

REDUCING VEHICLE POLLUTION FOR PUBLIC HEALTH

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EXECUTIVE SUMMARY

The transportation sector in Virginia is a significant source of air pollutants including particulate matter, methane, nitrous oxide, and hydrofluorocarbons, which are all linked not only to climate change, but also to decreased air quality, worse public health outcomes, and environmental damage. Long-term personal health effects can include cancers, cognitive decline, upper respiratory diseases, asthma, heart disease, and obesity.

Effectively reducing unsafe levels of air pollution will require the Commonwealth to use a variety of tools, including strong emission standards to incentivize cleaner vehicles, a robust statewide real-time air monitoring system to measure progress, and proper incentives and funding opportunities to mitigate the impact of pollution in Virginia, particularly in our most vulnerable and overburdened communities.

CHALLENGE

Reducing vehicle pollution requires understanding how transportation impacts not only access and mobility but also social structures, public health, the environment, and economic factors. Another fundamental challenge is that the people who suffer the most from its pollution tend to contribute the least. Communities of color bear a disproportionate burden from air pollution building from decades of environmental racism, discriminatory practices such as redlining, and land use decisions that allowed for the creation of overburdened neighborhoods, cancer alleys, and sacrifice zones.

Fine particulate matter, a major component of transportation, generates air pollution and can injure a person's respiratory and cardiovascular systems. This increases the risk of developing many medical problems including disproportionate hospitalization and death from COVID-19, and higher risks of cancers and upper respiratory illnesses such as asthma, as well as suffering heart attacks.^{1,2}

Annually, particulate matter from Virginia specific transportation has been found to cause 92 excess deaths, 2,600 cases of exacerbated asthma, 10,000 lost workdays, and lead to additional health costs of \$750 million.³ When considering transportation emissions in their entirety, these emissions led to 750 premature deaths in Virginia in 2016, and the deaths associated with this pollution are 61% higher in low income, older, and BIPOC elderly, and minority communities.^{4,5}

Agriculture, a multi-billion dollar industry in Virginia, is heavily influenced by the environment. Air pollution contributes to failing agricultural and commercial crop yields, raises plant susceptibility to disease pests and other environmental stressors, and can directly contaminate ground and surface bodies of water and soil. Furthermore, contaminants such as sulfur dioxide and nitrogen oxide particles can create toxic rain when they mix with water and oxygen in the air, as well as absorbed directly by water bodies further worsening environmental problems, such as biodiversity reduction, habitat degradation, and impacts to Virginia's aquaculture industry.

SOLUTION

Strict requirements to reduce tailpipe emissions, effective clean car standards and personal choices to reduce vehi-

cle miles driven can help reduce vehicle emissions significantly. The less fossil fuel we burn, the faster we can reduce vehicle pollution. Other complementary strategies concern land-use, forestry, and the built environment.

How communities are developed will impact how convenient and/or appealing alternative transportation modes will be for commuters.

Strategies to reduce vehicle pollution include:

- Limiting carbon emissions from tailpipes and lessen limits annually. All carbon management programs must engage and be responsive to the needs of impacted communities throughout the policy design and implementation process and must hold polluters accountable for the true cost of pollution. Impacted communities must be prioritized as recipients of generated revenues.
- Reallocating funding away from carbon-intensive highways, and boosting new funding to swiftly transition to zero emission, i.e. public transportation.
- Continuing to support efforts to implement equitable emission standards, such as the Virginia Advanced Clean Car Standards.
- Continuing to support and fund previously passed electric school bus bill programs.⁶
- Planting native trees and vegetation, including near-road plantings that would provide noise and vegetation barriers, which have been shown to remove small particulate pollutants and reduce downwind pollution at a greater rate than vegetation or solid noise barrier alone.⁷ Additionally, expanding tree canopies in vulnerable areas can lead to decreased levels of pollutants due to their absorption through structures in the leaves surfaces.⁸ Studies have shown that trees can reduce street level particulate matter by 60%.⁹
- Investing in a robust statewide air quality monitoring system consisting of stationary monitors and scheduled mobile monitoring throughout the Commonwealth and in heavily polluted communities.

POLICY RECOMMENDATIONS

Commission a study by the Joint Legislative Audit and Review Commission to determine the capability of the current air quality monitoring to present recommendations to address the need for additional monitors, identify specific impacted locations with a consideration to Environmental Justice, and how best to fast track implementation.

Support policy recommendations listed in the ACCELERATING TRANSPORTATION ELECTRIFICATION policy paper, page 63, including protecting and advancing Virginia's Clean Car Standards, which take effect in 2024 and funding for the Virginia Electric Vehicle Grant Fund to support school districts in obtaining electric buses.

Support policy recommendations listed in INCREASING INVESTMENT IN TREES, page 43, particularly to ensure the proper funding is allocated to the Department of Forestry's Urban and Community Forestry Grant Program.