential streets to historically and presently underserved Black, Indigenous, and Latinx communities.

## II. Addressing Climate Resilience

The goals are noticeably silent on climate resilience. NCDOT should revise its goals to recognize and address three key facts related to the intersection between transportation, emissions, environmental justice, and climate change. First, transportation is the leading source of climate-changing emissions in our state.<sup>9</sup> Second, environmental justice communities often experience the worst effects of flooding, sea level rise, and extreme weather events.<sup>10</sup> And third, access to evacuation infrastructure and disaster response preparation is not equitably distributed.<sup>11</sup>

As many North Carolinians experienced after the most recent major hurricanes, severe storms can leave whole communities stranded, cutting off access to critical supplies, healthcare, and other services for weeks.<sup>12</sup> In addition, in the summer, many public transit users suffer from exposure to extreme heat while waiting for the bus.<sup>13</sup> These impacts disproportionately affect certain populations, including older adults, children, low-income communities, and communities of color, which have less capacity to prepare for and manage the effects of climate change.<sup>14</sup>

NCDOT's silence on resilience is surprising given NCDOT's current efforts in this area. NCDOT committed in its 2022 Resilience Strategy Report to include resilience assessments in

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<sup>9</sup> *North Carolina Greenhouse Gas Inventory (1990-2050) 2*, N.C. Dep't of Env't Quality (Jan. 2024), <https://edocs.deq.nc.gov/AirQuality/DocView.aspx?id=468498&dbid=0&repo=AirQuality&cr=1>.

<sup>10</sup> See, e.g., Leah R. Handwerger et al., *Present and Future Sea Level Rise at the Intersection of Race and Poverty in the Carolinas: A Geospatial Analysis*, 3 J. Climate Change & Health 100028 (Aug. 2021); Alique G. Berberian et al., *Racial Disparities in Climate Change-Related Health Effects in the United States*, 2022 Current Env't Health Rpts. 451 (May 28, 2022).

<sup>11</sup> See, e.g., Disaster Tech. Assistance Ctr. Supplemental Rsch. Bull., *Greater Impact: How Disasters Affect People of Low Socioeconomic Status*, Substance Abuse & Mental Health Servs. Admin. (July 2017), [https://www.samhsa.gov/sites/default/files/dtac/srb-low-ses\\_2.pdf](https://www.samhsa.gov/sites/default/files/dtac/srb-low-ses_2.pdf); Takahiro Yabe & Satish V. Ukkusuri, *Effects of Income Inequality on Evacuation, Reentry and Segregation After Disasters*, 82 Transp. Rsch. Part D: Transp. & Env't 102260 (May 2020).

<sup>12</sup> See, e.g., Elisha Fieldstadt et al., *Hundreds Rescued, Many Still Trapped in New Bern, N.C., as City is Battered by Florence*, NBC News (Sept. 14, 2018), <https://www.nbcnews.com/news/weather/nearly-150-people-trapped-new-bern-n-c-small-city-n909551>.

<sup>13</sup> See Andrew M. Fraser & Mikhail V. Chester, *Transit System Design and Vulnerability of Riders to Heat*, 4 J. Transp. & Health 216 (Mar. 2017).

<sup>14</sup> Lajward Zahra, *Cutting Funding for Public Transportation Amid Extreme Temperatures is a Match Made in Hell for Marginalized Communities*, Prism (Aug. 9, 2022), <https://prismreports.org/2022/08/09/cutting-funding-for-public-transportation-amid-extreme-temperatures-is-a-match-made-in-hell-for-marginalized-communities/>.

its long range plans and to incorporate resilience throughout the planning and development process.<sup>15</sup> In its 2023 Climate Strategy Report, NCDOT committed to evaluating the impacts of climate change on transportation infrastructure and to make plans to address the threats it poses, including by incorporating resilience into design guidance.<sup>16</sup> NCDOT should reflect these commitments in its environmental justice goals and include measures to ensure it implements resilience projects in environmental justice communities. NCDOT should also conduct extensive public engagement to ensure it is addressing the needs of impacted communities.

### III. Addressing People with Disabilities

NCDOT's goals are also silent on an entire category of people that fall under the federal definition of environmental justice: people with disabilities.

As Executive Order 292 recognizes, "North Carolinians, irrespective of . . . ability . . . have the right to enjoy a sustainable environment with clean air, clean water, and clean soil and that is free from environmental degradation."<sup>17</sup>

Disabilities may include mobility, sight, hearing, and unseen limitations that impact a person's ability to adapt to environmental conditions. Such conditions might result in limited access or safety when moving from point to point. Some people with disabilities also experience sensitivities to exhaust fumes and other respiratory irritants.

The choices NCDOT makes about our transportation network impact how we navigate our environment and who has meaningful access to public facilities, and it is critical for NCDOT to ensure accessibility for all people. Car-centric design excludes people who may not have the ability to drive from affordable mobility choices and convenient access to jobs and services. Even when public transit is an option, public transit stops without accessible curbs can create dangerous situations for people with disabilities who need to board or exit a bus. This increases the risk for people with disabilities who use public transit out of necessity, and reduces the likelihood others with disabilities will attempt to use it. In both scenarios, NCDOT's choice can perpetuate inequities with respect to their access to a healthy, sustainable, and resilient environment.

NCDOT should update its environmental justice goals to include people with disabilities in public engagement and to ensure its policies and projects promote accessibility.

### IV. Goal One: "Strive for Excellence in Public Involvement"

We appreciate NCDOT's focus on public involvement because environmental justice communities have been left out of transportation decisionmaking for decades and often are still sidelined. Agency community engagement efforts for the proposed Advanced Clean Trucks rule provide a recent example. As noted in a March 3, 2023 letter highlighting the problems with the

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<sup>15</sup> 2022 Resilience Strategy Report, N.C. Dep't of Transp., <https://www.ncdot.gov/initiatives-policies/Transportation/transportation-resilience/Documents/ncdot-resilience-report.pdf> (last visited Apr. 4, 2024).

<sup>16</sup> 2023 Climate Strategy Report, N.C. Dep't of Transp. (Oct. 1, 2023), <https://www.ncdot.gov/initiatives-policies/Transportation/transportation-resilience/Documents/2023-climate-strategy-report.pdf>.

<sup>17</sup> Exec. Order No. 292 (Oct. 24, 2023), <https://governor.nc.gov/executive-order-no-292/open>.

outreach and other issues, the state's stakeholder engagement frequently leaves out key community leaders.<sup>18</sup> It will be important for NCDOT to engage in early and comprehensive outreach to identify and include stakeholders, as NCDOT notes in the objectives and outcomes for the public involvement goal.

Effective public involvement, however, requires more than simply identifying the relevant stakeholders. Participants must have enough familiarity with the process and issues to be able to fully engage. NCDOT should revise this goal to include a commitment to engaging with communities over time to provide people who have little or no background in transportation policy with the resources they need to meaningfully participate in decisionmaking processes.

Perhaps even more importantly, NCDOT must take action as a result of public engagement. It is not enough to hold a meeting and request input—NCDOT must incorporate stakeholder feedback into a proposed project or plan and follow up with a community to let them know how their feedback has been implemented. NCDOT must be open to making significant changes to a project, which could include a decision not to move ahead with the project or serving a transportation need through transportation demand management (“TDM”) or transportation systems management and operations (“TSMO”), rather than construction.

Otherwise, the participation process is merely a box-checking exercise that does not actually advance NCDOT's equity goals. NCDOT should modify the public involvement goal to commit to taking appropriate action in response to public feedback.

The public involvement goal can be further strengthened by incorporating other suggestions for best practices in our March 2023 letter. We urge NCDOT to:

- Proactively engage with community members more regularly;
- Ensure access to important policy discussions is not limited by wealth; for example, NCDOT events like the annual Transportation Summit should be free or state-sponsored for community members and nonprofits, and NCDOT can provide stipends for community members to participate in stakeholder meetings;
- Increase sensitivity to the cultural and community context of meetings, including but not limited to ensuring speakers are knowledgeable about the local context of places where meetings are held and prepared to answer questions about related issues in those communities;
- Improve diversity in NCDOT outreach and events by diversifying NCDOT panels and presenters and including community representatives;
- Consult with local community leaders to ensure planning efforts incorporate local priorities;
- Make all outreach materials and events accessible to people with limited knowledge of the subject matter by using accessible language and graphics, limited English proficiency, or other accommodation needs like transcription or translation services;
- Holistically discuss issues and policies so communities understand the full context and implications (e.g. in a meeting about electric vehicle charging infrastructure, take a step back to explain North Carolina's electrification efforts and how community engagement fits in); and

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<sup>18</sup> See letter from Kym Meyer, SELC, et al., to Governor Roy Cooper (March 3, 2023) (attached).

- Prepare agency staff to engage with intersecting topics, including but not limited to pollution associated with transportation, disproportionate and cumulative impacts of transportation systems and other sources, and health impacts likely to result from proposed policies.

NCDOT should revise the public involvement goal to better emphasize performance metrics that measure project *outcomes* connected to NCDOT’s public involvement efforts. Environmental justice requires both meaningful participation and fair treatment. Indeed, the environmental justice executive order specifically directs agencies to develop “EJ [environmental justice] goals and measurable *outcomes*,” not just to measure the processes that lead to those outcomes.<sup>19</sup> In the Clean Transportation Plan published one year ago, NCDOT committed to “[i]dentif[y] equity metrics to incorporate into projects and promote accountability.”<sup>20</sup> When a goal is silent regarding the outcomes of public involvement, it may not achieve equitable results, even when the stakeholder engagement process is robust.

We support NCDOT’s commitment to measuring the effectiveness of public engagement. As currently drafted, NCDOT commits to quantitatively scoring public involvement efforts to promote transparency and accountability and references including funding and mitigation measures in this evaluation. We recommend clarifying the outcomes section of the goal to more clearly include quantitative outcome-based metrics that explicitly measure (1) whether feedback was implemented, and (2) the impact of NCDOT’s actions on equity (e.g. impact on access, safety, air emissions, flooding, urban heat islands, local economies, etc.).

NCDOT should also commit to working with regional planning organizations (metropolitan planning organizations (“MPOs”) and rural planning organizations (“RPOs”)) to incorporate these best practices for meaningful public engagement in their planning processes.

Finally, NCDOT should include a commitment in this goal to improving its public participation processes if the metrics do not reflect increased equity in the form of meaningful public engagement that leads to more equitable distribution of environmental benefits and burdens and improved related health outcomes.

#### V. Goal Two: “Improve Safety and Health Outcomes for Vulnerable Road Users”

We appreciate NCDOT’s emphasis on safety in the second draft goal. NCDOT rightly acknowledges that Black, Indigenous, Latinx, and low-wealth communities are at higher risk to the safety threats posed by motor vehicles. People with disabilities are also impacted by the lack of safe, accessible, and comfortable sidewalks and other non-road transportation facilities.

