Environmental Defense Fund

See attachment for Environmental Defense Fund (EDF) comments on Ecology's draft process for identifying overburdened communities highly impacted by air pollution.

November 10, 2022

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Air Quality Program
P.O. Box 47600
Olympia, WA 98504-7600

Submitted via Online Comment Portal

RE: Environmental Defense Fund Comments on Draft Process for Identifying Overburdened Communities Highly Impacted by Air Pollution

Dear Ms. Torrone and Department of Ecology Air Quality Program Staff,

Environmental Defense Fund (EDF) appreciates the opportunity to submit the following comments on the Department of Ecology's (Ecology) draft process for identifying overburdened communities highly impacted by air pollution. EDF is a non-profit, non-governmental, and non-partisan organization that links science, economics, and law to create innovative, equitable solutions to urgent environmental problems. EDF has over three million members and activists across the country, including over 100,000 in Washington state. EDF has long pursued initiatives at the state, national, and international levels designed to reduce emissions of climate-altering and health-harming air pollutants, and brings deep expertise to the design of climate policy and air pollution monitoring, mapping, and analysis.

Improving air quality and health in the communities that are most impacted by criteria air pollution is critical to fulfilling the promise of the Climate Commitment Act (CCA). If implemented effectively, the CCA has the potential to ensure that Washington achieves its ambitious climate goals while also addressing the disparities in air quality and environmental health faced by Washington's most impacted communities. The identification of communities overburdened by air pollution is an essential component of successful implementation of the CCA's air quality provisions—as required by the CCA, Ecology must monitor and track air pollution in overburdened communities, set specific air quality targets for the areas where those communities are located, and identify specific

sources of air pollution within those communities. The CCA also requires Ecology and local clean air agencies to improve air quality in communities that are overburdened by air pollution to match levels in surrounding communities that are not overburdened. Ecology's process for identifying overburdened communities is critical because it will determine where resources and requirements for reductions in local air pollution are deployed.

As such, it is essential that Ecology's process for identifying overburdened communities reflects the desired outcomes of Washington's environmental justice advocates, of members of impacted communities, of Tribal Nations, and of Washington's Environmental Justice Council. We offer the following comments for consideration to the extent that they will help enable the goals and outcomes that are being asked for by environmental justice and tribal stakeholders.

1. **Why this process is critical**
    a. **Variation in exposure.**

Inequitable exposure to air pollution—specifically, higher pollution in communities of color—is a longstanding and persistent environmental injustice. Even as clean air policies have led to dramatic improvements in air quality over the last several decades, unjust disparities in pollution exposure remain, with people of color in the United States exposed to higher levels of health-harming pollution than white people, regardless of income.

Studies have shown that historically racist policies such as redlining and citing of highways and polluting facilities have resulted in racial/ethnic minority and other disadvantaged populations living in areas with a disproportionately higher number of emitting facilities and sources.[1,2] In a 2017 study, EDF and its partners drove air pollution sensors mounted on Google street view cars on every street and highway in Oakland, California an average of 30 times for 11 months, to collect nearly 3 million unique air quality measurements. It found black carbon and NO_2 concentrations varied 500-800% across city blocks in the area. Concentrations on city-designated truck routes linking highways to industrial areas were 1.9–3.6 times higher than on other surface streets.[3] Nationally, Black populations are exposed to 26% higher levels of soot from heavy-duty diesel trucks than the US population average.[4] Black, Asian and Hispanic Americans have a greater likelihood (84%, 58%, and 113% higher, respectively) than others of living in neighborhoods where air pollution levels were above 10 μg/m^3.[5] In its final report, Washington's Environmental Justice Task

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[1] Mikati, I., Benson, A.F., Luben, T.J., Sacks, J.D., & Richmond-Bryant, J. (2018). Disparities in Distribution of Particulate Matter Emission Sources by Race and Poverty Status. *American Journal of Public Health, 108*(4), 480-485. https://doi.org/10.2105/AJPH.2017.304297

[2] Banzhaf, S., Ma, L., & Timmins, C. (2019). Environmental Justice: The Economics of Race, Place, and Pollution. *Journal of Economic Perspectives, 33*(1). 185-208. https://doi.org/10.1257/jep.33.1.185

[3] Apte, J. S., Messier, K. P., Gani, S., Brauer, M., Kirchstetter, T. W., Lunden, M. M., Marshall, J. D., Portier, C. J., Vermeulen, R. C. H., & Hamburg, S. P. (2017). High-resolution air pollution mapping with google street view cars: Exploiting big data. *Environmental Science & Technology*, *51*(12), 6999–7008. https://doi.org/10.1021/acs.est.7b00891

[4] Tessum, W.; Paolella, D.A.; Chambliss, S.E.; Apte, J.S.; Hill, J.D.; Marshall, J.D. PM2.5 polluters disproportionately and systemically affect people of color in the United States. Sci. Adv. 2021, 7, eabf4491.

