

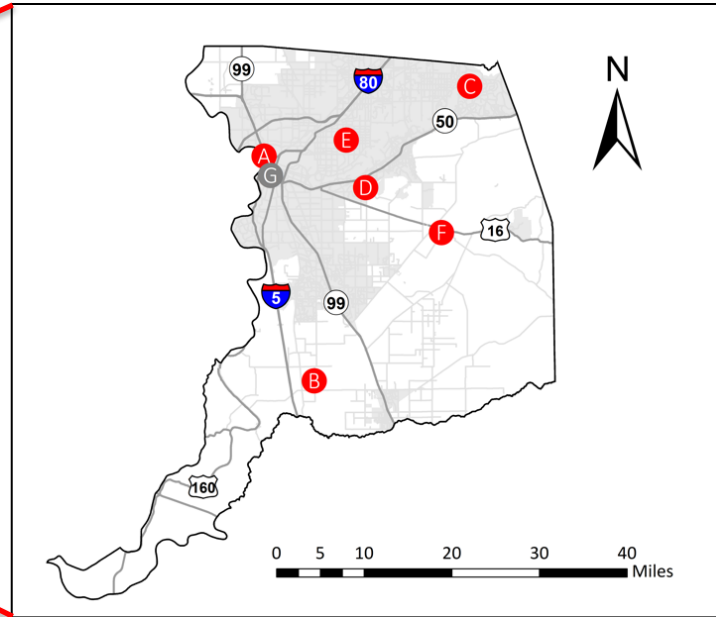
Air Pollution Data for Informing Communities and Guiding Local Development

National Ambient Air Monitoring Conference
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Sacramento Metropolitan Air Quality Management District

California Air Districts



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Inspiration for the City of Sacramento and District Partnership

History of Sacramento

- Recent AB617 legislation and environmental justice efforts work to address systematic injustices to create a more equitable future
- City of Sacramento Climate Implementation Work Plan

Environmental Justice Efforts

- District's Community Air Protection Program (AB617)
 - Community Air Monitoring Plan
 - Community Emission Reduction Plan
- Targeted incentives and investments in underserved air pollution burdened communities

AB 617 and the corresponding Community Air Protection Program helped inspire local agencies to search for ways to get involved.

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Project Overview & Objectives

City of Sacramento and Sac Metro Air District Partnership

Deploy 200 portable air sensors in low-income, under-resourced communities within the city of Sacramento, CA



Conduct Neighborhood-Scale Air Monitoring



Develop and implement a middle/high school air quality curriculum



Objectives:

- Provide localized data in under-resourced communities and fill air monitoring data gaps
- Build community engagement
- Inform land use planning and clean air project funding decisions

Deploy 200 Portable Air Sensors

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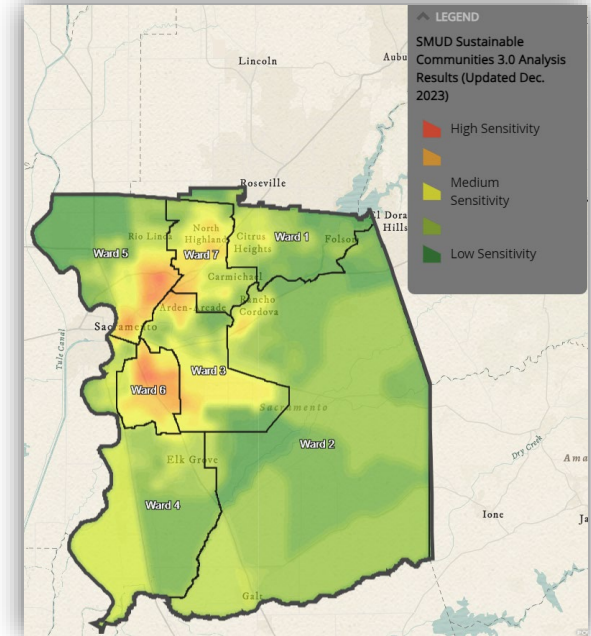


