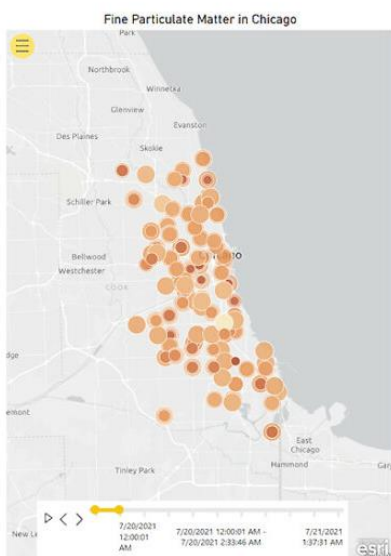


May 27, 2022 RAWSEP news paraphrased

Illinois, Chicago area & PM 2.5 Residential Air Quality Monitors (not PurpleAir) study collaboration between local news stations, another way to have an air quality monitor installed on residential property. RAWSEP View: Chicago uses Environmental Law and Policy Center -Chicago's (ELPC's) mobile AirBeam monitors, Microsoft uses Custom hardware: Air Quality (Pro II)

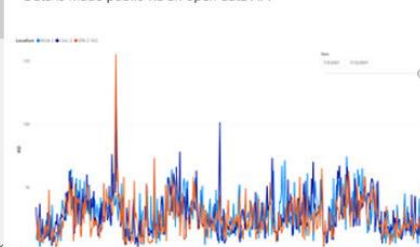
Microsoft's The Eclipse PM 2.5 map Chicago uses Eclipse solar powered sensors that are custom designed, from the electrical engineering, firmware to the enclosure, and calibrated in our hardware lab at Microsoft Research in Redmond. The air quality sensors measure CO, NO2, SO2, and O3, as well as PM 1, PM 2.5, and PM 10, along with temperature, humidity and pressure. Data is uploaded using cellular LTE-M technology directly to an Azure data stack. The devices take sensor readings at 60-second and 15-minute intervals, powered by solar the devices run perpetually.

For planners and policy makers:
Power BI platform makes it easy to see data over space and time.



Month	14	15	16	17	18	19	20	21	All Days
July									
100th & Torrence (WB)	9.65	6.75	15.52	12.01	9.56	10.26	20.09	26.67	13.39
102nd & Ewing (SB)	9.24	6.92	14.92	12.06	10.16	11.36	20.90	26.21	13.62
106th & Ave D (WB)	8.79	7.60	12.75	10.30	8.85	10.13	18.52	23.09	12.18
111th & Cottage Grove (WB)	12.27	7.17	14.23	12.10	9.26	10.65	19.93	26.09	13.57
136th & Ave O (NB)				10.04	9.80	16.93	24.83		15.46
136th & Avenue O (SB)	8.38	6.10	13.18	11.83	10.06				10.19
26th & Keeler (EB)	8.93	8.03	12.61	9.39	7.16	9.06	19.14	20.31	11.56
30th & Damen (W Leg) (WB)	9.24	6.94	12.06	9.74	7.62	9.81	20.63	21.44	11.87
39th & Sacramento (EB)	8.67	7.01	13.10	10.65	7.55	9.39	20.22	22.78	12.12
47th & Halsted (WB)	9.59	7.85	15.53	11.49	9.23	11.34	20.87	26.56	13.67
61st & King (WB)	10.40	7.15	13.31	10.27	8.46	9.78	19.97	22.30	12.34
63rd & Damen (WB)	9.98	7.14	14.75	11.54	8.95	12.50	21.23	26.20	13.64
63rd & King Drive (EB)					11.13				11.13
63rd & Lamon (EB)	9.58	7.04	13.69	10.98	8.56	10.16	19.76	24.48	12.63
63rd & Peoria (EB)	9.14	8.04	14.88	11.71	8.94	11.28	22.20	26.56	13.78
63rd & Pulaski (EB)	10.06	8.06	12.16	9.61	6.58	8.44	18.77	20.49	11.40
63rd St & State 13 E (EB)	9.65	7.05	14.52	11.34	8.88	10.49	20.11	24.91	12.98
All Sensors	9.33	7.07	14.39	10.69	8.53	10.35	19.85	22.96	12.61