To fully capture the effects of car-centric infrastructure on marginalized groups, the safety goal should be expanded beyond fatality rates to include reduced rates of injury. A singular focus on fatalities fails to account for the life-changing effects of motor vehicle crashes. For example, in 2021, 1,783 people were killed in crashes in North Carolina while more than

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<sup>19</sup> Exec. Order No. 292, Sec. 7 (Oct. 24, 2023), <https://governor.nc.gov/executive-order-no-292/open> (emphasis added).

<sup>20</sup> *Final Report: North Carolina Clean Transportation Plan 24*, N.C. Dep’t of Transp. (Apr. 5, 2023), <https://www.ncdot.gov/initiatives-policies/environmental/climate-change/Documents/nc-clean-transportation-plan-final-report.pdf>.

114,722 people were injured.<sup>21</sup> Of these crashes, thousands involved bicycles or pedestrians.<sup>22</sup> The goal also should include fatalities and injuries to all non-motorists (pedestrians, cyclists, and people using other forms of micromobility), not just pedestrians as it is currently drafted.

In addition, NCDOT should strengthen the safety goal by setting a numerical target for fatality and injury reductions. NCDOT should explicitly incorporate its prior Vision Zero safety commitments from the Strategic Highway Safety Plan, which pledges zero traffic fatalities and serious injuries by 2050, and it should set interim goals as well.<sup>23</sup> This Vision Zero commitment was re-affirmed by the Executive Committee on Highway Safety at its meeting on February 16, 2024.<sup>24</sup>

In the goal's outcomes, NCDOT should commit to implementing its 2024 Strategic Highway Safety Plan (to be released in May 2024) and 2023 Vulnerable Road User Safety Assessment, which is part of the Strategic Highway Safety Plan. The goal should reference NCDOT's 2023 Vulnerable Road User Safety Assessment.

NCDOT already has policy tools to achieve these safety goals. For example, NCDOT can increase safety by (1) consistently applying the existing Complete Streets policy early in the transportation planning process,<sup>25</sup> including incorporating Complete Streets elements in resurfacing and other maintenance activities,<sup>26</sup> (2) moving away from level of service analysis when evaluating transportation project alternatives,<sup>27</sup> (3) focusing on reducing vehicle miles traveled,<sup>28</sup> (4) setting more protective and context-sensitive speed limits,<sup>29</sup> (5) evaluating existing design standards and identifying revisions necessary to prioritize safety over speed,<sup>30</sup> and (6) deploying low-cost, interim design safety countermeasures on state roadways (“quick-

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<sup>21</sup> N.C. Div. of Motor Vehs., *North Carolina 2021 Traffic Crash Facts*, N.C. Dep't of Transp. (last visited Apr. 1, 2024), <https://connect.ncdot.gov/business/DMV/CrashFactsDocuments/2021%20Crash%20Facts.pdf>.

<sup>22</sup> See *Crash Query Tool*, N.C. Vision Zero (last visited Apr. 1, 2024), <https://ncvisionzero.org/visualizations/crashquerytool/> (3,040 crashes involving pedestrian(s) and 741 involving bicycles in 2021).

<sup>23</sup> See, e.g., *2019 North Carolina Strategic Highway Safety Plan 2*, N.C. Dep't of Transp. (Dec. 2019), <https://connect.ncdot.gov/groups/echS/Documents/2019/2019%20NC%20SHSP.pdf> (“This updated Plan . . . continues the Vision Zero approach to reach our goal of reducing fatalities and serious injuries by half by 2035, moving towards zero by 2050.”).

<sup>24</sup> See Exec. Comm. for Highway Safety, *Virtual Meeting Minutes 2*, N.C. Dep't of Transp. (Feb. 16, 2024), [https://connect.ncdot.gov/groups/echS/Documents/2024/ECHS%20Meeting%20Minutes%20\(2-16-24\).pdf](https://connect.ncdot.gov/groups/echS/Documents/2024/ECHS%20Meeting%20Minutes%20(2-16-24).pdf).

<sup>25</sup> *Complete Streets*, N.C. Dep't of Transp. (last updated Nov. 16, 2022), <https://www.ncdot.gov/divisions/integrated-mobility/multimodal-planning/Pages/complete-streets.aspx>.

<sup>26</sup> “NCDOT Complete Streets Resurfacing and Maintenance Activities Implementation Guidance” was described as “forthcomng” in February 2022 but has not yet been released.

<sup>27</sup> See, e.g., Kent Hymel, *If You Build It, They Will Drive*, 76 *Transp. Pol'y* 57 (Apr. 2019) (finding capacity expansion induces additional vehicle traffic); Dibakar Saha, *A Conceptual Framework to Understand the Role of Built Environment on Traffic Safety*, 75 *J. Safety Rsch.* 41 (Dec. 2020) (areas with two-lane roads and speed limits under 35 miles per hour have lower crash rates).

<sup>28</sup> See Todd Litman, *A New Traffic Safety Paradigm*, Victoria Transp. Pol'y Inst. (Feb. 20, 2024), <https://www.vtpi.org/ntsip.pdf> (explaining “vehicle travel reduction strategies provide safety benefits”).

<sup>29</sup> Guan Xu et al., *Speed Management is Key to Road Safety*, 85 *Pub. Roads* 24 (2022), <https://highways.dot.gov/public-roads/winter-2022/05>; see also *City Limits: Setting Safe Speed Limits on Urban Streets*, Nat'l Ass'n of City Transp. Offs. (July 2020), <https://nacto.org/safespeeds/>.

<sup>30</sup> See Fed. Highway Admin., *Moving to a Complete Streets Design Model: A Report to Congress on Opportunities and Challenges* 32 (Mar. 2022) (“Accelerate adoption of standards and guidance that promote safety and accessibility for all users and that support innovation in design”).

build” projects).<sup>31</sup> It is particularly important to emphasize safe speeds and other safety measures (rather than motor vehicle level of service or travel times) on state roadways that pass through historically underserved communities. The draft safety goal lists messaging as a strategy, which we recommend replacing with these more protective measures.

NCDOT should revise the objective section accordingly to:

- Improve safety for impacted populations by prioritizing safety outcomes over projections of vehicle delay in street and roadway design;
- Reference existing safety analyses and incorporate the most protective design feasible during resurfacings, maintenance projects, and new projects;
- Use existing policy tools, such as Complete Streets, vehicle miles traveled reduction strategies, and speed limits, to maximize safety outcomes; and
- Prioritize investment in safety infrastructure and community access to safe and affordable transportation modes in historically underserved project areas.

NCDOT should also elaborate on “improved public health outcomes.” The background section includes examples of traffic injuries and human trafficking as safety-related risks and inequities but does not expand on the larger public health effects of transportation, especially on frontline populations. For example, people living adjacent to highways and public transit drivers and users, including children on school buses, are often exposed to traffic-related air pollutants like diesel exhaust, which can cause numerous health problems. Active transportation investments, like sidewalks and bike facilities, have physical and mental health benefits because they encourage people to exercise and spend time outdoors. NCDOT should revise the safety goal to be more specific on health-based metrics. This could include measuring an increase in meaningful choice of transportation modes and rates of active transportation, and reduction in illnesses such as asthma that are associated with traffic-related air pollution.

In the background section, NCDOT should specifically note historically underserved areas often lack “*separated* bike facilities,” not just “bike lanes.” High-quality infrastructure, including side paths, separated bike lanes, and completed greenway networks, for people walking, biking, or rolling is a key component of safe mobility for all.

Finally, NCDOT should refer to vehicle collisions as “crashes,” rather than “accidents,” because they are usually preventable consequences of our transportation planning and funding decisions and are not inevitable or unexpected. Furthermore, referring to groups as “vulnerable” because of historic exclusion from decisionmaking and underinvestment in safe transportation infrastructure de-emphasizes the role of NCDOT’s own policy decisions in creating unsafe environments for these groups. We suggest referring to these groups in the context of Goal 1 as “historically and presently excluded” and in the context of Goal 2, “road users disproportionately exposed to safety hazards.”

#### VI. Goal Three: “Eliminate Disparities in Access to Opportunities and Services”

We strongly support NCDOT’s goal of eliminating disparities in access to opportunities and services, especially the suggested strategy of working with local governments and

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<sup>31</sup> NCDOT Interim Design Safety Pilot Project, *Final Report* (Sept. 2023), <https://connect.ncdot.gov/projects/BikePed/Documents/interim-design-safety-pilot-program.pdf>.



environmental justice communities to develop competitive grant applications for discretionary grant funding for multimodal projects. Given the many limitations on multimodal projects in state law,<sup>32</sup> federal programs are often the primary opportunities to fund critical projects, especially in areas where a local government is unable to finance the project itself.

It is often difficult, however, for many communities to obtain the local match funding required for federal discretionary grants and then to administer the grant and deliver the project. NCDOT should strengthen the access goal by adding commitments to not only assist with grant applications, but also to secure matching funds and work with communities to administer grants and to implement projects. This support is crucial because many communities do not have the ability to manage the complexity of federal funding and therefore do not even apply for these funds. Because NCDOT does not normally construct or maintain independent (standalone) bicycle and pedestrian projects, it means those kinds of projects are often not built in disadvantaged communities where they are most needed. For example, in the Multimodal Planning Grant program, NCDOT has reduced the administrative burden for local communities by using prequalified on-call firms to prepare the plans. Similar creative approaches are needed to assist especially smaller communities with the implementation of bicycle, pedestrian, and “quick-build” projects.

NCDOT should also reaffirm its commitment to Justice40, which is a federal initiative to ensure 40 percent of the overall benefits of certain investments flow to disadvantaged communities that are marginalized by underinvestment and overburdened by pollution. These commitments should be included as outcomes of the access goal.

NCDOT should not limit this environmental justice goal to federal discretionary funding—it should also address the ways in which its state funding practices affect environmental justice and equity. NCDOT should supplement this goal with a commitment to update its project selection criteria to favor projects that improve equity and disfavor projects that have disproportionate effects on historically impacted communities. Project selection is a crucial area for NCDOT to improve equity. During the last funding cycle (“P7”), NCDOT’s SPOT workgroup recommended, and the Board of Transportation approved, including equity in the criteria for non-highway projects only. However, the equity measure would carry no weight for P7—it would be included merely as a test. In these environmental justice goals, NCDOT should commit to incorporating equity as a weighted measure for both highway and multimodal projects in future prioritization cycles.

Other changes to NCDOT’s project prioritization process would also improve equity. For example, the practice of setting aside at least 90% of transportation funding for highway projects (the “normalization percentage”) and defining the project selection criteria in a way that over-emphasizes the importance and benefits of expanding roadways disproportionately affects Black, Indigenous, Latinx, and low-wealth communities, which have historically been more likely to be divided by highway projects and impacted by tailpipe pollution.<sup>33</sup> In addition to historic investment in harmful infrastructure, the lack of funds available for multimodal transportation

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<sup>32</sup> See, e.g., N.C. Gen. Stat. § 136-189.11(d)(3)(c) (prohibiting NCDOT from funding “independent bicycle and pedestrian improvement projects”); *id.* at § 136-189.11(d1) (imposing additional requirements for light rail projects).

