

**ALBUQUERQUE-BERNALILLO COUNTY
AIR QUALITY CONTROL BOARD**

**IN THE MATTER OF THE PETITION TO AMEND
TITLE 20, CHAPTER 11 OF THE NEW MEXICO
ADMINISTRATIVE CODE TO REQUIRE REVIEW
AND CONSIDERATION OF HEALTH, ENVIRONMENT
AND EQUITY IMPACTS,**

AQCB PETITION NO. 2022-3

**MOUNTAIN VIEW NEIGHBORHOOD
ASSOCIATION, MOUNTAIN VIEW
COMMUNITY ACTION, AND FRIENDS OF
VALLE DE ORO,
PETITIONERS.**

**CLOSING ARGUMENT OF ELAINE CIMINO, *PRO SE*, BASED ON
NOVEMBER 6, 2023 WRITTEN COMMENTS BY A PARTY FOR THE RECORD
ENCOURAGING COLLECTION, INTEGRATION AND ANALYSES OF NITROGEN
DIOXIDE (NO₂) DATA**

The tools exist to integrate nitrogen dioxide (NO₂) data into the proposed Health, Environmental and Equity Impact (HEEI) Ordinance in order to create better air quality in Albuquerque and Bernalillo County for all. Collecting this data is crucial in framing environmental justice initiatives, particularly within the framework of the Environmental Protection Agency's (EPA) Environmental Justice Geographic Information System (EJ GIS) Tool.

As a concerned group deeply committed to advancing environmental equity and addressing air quality disparities, we believe the inclusion of NO₂ data is not only essential, but also represents a significant step towards achieving these goals. Including the proposed language in the HEEI Ordinance will give the Environmental Health Department (EHD) the tools it needs to examine the potential benefits and insights that such data could bring to the table for better air quality.

Further, the integration perfectly aligns with the objectives of the HEEI Ordinance to:

1. “ensure that the health, environmental and equity impacts of combined air emissions sources are considered and addressed by the Department such that no neighborhood or population group bears the disproportionate health impacts of air emissions that may with reasonable probability injure human health;

2. “enable the Department to develop a complete understanding of the current and future effects of permitting actions on human health, plant and animal life, public welfare or reasonable use of property in Bernalillo County and the City of Albuquerque, to evaluate the differences, needs, requirements and conditions within the County and parts thereof, and to make permitting decisions that meaningfully consider such cumulative or disparate impacts, including all possible opportunities to mitigate air pollution emissions.” 20.11.72.6.

Inclusion of nitrogen dioxide (NO₂) data, as outlined in the subsequent sections with proposed additional language insertions, will enhance the efficacy of the HEEI Ordinance, furthering its impact and ensuring it remains a valuable tool for the community. Inclusion of NO₂ data is not only essential but also represents a significant step towards achieving the HEEI Ordinance objectives.

Integration of NO₂ data into the EPA’s Environmental Justice (EJ) GIS Tool enhances the tool’s capabilities and equips regulators with a powerful resource to improve air quality management, feasibly target enforcement efforts and address environmental justice disparities for considering new air permit.

Our primary concern is that without the utilization of NO₂ satellite data with ground level data, the Environmental Health Department (EHD) may overlook the potential benefits and insights that such data could bring to the environmental justice table.

We are requesting the insertion of the NO₂ language into the final HEEI Ordinance.

“When evaluating new air permits, EHD shall integrate NO₂ API datasets into the EPA EJ Tool and assess the combined effects of current NO₂ emissions taking into account demographic and health disparities in affected census tracts.”

Elaine Cimino, a *ProSe* Party

Elaine Cimino, a ProSe party, directs a grassroots and environmental justice group. She spearheads local data collection initiatives in conjunction with the TEMPO Early Adopter Program of the National Aeronautics and Space Administration (NASA), NASA Health and Air Quality Applied Sciences Team (HAQAST), United States Geological Survey (USGS) and Massachusetts Institute of Technology (MIT) mapping focusing on real-time or near real-time emissions tracking.

Sharing visual data on a public platform aims to inform policymakers, the public, regulators, and emitters. This transparent approach, facilitated by public data, fosters accountability and lays the groundwork for emissions reduction. The existing satellite infrastructure monitoring and tracking emissions is set to expand significantly in the coming year. Adding regulatory language to the HEEI to ensure the use of these new tools to reduce emissions.