For students, developers, and community scientists:
Data is made public via an open data API

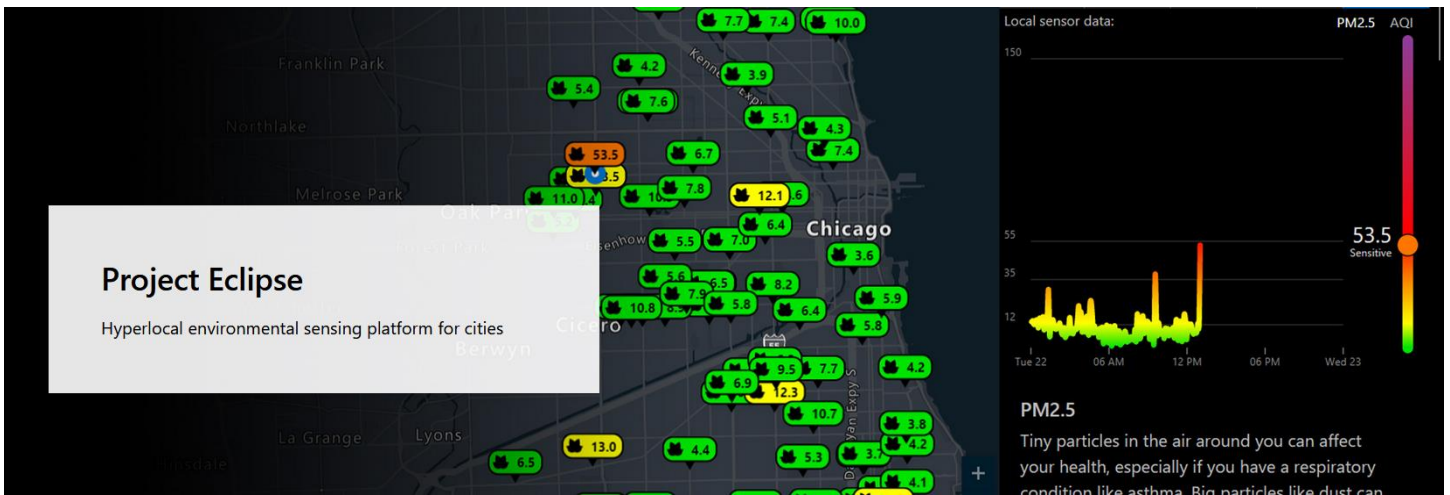


For residents:
Visualizations are immediately accessible via an interactive website