<sup>33</sup> See, e.g., *Dividing Highways: How Historic Black Communities Are Seeking Justice*, SELC (June 17, 2023), <https://www.southernenvironment.org/news/southern-highways-lead-to-opportunities-for-environmental-justice/>.

has left many areas with inadequate multimodal infrastructure, making it difficult for people to travel safely, especially people who lack access to a car. NCDOT should commit to policy changes including lowering or eliminating the minimum normalization percentage set aside for highway projects, or committing a percentage of NCDOT's budget to be used in transportation-disadvantaged areas.

NCDOT could also add a criterion for air pollution to its scoring process in the benefit-cost category. As discussed above, transportation-related air pollution is a major environmental justice issue. Moving forward, NCDOT should consider the relative costs and benefits of a project's impact on air quality.

Aside from modifying its funding practices, NCDOT can also eliminate disparities in access to opportunities and services by addressing a root cause of these disparities: land use problems. Many land use decisions have pushed affordable housing increasingly farther away from jobs and other services, causing people with the least means to have to travel the longest distances. While NCDOT is not the only party responsible for sprawl—local governments, private developers, and others play a hand—the agency's practice of building new and wider roads is a major contributing factor due to induced growth and demand. Rather than building roads based on speculative forecasts of future growth, which are often flawed, NCDOT should "backcast," and plan investments that will harness growth in ways that support more compact and connected communities and that leverage existing infrastructure investments (e.g., water, sewer, roads). NCDOT should update the access goal to address this key issue.

Moreover, we encourage NCDOT to emphasize reducing vehicle miles traveled ("VMT") as a strategy for promoting access and equity. Reducing the number of cars on the road reduces harmful traffic-related air pollutants, helps address climate-changing emissions, and reduces crashes, all of which are public health threats disproportionately faced by overburdened communities. Many VMT reduction strategies, like expanding public transit, also increase equity of access to mobility options, and promote smarter land use choices that site affordable housing, jobs, and services closer together, which improves equity. As one of its outcome metrics, NCDOT should set a VMT reduction goal of 20-25% per capita by 2050.

As with the other goals, we urge NCDOT to quantify the outcome metrics and set a target that is ambitious, yet achievable. At a minimum, in addition to the VMT reduction target, we suggest setting targets for increased access to jobs, schools, affordable housing, healthcare, grocery stores, and other services; availability of non-highway modes of transportation; and safety. NCDOT should commit to working with MPOs and RPOs to adopt these goals as well.

## VII. Goal Four: "Mitigate Canopy Deserts"

We agree with NCDOT's assessment that deforestation across our state is a serious problem, including in urban areas, and that the effects of extreme heat are disproportionately experienced in low-wealth areas and in communities of color. We note, however, that deforestation can be falsely raised as a talking point for NIMBYists aiming to prevent compact urban development. NCDOT must be careful to ensure its forestry policies are deliberately aimed at mitigating canopy deserts and do not inadvertently interfere with good land use policy.

In this goal, NCDOT must be more explicit about the relationship between mitigating canopy deserts and environmental justice. Strategies to mitigate or adapt to the effects of climate

change, while important, should not be conflated with environmental justice goals. We suggest NCDOT adjust the proposed outcomes for this goal to focus on mitigation of heat islands in low-wealth areas and communities of color, using a metric like percent decrease in heat-related illness and injuries in low-income and disadvantaged communities. Alternatively, NCDOT could aim to increase the amount of canopy cover in these areas, and set a goal like a certain percent increase in reforestation in disadvantaged areas with the least tree cover. Fundamentally, NCDOT must focus its reforestation efforts on environmental justice communities for this to be an “environmental justice” goal.

Part of NCDOT’s research and development should assess how disadvantaged communities have been historically excluded from the ecological benefits of transportation improvements and how a reforestation plan can avoid these pitfalls and promote equitable climate change mitigation and adaptation strategies.

As a matter of urban forestry, NCDOT should set measurable, achievable goals. The current outcomes for the forestry goal are vague and fail to communicate NCDOT’s desired outcomes. For example, “ecological restoration” is a term of art relating to landscape-scale proportions of forest types and disturbance patterns, not just an increase in the number of trees. NCDOT should revise this outcome to aim for an increase in restoration and continued recruitment of mature, native trees and healthy understories.

Additionally, the forestry goal’s focus on restoration is necessary, but not sufficient. NCDOT must consider trees throughout project development; it is not enough to restore them after cutting them down. NCDOT should routinely develop alternatives that avoid deforestation in the first place and refine their designs with a premium placed on retaining existing forests and preventing deforestation. This should be added as an objective and one or more associated outcomes should be included to measure the success of this objective. For example, NCDOT could add an objective to avoid deforestation to the maximum extent practicable when planning, designing, and building projects, and an associated outcome that measures the reduction in the number of projects that involve deforestation or the amount of deforestation per project.

NCDOT could also evaluate existing policies that result in the loss of tree canopy, such as clear zone policies that require cutting of mature trees near the roadway.<sup>34</sup> While clear zone requirements are intended to address motorist safety, arbitrary application in urban design contexts can further reduce urban tree canopy and conflict with non-motorist safety (e.g., by removing barriers between the roadway and the sidewalk).<sup>35</sup>

NCDOT should also review its street design guidelines to make it easier to plant larger, shade-providing trees in rights-of-way, including medians, even if that means reducing speeds. Planting street trees should be part of roadway projects in urban areas. The provision for street trees needs to be incorporated early in project development—it is often difficult to add street trees after the fact if they have not been contemplated early in the process.

#### VIII. Goal Five: “Invest in Historically Underserved Communities”

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<sup>34</sup> *Roadway Design Manual*, N.C. Dep’t of Transp. (Nov. 2023), <https://connect.ncdot.gov/projects/Roadway/Pages/RDM.aspx>.

<sup>35</sup> Wesley E. Marshall et al., *Urban Clear Zones, Street Trees, and Road Safety*, 29 *Resch. Transp. Bus. & Mgmt.* 136 (Dec. 2018), <https://www.sciencedirect.com/science/article/abs/pii/S221053951730161X>.

We appreciate NCDOT's recognition that transportation projects have historically excluded some communities from the benefits of increased connectivity and access while foisting the burdens of those projects upon these communities. However, this goal lacks focus by evaluating both the community impacts of project investments (like increased transportation access, safety, and environmental quality) and workforce development. Consider breaking these into two (or more) separate goals to improve clarity.

Like the other goals, this draft goal also suffers from a lack of measurability. NCDOT must be clearer about what "economic growth opportunities" means, not only because more specificity will better allow progress to be measured, but because many communities have been promised "economic growth" or "economic development," only to have a major polluter come into town and deplete their quality of life. Workforce development and local job creation goals must also ensure that the projects provide sustained economic and environmental benefits to the community.

This goal should also more clearly ensure the economic benefits of investments of taxpayer dollars in transportation projects flow back into impacted communities. From a workforce development perspective, this may include hiring local contractors and disadvantaged business entities ("DBEs") and working with local Black, Indigenous, Latinx-owned businesses to become recognized and certified as DBEs, as certification can pose a barrier. For example, Hood Huggers International in Asheville has formed its own contracting company so it can recapture benefits for the Burton Street neighborhood community from the I-26 project, but it is having difficulty because it has yet to be certified and therefore is not as competitive in the bidding process.<sup>36</sup> Within this goal, NCDOT should set numeric targets for DBE certifications and total amount paid to local contractors in underserved communities. DBE goals for projects in disadvantaged communities should seek to exceed program-wide DBE goals required by federal law.

Finally, NCDOT should revise the first objective to include the 14 NCDOT Highway Divisions, in addition to the MPOs and RPOs, because the divisions can submit projects directly to the SPOT process.

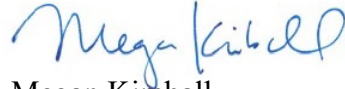
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<sup>36</sup> See *About Us*, Hood Huggers Int'l, <https://hoodhuggers.com/about-us/> (last visited Mar. 11, 2024).

IX. Conclusion

Thank you for the opportunity to comment. If you have any questions or need more information, please contact us at [mkimball@selcnc.org](mailto:mkimball@selcnc.org) or (919) 967-1450.

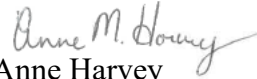
Sincerely,



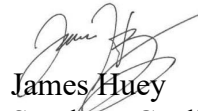
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Senior Attorney



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Associate Attorney



Anne Harvey  
Southern Coalition for Social Justice  
Chief Counsel for Environmental  
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James Huey  
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On behalf of:

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April 22, 2024

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**Enclosures:** Letter from Chandra Taylor-Sawyer, SELC, to USDOT (June 30, 2023)  
Letter from Kym Meyer, SELC, et al., to Governor Roy Cooper (March 3, 2023)

**ENCLOSURES**



June 30, 2023

**Submitted via:** <http://www.regulations.gov>  
**Contact Name:** Chandra T. Taylor-Sawyer  
ctaylor@selcnc.org

**Institution Name:** Southern Environmental Law Center  
**Re:** Docket No, DOT-OST-2023-0087  
USDOT Equity Action Plan

We commend DOT's focus on equity in transportation and look forward to sharing these comments to strengthen and enhance your efforts. As written, the Equity Action Plan advances equity and addresses historic injustice through the lens of equal transportation access and wealth creation. However, an equally critical element of equity is removing the traffic-related burdens many disadvantaged and underserved communities experience. Many of these traffic-related burdens are health burdens resulting from unequal, cumulative exposure to traffic-related air pollution (TRAP) such as fine particles, carbon monoxide, ozone, benzene, polycyclic aromatic hydrocarbons, and nitrous oxides from vehicles.

In the Request for information, DOT specifically seeks input regarding how DOT works to advance equity has impacted organizations and communities, as well as input on performance metrics, **data sets**, tools, and **research** to measure and **advance transportation equity**. **Please accept these comments containing research sources to support how communities of color are disproportionately exposed to TRAP as well as how the same communities experience a disproportionate burden of TRAP-related disease.**

The updated Equity Action Plan should explicitly address the existence of inequitable distribution of TRAP exposures, the health disparities these exposures generate, and deliberately prioritize projects that reduce or eliminate inequitable TRAP exposure for overburdened and underserved communities.