Closing Argument Comments

The Closing Argument incorporate the November 6, 2023 comments submitted by Ms. Cimino. AQCB Docket No. 2022-3.

Ms. Cimino who explained the policy decision for including satellite data for air quality monitoring.

Public Policy Statement from the Health and Air Quality Applied Sciences Team (HAQAST) Satellite Data for Environmental Justice

Satellite Data for Air Quality Monitoring

Written Comments on the HEEI Ordinance AQCB Petition No. 2022-03 by Jenny Bratburd (University of Wisconsin—Madison) and Gaige Kerr (George Washington University) Adapted from “Satellite Monitoring for Air Quality and Health” by Holloway et al. (2021) and the Health and Air Quality Applied Sciences Team (HAQAST) Satellite Data for Environmental Justice resources.

Summary

- Satellite data can support policy and regulatory uses and come with distinct advantages and disadvantages relative to other monitoring technology.
 - Satellite instruments measure a column of air, rather than the direct, nose-level concentrations at the ground. This is not always easy to compare to ground-level monitors, though advances are increasing.
 - Satellites can capture a wider geographic range than ground level monitors.
 - Data from satellite instruments, ground-level instruments and models can be combined.
 - Many regulated pollutants are measurable with satellite instruments, including nitrogen dioxide (NO₂), sulfur dioxide (SO₂), and formaldehyde (precursor to ozone).
- Satellite data has been used in aspects of policy implementation.
 - U.S. EPA uses ground-level monitoring for compliance with NAAQS, though satellite data supports other policy applications.
 - U.S. EPA air trends report incorporates satellite data.
 - State implementation plans.
 - Exceptional event demonstrations
 - Environmental justice analysis

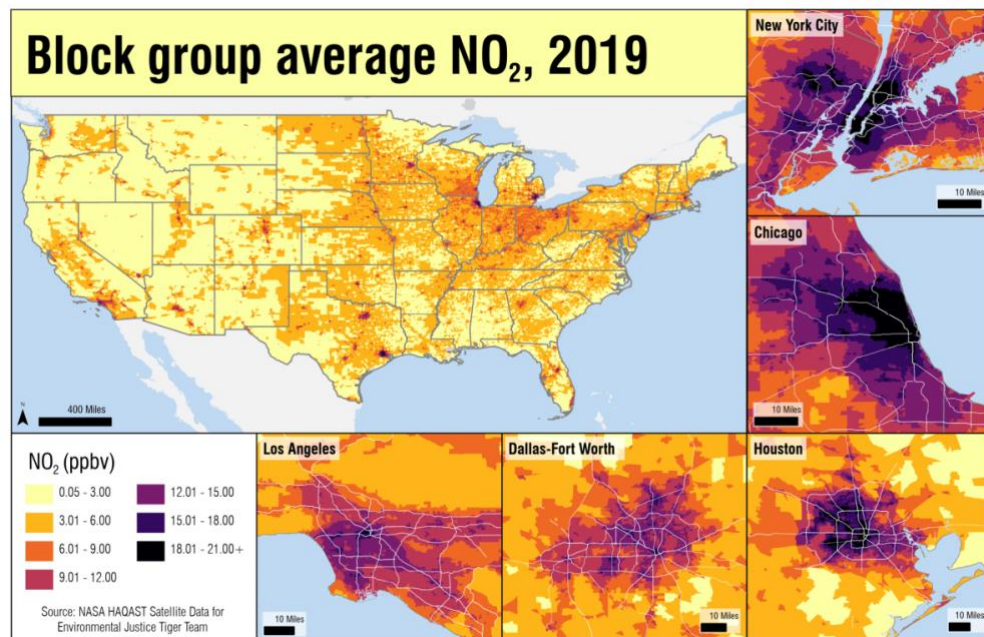
Air quality data from satellite instruments are applicable to a range of policy and regulatory uses. Currently, the U.S. Environmental Protection Agency (EPA) National Ambient Air Quality Standards (NAAQS) only consider ground-based monitor data when determining compliance with

the standards; however, satellite data play a growing role in showing emissions and pollutant transport over space and time, and help support State Implementation Plans and Exceptional event demonstrations.¹