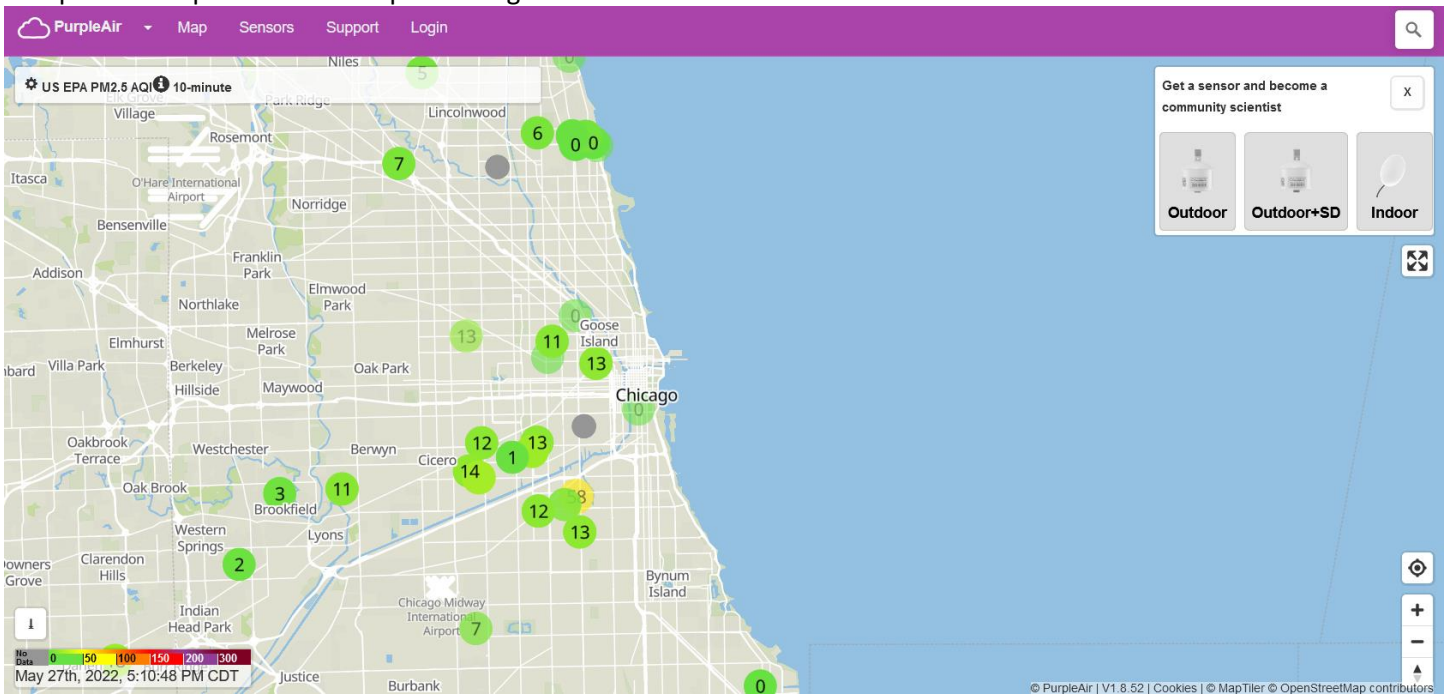
The U.S. EPA's air monitors remain the leading standard for gathering air quality data, but they are not designed to inform the public of local conditions.

Help us investigate Chicago's air quality - WBEZ Wednesday, May 25, 3:34 p.m. CT ... and there are several local hotspots for particulate matter 2.5 — the tiny particles that come from diesel ... RAWSEP View: Illinois, Chicago. Local newsrooms are collaborating to measure air pollution in Chicago and nearby suburbs. News stations say "And we need your help. News Station WBEZ writes "We want to hear about how poor air quality affects you and your family's health. We're also looking for volunteers who would be interested in having air quality sensors installed on their property this summer, to better understand air pollution in Chicago. If you're interested, fill out the form below:" The article states that COVID-19 death rates in low-income, mostly Black and Hispanic communities like Little Village are among the highest in Chicago, and there are links between exposure to air pollution and COVID-19 death rates.

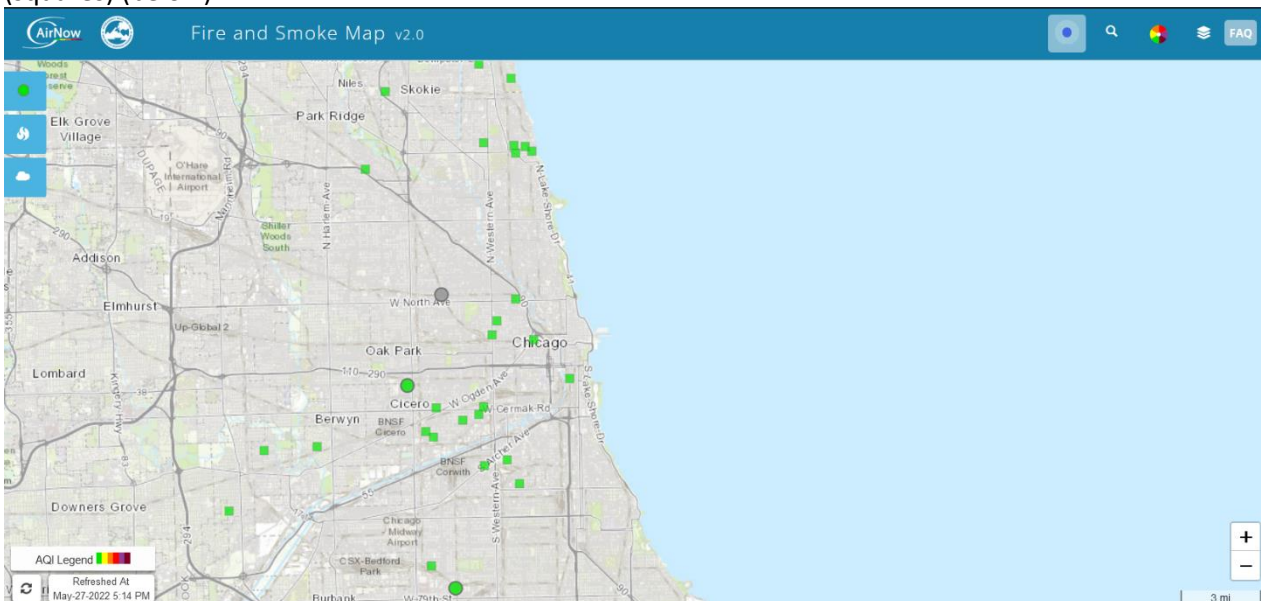
The sensor map used by WBEZ at the URL below
<https://www.microsoft.com/en-us/research/project/project-eclipse/>



