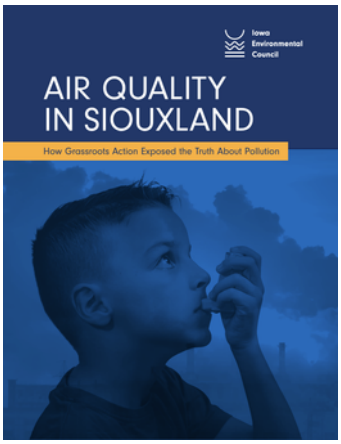
AIR QUALITY IN SIOUXLAND

the dirty truth uncovered by a grassroots air monitoring initiative



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FACED WITH A LACK OF LOCAL, PUBLICLY ACCESSIBLE, REAL-TIME AIR QUALITY DATA, SIOUX CITY RESIDENTS LAUNCHED A GRASSROOTS POLLUTION MONITORING INITIATIVE IN 2025. COMMUNITY MEMBERS, WITH THE ASSISTANCE OF THE IOWA ENVIRONMENTAL COUNCIL, INSTALLED SIX PURPLEAIR™ MONITORS ACROSS GREATER SIOUX CITY. THIS LOCALIZED NETWORK FILLS A CRITICAL DATA GAP BY PROVIDING CONTINUOUS, REAL-TIME MEASUREMENTS OF AMBIENT CONCENTRATIONS OF DANGEROUS AIR POLLUTANTS.

THE PROBLEM

Reports in 2024 and 2025 indicated that Woodbury County had the highest asthma rates in the state. For residents with asthma and other risk factors, access to real-time air monitoring data is crucial. However, this data was not publicly accessible. Air pollution, particularly from coal plants like the two operated by MidAmerican Energy in Woodbury County, is also associated with increased cancer and mortality risk.

WHAT YOU NEED TO KNOW

1. Particulate matter 2.5 (PM2.5) is a type of air pollution, made up of microscopic liquid droplets and solid particles suspended in the atmosphere. At 2.5 microns or less in diameter — roughly 30 times smaller than a single strand of human hair — these particles are invisible to the naked eye and can only be detected with a microscope. PM2.5 is one of the most widespread and hazardous forms of air pollution.

2. PM2.5 directly emitted by coal plants and formed from the byproducts of coal combustion is particularly hazardous. Coal-derived PM2.5 often contains highly toxic trace elements, including neurotoxins like mercury and carcinogens such as arsenic, cadmium, chromium, and lead. Exposure to coal PM2.5 is associated with a mortality risk that is more than twice as high as PM2.5 from other sources. Woodbury County is home to two of MidAmerican Energy's coal plants: George Neal North and George Neal South.

3. Analysis of one year of data from six air monitors installed by residents showed that levels of PM2.5 in Woodbury County frequently exceeded the EPA's thresholds for "unhealthy for sensitive groups" and "unhealthy" for the general population. Spikes in PM2.5 levels were correlated with periods when MidAmerican Energy's coal plants were operating. Residents also face air pollution from fertilizer manufacturing, meat processing, and more.

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POLICY SOLUTIONS TO IMPROVE AIR QUALITY

Coordinated action across regulatory, policy, industry, healthcare, and grassroots organizations is needed to reduce emissions, improve exposure monitoring, and strengthen public health protections. The following recommendations outline key actions to address PM2.5 pollution and its health impacts:

REGULATORY

Strengthen PM2.5 limits to be consistent with WHO guidance (5 µg/m³)
In 2021, the World Health Organization strengthened its PM2.5 guideline from 10 µg/m³ to 5 µg/m³. This change was driven by an expanding body of evidence showing that meaningful health impacts occur even at low levels of pollution. The EPA should update its guidelines to align with the WHO and the best-available medical and scientific research.

Expand ambient air monitoring system beyond minimum requirement
The Iowa Department of Natural Resources should install continuous monitors in Sioux City and other communities across the state that are disproportionately burdened by the negative health effects of air pollution.

PUBLIC HEALTH

Alert the public via text message or email when air pollution exceeds EPA standards

Incorporate air pollution exposure screening in clinical assessments
Medical providers should screen patients who live in high pollution areas for illnesses and conditions that are caused by or exacerbated by air pollution.

Educate the public on clinical guidance for high pollution days
Clinicians and public health professionals should educate the public about how to protect themselves from the dangers of poor air quality, including staying inside (particularly for individuals with respiratory or heart disease), reducing the intensity of outdoor activities, and improving indoor air quality through air conditioners or air purifiers.

UTILITIES

Assist residents of communities affected by coal plant pollution with acquiring indoor air purifiers

In partnership with local policymakers, utilities should support measures that protect communities from air pollution.

Accelerate retirement of coal generation; transition to clean energy
Utilities should protect public health through coal plant closure and commitment to clean energy.

Implement best available pollution controls; optimize coal plant operations
Until coal plant closure, utilities should mitigate their contributions to air pollution.

Integrate health-based air quality into energy planning
Utility corporations and the Iowa Utilities Commission should consider public health and air quality in planning to meet the energy demand of the future.

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