



**NEW YORK CITY DEPARTMENT OF HEALTH  
AND MENTAL HYGIENE**  
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*Commissioner*

## **About the New York City Community Air Survey (NYCCAS)**

### **Why is the purpose of the survey?**

The community air survey is designed to measure pollution levels and see how they vary across New York City. The results are helping to inform the public and city officials about neighborhood air quality and local air pollution sources. Together with other information, the survey results will help City agencies better understand the sources and health effects of air pollution and plan measures to reduce it.

### **How does this survey differ from routine air-quality monitoring?**

The New York State Department of Environmental Conservation (DEC) conducts routine air quality monitoring in New York City and throughout the state, as required by federal regulations. DEC tracks hourly, daily and annual trends in overall air quality in the NYC metro area to determine whether NYC is complying with the federal Clean Air Act, and to help forecast days when air quality will be poor.

DEC monitors are located at about 25 sites around the city, mostly on rooftops at some distance away from heavy traffic and other emission sources. Routine DEC monitoring is not designed to compare pollution levels at different locations within the city. Most pollutants are monitored at just a few locations.

NYCCAS is designed to better understand how average air pollution levels vary from place to place within New York City. The survey collects one air sample every two weeks, in each season, from 150 locations throughout the five boroughs. NYCCAS air samples are collected at street level, where people walk along sidewalks, and where traffic-related pollution is usually higher.

### **Where are the NYCCAS air sampling boxes located?**

Monitors are mounted on light, signal or utility poles, mostly along streets but also in parks.

### **How were the monitoring locations chosen?**

The locations represent a wide variety of New York City environments – sidewalks, busy streets, parks, and quiet neighborhood roads. Most of the sites (80%) were chosen at random to ensure a good representation of all types of neighborhoods, including residential, commercial and industrial ones. The locations vary in tree cover and in the density of traffic and buildings. The remaining 20% of our sites were selected ensure that at least one monitor is placed:

- In every Community District
- In some neighborhoods with large transportation facilities or long-term construction
- Near some major highway interchanges and other locations with heavy traffic

### **Which pollutants are being measured?**

NYCCAS monitors all of the major air pollutants regulated by the Environmental Protection Agency because of their proven harm to public health. Most of these pollutants are produced by burning fuel in motor vehicles, boilers, and furnaces. They include:

- Fine particles (PM<sub>2.5</sub>)
- Nitrogen oxides (NO<sub>x</sub>)
- Elemental carbon (EC)
- Metals in particles
- Sulfur dioxide (SO<sub>2</sub>)
- Ozone (O<sub>3</sub>)

Such pollutants are found throughout New York City at levels that vary both from place to place and from day to day.

### **I'm concerned about emissions from a facility in my neighborhood. Can NYCCAS place a monitor near that site?**

NYCCAS is not designed to measure how any particular facility affects air quality in its immediate vicinity. NYCCAS examines how pollution varies across New York City and how local sources of pollution, such as car traffic and building boilers, contribute to the differences in air quality across NYC neighborhoods.

### **How will you analyze the air pollution data?**

Since we can't sample the air in every location in NYC, we chose representative areas so that we can determine how pollution levels vary in relation to traffic, buildings, trees, and other neighborhood factors. Since we know about traffic, buildings, trees and other neighborhood factors even where we don't sample, we can use statistical procedures to estimate pollution levels in areas where no direct measurements were taken.

### **Can the pollution estimates be compared to federal standards?**

No, the measurement methods and locations are different. EPA standards are based on measurements taken at roof height, but NYCCAS air monitors are placed at street level, where some pollutant levels may be higher and where people spend most of their outdoor time. The NYCCAS findings will show how air quality differs among neighborhoods but cannot be used to judge whether New York City is in compliance with federal air standards.

### **Who is involved in the study?**

NYCCAS is a partnership of the New York City Health Department, Queens College of the City University of New York (CUNY), and a consultant, ZevRoss Spatial Analysis. PlaNYC, New York City's sustainability initiative, provided funding for NYCCAS. It is one of many PlaNYC initiatives coordinated by the Office of Long-Term Planning and Sustainability.

### **What is inside the air sampling boxes hung from lampposts?**

Each monitoring box contains a pump and filtering device to collect fine-particle samples. The box also houses a rechargeable battery and electronic components that power, control and monitor the pump's operation. The outside of the box houses devices to measure gasses. The NYCCAS monitors do not contain radiation or release chemicals into the air. They do not take video or still pictures of any kind.



### **How does NYCCAS differ from previous neighborhood air pollution studies in New York City?**

Some past studies have shown air-quality differences between specific neighborhoods, but NYCCAS monitors air pollution in all neighborhoods across the city, in all seasons. These measurements help us identify more polluted areas and identify the contributing factors.

### **Why are pollution levels generally higher in areas with a higher density of buildings and people?**

High-density neighborhoods burn more fuel oil for heating and cooking. They also tend to have more traffic, meaning more emissions from vehicles.

### **Do buildings with large fuel-burning boilers contribute disproportionately to air pollution?**

All fuels burned to heat buildings produce some air pollution. Heating equipment in many large New York City buildings burns residual oil (also known as #4 or #6 oil), which emits more pollution than regular home heating oil (#2, or distillate oil) or natural gas. Pollutants like PM<sub>2.5</sub> tend to be higher in areas where more heating fuel, especially residual oil, is burned.

### **What is the city doing about the higher levels of air pollution found in some neighborhoods?**

NYCCAS data, together with community input and other considerations, will help inform the City's efforts to reduce local emissions and improve air quality.

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