Compare to Purpleair sensor map of Chicago Area



Compare to AirNow PM 2.5 monitors (including EPA 2.5 Monitors (circles) and resident-owned PurpleAir Monitors (squares) (below)



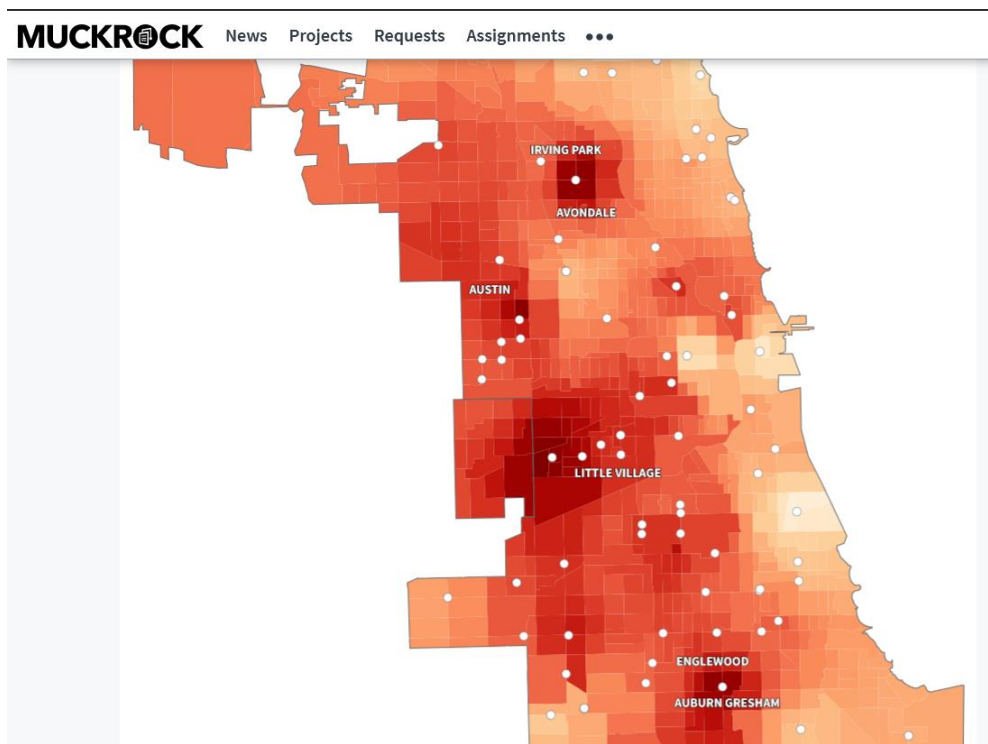
<https://www.wbez.org/stories/pandemic-death-toll-in-cook-county-two-years-in/1a6ae86f-4a59-4f4d-860f-7fd95d3646c7> Nearly 19,000 more deaths in Cook County: The pandemic's toll, two years in RAWSEP View: Nurse Tamara Jones checks on a patient with COVID-19 and on a ventilator in the Intensive Care Unit at Roseland Community Hospital on the Far South Side in December 2020. This article shows that COVID 19 death rates in low income, mostly Black and Hispanic Communities like Little Village are among the highest in Chicago.

