

MARYLAND: Buildings & Smog

5.1 Million Marylanders Live With Smog Levels That Violate Minimum Federal Air Quality Standards

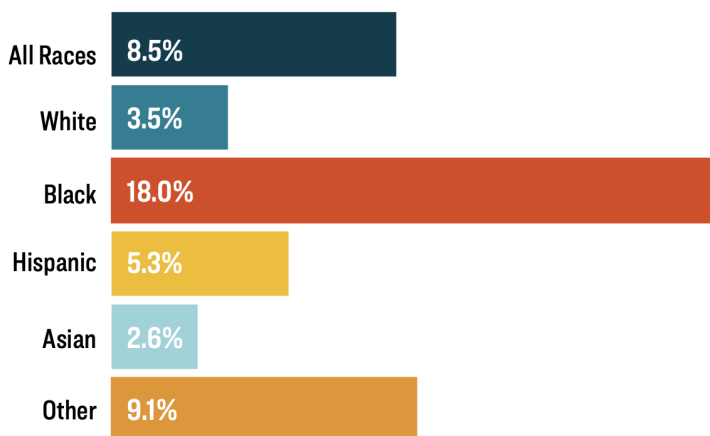
Smog pollution, otherwise known as ozone, is a major public health issue in Maryland.

- Approximately 5.1 million Marylanders live in areas with unsafe levels of smog.
- Pollution from gas combustion in buildings—in addition to transportation and power plant pollution—produces nitrogen oxide (NOx) emissions that combine with sunlight to form smog, making the summer months the worst time for air quality in cities.
- Smog can cause chronic respiratory illnesses, asthma attacks, bronchitis, and premature death.
- Smog’s health impacts are not evenly distributed across Marylanders—smog pollution disproportionately impacts communities of color in Maryland. Maryland Department of Health (MDE) data shows that emergency room visits for asthma among Black children in Maryland are roughly five times the rate for white children.

Thankfully, Maryland can reduce its smog problem by requiring buildings to replace dirty gas-burning equipment, such as gas-powered space and water heaters, with clean, efficient electric equipment, such as efficient heat pumps. Recent ozone modeling by Sonoma Technology, commissioned by the Sierra Club, reveals the unexpectedly large contribution of buildings to ozone pollution in Maryland.

Rates of emergency department visits for asthma for children aged 2-17 years (2019)

(source: HSCRC)



On high smog days, such as in the summer, pollution just from burning fossil fuels in residential, commercial, and other buildings can bring smog levels in Maryland to 1 percent of its allowable healthy limits, leaving total smog more likely to exceed safe levels. This a high degree of pollution from a source that is not typically thought of as contributing to air pollution—and the modeling also shows projected impacts from buildings on air pollution are increasing. In fact, the U.S. Environmental Protection Agency (EPA) often considers contributions to 1 percent of ozone standards to be significant enough to justify additional pollution control measures.

The smog that building emissions worsen is concentrated around Maryland’s cities, which include its urban environmental justice communities, as seen in the map generated by Sonoma Technology reflecting smog levels for 2016 and projected levels for 2023.

What Can Maryland Do?

The Maryland Department of the Environment (MDE) is moving toward adopting important policies that will reduce emissions from the building sector by replacing dirty gas-powered equipment in buildings with clean electric alternatives. These policies include the proposed Building Energy Performance Standards (BEPS), Zero-Emission Heating Equipment Standard (ZEHES), and Clean Heat Standard (CHS).

Adoption of these rules—along with quick and equitable implementation—is critical for meeting the Moore Administration's goals of reducing pollution in Maryland's overburdened environmental justice communities and achieving Maryland's climate commitments, which require statewide emission reductions of 60 percent below 2006 levels by 2031 and statewide carbon neutrality by 2045. The presence of thousands of dollars in federal incentives and state EmPOWER rebates will also help Marylanders in making the transition to cleaner, efficient electric appliances.

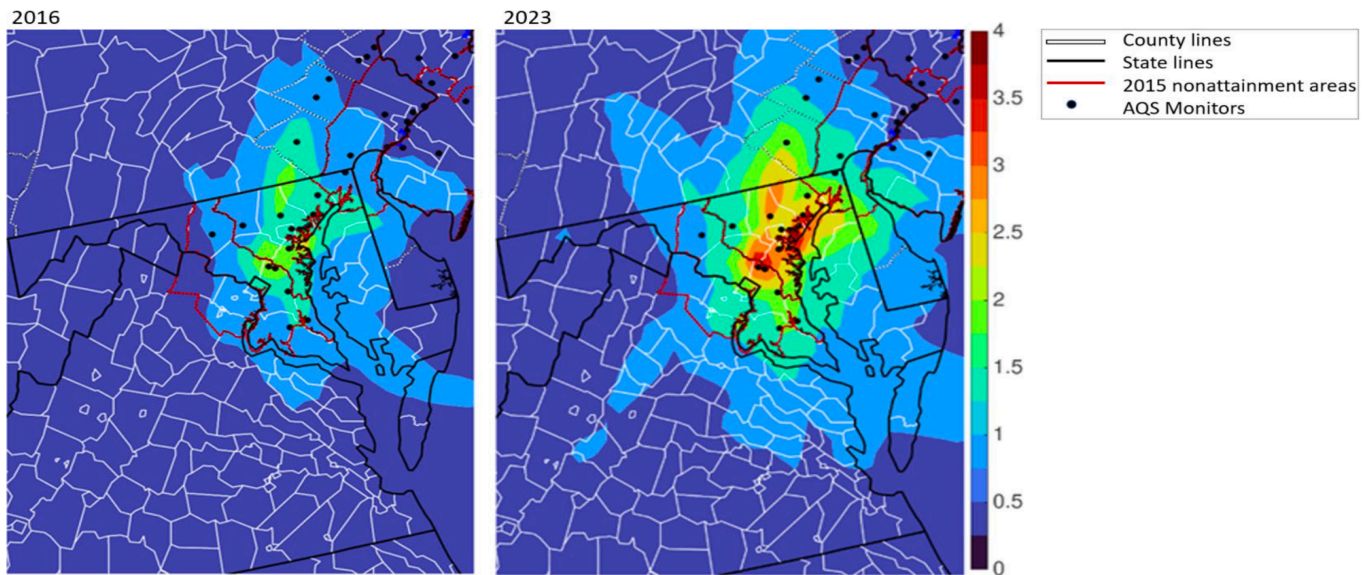


Figure 1. Absolute maximum daily average 8-hr (MDA8) modeled ozone impacts (ppb) due to all Maryland building combustion sources during the 2016 ozone season (April to October). The 2016 plot (left) shows base year modeled ozone impacts, while the 2023 plot (right) shows projected future year modeled ozone impacts.

Adopting clean building rules is critical to addressing Maryland's long-standing air quality attainment challenges and putting the state in a position to potentially redesignate the Baltimore area to attainment of federal ozone standards if recent improvements in air quality persist.

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