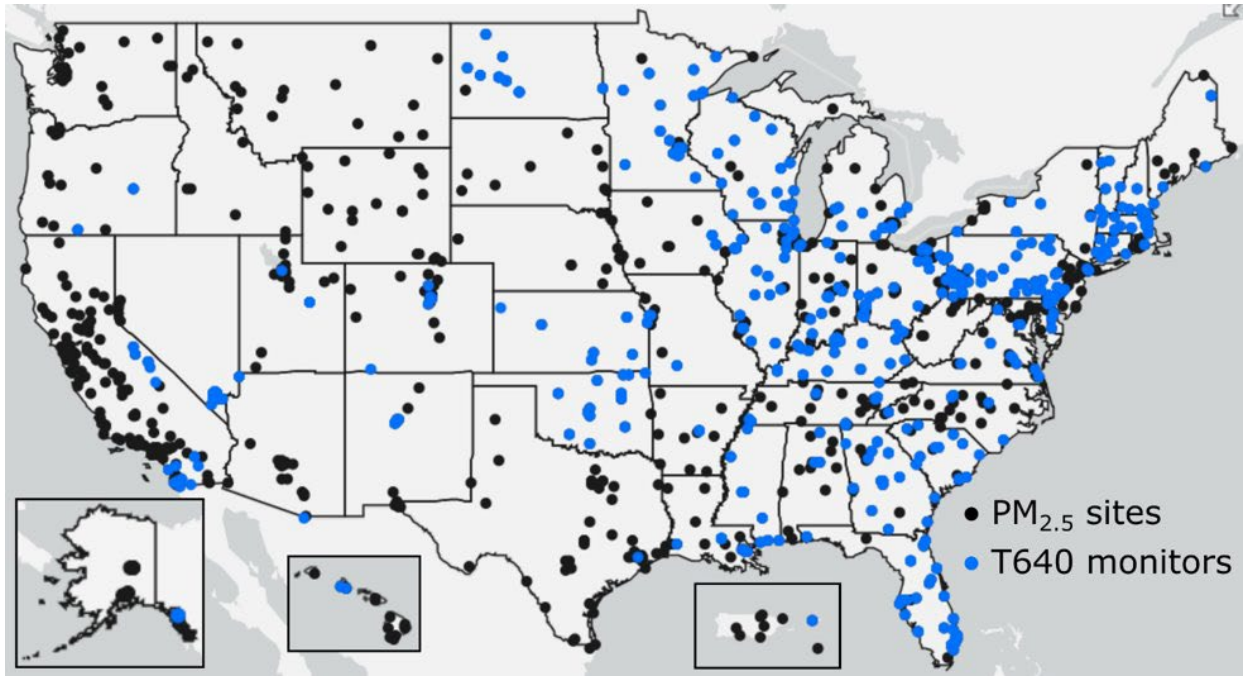
PM Data Analysis

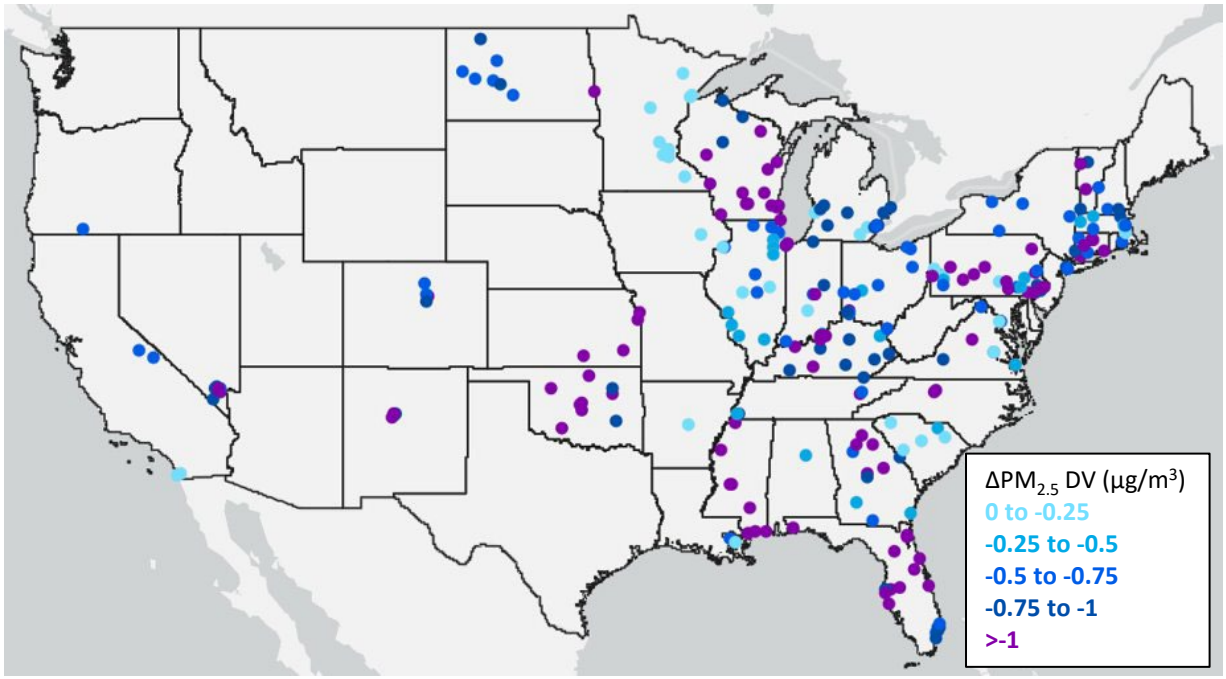
Brett Gantt
U.S. Environmental Protection Agency