Satellite instruments measure a column of air over the Earth, rather than direct nose-level observations, which can make direct comparisons to air quality stations challenging. One benefit of satellites is that they can collect data over a much broader area than the limited number of air quality monitors. In the Albuquerque area (i.e., Bernalillo County), there are only three active nitrogen dioxide (NO₂) and six active fine particulate matter (PM_{2.5}) monitors.² Satellite data, on the other hand, can measure or be used to estimate these pollutants and other pollutants regulated under NAAQS at a high spatial resolution (e.g. 1 km²) across the entire United States. Long-term satellite records provide clear evidence for the success of air quality regulations at reducing two trace gases, SO₂ and NO₂. Each of these is associated with direct health impacts and contributes to chemically formed pollution: SO₂ contributes to sulfate particulate matter (PM) and NO₂ contributes both to ozone and to nitrate PM. Numerous satellite instruments also detect formaldehyde, one of the precursors to ozone. Satellite data have been used to estimate the health impacts due to long-term exposure to pollutants regulated under NAAQS in Albuquerque: using these data, researchers estimated 50 premature deaths attributable to long-term exposure to PM_{2.5}, 70 premature deaths to ozone, and 1,040 new cases of pediatric asthma to NO₂ in 2019.³

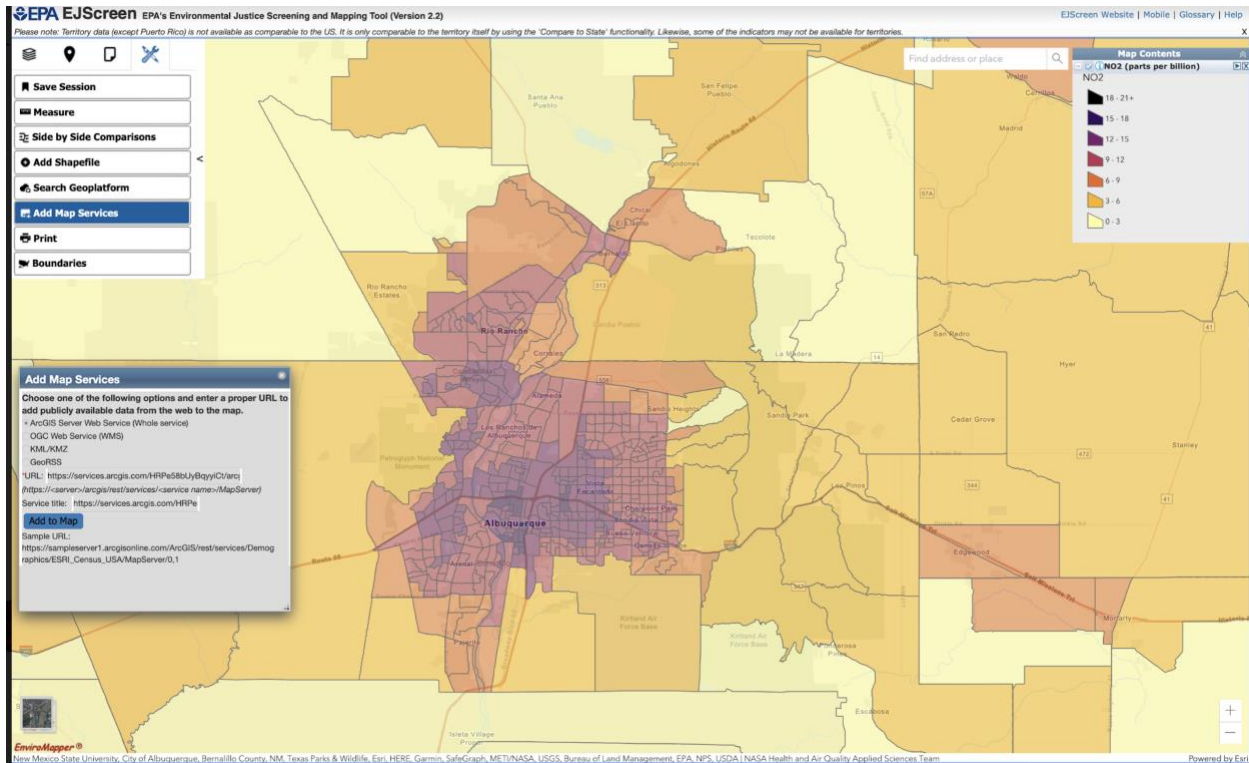
Satellite data are incorporated in some aspects of U.S. air quality policy implementation. The annual U.S. EPA air quality trends report includes long-term changes in tropospheric column NO₂ observed from space.⁴ Under the NAAQS, states with counties out of compliance with a standard are required to submit a state implementation plan (SIP) that describes an approach to attaining the standard. Satellite NO₂ data have been featured in SIPs submitted by the state of Texas for declining levels of a key precursor to ozone formation, and satellite NO₂ and formaldehyde data have been used by the state of Connecticut as weight-of-evidence for photochemical conditions shaping regional high-ozone events.⁵⁻⁷ Satellite data have been applied to identify episodic, high-pollution events from sources such as wildfires, dust, and even fertilizer application in agricultural regions, often in combination with models and ground-based measurements. Multiple satellite products have been used in exceptional event demonstrations that make a case for excluding these events from counting toward noncompliance.^{8,9}