AIR QUALITY
MANAGEMENT DISTRICT

City of
SACRAMENTO

Air Sensor Deployment Objectives

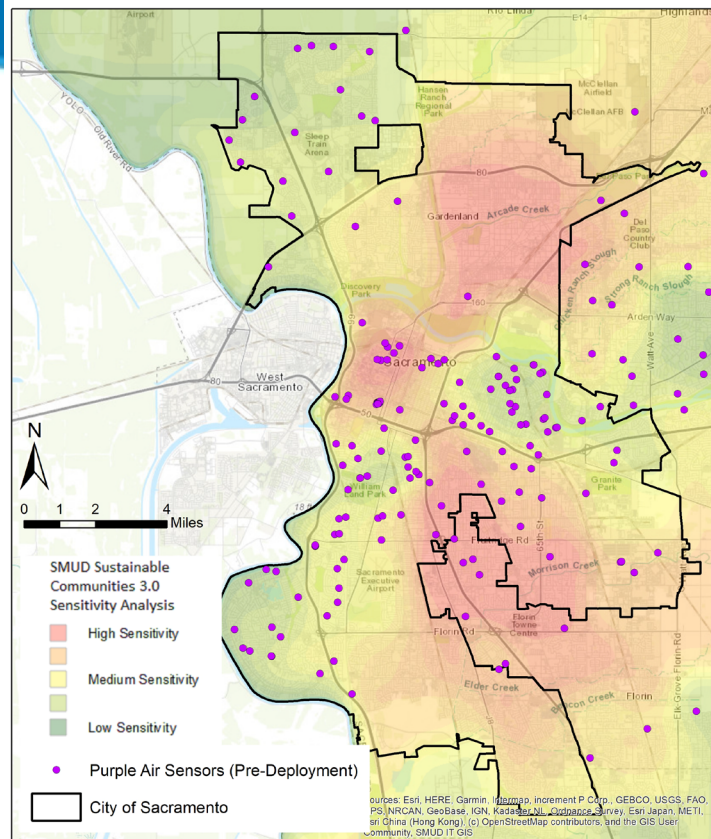
- Prioritize deployment to communities with higher sensitivity
- Increase spatial coverage of air monitoring
- Enhance air quality awareness
- Provide publicly available real-time air sensor data to enable:
 1. Community members to inform personal decisions
 2. Local officials to consider the information in general planning and air quality management practices



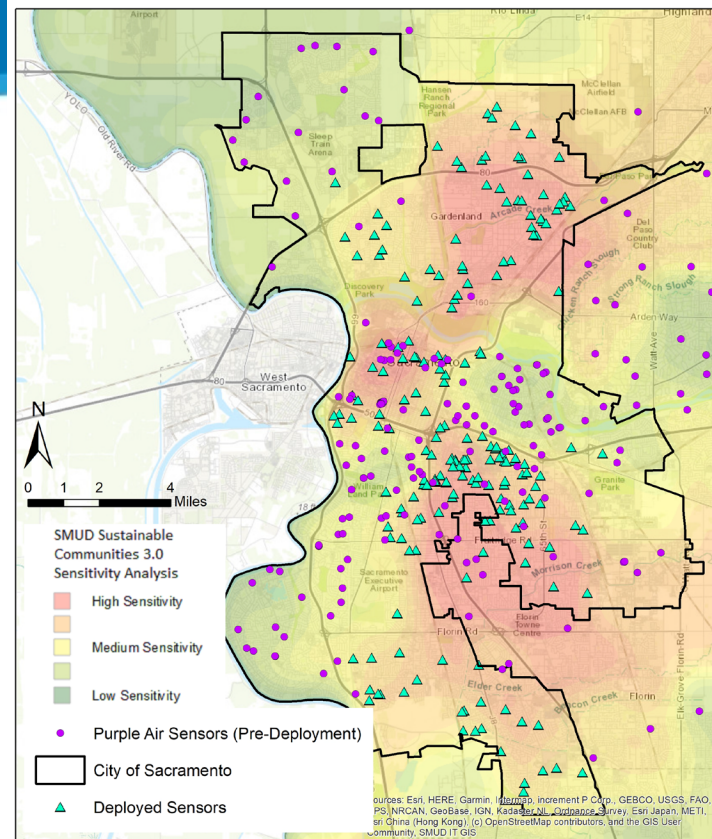
SMUD Sustainable Communities Map

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Geographical Coverage Pre- and Post-Deployment

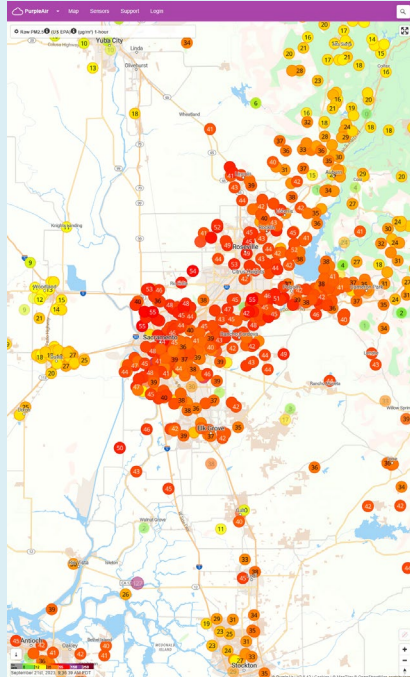


Pre-Deployment (January 2023)