NAAMC PM Session
August 14th, 2024

PM Teledyne Data Update

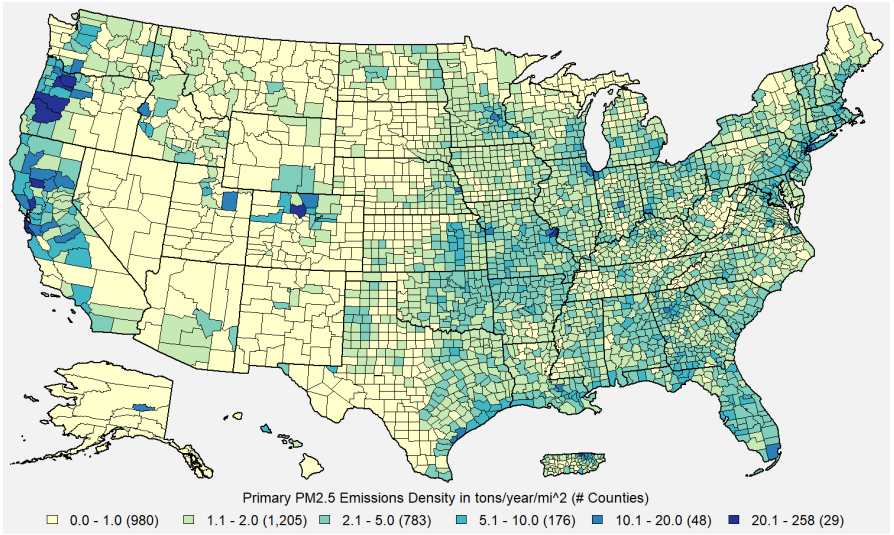
- October 2021: Draft Policy Assessment for the Reconsideration of the NAAQS for PM released
- Spring 2022: Public Meetings of the Chartered CASAC and the CASAC PM Panel
- April 2023: Modification request for the T640/T640x $PM_{2.5}$ FEM designation was approved by EPA ORD's Reference and Equivalency Program
- February 2024: EPA proposed a retroactive update of the approved modification of the T640/T640x FEM data in AQS from 2017-2023
- May 2024: EPA finalized the retroactive update of the approved modification of the T640/T640x FEM data in AQS
- August 2024: EPA released 2021-2023 $PM_{2.5}$ design values including the retroactive T640/T640x $PM_{2.5}$ update