[5] https://globalcleanair.org/health/stronger-national-fine-particle-air-pollution-standards-will-provide-significant-health-benefits-and-reduce-disparities/

Force found that in Washington state, studies "reflect the findings of national EJ research, that people of color and low-income communities continue to be disproportionately exposed to environmental health hazards in their communities."[6]

b. Variation in impact.

The issues of air pollution–related health impact inequities extend beyond exposure alone. Many of the same racist policies, institutional practices, and poor cultural representations have caused disinvestment in racial/ethnic minority communities, resulting in differential quality and distribution of housing, transportation, economic opportunity, education, food, access to health care, and beyond. All of these inequities manifest in health disparities, higher underlying mortality rates, and greater susceptibility to pollution-caused disease.[7,8] Among Medicare enrollees, Black Americans had three times higher risk of death due to fine particulate exposure than the national average.[9] In Washington State, the Environmental Justice Task Force found that census tracts with greater environmental health disparities also have greater percentages of BIPOC communities than census tracts with fewer environmental health disparities.[10]

c. Solutions are available now, but must be prioritized where they are needed most.

Innovation and investment have changed the landscape for solutions that support economic growth and jobs while reducing the risks from air pollution. For example, renewable power generation is less expensive than new fossil-fuel based power generation,[11] and "market analysts project favorable [total cost of ownership] without government subsidies for medium-duty ZEV applications in many weight classes by 2025, and for applications in all weight classes by 2030."[12] However, there is a real danger that even as the overall mix of electricity generation, industrial facilities, and vehicles on the road becomes cleaner, legacy pollution sources could linger in environmental justice communities. It is important that resources for improving air quality be prioritized where they are needed most. Ecology's process for identifying overburdened communities will

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[6] Environmental Justice Task Force. "Recommendations for Prioritizing EJ in Washington State Government: Report to the Washington State Governor and Legislature." Fall 2020. Available at: https://www.environmentallawandpolicy.com/wp-content/uploads/sites/452/2021/05/3.-Washignton-EJ-Taskforce-Recommendations-Report.pdf

[7] Morello-Frosch, R., Zuk, M., Jerrett, M., Shamasunder, B., & Kyle, A.D. (2011). Understanding The Cumulative Impacts Of Inequalities In Environmental Health: Implications For Policy. *Health Affairs, 30*(5). https://doi.org/10.1377/hlthaff.2011.0153

[8] Devon C. Payne-Sturges, Gilbert C. Gee, and Deborah A. Cory-Slechta. (2021). Confronting Racism in Environmental Health Sciences: Moving the Science Forward for Eliminating Racial Inequities. *Environmental Health Perspectives, 129*(5). https://doi.org/10.1289/EHP8186

[9] Di, Q. *et al.* Air pollution and mortality in the Medicare population. *N. Engl. J. Med.* **376**(26), 2513–3252 (2017).

[10] Environmental Justice Task Force. "Recommendations for Prioritizing EJ in Washington State Government: Report to the Washington State Governor and Legislature." Fall 2020. Available at: https://www.environmentallawandpolicy.com/wp-content/uploads/sites/452/2021/05/3.-Washignton-EJ-Taskforce-Recommendations-Report.pdf

[11] World Economic Forum, Renewables were the world's cheapest source of energy in 2020, new report shows (July 5, 2021), available https://www.weforum.org/agenda/2021/07/renewables-cheapest-energy-source/ (accessed Nov. 9, 2022).