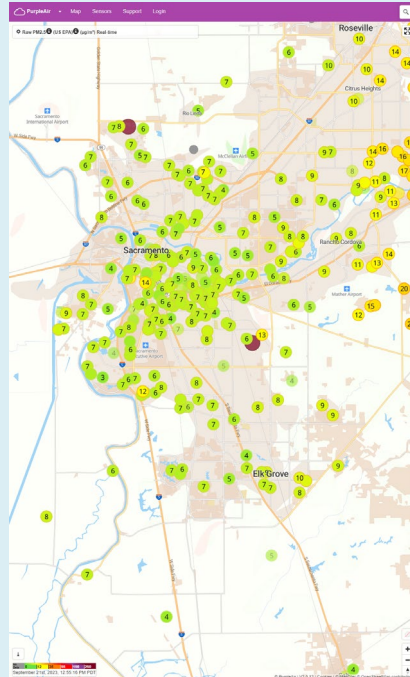


Post-Deployment (February 2024)

Portable Air Sensor Network During a Wildfire Smoke Event



September 21, 2023 9:36 AM



September 21, 2023 12:55 PM

1. The public can use the sensor network as an immediate health decision-making tool
2. School districts can use this resource to inform outdoor activity for their students
3. Local agencies can use this to communicate to the public about wildfire smoke status and public health

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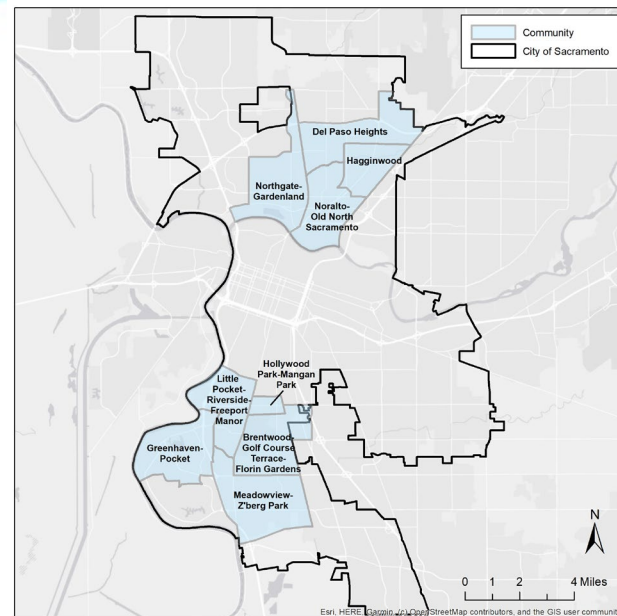
Neighborhood-Scale Air Monitoring

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Objectives

- Perform neighborhood mobile air monitoring in the City of Sacramento to collect data for:
 - Criteria pollutants ($PM_{2.5}$, PM_{10} , O_3 , NO_2),
 - Climate forcers (BC, CO_2 , CH_4), and
 - Volatile Organic Compounds (aromatics, alkanes, dienes)
- Focus on areas with higher sensitivity and environmental burden
- Identify areas of higher pollutant concentrations