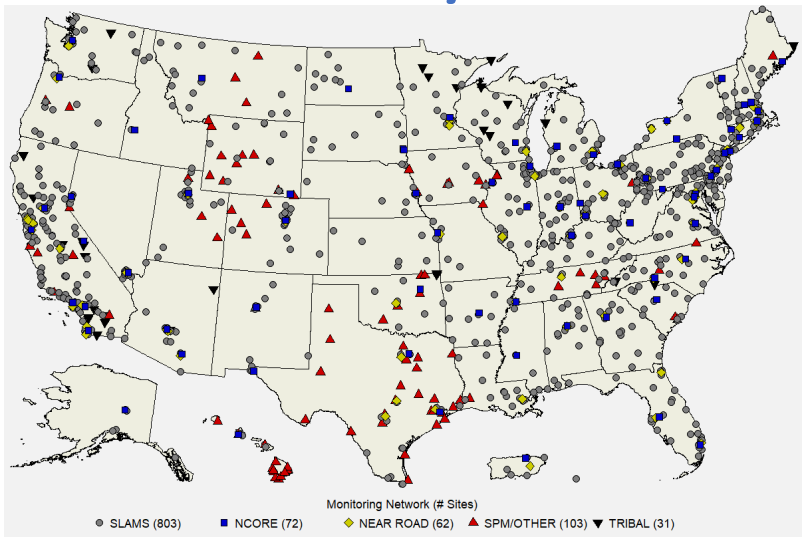


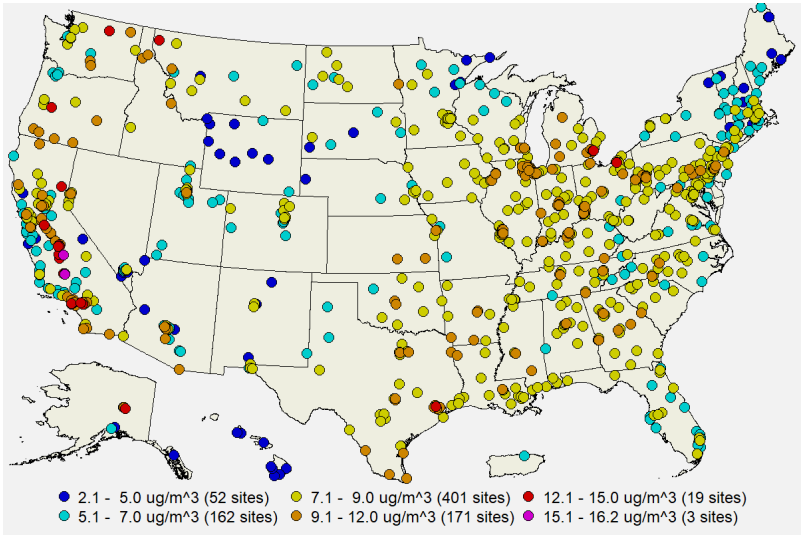


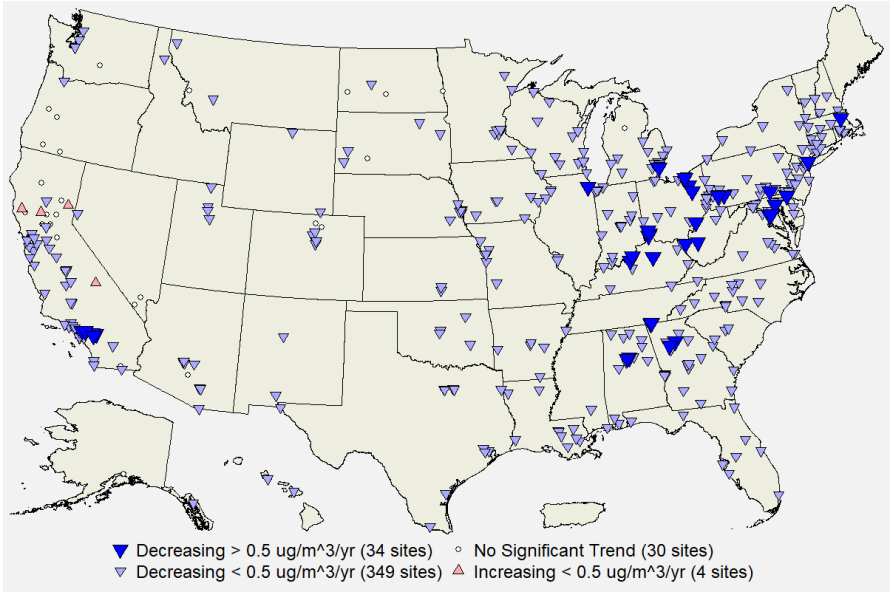
https://www.regulations.gov/docket/EPA-HQ-OAR-2023-0642