Satellite data are also increasingly relevant to environmental justice analysis. Often, areas with the greatest emissions and highest levels of NO₂ are communities with higher proportions of racial and ethnic minorities and residents with lower socioeconomic status, an environmental justice concern. The NASA Health and Air Quality Applied Sciences team created a high-resolution dataset of surface-level NO₂ concentrations globally, available at the census block group level in the U.S. This dataset can be incorporated into the EPA EJScreen tool (depicted in the Block group average figure to the right).¹⁰



References

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- Fiore, A. M., Pierce, R. B., Dickerson, R. R. & Lin, M. Detecting and attributing episodic high background ozone events. *EM Magazine for Environmental Managers* (2014).
- Kerr, G. H., Anenberg, S. C. & Richardt, E. Viewing nitrogen dioxide pollution in environmental justice screening tools.



This map was submitted in Ms. Cimino’s November 6, 2023 comments.

Proposed Language to Petitioners’ Amended Exhibit A, Version 4

Below are suggested clarifications and changes to the Petitioners’ Amended Exhibit A, Version 4.

1. **20.11.72.7.BB. “Radius.”** Generally when “radius” is mentioned in the proposed regulation, it is a measure from the center of the source. In order to provide equity and to meet the objectives of the proposed regulations, the radius must be measured from the fenceline. Measuring the radius from the center of the site may diminish the impact of emissions from facilities located on the perimeter of the site.

In **20.11.72.7.EE**, “Source” is defined as “a structure, building, equipment, facility, installation or operation that emit or may emit an air contaminant.”

Further, the definition of radius should be extended to five (5) miles from the fenceline.

2. **2.11.72.10.3.d. “Health Indicators.”** A word or two should be added to clarify the language: “Heart disease 18 and over prevalence; and.”
3. **2.11.72.10.F.2. “Notice.”** The requirement should include the size of the sign to be posted at the source site.
4. **2.11.72.11.A.1.c. “Application contents.”** Add “response to comments” to the list of items that should be included in the final HEEI Report.
5. **NO2 Dataset Inclusion:**

When evaluating new air permits, EHD shall integrate NO2 API datasets into the EPA EJ Tool and assess the combined effects of current NO2 emissions taking into account demographic and health disparities in affected census tracts.

Conclusion

We appreciate the flexibility of the Board to hear our concerns and hope they will take these policies comments and integrate them into the rulemaking.

Keep the door open to new technology that integrates both ground and atmospheric monitoring. Other cities are using the new technology and making strides to reduce air emissions.

Respectfully submitted this first day of December, 2023.

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CERTIFICATE OF SERVICE

I certify that on this first day of December, 2023, a copy of the foregoing copy of Elaine Cimino, Pro Se, Notice of Filing of Closing Arguments was filed with the Hearing Clerk in accordance with 20.11.82.16 NMAC and served by electronic mail to the following parties, with apologies for the formatting problems:

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