<https://www.lung.org/blog/covid-19-mortality-and-air-pollution> RAWSEP View: American Lung Association 2021 facts about links between exposure to air pollution and COVID 19 death rates, resource for article about PM 2.5 in Chicago in 2022.

<https://www.wbez.org/stories/what-is-particulate-matter/2b1f45f5-ca5d-40ba-ae68-737202e7c7e0> What's in the air (PM 2.5) by WBEZ news station. RAWSEP View: COVID 19 death rates in low-income, mostly Black & Hispanic communities are among the highest in Chicago. Is there a link between high PM 2.5 and high death rates. RAWSEP View: This article is about PM 2.5 from traffic, rather than wood burning.

[New analysis shows Chicago's air pollution hot spots are near heavy-traffic areas | WBEZ Chicago](#) New analysis shows Chicago's air pollution hot spots are near heavy-traffic areas. The highest rates of pollution are in Little Village, Austin, Englewood and other neighborhoods, according to data from a **new sensor network**. WBEZ brings you fact-based news and information. RAWSEP View: This article is about PM 2.5 from traffic, not necessarily from wood smoke.

[Chicago's Air Pollution Hotspots: New Sensor Network Reveals Neighborhood Air Quality Disparities — Cicero Independiente](#) New data show air pollution hotspots in Little Village, Austin, Irving Park, Avondale, Englewood and Auburn Gresham Average particulate matter 2.5, or PM2.5, readings, July to October 2021, by census tract, and sensor locations. RAWSEP View: **TRAFFIC CAUSES PM 2.5 SPIKES**. The Fourth of July and other holidays — when many people clog the roads to vacation, attend barbecues or other events — ranked among the most heavily polluted days of the year. **BUT WOOD FIRE (WILDFIRE) CAUSES PM 2.5 HIGHEST SPIKE IN CHICAGO STUDY**. But it was Friday, July 23, 2021, a 90-degree day, with wildfire smoke plumes arriving from the West, that stood out as one of the year's worst days for particulate matter. Wildfire smoke, hot temperatures and stagnant air worsen air pollution, including both ozone and particulate matter. **Muckrock Map below: Wood Fire (Wildfire 7/23/2021 one of worst days for particulate matter)**



RAWSEP View: In this article, one example of the health impact of PM 2.5 pollution (from a coal plant that was replaced by a Target store in a Chicago suburb) was an interview with a resident with a brain tumor diagnosis, possibly caused by the PM 2.5 pollution. Even the Target building process polluted the neighborhood. A [botched implosion of a 378-foot smokestack](#) from the old coal plant left her neighborhood blanketed in dust in April 2020. “Why are you selling ... [our health] to the highest bidder?” an affected resident asked of city officials, saying her neighborhood is basically a “sacrifice zone” for industry.

<https://elpc.org/blog/mapping-with-microsoft-research-tracking-air-pollution-in-chicago/> RAWSEP View: August 18, 2021, 100 air quality sensors installed in Chicago neighborhoods in Chicago neighborhoods. Like Environmental Law and Policy Center -Chicago’s (ELPC’s) mobile AirBeam monitors, the new stationary sensors use light scattering technology to document the concentration of [particulate matter](#) (PM2.5) pollution in the air, in addition to other gases and indicators. The monitors are weather-resistant and solar-powered, and the public can view real-time data by scanning the QR code at a monitor location or on Microsoft’s [Urban Air website](#). The new sensors can be found in every ward of the city,

U.S. State of Georgia Wood Pellet plants react now that Biomass burning now not “carbon neutral” according to European Union

<https://www.aljazeera.com/news/2022/5/3/how-europes-biomass-appetite-is-harming-the-us-south> North Carolina, Garysburg: wood pellet plant owned by company in Maryland supplies wood pellets to European and European Union (EU) countries. RAWSEP View: To meet their climate goals, EU countries are relying on a controversial ‘renewable’ energy source. Since 2009, encouraged by government subsidies, energy providers in countries like the United Kingdom, the Netherlands and Belgium built new infrastructure or retrofitted their coal-fired plants to burn wood pellets. Residents in Garysburg, North Carolina say their town is now air polluted. A 2018 report by the Environmental Integrity Project found that more than half the 21 pellet facilities operating in the region, including Enviva’s Northampton mill, “either failed to keep emissions below legal limits or failed to install required pollution controls”.