## **I. Minority Communities are Disproportionately Exposed to TRAP**

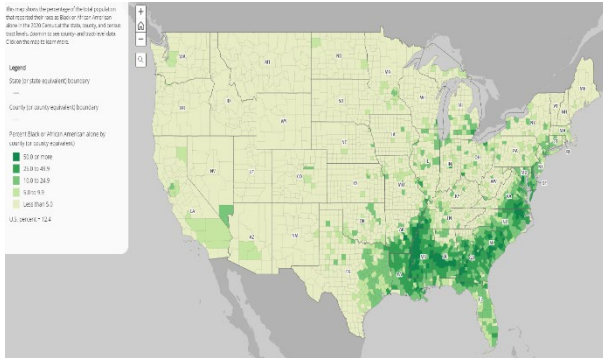
Overburdened and underserved communities of color disproportionately experience elevated levels of exposure to TRAP.<sup>1</sup> For African Americans, these inequitable exposures are particularly stark in the Southeastern United States, where there the population is concentrated and where there is elevated

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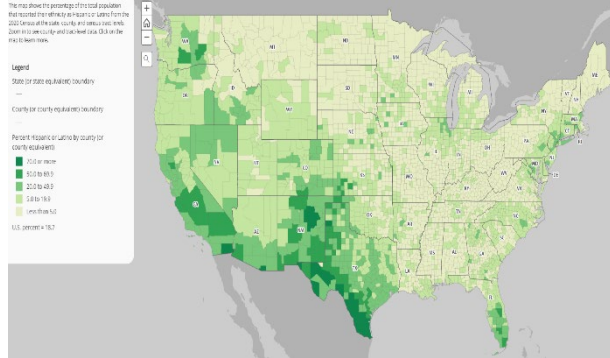
<sup>1</sup> Clark LP, Millet DB, Marshall JD. National patterns in environmental injustice and inequality: outdoor NO<sub>2</sub> air pollution in the United States. PLoS One. 2014 Apr 15;9(4):e94431. doi: 10.1371/journal.pone.0094431. PMID: 24736569; PMCID: PMC3988057.; Liu Y, Zhao N, Vanos JK, Cao G. Revisiting the estimations of PM<sub>2.5</sub>-attributable mortality with advancements in PM<sub>2.5</sub> mapping and mortality statistics. Sci Total Environ. 2019 May 20;666:499-507. doi: 10.1016/j.scitotenv.2019.02.269. Epub 2019 Feb 18. PMID: 30802665. <https://pubmed.ncbi.nlm.nih.gov/30802665/>; Rowangould, G. M. (2013). A census of the US near-roadway population: public health and environmental justice considerations. Transportation Research Part D: Transport and Environment: 25; 59-67. DOI: <https://doi.org/10.1016/j.trd.2013.08.003>

concentration of PM<sub>2.5</sub>. For example, the graphic developed by Li, Zhao, Vanos, and Cao clearly shows elevated concentrations of PM<sub>2.5</sub> in the Eastern United States (graphics included below).

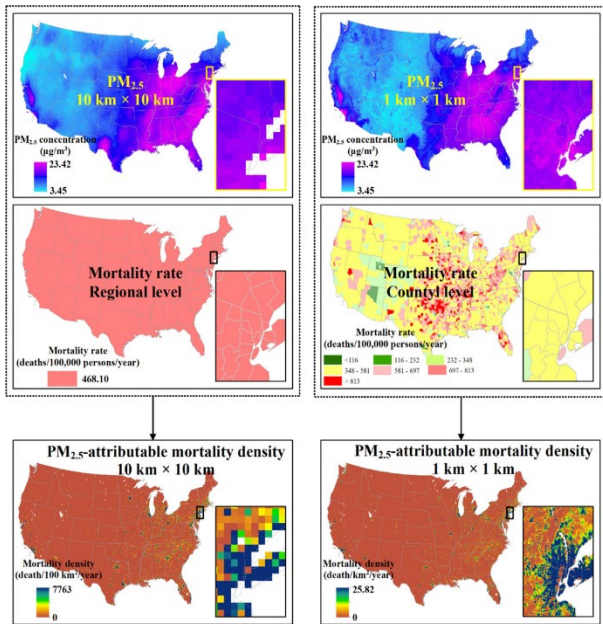
*Percent Black or African American By County (2020 US Census)<sup>2</sup>*



*Percent Hispanic or Latino by County (2020 US Census)<sup>3</sup>*



*PM<sub>2.5</sub> Exposure from Burbank et. Al. (2023)<sup>4</sup>*



Racial and ethnic minority populations experience higher TRAP exposure compared to white populations. Non-Hispanic black and Hispanic children in the United States have a higher exposure to traffic (and thus, TRAP) compared to non-Hispanic white children. One study notes “in most counties a disproportionate number of non-white residents live in high traffic density areas (84% of US counties) ... The disparities among non-whites are greatest in the southern states; however, there is no general geographic region of the country without any disparity”.<sup>5</sup>

We recognize additional data and research on how underserved and overburdened communities experience elevated levels of TRAP is needed to strengthen DOT’s analyses. We have provided a subset of this research for your reference below.

<sup>2</sup> (2023). US Census Demographic Data Map Viewer. *United States Census Bureau*. Accessed June 28, 2023 at <https://mtgis-portal.geo.census.gov/arcgis/apps/MapSeries/index.html?appid=2566121a73de463995ed2b2fd7ff6eb7>

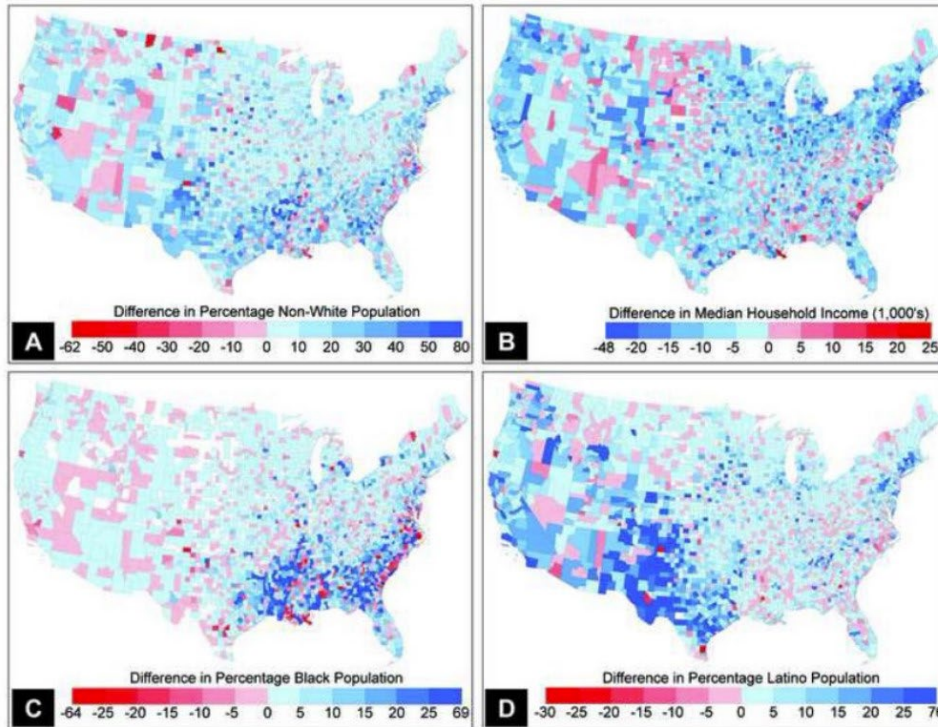
<sup>3</sup> See 2023 US Census Demographic Data Map Viewer

<sup>4</sup> Burbank, A. J., Hernandez, M. L., Jefferson, A., Perry, T. T., Phipatanakul, W., Poole, J., and Matsui, E. C. (2023). *Journal of Allergy and Clinical Immunology*: 151(30); 656-670. DOI: 10.1016/j.jaci.2022.11.025

<sup>5</sup> Rowangould, G. M. (2013). A census of the US near-roadway population: public health and environmental justice considerations. *Transportation Research Part D: Transport and Environment*: 25; 59-67. DOI: <https://doi.org/10.1016/j.trd.2013.08.003> (page 8)

*Texas and southern sources regarding exposure to TRAP*

- [Chakraborty J, Aun JJ](#). Social Inequities in Exposure to Traffic-Related Air and Noise Pollution at Public Schools in Texas. *Int J Environ Res Public Health*. 2023 Mar 29;20(7):5308. DOI: 10.3390/ijerph20075308. PMID: 37047923; PMCID: PMC10094516.
  - This study “found children attending schools with the highest exposure to both NO<sub>2</sub> and road noise (top 25%) were significantly more likely to be Black, Hispanic, and eligible for free/reduced lunches (socioeconomically deprived) ... Schools with greater NO<sub>2</sub> exposure were significantly more likely to serve racial/ethnic minority and younger students...”
- [Chakraborty J](#). Children's exposure to vehicular pollution: Environmental injustice in Texas, USA. *Environ Res*. 2022 Mar;204(Pt A):112008. doi: 10.1016/j.envres.2021.112008. Epub 2021 Sep 4. PMID: 34492280.
  - “Results reveal significantly greater traffic proximity and NO<sub>2</sub> exposure in Texas school districts with higher percentages of children, after controlling for clustering, population density, and other socio-demographic factors. Districts exposed to higher levels of traffic proximity and NO<sub>2</sub> exposure also contain significantly greater proportions of racial/ethnic minority, foreign-born, disabled, and socioeconomically vulnerable children. These findings highlight the urgent need to develop mitigation strategies for reducing vehicular pollution exposure, especially in districts with higher proportions of socially disadvantaged students that could be additionally burdened with limited resources.”
- [Park, Y. M. and Kwan, M.](#) (2020). Understanding Racial Disparities in Exposure to Traffic-Related Air Pollution: Considering the Spatiotemporal Dynamics of Population Distribution. *International Journal of Environmental Research Public Health*: 17(3); 908. DOI: 10.3390/ijerph17030908
  - “By considering people’s daily movement patterns and spatiotemporal distributions of racial groups, it finds that the association between segregation and exposure to traffic-related air pollution differs by race and time of day.”
  - “At night, if white people are more segregated (i.e., higher levels of residential segregation), they are more likely to experience lower levels of near-road exposure. ... These findings indicate that although all vehicle drivers in [the Atlanta metropolitan area (20 counties)], regardless of their race/ethnicity, are responsible to some degree for high levels of traffic-generated air pollution in the central cities (though white suburban/exurban commuters probably have the greater responsibility for it), white people can reduce their burden of air pollution by living in suburban/exurban areas far away from high-traffic roads, which may not always be the case for other racial groups.”
- [Rowangould, G. M.](#) (2013). A census of the US near-roadway population: public health and environmental justice considerations. *Transportation Research Part D: Transport and Environment*: 25; 59-67. DOI: <https://doi.org/10.1016/j.trd.2013.08.003>



Note: Difference in the percentage of non-white population (a) average median household income (b), percentage black population (c), and percentage Latino population (d) between the lowest and highest traffic density quintile for each US county.