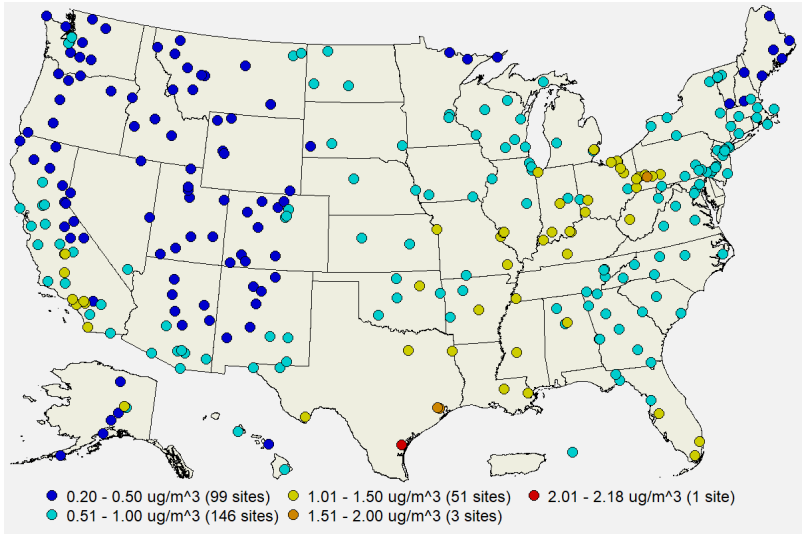
NAAQS Air Quality Documents

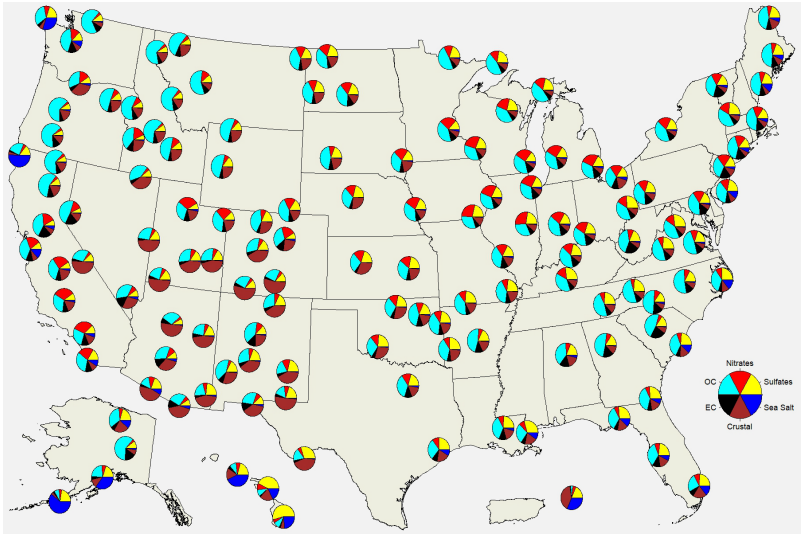




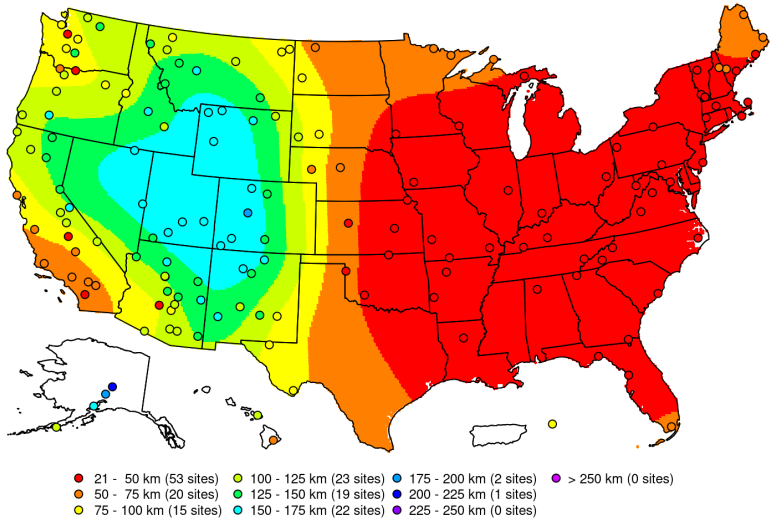


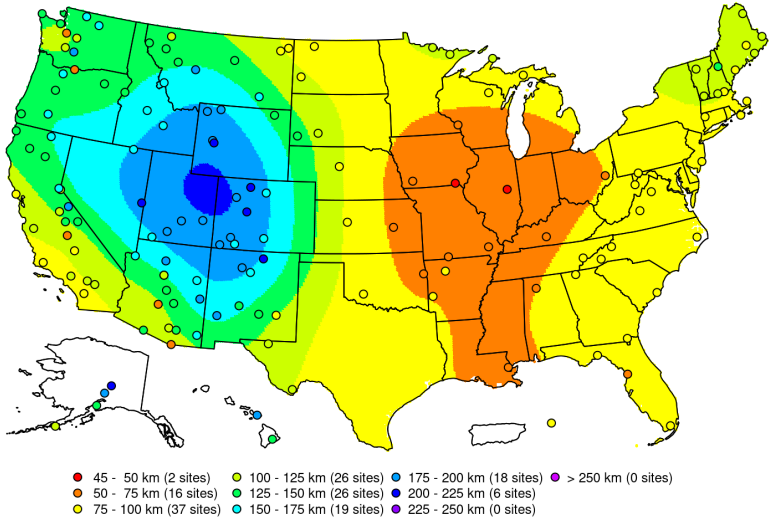