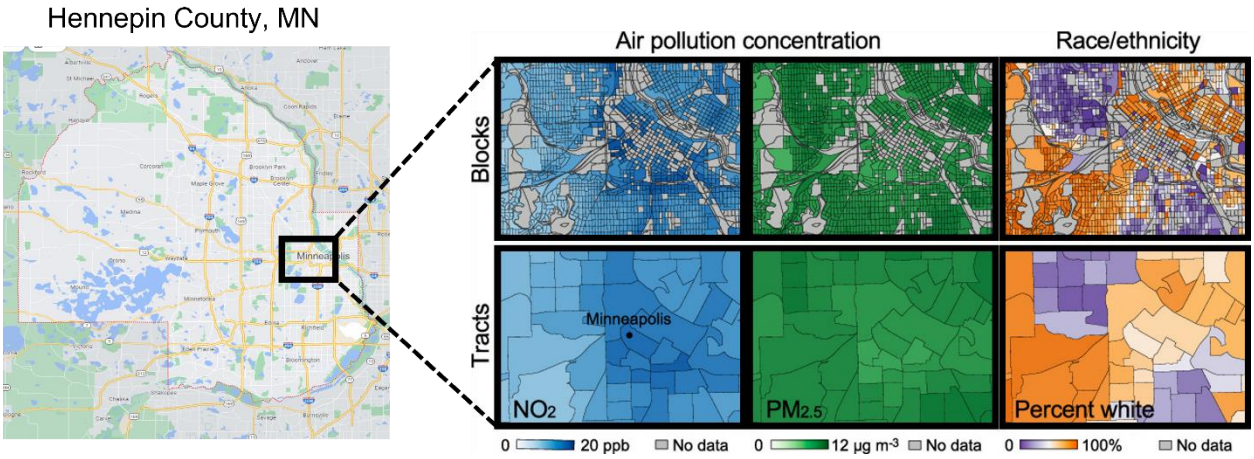
[12] NESCAUM, MultiState Medium- and Heavy-Duty Zero-Emission Vehicle Action Plan, 21, available https://www.nescaum.org/documents/multi-state-medium-and-heavy-duty-zero-emission-vehicle-action-plan/ (accessed Nov. 9, 2022).

impact where and how resources and pollution reduction strategies are implemented across Washington State; by designing an equitable, effective process, Ecology can help ensure affordable, efficient solutions are focused in the communities that have been most impacted by pollution and environmental health disparities.

2. **Data sources and data approaches that Ecology could consider.**
    a. **Census tract or smaller is the right level of geographic granularity.**

Air quality is often evaluated at the city or county scale, but pollution levels vary at a much finer scale, as do the demographics of neighborhoods shaped by residential segregation. EDF understands that the current proposal evaluates air and health data at the level of census tract or smaller. EDF commends this approach, and urges that census tract or smaller remains the level of geographic granularity for analysis and implementation as the proposal moves through Ecology's process.

Why is this issue of geographic scale so important? New research from EDF and partners explored whether is possible to accurately estimate disparities in exposure to air pollution using larger scale data (for example, county averages) or whether finer scale data (census tract or smaller) is needed.



We found that for two important health-harming pollutants, fine particulate matter (PM2.5) and nitrogen dioxide (NO2), using state and county scale data led to substantial underestimates in US-wide racial/ethnic exposure disparities compared to those based on finer scale data—on average, using county vs. tract data would underestimate national exposure disparities by 20%.

Within individual cities, while census tract scale data was often adequate to characterize disparities, it was sometimes necessary to use even finer data – as small as a city block— to capture the full magnitude of inequity across neighborhoods.

    b. **Additional data sources for air pollution.**

The air pollution data referenced in Ecology's proposal reflects a reasonable use of accessible air data. However, the status quo includes blind spots in air monitoring. For

example, many regulatory monitors are only turned on 1 in 6 days, and studies show companies pollute more when they know the monitors aren't turned on.[13]

Satellite data can help fill in the gaps. Satellites are already monitoring air pollution. For example, satellite data was instrument to revealing causal connections between NO2 pollution and new diagnoses of children's asthma.[14] Ecology should integrate consideration of satellite readings into its identification of overburdened communities. Satellite data could also be a useful input for assessing whether boundaries are appropriate or for determining how they need to change over time.

Relatedly, Ecology should end the practice of announcing the days of monitoring in advance. If Ecology determines that it needs to preserve some monitoring sites as intermittent, it should not enable emitters to avoid accountability by gaming the monitoring days.

c. Additional data sources for health.

Children are particularly susceptible to air pollution, with cumulative effects that last a lifetime. Data about childhood asthma is generally not available at the census tract level or smaller. As Ecology refines its health indicators, it should invest in geographically granular health data at the census tract level or smaller.

d. Proximity to persistent mobile sources of air pollution as a risk factor.