**Figure 4. Spatial distribution of county level income and race disparities.**

- “The maps in Figure 4 show the difference in population characteristics between the lowest and highest traffic density quintiles for each county in the US. Figures 4a and 4b indicate that in most counties a disproportionate number of non-white residents live in high traffic density areas (84% of US counties) ... The disparities among non-whites are greatest in the southern states; however, there is no general geographic region of the country without any disparity. ... Blacks are much more likely to live in high traffic density areas in a region following the coast from East Texas to Virginia ... These areas correspond to regions with higher baseline populations of black ... residents”
- [Burbank, A. J., Hernandez, M. L., Jefferson, A., Perry, T. T., Phipatanakul, W., Poole, J., and Matsui, E. C. \(2023\). “Environmental Justice and Allergic Disease: A Work Group Report of the AAAAI Environmental Exposure and Respiratory Health Committee and the Diversity Equity and Inclusion Committee.” \*Journal of Allergy and Clinical Immunology\*: 151\(30\); 656-670. DOI: 10.1016/j.jaci.2022.11.025](#)
  - “Racial and ethnic minority and low-income populations incur greater exposure to neighborhood traffic than White and higher-income populations (69, 97, 114, 115). Among the U.S. national Environmental Influences on Child Health Outcomes (ECHO) Consortium, Commodore et al. found that a larger proportion of non-Hispanic Black and Hispanic children were exposed to neighborhood traffic compared to non-Hispanic White children (39.5%, 34.9%, and 12.4%, respectively) and were also more likely to report asthma symptoms (40.1%, 31.5%, and 19.3%, respectively) (97).”

- [Jones, M.R., Diz-Roux, A. V., Hajat, A., Kershaw, K. N., O’Neill, M. S., Gualler, E., Post, W. S., Kaufman, J. D., and Navas-Acien, A.](#) (2015). Race/ethnicity, residential segregation, and exposure to ambient air pollution: the multi-ethnic study of atherosclerosis (MESA). *American Journal of Public Health*: 104 (11): 2130-2137. DOI: 10.2105/AJPH.2014.302135
  - “Participants in neighborhoods with more than 60% Hispanic populations were exposed to 8% higher PM2.5 and 31% higher NOX concentrations compared with those in neighborhoods with less than 25% Hispanic populations. Participants in neighborhoods with more than 60% White populations were exposed to 5% lower PM2.5 and 18% lower NOX concentrations compared with those in neighborhoods with less than 25% of the population identifying as White. Neighborhoods with Whites underrepresented or with Hispanics overrepresented were exposed to higher PM2.5 and NOX concentrations.”

*Nationally relevant sources regarding inequitable TRAP Exposure*

- [Clark, L.P., Millet, D. B., and Marshall, J. D.](#) (2017). Changes in Transportation-Related air Pollution Exposures by Race-Ethnicity and Socioeconomic Status: outdoor Nitrogen Dioxide in the United States in 2000 and 2010. *Environmental Health Perspectives*: 125(9). DOI: 10.1289/EHP959
  - “Estimated annual average NO2 concentrations decreased from 2000 to 2010 for all of the race-ethnicity and socioeconomic status groups, including a decrease from 17.6 ppb to 10.7 ppb (-6.9 ppb) in nonwhite [non-(white alone, non-Hispanic)] populations, and 12.6 ppb to 7.8 ppb (-4.7 ppb) in white (white alone, non-Hispanic) populations. In 2000 and 2010, disparities in NO2 concentrations were larger by race-ethnicity than by income. Although the national nonwhite white mean NO2 concentration disparity decreased from a difference of 5.0 ppb in 2000 to 2.9 ppb in 2010, estimated mean NO2 concentrations remained 37% higher for nonwhites than whites in 2010 (40% higher in 2000), and nonwhites were 2.5 times more likely than whites to live in a block group with an average NO2 concentration above the WHO annual guideline in 2010 (3.0 times more likely in 2000).”
- [Valencia A, Serre M, Arunachalam S](#) (2023) A hyperlocal hybrid data fusion near-road PM2.5 and NO2 annual risk and environmental justice assessment across the United States. *PLoS ONE* 18(6): e0286406. <https://doi.org/10.1371/journal.pone.0286406>
  - [Link to study data](#)
  - “[Figure 5] also shows that not only are Minorities exposed to higher air pollution than their White counterparts in the corridor very near (i.e., within 10 m of) roads, but this exposure inequity persists even at distance of 100m to 1km of roads, where Minorities can be exposed to up to 15% more PM2.5 than the White population and up to 35% more NO2 than the White population (bottom panel of Fig 6).”
- [Pratt GC, Vadali ML, Kvale DL, Ellickson KM.](#) Traffic, air pollution, minority and socio-economic status: addressing inequities in exposure and risk. (2015) *Int J Environ Res Public Health*;12(5):5355-72. doi: 10.3390/ijerph120505355. PMID: 25996888; PMCID: PMC4454972.
  - “These results confirm for our study location that *populations on the lower end of the socio-economic spectrum and minorities are disproportionately exposed to traffic and air*

*pollution and at higher risk for adverse health outcomes. A major source of disparities appears to be the transportation infrastructure. Those outside the urban core had lower risks but drove more, while those living nearer the urban core tended to drive less but had higher exposures and risks from on-road sources.” (emphasis added)*

## **II. Minority Communities’ Disproportionate Burden of TRAP Related Disease**

Many studies link TRAP exposure to a series of diseases such as atherosclerosis, asthma, and coronary heart disease (CHD).<sup>6</sup> Some studies have shown that prenatal exposure to some TRAP pollutants has an impact on children's neurodevelopment after birth.<sup>7</sup> Studies also demonstrate that communities of color tend to have higher rates of these traffic-pollution-related diseases. Often, the incidence of these diseases is correlated with high levels of exposure to TRAP pollutants.<sup>8</sup> These diseases impose a heavy burden on people and their families – both in terms of quality of life, duration of life, and finances.<sup>9</sup>

### *Regionally relevant Research on Minority Communities’ Disproportionate Burden of TRAP Related Disease*

- Wang Y., Shi L., Lee M., Liu P., Di Q., Zanobetti A., et al.(2017) Long-term exposure to PM2.5 and mortality among older adults in the Southeastern US. *Journal of Epidemiology.*; 28(2): 207-14 . DOI: 10.1097/EDE.0000000000000614
  - Note: can be accessed through Web of Science
  - “The hazard ratio (HR) for death was 1.021 (95% confidence interval: 1.019, 1.022) per 1  $\mu\text{g m}^{-3}$  increase in annual PM 2.5. ... [The HR] was higher among males, non-whites, dual-eligible individuals, and beneficiaries with previous hospital admissions.”

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<sup>6</sup> Liu Y, Zhao N, Vanos JK, and Cao G. Revisiting the estimations of PM2.5-attributable mortality with advancements in PM2.5 mapping and mortality statistics. (2019) *Sci Total Environ.*;666:499-507. doi: 10.1016/j.scitotenv.2019.02.269. Epub 2019 Feb 18. PMID: 30802665.; [Gan WQ, Koehoorn M, Davies HW, Demers PA, Tamburic L, Brauer M.](#) (2011) Long-term exposure to traffic-related air pollution and the risk of coronary heart disease hospitalization and mortality. *Environ Health Perspect.* ;119(4):501-7. doi: 10.1289/ehp.1002511. Epub 2010 Nov 16. PMID: 21081301; PMCID: PMC3080932;

<sup>7</sup> Mathilda Chiu YH, Wilson A, Leon Hsu HH, Jamal H, Mathews N, Kloog I, Schwartz J, Bellinger DC, Khani N, Wright RO, Coull BA, Wright RJ.(2023) Prenatal ambient air pollutant mixture exposure and neurodevelopment in urban children in the Northeastern United States. *Environ Res.* 116394. doi: 10.1016/j.envres.2023.116394. Epub ahead of print. PMID: 37315758.

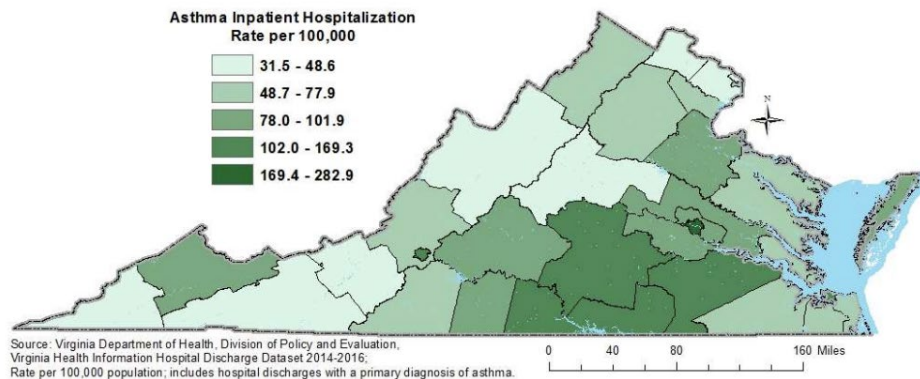
<sup>8</sup> Wang Y., Shi L., Lee M., Liu P., Di Q., Zanobetti A., et al.(2017) Long-term exposure to PM2.5 and mortality among older adults in the Southeastern US. *Journal of Epidemiology.*; 28(2): 207-14 . DOI: 10.1097/EDE.0000000000000614; Weiss MC, Adusumilli S, Jagai JS, Sargis RM. Transportation-related Environmental Mixtures and Diabetes Prevalence and Control in Urban/Metropolitan Counties in the United States. *J Endocr Soc.* 2023 May 15;7(6):bvad062. doi: 10.1210/jendso/bvad062. PMID: 37260779; PMCID: PMC10227866.; Erqou, S., Clougherty, J. E., Olafiranye, O., Magnani, J. W., Aiyer, A., Tripathy, S., Kinnee, E., Kip, K. E., and Reis, S. E. (2018). Particulate Matter Air Pollution and Racial Differences in Cardiovascular Disease Risk. *Arteriosclerosis, Thrombosis, and Vascular Biology*; 38; 935-942. DOI: <https://doi.org/10.1161/ATVBAHA.117.310305>; Fabisiak, J. P., Jackson, E. M., Brink, L. L., & Presto, A. A. (2020). A risk-based model to assess environmental justice and coronary heart disease burden from traffic-related air pollutants. *Environmental Health: A Global Access Science Source*, 19(34). <https://doi-org.proxy.lib.duke.edu/https://rd.springer.com/article/10.1186/s12940-020-00584-z>

<sup>9</sup> Martenies, S. E., Milando, C. W., Williams, G. O., & Batterman, S. A. (2017). Disease and health inequalities attributable to air pollutant exposure in Detroit, Michigan. *International Journal of Environmental Research and Public Health*, 14(10), 1243.

