COMMUNITY AIR MONITORING INITIATIVE

2022-2023

In accordance with New York State's Climate Leadership and Community Protection Act (Climate Act), the New York State Department of Environmental Conservation (DEC) is undertaking community air quality monitoring in 10 Disadvantaged Communities (see maps to the right). The air monitoring study areas were selected by identifying Disadvantaged Communities with the highest air pollution burdens. The method used for scoring air pollution burden was based on the work of the Climate Justice Working Group and before study boundaries were finalized through review by local stakeholders in each community. Visit https://climate.ny.gov to learn more information about the Climate Act and the Climate Justice Working Group.
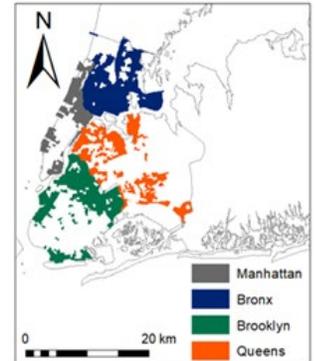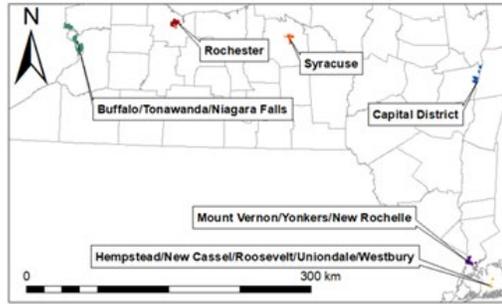
New York State is working with Aclima, Inc., to screen for local sources of air pollution street-by-street in these communities for one year. Aclima's mobile monitoring fleet of air sensor-equipped, low-emissions vehicles are driven on public roads in the study areas at least 20 times across different seasons, different days of the week, and different times of the day over the course of the year. The goal of this effort is to collect block-level air pollution data to help identify sources contributing to disproportionate air pollution burdens and develop strategies to reduce air pollution within these communities, including greenhouse gas emissions contributing to climate change.

Pollutants Measured

The figure below shows the pollutants measured during mobile monitoring and some of their known emission sources.
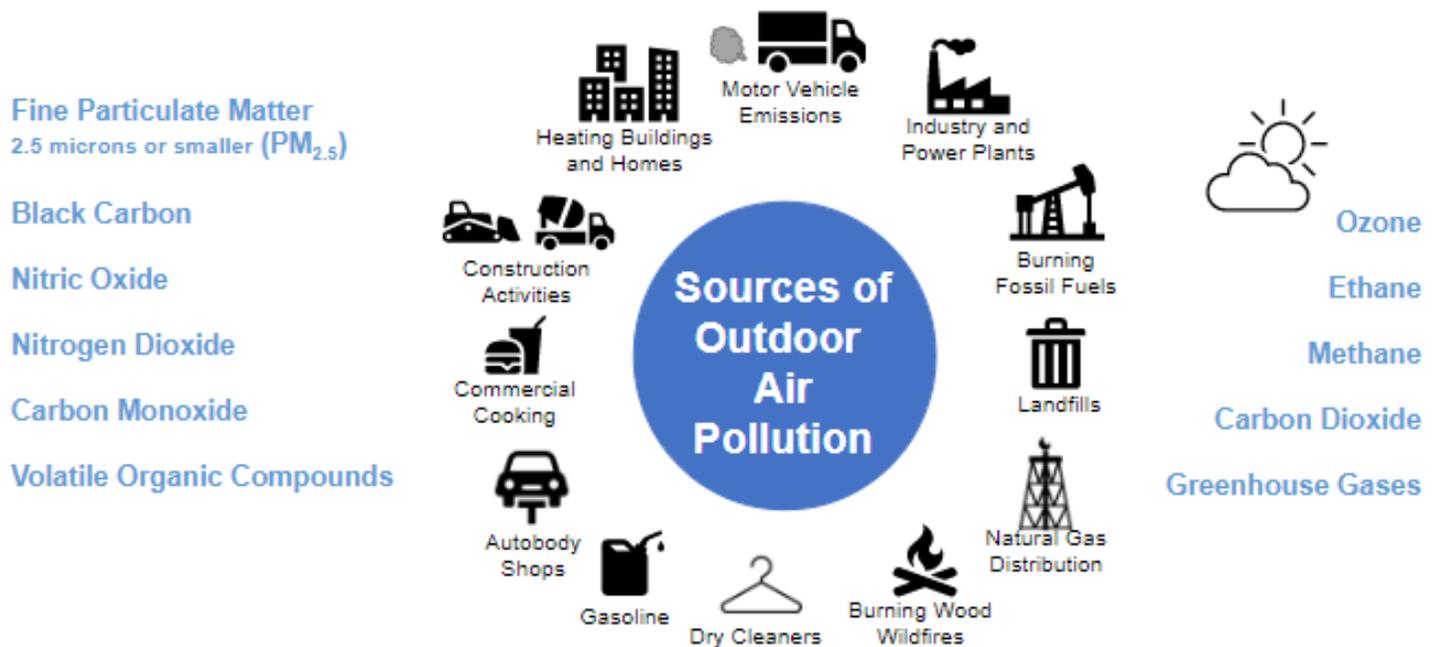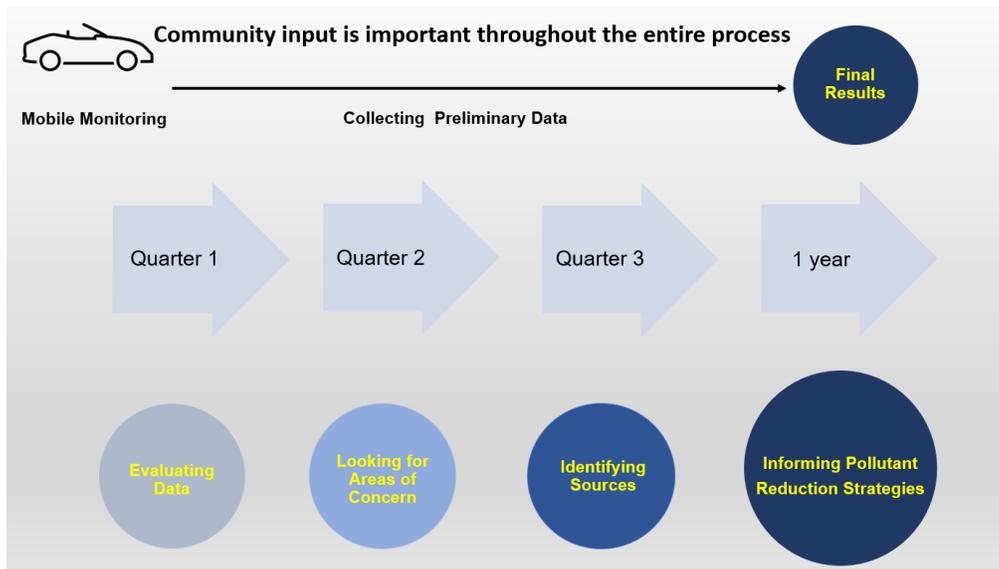