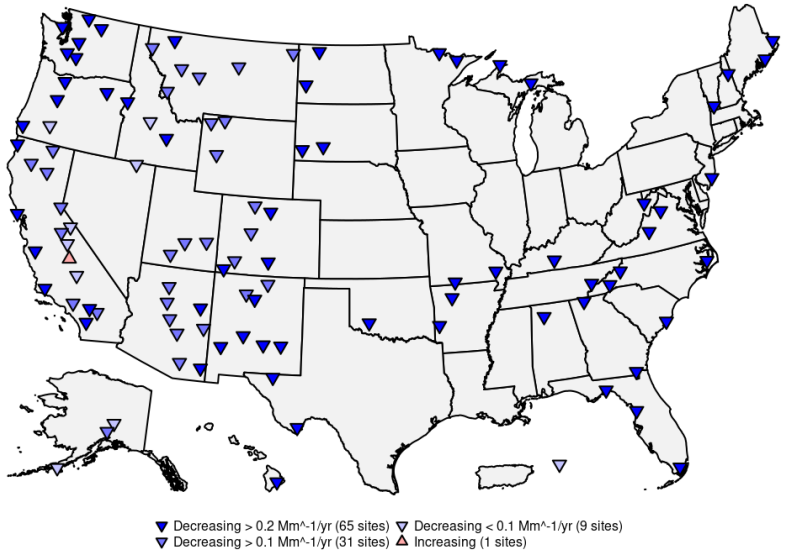


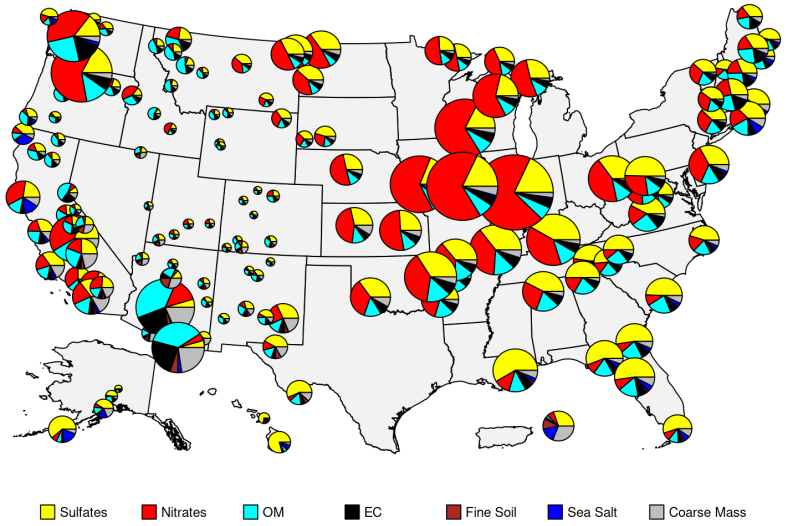


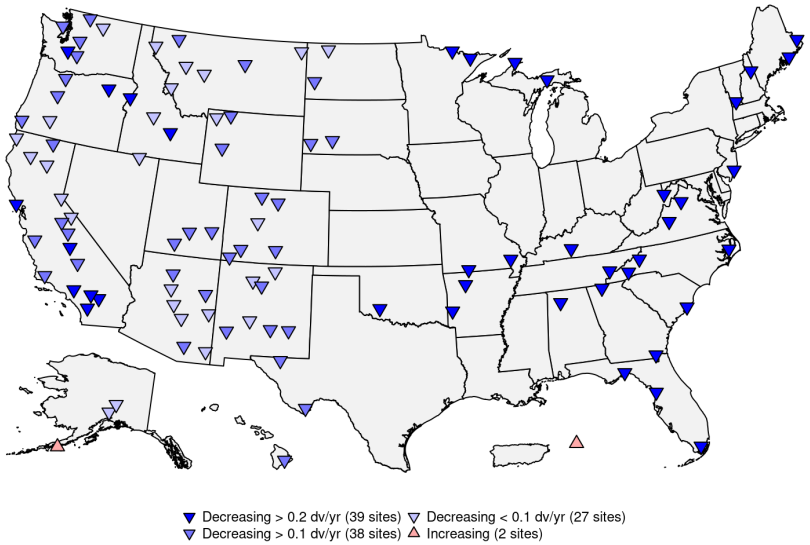
Regional Haze Air Quality Document (under development)