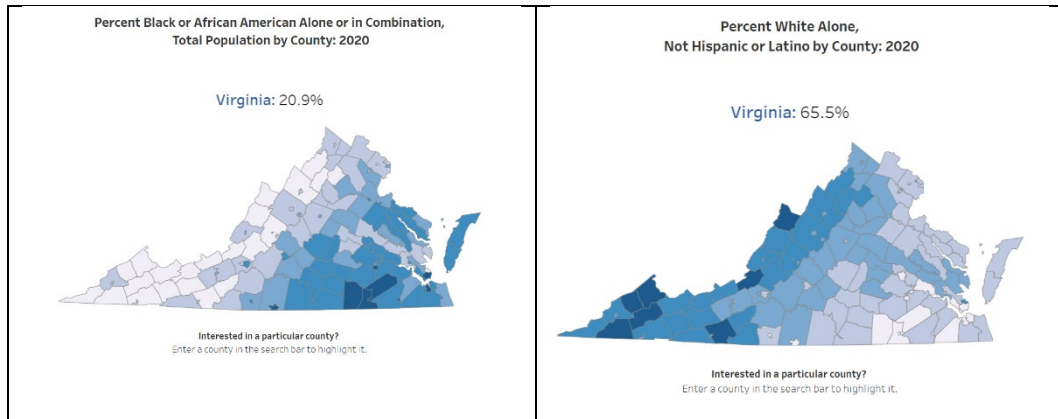
- (2018) Virginia 2018 Asthma Burden Report. *Virginia Department of Public Health*. Accessed Jun 29, 2023 at [https://www.vdh.virginia.gov/content/uploads/sites/94/2018/11/Asthma-Burden-Report\\_Final\\_10232018-1.pdf](https://www.vdh.virginia.gov/content/uploads/sites/94/2018/11/Asthma-Burden-Report_Final_10232018-1.pdf)
  - “According to the World Health Organization, the strongest risk factors for developing asthma are a combination of genetic predisposition and environmental exposure to inhaled substances and particles such as air pollution and chemical irritants.” (page 14)
  - “Race/Ethnicity: When compared with white adults (8.4%), black adults (11.4%) had a higher current asthma prevalence. Also, adult black non-Hispanics had a higher three-year average lifetime asthma prevalence compared to adult white non-Hispanics (15.7 versus 12.5 percent). Hispanics made up about 18.5 percent of those with current asthma between 2014 and 2016.” (page 10)
  - Among Children: “Race and Ethnicity: Current asthma prevalence was higher among Black, NH (11.3%), Hispanic (7.4%), Other, NH (7.2%), White, NH (5.9%) children compared with Asian children (2.1%).” (page 11)
  - Regarding Hospitalization: “Race/Ethnicity: Race and ethnicity make a difference: Blacks were nearly 4.3 times more likely to be hospitalized for asthma than Whites. Whites (40.5%) and Blacks (49.3%) were more likely than any other race/ethnicity to be hospitalized for asthma, compared to Hispanics (2.6%), and Asians (2.0%) and Others (5.4%).” (page 12)
  - Graphic from page 13 of Virginia’s Pollution Burden Report is compared to the 2020 census county data – it is clear the areas with higher hospitalization rates due to asthma correspond with counties that have a higher percentage of people of color.

**Health Districts and Prevalence Rate of Asthma in Virginia:**

**Figure 11: Age-Adjusted Asthma Inpatient Hospitalization Rates by Local Health Districts: Virginia, 2014 - 2016**



<p>2020 Census: Virginia’s Counties Percent of total county population <b>that is Black or African American</b> Alone or in Combination</p>	<p>2020 Census: Virginia’s counties percent of total county population that is non-Hispanic white</p>
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### *Nationally Relevant Research on Minority Communities' Disproportionate Burden of TRAP Related Disease*

- [Weiss MC, Adusumilli S, Jagai JS, Sargis RM.](#) Transportation-related Environmental Mixtures and Diabetes Prevalence and Control in Urban/Metropolitan Counties in the United States. *J Endocr Soc.* 2023 May 15;7(6):bvad062. doi: 10.1210/jendso/bvad062. PMID: 37260779; PMCID: PMC10227866.
  - “We found that increased county-level particulate matter air pollution and nitrogen dioxide along with reduced public transportation usage and lower walkability were all associated with increased diabetes prevalence. The minority proportion of the population influences some of these relationships as some of the effects of air pollution and the transportation-related environment are worse among counties with more minority residents. Furthermore, the transportation and air quality mixtures were found to be associated with increased diabetes prevalence and reduced diabetes control.”
- [Martenies, S. E., Milando, C. W., Williams, G. O., & Batterman, S. A.](#) (2017). Disease and health inequalities attributable to air pollutant exposure in Detroit, Michigan. *International Journal of Environmental Research and Public Health*, 14(10), 1243.
  - This study focused on Detroit.
  - “Based on current levels, exposures to fine particulate matter (PM<sub>2.5</sub>), ozone (O<sub>3</sub>), sulfur dioxide (SO<sub>2</sub>), and nitrogen dioxide (NO<sub>2</sub>) are responsible for more than 10,000 disability-adjusted life years (DALYs) per year, causing an annual monetized health impact of \$6.5 billion. This burden is mainly driven by PM<sub>2.5</sub> and O<sub>3</sub> exposures, which cause 660 premature deaths each year among the 945,000 individuals in the study area. NO<sub>2</sub> exposures, largely from traffic, are important for respiratory outcomes among older adults and children with asthma, e.g., 46% of air-pollution related asthma hospitalizations are due to NO<sub>2</sub> exposures. *Based on quantitative inequality metrics, the greatest inequality of health burdens results from industrial and traffic emissions.* These metrics also show disproportionate burdens among Hispanic/Latino populations due to industrial emissions, and among low-income populations due to traffic emissions.” (*emphasis added*)
- [Erqou, S., Clougherty, J. E., Olafiranye, O., Magnani, J. W., Aiyer, A., Tripathy, S., Kinnee, E., Kip, K. E., and Reis, S. E.](#) (2018). Particulate Matter Air Pollution and Racial Differences in



Cardiovascular Disease Risk. *Arteriosclerosis, Thrombosis, and Vascular Biology*: 38; 935-942. DOI: <https://doi.org/10.1161/ATVBAHA.117.310305>

- This study was based in Pennsylvania.
  - “The black–white participant difference in exposure to PM<sub>2.5</sub> and BC remained statistically significant after adjustment for age, sex, smoking status, income, and education. Furthermore, higher PM<sub>2.5</sub> exposures were associated with higher systolic blood pressure, body mass index, blood glucose, and interleukin-6 and lower fRHI (ie, worse endothelial function) in age- and sex-adjusted models ([Table 2](#)). The associations of PM<sub>2.5</sub> with glucose and fRHI remained statistically significant after further adjusting for smoking, race, income, and education.”
  - “Blacks had 1.45 (95% CI, 1.00–2.09) higher risk of combined incident CVD events and all-cause mortality than whites in models adjusted for traditional CVD risk factors. This association was modestly attenuated to 1.34 (0.91, 1.96) with adjustment for PM<sub>2.5</sub> ([Table 3](#)). Mediation analyses showed that 24% of the association between race and combined clinical outcome is mediated by exposure to PM<sub>2.5</sub>.
- Fabisiak, J. P., Jackson, E. M., Brink, L. L., & Presto, A. A. (2020). A risk-based model to assess environmental justice and coronary heart disease burden from traffic-related air pollutants. *Environmental Health: A Global Access Science Source*, 19(34). <https://doi-org.proxy.lib.duke.edu/https://rd.springer.com/article/10.1186/s12940-020-00584-z>
    - This study focused on populations in Allegheny County, PA.
    - “For both pollutants, the relative occurrence of EJ tracts (> 20% poverty and/or > 30% non-white minority) in Q2 - Q4 compared to Q1 progressively increased and reached a maximum in Q4. EJ tracts were 4 to 25 times more likely to be in the highest quartile of exposure compared to the lowest quartile for BC and NO<sub>2</sub>, respectively. Pollutant specific risk values (mean [95% CI]) for CHD mortality were higher in EJ tracts ( $5.49 \times 10^{-5}$  [ $5.05 \times 10^{-5}$  -  $5.92 \times 10^{-5}$ ];  $5.72 \times 10^{-5}$  [ $5.44 \times 10^{-5}$  -  $6.01 \times 10^{-5}$ ] for BC and NO<sub>2</sub>, respectively) compared to non-EJ tracts ( $3.94 \times 10^{-5}$  [ $3.66 \times 10^{-5}$  -  $4.23 \times 10^{-5}$ ];  $3.49 \times 10^{-5}$  [ $3.27 \times 10^{-5}$  -  $3.70 \times 10^{-5}$ ] for BC and NO<sub>2</sub>, respectively). While EJ tracts represented 28% of the county population, they accounted for about 40% of the CHD mortality attributed to each pollutant. EJ tracts are disproportionately skewed toward areas of high exposure and EJ residents bear a greater risk for air pollution-related disease compared to other county residents.”
  - Javed, Z., Haqsood, M. H., Yahya, T., Amin, Z., Valero-Elizondo, J., Andrieni, J., Dubey, P., Jackson, R. K., Daffin, M. A., Cainzos-Achirica, M., Hyder, A. A., and Nasir, K. (2022). Race, Racism, and Cardiovascular Health: Applying a Social Determinants of Health Framework to Racial/Ethnic Disparities in Cardiovascular Disease. *Cardiovascular Quality and Outcomes*; 15. DOI: <https://doi.org/10.1161/CIRCOUTCOMES.121.007917>
    - “Ever since their inception via the National Housing Act of 1934, residential segregation and redlining laws have continued to haunt the modern-day American society. The effects of historical discriminatory policies—such as by the Federal Housing Administration to facilitate home construction and subsequent ownership for the White population, and discourage ownership for the Black population—continue to perpetuate to this day. The glaring racism—legalized by the federal government—is exemplified by

- the fact that the Home Owner’s Loan Corporation and Federal Housing Administration created maps for every major metropolitan area in the United States, which were color coded to depict mortgage insurance-worthiness; areas with high Black population were coded red to signal high-risk areas for insurance, essentially preventing Black families the right to own a house, and creating a legal barrier that created prime conditions for concentrated poverty—the effects of which continue to reverberate to this day (Figure 2). *Such injustices have historically condemned populations of color to under-resourced and unsafe neighborhoods—predisposing them to poor CVD outcomes.*” (emphasis added)
- “Living/working in socioeconomically disadvantaged neighborhoods may increase exposure to a variety of air pollutants, including particulate matter, which may increase the risk of CVD. Prior evidence suggests neighborhoods with >60% Hispanic population are 8% to 30% more likely to be exposed to air pollutants, including PM2.5 and NOx, relative to areas with <25% Hispanic population. Similarly, it has been reported previously that particulate matter pollution may mediate nearly 25% of the higher risk of incident CVD and all-cause mortality in Black versus White individuals.” (emphasis added)
  - (2020) Asthma Disparities in America: A roadmap to reducing burden on racial and ethnic minorities. The Asthma and Allergy Foundation of America. Accessed June 29, 2023 at <https://aafa.org/wp-content/uploads/2022/08/asthma-disparities-in-america-burden-on-racial-ethnic-minorities.pdf>
    - Regarding Indigenous Peoples
      - “To better evaluate asthma disparities in these populations, we sought information from other sources such as the Indian Health Service (IHS), tribal health organizations and state health departments. *IHS reports that AI/AN people have a 10% higher risk of death from chronic lower respiratory diseases (including asthma).* IHS regional rates of asthma hospitalizations declined in all regions except Alaska from 2003-2005 to 2009-2011. The Navajo Nation is the most populous of all Indian Nations and reports the highest rates for asthma hospitalizations among the six IHS regions. Potential risk factors for health disparities in Navajo children with asthma living on reservations include poverty, limited access to specialty care, and *environmental challenges, which include high levels of indoor and outdoor air pollution.* Information on potential asthma-relevant environmental determinants remains sparse, but indoor use of wood-burning stoves and tobacco smoke is suspected to be common. *Exposure to air pollution (ambient, atmospheric, and indoor) is associated with the development of asthma in young children and increased asthma exacerbations in all populations.* Toxic pollutants known to worsen asthma are present in wood smoke including particulate matter, carbon monoxide, nitrogen oxides, and volatile organic compounds. Air pollution from secondhand smoke is a leading risk factor of lung disease and increasing asthma severity. Additional causes of poor air quality in tribal communities include mold, formaldehyde, forest and grass fires, particulates, airborne toxins, and radon.” (page 47, *emphasis added*)
    - Regarding People of Color and Health Risks