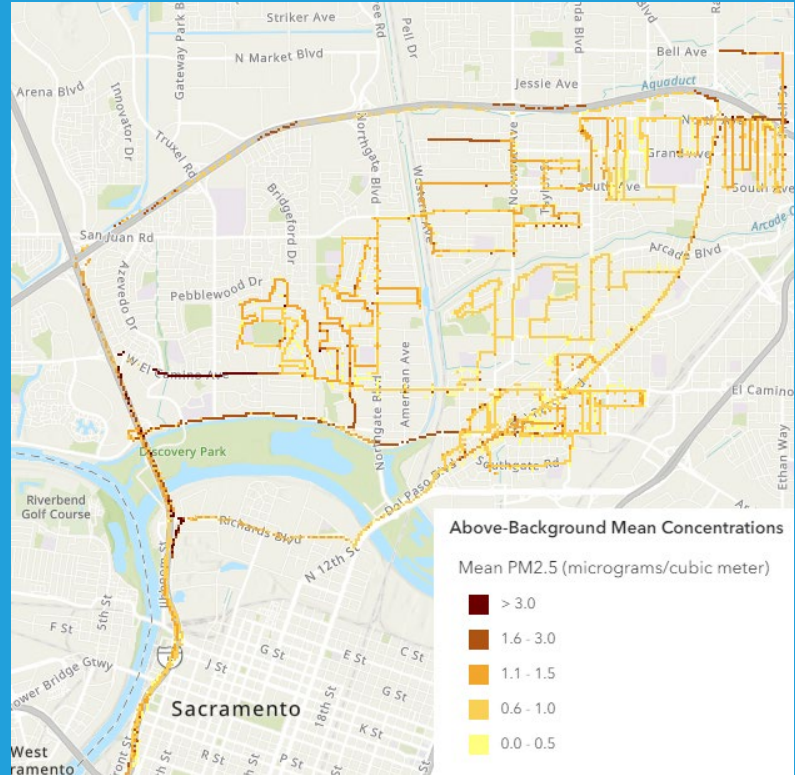


City of Sacramento
Communities of Interest

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Mobile Monitoring Results

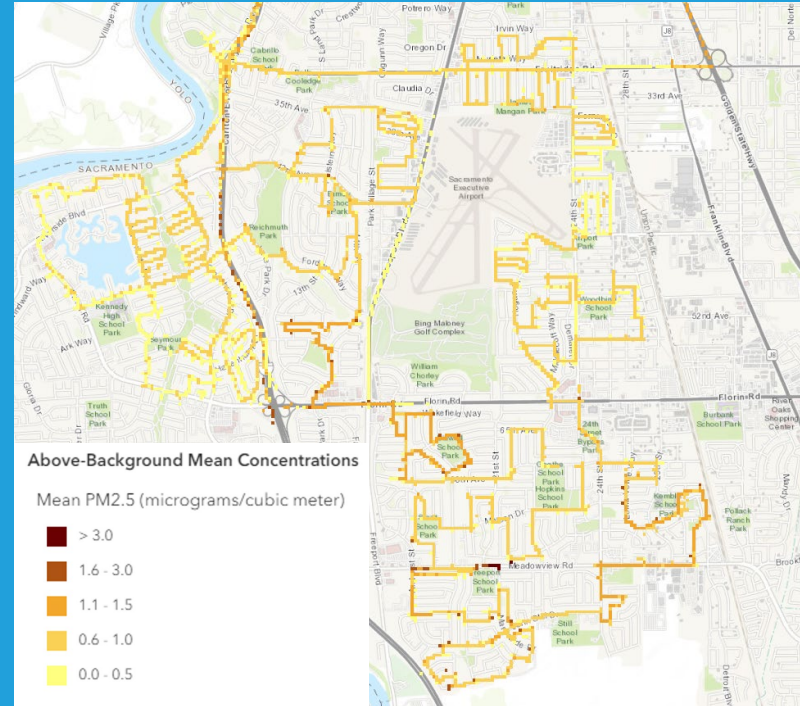
- Results were aggregated into maps
- The data represents how the mean concentration for each cell compares to the overall mean concentrations measured in all communities during the campaign
- Example: PM_{2.5}



North Sacramento PM_{2.5} Results

Mobile Monitoring Results (cont.)

- Areas with comparatively higher concentrations are considered 'Pollution Focus Zones' that may warrant further investigation
- Helps initiate conversations with local jurisdictions on priority areas within their communities



South Sacramento PM_{2.5} Results

Cultivating Long-Term Community Engagement

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Community Engagement

- Develop an air quality school curriculum to further air quality education in a classroom setting.
- Foster active student learning through hands-on air quality activities.
- Incorporate field trips to air monitoring stations.
- Continued engagement at community events.
- Facilitate air quality workshops to garner public interest and engagement.



Conclusions & Lasting Impacts

Access to air quality data can help course correct history of pollution burden on environmental justice communities within the City of Sacramento. This project helped:

1. Inform widespread immediate health protective decisions for the community, local agencies, and school districts.
2. Inform policy decisions for local partners such as those related to infrastructure development, identification of areas to focus resources, and areas to make investments in air pollution mitigation strategies.
3. Develop a sustainable strategy to engage students and build long term capacity of air quality engagement and understanding.

Acknowledgments

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Sac Metro Air District Project Team:

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Thank You