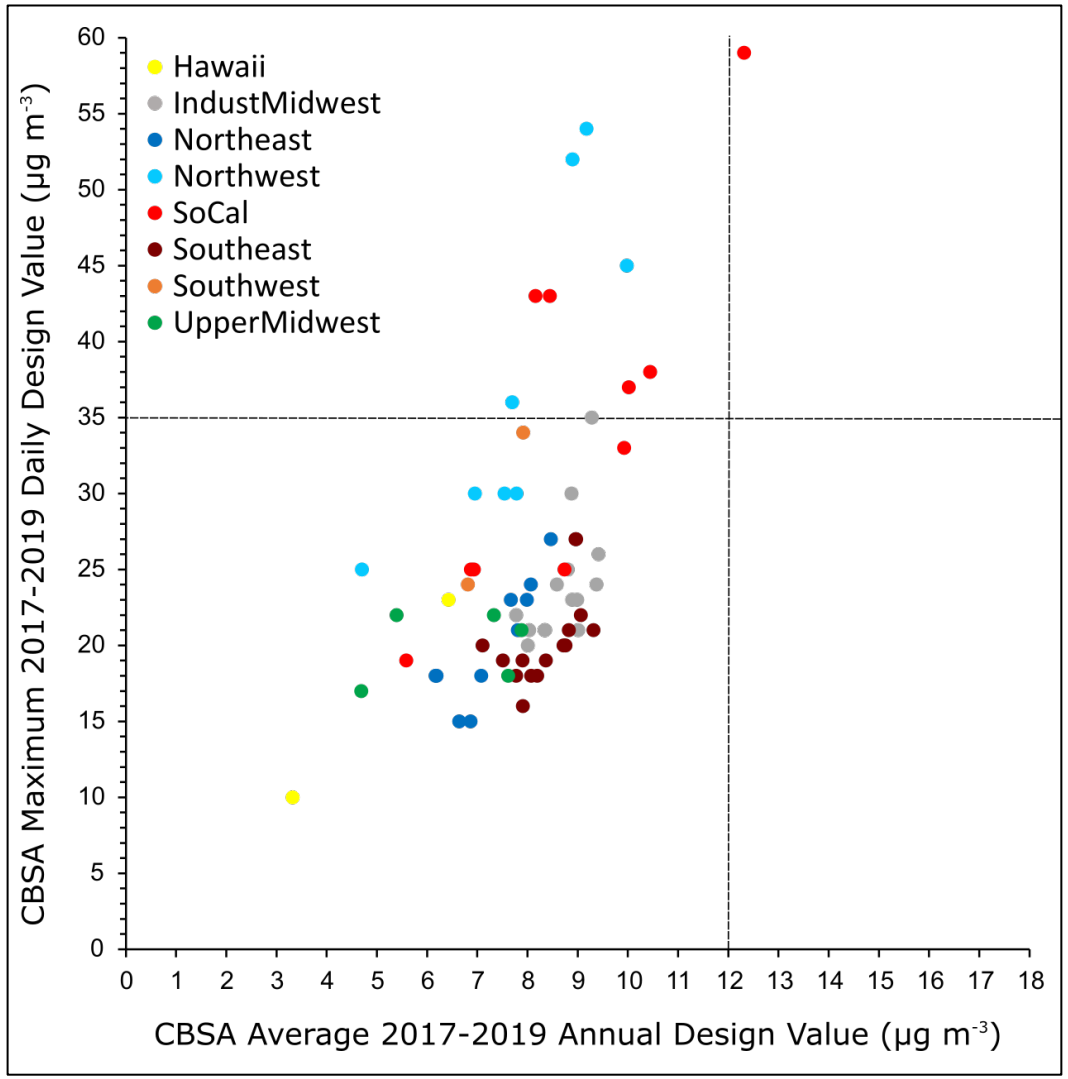


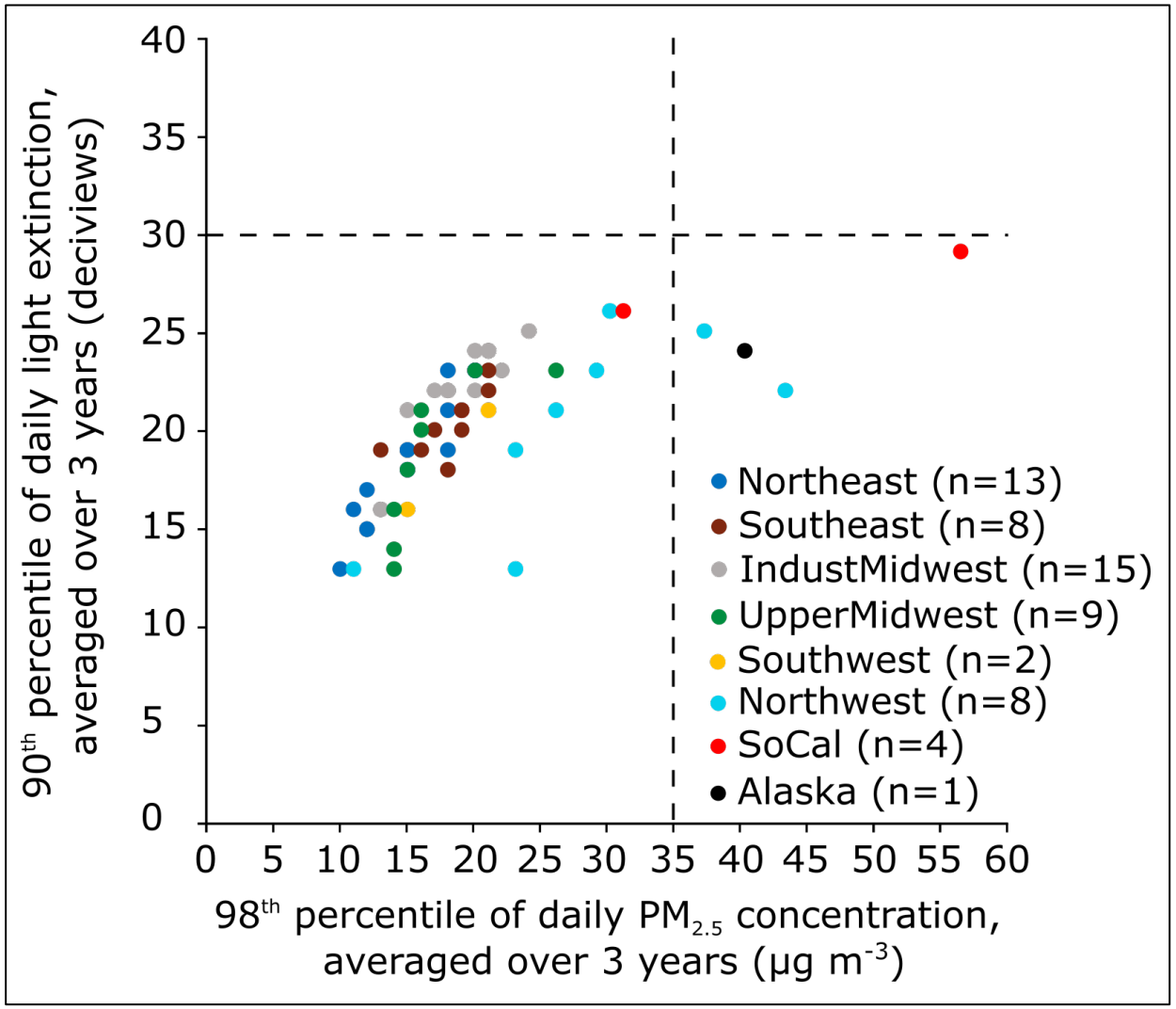


EPA

https://www.epa.gov/visibility/visibility-parks-and-wilderness-areas

PM NAAQS Policy Assessment





PurpleAir US-Wide $PM_{2.5}$ Correction

Atmos. Meas. Tech., 14, 4617–4637, 2021
https://doi.org/10.5194/amt-14-4617-2021

Atmospheric Measurement Techniques
Open Access
EGU

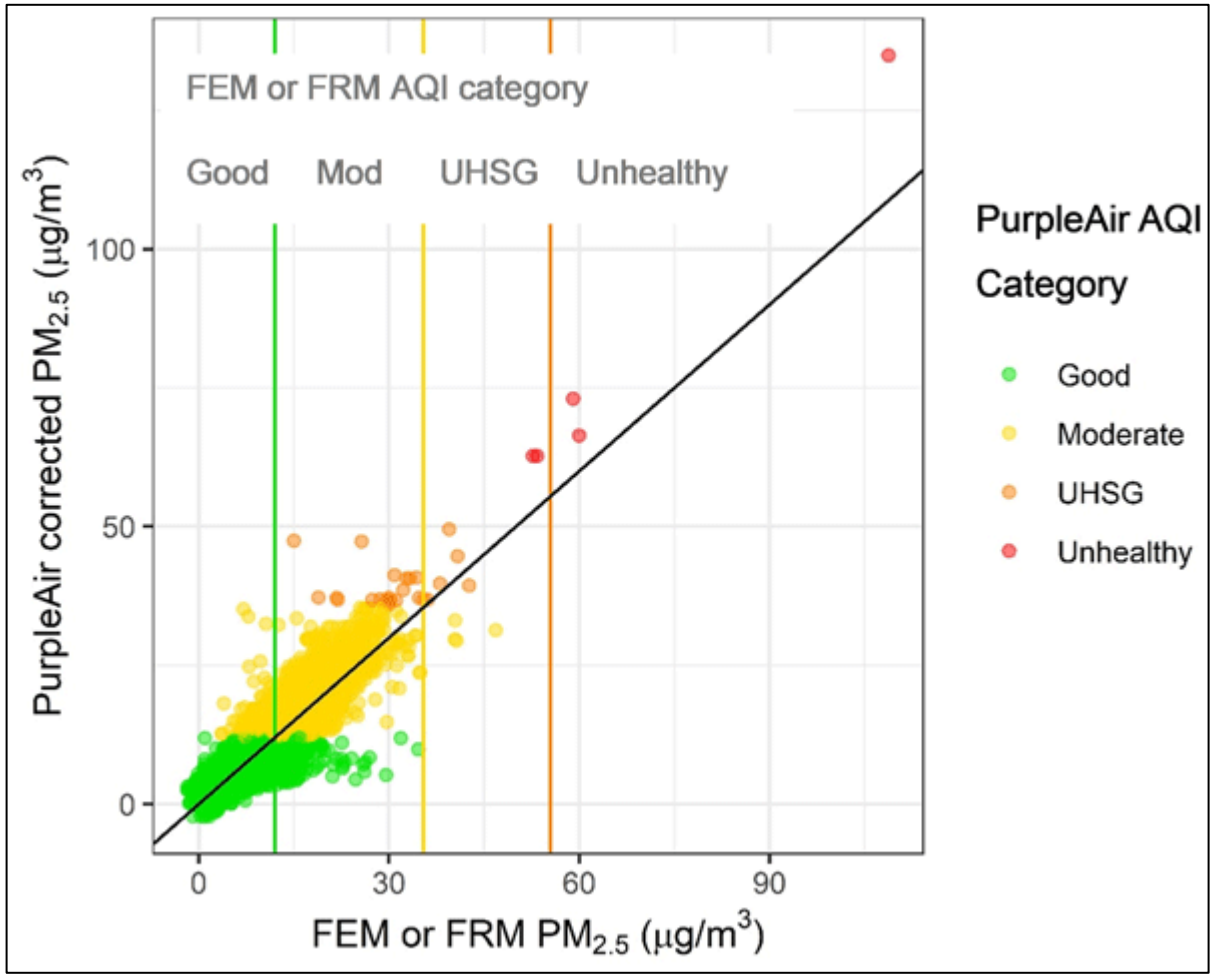
Development and application of a United States-wide correction for $PM_{2.5}$ data collected with the PurpleAir sensor

Karoline K. Barkjohn[1], **Brett Gantt**[2], **and Andrea L. Clements**[1]

[1]Office of Research and Development, US Environmental Protection Agency, 109 T.W. Alexander Drive, Research Triangle Park, NC 27711, USA