Air pollution is a mixture of gases and particles. PM$_{2.5}$ is fine particulate matter (or particulate matter 2.5 microns in size and smaller) and mostly comes from combustion such as burning fossil fuels to heat buildings, generate electricity, and run motor vehicles. PM$_{2.5}$ is also released from industrial processes, commercial cooking, and burning wood. Black

carbon, often called soot, is a part of $PM_{2.5}$, contributes to climate change, and comes from the burning of diesel, wood and other heavy fuel oils. Carbon dioxide, the most prominent greenhouse gas altering our climate, and other gases like nitric oxide, nitrogen dioxide, and carbon monoxide, are released from motor vehicles. Some of these gases may also be released during the burning of fossil fuels to heat buildings. Methane, a potent greenhouse gas, is released from landfills, sewage treatment facilities and from natural gas leaks, among other sources. Ethane measurements are used to help determine the source of methane. Volatile organic compounds, or VOCs, are gases released from industrial sources, paints, adhesives, solvents, fuels like gasoline, and consumer goods. The pollutant ozone is produced when VOCs and gases from motor vehicle exhaust react with sunlight. The monitoring may be able to detect specific VOCs such as benzene, toluene, ethylene benzene, and xylene to help further identify sources.

What will DEC do with the mobile monitoring data?

DEC is using the mobile monitoring data to identify locations of concern by looking for high pollution levels (peaks). DEC will provide regular updates on preliminary data and gather community input. DEC scientists will use this information to identify potential pollution sources, paying careful attention to places with sensitive individuals and vulnerable populations such as schools, daycare facilities, and nursing homes. DEC will then conduct additional work to isolate the exact source or sources contributing to the peaks.

Community input is important throughout the entire process

Mobile Monitoring   Collecting Preliminary Data   Final Results

Quarter 1 → Quarter 2 → Quarter 3 → 1 year

Evaluating Data | Looking for Areas of Concern | Identifying Sources | Informing Pollutant Reduction Strategies

At the end of the full year of collection, Aclima will validate all the preliminary data. The verified data are then used in computer models to produce maps of annual concentration estimates for each pollutant by road segment. These maps will be available to the public on an interactive website. All information including community input, mobile monitoring data, and other air monitoring and emissions data will be used to inform pollutant reduction strategies.

The Climate Act requires DEC and community stakeholders to propose pollutant reduction strategies by June 2024.

Public Engagement

DEC is forming Community Advisory Committees (CACs) in each monitoring study area to share air quality concerns and insights about the monitoring effort, attune the study to community knowledge, and develop community-driven solutions to reduce air pollution. Community input is critical for the success of this initiative. Let us know if you would like to participate in a CAC in your community. Email your air quality concerns and interest to participate in the CAC to CLCPA.CAM@dec.ny.gov or call 518-402-8402. Information and updates will be posted on the DEC Community Air Monitoring website at https://www.dec.ny.gov/chemical/125320.html.