- “The connection between in utero exposure to air pollution and vulnerability in the developing respiratory system seems to be especially evident in boys. An analysis of exposure to PM<sub>2.5</sub> among pregnant women in Boston showed that increased exposure to air pollutants, particularly during the second trimester, was significantly associated with early childhood development of asthma in urban children, but only in boys by age 6.<sup>93</sup> However, researchers understand that environmental exposures rarely happen in isolation. In fact, exposures are often compounded by social factors. In a later study, the researchers looked at the cumulative impact of prenatal air pollution and maternal stress on asthma development.<sup>94</sup> They found that elevated stress in pregnancy and higher exposure to fine particulate matter during the second trimester significantly increased the child’s likelihood of developing post-natal asthma.

High exposure to nitrogen dioxide (NO<sub>2</sub>) in pregnant women, which is a marker for traffic-related air pollution, also increases the risk of asthma in children. A large study conducted in Toronto, Canada found that exposures to NO<sub>2</sub> and PM<sub>2.5</sub> during the second trimester were associated with increased risks of developing early childhood asthma (before the age of 6).<sup>95</sup> In addition, children born to mothers who were themselves diagnosed with asthma and experienced high prenatal exposure to NO<sub>2</sub> during the second trimester were at even greater risk of developing asthma before 6 years of age. As a result, the likelihood of asthma development in children may be influenced by exposure to environmental pollutants often experienced disproportionately by mothers near environmental pollutants. *These mothers are overwhelmingly urban residents and people of color”* (pg 68, *emphasis added*)

- “As with many determinants of health, the burden of air pollution falls disproportionately on racial and ethnic minorities. Residential segregation resulted in large percentages of racial and ethnic minority populations living near sources of outdoor pollution, such as industrial centers, major roadways, oil and gas refineries, and distribution hubs. *In urban areas, traffic-related pollution is often the primary polluting source. Individuals living in these areas are also predominantly low-income and at risk for poor asthma due to economic factors.* Proximity to sources of pollution, amplified by socioeconomic stressors like poverty, leads to poor asthma outcomes. *A 2019 analysis of links between human activities and air pollution found that exposure to pollutants, specifically, fine particulate matter (PM<sub>2.5</sub>), was disproportionately experienced by Black and Hispanic populations, but that emissions were disproportionately caused by white populations.*

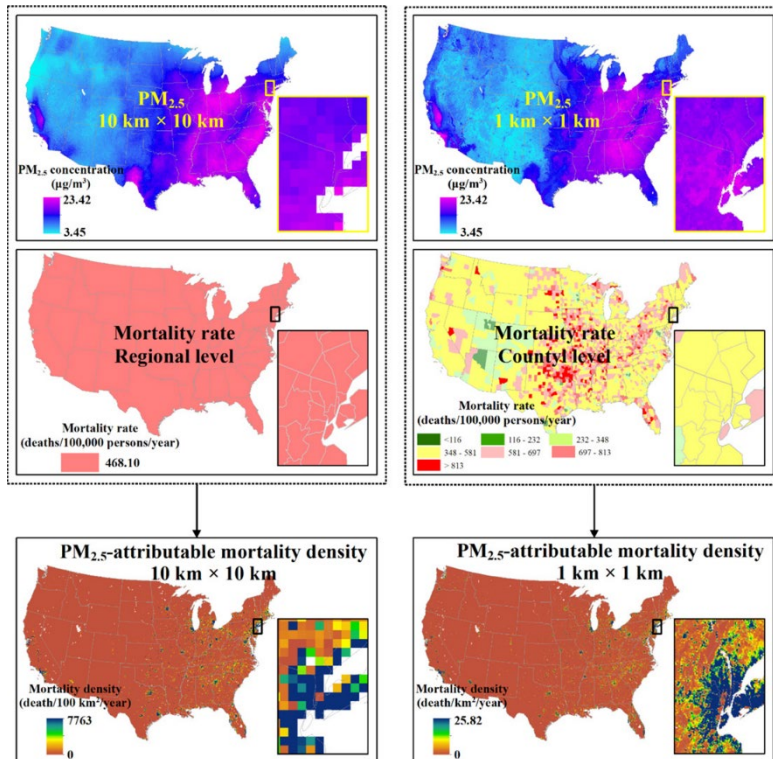
The study highlighted the role of race and ethnicity in driving this pollution inequity, defined as the “fractional difference between a racial-ethnic group’s exposure to PM<sub>2.5</sub> caused by all groups and that group’s population-adjusted contribution to the overall PM<sub>2.5</sub> exposure of all groups”. *“Pollution burden” was high among Black populations (56% inequity) and Hispanic populations*

(63% inequity), while white populations experienced a “pollution advantage” (17% equity), on average (Figure 37).” (page 129, emphasis added)

- Regarding Policy Interventions
  - “Robust policy reform is needed to reduce the disproportionate impact of air pollution on racial and ethnic minorities and its associated poor asthma outcomes. To achieve a more equitable outdoor environment, policymakers must take decisive and immediate action.” (page 130)  
  
“Measures to increase fuel efficiency and reduce vehicle emissions, such as carbon dioxide, hydrocarbons, nitrogen oxide, particulate matter, and mobile source air toxins<sup>263</sup>, can address the burden of air pollution on two fronts. Populations near highways will benefit from reduced pollution in their immediate outdoor environments, while other communities will benefit from upstream pollution reductions associated with the extraction, transportation, and refinement of petroleum products” (page 131)

#### *Connection between TRAP Exposure and Disease*

- [Mathilda Chiu YH, Wilson A, Leon Hsu HH, Jamal H, Mathews N, Kloog I, Schwartz J, Bellinger DC, Xhani N, Wright RO, Coull BA, Wright RJ.](#) (2023) Prenatal ambient air pollutant mixture exposure and neurodevelopment in urban children in the Northeastern United States. *Environ Res.* 116394. doi: 10.1016/j.envres.2023.116394. Epub ahead of print. PMID: 37315758.
  - “Prenatal AP mixture (per unit increase in WQS estimated AP index) was associated with decreased WRAML-2 general memory (GM;  $\beta = -0.64$ , 95%CI = -1.40, 0.00) and memory-related attention/concentration (AC;  $\beta = -1.03$ , 95%CI = -1.78, -0.27) indices, indicating poorer memory functioning, as well as increased CPT-II omission errors (OE;  $\beta = 1.55$ , 95%CI = 0.34, 2.77), indicating increased attention problems. ... Traffic-related pollutants (NO<sub>2</sub>, OC, EC) and SO<sub>4</sub><sup>2-</sup> were major contributors to these associations. There was no significant evidence of interactions among mixture components.”
- [Gan WQ, Koehoorn M, Davies HW, Demers PA, Tamburic L, Brauer M.](#) (2011) Long-term exposure to traffic-related air pollution and the risk of coronary heart disease hospitalization and mortality. *Environ Health Perspect.* ;119(4):501-7. doi: 10.1289/ehp.1002511. Epub 2010 Nov 16. PMID: 21081301; PMCID: PMC3080932.
  - “An interquartile range elevation in the average concentration of black carbon ( $0.94 \times 10^{-5}$ )/m filter absorbance, equivalent to approximately 0.8  $\mu\text{g}/\text{m}^3$  elemental carbon) was associated with a 3% increase in CHD hospitalization (95% confidence interval, 1-5%) and a 6% increase in CHD mortality (3-9%) after adjusting for age, sex, preexisting comorbidity, neighborhood socioeconomic status, and copollutants (PM<sub>2.5</sub> and NO<sub>2</sub>). There were clear linear exposure-response relationships between black carbon and coronary events. ”
- Liu Y, Zhao N, Vanos JK, and Cao G. Revisiting the estimations of PM<sub>2.5</sub>-attributable mortality with advancements in PM<sub>2.5</sub> mapping and mortality statistics. (2019) *Sci Total Environ.*;666:499-507. doi: 10.1016/j.scitotenv.2019.02.269. Epub 2019 Feb 18. PMID: 30802665.
  - National analysis of the relationship between PM<sub>2.5</sub> exposure and attributable mortality.



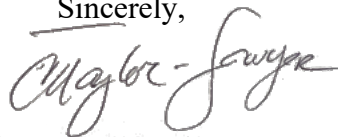
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- Rajagopalan, S., Al-Kindi, S. G., and Brook, R. D. (2022). Air Pollution and Cardiovascular Disease: JACC State-of-the-Art Review. *Journal of the American College of Cardiology*: 72 (17); 2054-2070. Accessed Jun 29, 2023 at <https://www.jacc.org/doi/abs/10.1016/j.jacc.2018.07.099>
  - “Fine particulate matter <2.5 µm (PM<sub>2.5</sub>) air pollution is the most important environmental risk factor contributing to global cardiovascular (CV) mortality and disability. Short-term elevations in PM<sub>2.5</sub> increase the relative risk of acute CV events by 1% to 3% within a few days. Longer-term exposures over several years increase this risk by a larger magnitude (~10%), which is partially attributable to the development of cardiometabolic conditions (e.g., hypertension and diabetes mellitus). As such, ambient PM<sub>2.5</sub> poses a major threat to global public health. In this review, the authors provide an overview of air pollution and health, including assessment of exposure, impact on CV outcomes, mechanistic underpinnings, and impact of air pollution reduction strategies to mitigate CV risk. The review concludes with future challenges, including the inextricable link between air pollution and climate change, and calls for large-scale trials to allow the promulgation of formal evidence-based recommendations to lower air pollution–induced health risks.”
- Li, J., Liu, F., Liang, F., Yang, Y., Lu, X., and Gu, D. (2023) Air pollution exposure and vascular endothelial function: a systematic review and meta-analysis. *Environmental Science and Pollution Research*: 30; 28525-28549. DOI: <https://doi.org/10.1007/s11356-023-25156-9>
  - “Vascular endothelial dysfunction is an early stage to cardiovascular diseases (CVDs), but whether air pollution exposure has an effect on it remains unknown. We conducted a systematic review and meta-analysis to summarize epidemiological evidence between air pollution and endothelial dysfunction. We searched the database of PubMed, EMBASE, the Cochrane Library, and Web of Science up to November 10, 2022. Fixed and random

effect models were used to pool the effect change or percent change (% change) and 95% confidence interval (95% CI) of vascular function associated with particulate matter (PM) and gaseous pollutants. I2 statistics, funnel plot, and Egger's test were used to evaluate heterogeneity and publication bias. There were 34 articles included in systematic review, and 25 studies included in meta-analysis. *For each 10 µg/m<sup>3</sup> increment in short-term PM<sub>2.5</sub> exposure, augmentation index (AIx) and pulse wave velocity (PWV) increased by 2.73% (95% CI: 1.89%, 3.57%) and 0.56% (95% CI: 0.22%, 0.89%), and flow-mediated dilation (FMD) decreased by 0.17% (95% CI: - 0.33%, - 0.00%). For each 10 µg/m<sup>3</sup> increment in long-term PM<sub>2.5</sub> exposure, FMD decreased by 0.99% (95% CI: - 1.41%, - 0.57%).* The associations between remaining pollutants and outcomes were not statistically significant. The effect of short-term PM<sub>2.5</sub> exposure on FMD change was stronger in population with younger age, lower female proportion, higher mean body mass index and higher PM<sub>2.5</sub> exposure. Cardiac or vasoactive medication might attenuate this effect. Our study provides evidence that PM<sub>2.5</sub> exposure had adverse impact on vascular endothelial function, indicating the importance of air quality improvement for early CVD prevention.” (*emphasis added*)