[2]Office of Air Quality Planning and Standards, US Environmental Protection Agency, 109 T.W. Alexander Drive, Research Triangle Park, NC 27711, USA

Correspondence: Karoline K. Barkjohn (barkjohn.karoline@epa.gov)

Received: 16 October 2020 – Discussion started: 2 December 2020
Revised: 27 April 2021 – Accepted: 29 April 2021 – Published: 22 June 2021



https://amt.copernicus.org/articles/14/4617/2021/

Characterizing Near-Road NO_2 and $PM_{2.5}$

Environmental Science & Technology

pubs.acs.org/est

Article

Characterizing Nitrogen Oxides and Fine Particulate Matter near Major Highways in the United States Using the National Near-Road Monitoring Network

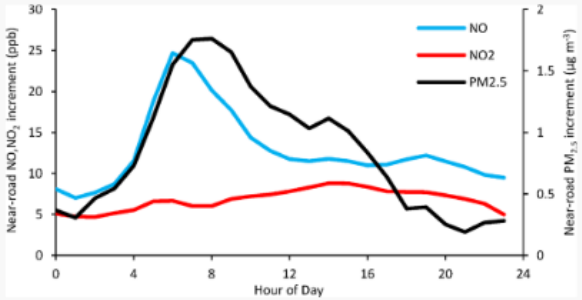
Brett Gantt,* R. Chris Owen, and Nealson Watkins