Proximity to roads or facilities that attract medium and heavy-duty vehicles is a risk factor for exposure to NO2, ultrafine particles and other traffic-related pollution. The concentration gradients for these pollutants drop off dramatically over 500 m or less. As companies shift to direct deliveries to customers, truck traffic increases even on local roads. At facilities like warehouses or waste transfer facilities, trucks idle right beside places where people work, live and play. The commercial availability of zero-emissions trucks, and funding for charging infrastructure, mean that this disproportionate burden from mobile and indirect sources is avoidable.

[13] Zou, E. Y. (2021). UNWATCHED pollution: The effect of intermittent monitoring on air quality. *American Economic Review*, *111*(7), 2101–2126. https://doi.org/10.1257/aer.20181346

[14] https://gwtoday.gwu.edu/nearly-2-million-children-worldwide-develop-asthma-result-breathing-traffic-related-pollution, January 6, 2022.

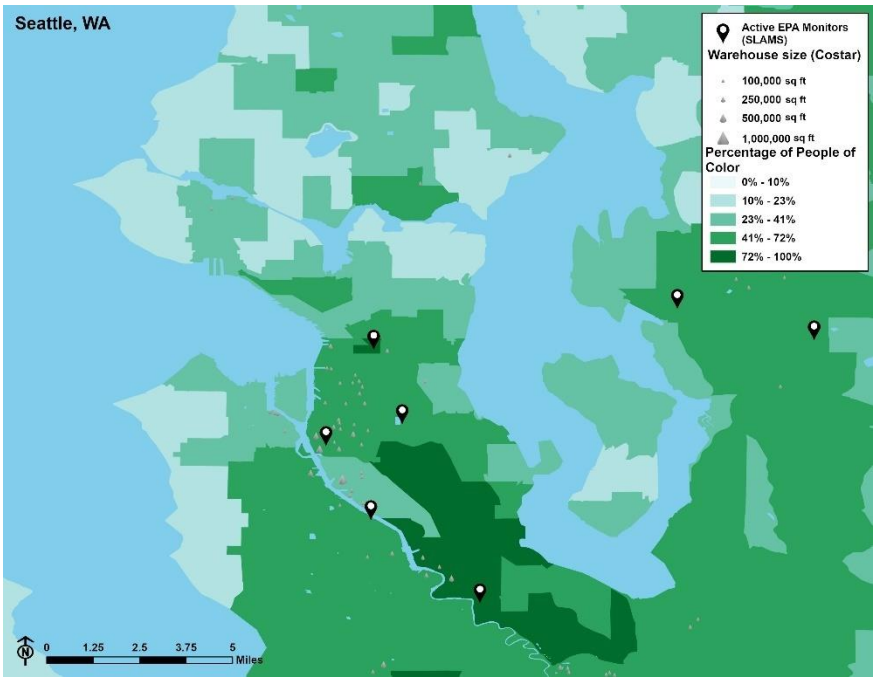


Figure 1 EDF research

As a result, Ecology should include proximity to sources of transport emissions as an indicator. A highly granular understanding of proximity to roadways and warehouses is possible right now. Ecology should also commit to better truck counting, especially on local roads.

3. Community-based science and participatory analysis.

Community-based/citizen science and participatory analysis can be highly effective tools for air pollution assessment, and can provide community members with opportunities to directly apply critical local knowledge to the collection of air quality and health data, setting the stage for community-designed solutions. Ecology can encourage community-driven research by taking the following steps:

- Provide funding for air monitoring, truck counting, health indicator tracking, and related analysis by local community members, including through capacity building and training. For example, community members can assemble, install, arrange power, and set up data handling for community air monitors.
- Establish a process for communities to request new Federal Reference Monitors.
- Enable the co-location of low-cost sensors at regulatory monitors.
- Consider a lending library of low-cost sensors and provide support for analysis and deployment.

4. Conclusion.

EDF appreciates the opportunity to submit comments on the proposed process for identifying overburdened communities highly impacted by air pollution and offers our comments for consideration to the extent that they will help enable the outcomes advocated for by environmental justice stakeholders and Tribal Nations. We look forward to continued opportunities for engagement as Ecology develops a community identification process that can deliver on the Climate Commitment Act's commitment to improving air quality in the communities most impacted by health-harming air pollutants.

Respectfully submitted,

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