### III. Conclusion

DOT has an opportunity to advance equity through its plan by reducing pollution burden as well disease burden on particularly at-risk communities. Inclusion of strategies to do so in the equity plan is an important part of the process to achieve that goal. We welcome any outreach from DOT regarding incorporating additional details on these integral considerations.

Sincerely,



Chandra T. Taylor-Sawyer

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Environmental Justice Initiative Leader

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March 3, 2023

Governor Roy Cooper  
Office of the Governor  
20301 Mail Service Center  
Raleigh, NC 27699-0301

**Re: Concerns about North Carolina State Agencies' approach to environmental justice and outreach in the context of transportation and climate change**

Dear Governor Cooper,

The undersigned organizations all engage in efforts to reform our transportation system so that it is both cleaner and more equitable. We appreciate the focus your administration has put into these efforts over recent years. We write today to express some concerns about how agencies within your administration have approached public outreach and environmental justice in this context.

We greatly appreciate that Executive Orders 80, 246 and 271 all promise a commitment to environmental justice and equitable outreach as part of the Administration's efforts to combat climate change. EO 246 also directed each cabinet agency to develop a public participation plan designed to "improve communication, foster relationships, and enhance transparency in decision-making with all members of the public, including underserved communities and populations with limited English proficiency." We are concerned that the Administration's laudable goal for integrating environmental justice into its policymaking and outreach efforts are not being met by current practices. As the State begins outreach on the Clean Transportation Plan and moves into a second stage of public outreach on the Advanced Clean Trucks Rule, it is essential that the Administration do better. Below are some suggestions of how the administration might improve.

- **Access to important policy discussions**
  - To help end environmental injustice in North Carolina it is essential that engagement in key policy discussions is not limited by wealth. NCDOT recently hosted its annual "summit." Governor Cooper opened the event discussing a number of important transportation policies. The summit concluded with a "policy maker roundtable", yet access to the event was limited to those who could afford the \$750 entry fee. To our knowledge, no scholarships or discounts were made available to community groups unable to pay this steep price tag. Access to policy discussions put on by a state agency should not be exclusionary in this way. Although all sessions were made available for public to view online afterward, these videos are no substitute for live, in-person attendance and the robust engagement they foster.
  - We suggest that in the future all state-sponsored events include opportunities for any interested members of the public to participate without this financial barrier. Scholarships or free passes for community members and nonprofits would be one way to achieve this goal.

- **Increased sensitivity to the cultural and community context of meetings based on location**
  - DEQ and the Governor’s office have recently hosted a series of “outreach” meetings throughout North Carolina to discuss the Advanced Clean Trucks rule. So far, participants have reported that these events have been held without the speakers demonstrating any knowledge or sensitivity to the meeting locations and their proximity to harmful polluters and cumulative impacts posed, as well as how current and future developments intersect with the proposal at issue. For example, the meeting in Burlington was conducted without any recognition that it was directly adjacent to the [Western Electric Missile Plant](#), which has long threatened the health and welfare of the neighboring Black and Latinx community. Likewise, presenters at the meeting were unprepared to answer questions about proposed local mega industrial and distribution centers or any plans or possible policies to help ensure that zero-emissions medium- and heavy-duty trucks can be integrated into those plans to help reduce air pollution from those facilities.
  - We suggest that the Administration engage with local members of the community before putting on an outreach presentation to gain awareness of relevant local issues and have someone available able to acknowledge and speak to those issues.
- **Engagement of diverse interests and relevant community leaders in outreach efforts**
  - The ACT outreach meetings also suffered from a lack of diversity and local community leaders as part of the presentation team. Presenters were primarily white males, who, as mentioned above, did not appear to be aware of local issues facing the community. In addition, there is little evidence that local leaders were engaged to attend or participate in the presentation.
  - Likewise, the panels at the NC Transportation summit also failed to represent North Carolina’s diversity. The close of the summit by a policymaker roundtable that consisted of five white men was particularly troubling given the diverse range of voices that should be involved in shaping our transportation policy.
  - We suggest that all presentations and panels sponsored by the State be required to include a diverse range of speakers and stakeholders, including local community leaders where appropriate. It is important that both racial diversity, and local leadership be reflected in community engagement.
  - We also suggest that EJ leads from relevant cabinet agencies be included in meetings where possible.
- **Accessible language and graphics**
  - The ACT outreach meetings were further flawed because the presenters failed to use accessible language and graphics to communicate with the public. The presentations were overly-heavy on acronyms and technical language and failed to explain the key issues at stake. In addition we encourage the administration to continue its commitment to ensuring language access for non-English speakers.



- We suggest that when the State is engaging in community outreach, anyone presenting be trained in how to communicate well with a diverse range of stakeholders, to use clear straightforward language, and to rely on materials that can convey all relevant concepts to the interested community in a way that does not require technical expertise and training. Additionally, after a policy is implemented, the State should hold additional public information sessions and provide written materials to explain the rule, share the steps the State has taken to address community concerns, and identify opportunities for engagement, if any.
- **Holistic discussions of issues and policies**
  - Issues like the electrification of transportation involve a wide range of issues including: where and how essential minerals are mined, where and how batteries and cars are manufactured, how workers are treated, where manufacturing facilities are located, where charging infrastructure is deployed, and by who, where diesel is currently creating a health burden, and where benefits are expected. While we understand that there is little flexibility within the ACT rule itself to address all of these questions, and we also understand that it is difficult for agency staffers to be up to speed on the details of every aspect of the larger picture, we still believe it is appropriate to present any policy related to electrification in this larger context as much as possible.
  - We suggest that when the State presents on discrete issues, it includes presenters who have at least some awareness on the full range of concerns related to that topic and who can at least acknowledge the broader suite of interrelated topics that are touched by such issues, as well as to refer community members to additional staff.
  - We also suggest that presenters have knowledge about existing disparate impacts along lines of race, ethnicity, and/or income from local sources of pollution, for example, in the case of the ACT, counts of medium and heavy-duty trucks on primary routes in the Burlington area could be overlaid with maps that show local demographic information. This will help to demonstrate that the Administration is aware of the problem of existing disparate impacts from pollution and begin discussions of ways to address those disparities
  - In addition to acknowledging existing disparities in exposure to and impacts from pollution, efforts should be made to communicate the impact on communities of color and low-income of the policy about which the administration is soliciting input. Ultimately, if the agency wants communities of color and low-income to engage in policy making discussions, more should be done to tell those North Carolinians how the proposal in question will impact their communities. We specifically urge improved evaluation and presentation of health impacts (positive or negative) likely to result from the adoption of the policy as proposed.

- **Ensure engagement is meaningful**

- A common refrain from the recent ACT meetings as well as other recent stakeholder events is that participants feel like their feedback isn't actually being heard or used. Members of the community take time to show up to meetings and write comments, but then feel like everything they suggest is disregarded. Instead, the process feels like a box checking exercise.
- We suggest that when the State conducts public outreach it creates realistic expectations for how feedback will be incorporated that is clearly communicated. We further suggest that the State follows up on outreach efforts to demonstrate how feedback has been heard and incorporated into policy.
- This suggestion may mean the State rethinking the frame around its outreach efforts. For example, because there is little flexibility for changes with the ACT rule, outreach would have been better focused around the larger goals of Executive Order 271, so that the community could have provided input on where resources should be provided, asked questions about the recruitment of manufacturing facilities, and provided guidance on what data would be helpful to investigate health disparities.

- **Build long term capacity over time**

- We appreciate that the Administration has made some recent efforts to increase diverse community engagement via the provision of stipends. For community groups to meaningfully participate in rulemakings like the ACT, or policy proposals like the Clean Transportation Plan, they ideally need to have had a more longstanding engagement with the relevant issues. It is very difficult for someone with no background to pop into such a process and have the tools to fully represent community interests.
- We suggest that the State consider how it can work with the federal government and MPOs to access different funding streams to offer more consistent financial support so that community groups can build capacity to engage on these important issues over the long term.

Thank you for your consideration. We welcome the opportunity to discuss these issues further with your office, and the relevant cabinet agencies.

Sincerely,



Kym Meyer  
Litigation Director  
Southern Environmental Law Center

Governor Cooper

March 3, 2023

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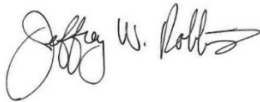
John Tallmadge, Executive Director  
Bike Durham



Terry Lansdell, Director  
BikeWalkNC



Kathleen Shapley-Quinn, MD, Executive  
Director  
Carolina Advocates for Climate, Health, and  
Equity



Jeff Robbins, Executive Director  
CleanAIRE NC



Bobby Jones, Founder  
Down East Coal Ash Environmental and  
Social Justice Coalition



Anne Blair, Director of Policy  
Electric Coalition



David Kelly, NC State Director  
Environmental Defense Fund



Dr. Shelly Francis, Co-Founder & Executive  
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EVHybridNoire



Patrick King, II, Southeast Mobility Choices  
Advocate  
Natural Resources Defense Council



Jovita Lee, Program Director  
North Carolina Black Alliance



Rania Masri, PhD, Director of Organizing  
and Policy  
North Carolina Environmental Justice  
Network



Claire Williamson, Energy Policy Advocate  
North Carolina Justice Center



Cynthia Satterfield, State Director  
NC Sierra Club



Donna Chavis, Founder  
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Stan Cross, Electric Transportation Policy

Director

Southern Alliance for Clean Energy



Nathan Spencer, Executive Director

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West End Revitalization Association

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