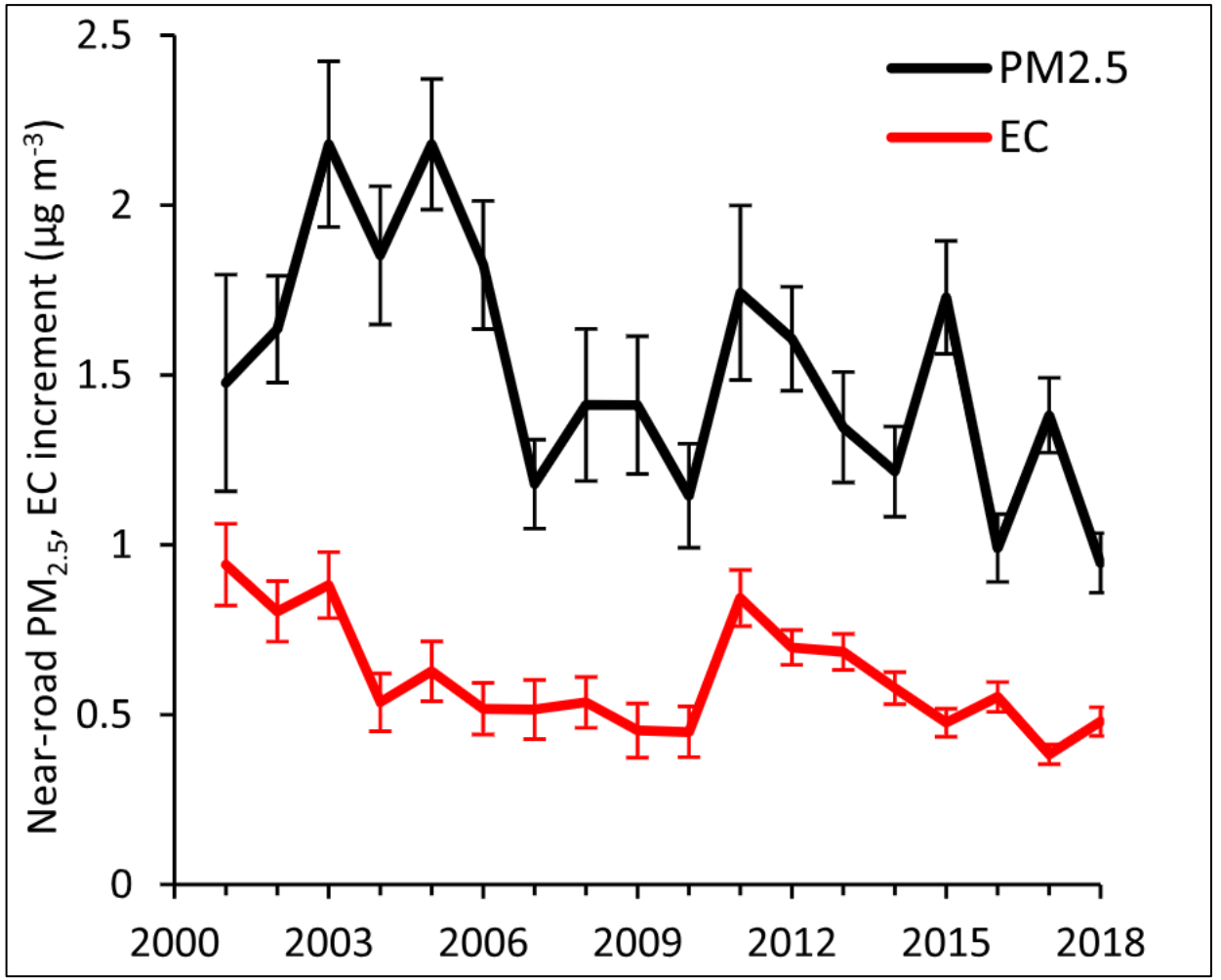
Cite This: *Environ. Sci. Technol.* 2021, 55, 2831−2838

Read Online

ACCESS | Metrics & More | Article Recommendations | Supporting Information

ABSTRACT: As part of the United States Environmental Protection Agency's 2010 Nitrogen Dioxide (NO_2) National Ambient Air Quality Standards (NAAQS) review, a national network of near-road sites was established to characterize pollutant behavior, interaction, and dispersion in the ambient near-road environment. Using spatial interpolation to estimate the near-road concentration increments of NO_2 and particulate matter with an aerodynamic diameter of 2.5 μm and less ($PM_{2.5}$) relative to nearby non-near-road monitors, we found that the 2013−2018 national average increment is 6.9 ppb and 1.0 $\mu g\ m^{-3}$ for NO_2 and $PM_{2.5}$, respectively. Analyses of the hourly near-road NO_2, nitric oxide (NO), and $PM_{2.5}$ increments showed distinct diurnal cycles; the NO_2 increment peaks at ~9 ppb during the early afternoon (2−4 pm local time) while the NO and $PM_{2.5}$ increments peak during the morning rush hour (5−8 am local time) at 25 ppb and 1.8 $\mu g\ m^{-3}$ for NO and $PM_{2.5}$, respectively. Although long-term trends are not yet available for this network of sites, a similar analysis of the NO_2 and $PM_{2.5}$ increment at a quasi-near-road site outside of the official network in Elizabeth, NJ showed gradual decreases in the increment over time since the mid-2000s.





https://pubs.acs.org/doi/full/10.1021/acs.est.0c05851

Contact

- Brett Gantt (RTP, NC)
  - OAR/OAQPS/AQAD/AQAG
  - gantt.brett@epa.gov