U.K.

<https://www.desmog.com/2022/04/12/biomass-industry-pushes-back-against-europes-plans-to-protect-woodlands/> U.K. Leaked documents show UK power plant Drax is at the heart of lobbying efforts to dilute EU biodiversity rules that could limit its supply of wood. RAWSEP View: Drax [claims](#) to be the largest decarbonisation project in Europe since converting most of its coal units to burn biomass over the past decade. And in 2021 it [received](#) over £800 million in subsidies from the UK government to burn wood biomass for electricity.

[The biomass peril - New Age](#) WOODY biomass, or burning trees to produce renewable energy, is spreading ... 'All of this wood burning is putting intensifying pressure on global

RAWSEP View: This article editorializes in support of the May 2022 European Union (EU) vote to end calling biomass burning “Carbon Neutral”. The author writes that “The term “carbon neutral,” which is not the same as “zero carbon” and not a scientific term, (...) really means “Someone else, at some other time, removes carbon, so I can emit more.” And According to the Natural Resources Defense Council (NRDC) report on the United Nation’s **Intergovernmental Panel on Climate Change (IPCC)** position: “Cutting and burning forests in the southeastern United States – the leading global region for wood pellet manufacturing – leads to a net shift of carbon from the land to the air that lasts for decades.”

[How possible changes to European energy policy would affect Georgia business — and trees](#) **Wood** pellets can be **burned** in power plants in place of coal. ... and Europe classifies **burning wood** pellets as carbon neutral, and governments ... Georgia. RAWSEP View: This article describes how wood pellets are manufactured in Georgia, the U.S. state. This article acknowledges that wood burning is not “carbon neutral” in agreement with the European Union vote in May 2022. A climate reporter interviewed for this article said “The wood pellet industry is fighting back”. The U.S. Industrial Wood Pellet Association said in a statement to him that wood pellets are needed “to protect European energy security and to meet ambitious climate targets.” In an interview, the climate reporter said “Critics of the (wood pellet) industry are hopeful but cautious,” he says. “Meanwhile, Britain, which is the largest user of wood pellets, is no longer a member of the EU. So there’s a parallel effort going on there to limit wood pellets.”

Amyotrophic Lateral Sclerosis (ALS) & PM 2.5

[Study Finds Link Between Particulate Matter Composition, ALS Aggravation](#) Annual **PM2.5** black carbon, nitrate, sulfate, OM, sea salt, and soil mass concentrations were predicted by an air pollution prediction model. The total ...

Arizona

[Increased fire restrictions to go into effect at Grand Canyon - KNAU](#) Under the ban, all campfires and **wood burning** and charcoal fires will be prohibited along ... wood splitters and other internal combustion tools.

California

[Beach bonfire for summer: Tips and tricks for scoring a spot on the sand - Orange County Register](#) California, Orange County. There are eight **wood-burning** rings on the west side of the Balboa Pier – four designated for ADA access – and eight that use charcoal, according to ... RAWSEP View: There is no need for wood burning on beaches in San Diego, since the temperature does not fall below temperatures that can be dealt with by changing to warm clothing, or jackets if necessary.

[Earth Matters: Pollution's toll on people of color; climate inaction could cost \\$178 trillion - Daily Kos](#) California, San Francisco. The entire Bay Area has higher levels of tiny airborne particulates than World Health Organization guidelines recommend. Known as **PM2.5** or soot, when ... RAWSEP View: California, San Francisco. PM 2.5 is a frequent problem in the San Francisco Bay Area, and this article speaks about the economic toll on people of color by lack of PM 2.5 mitigation.

Canada

[Improper fire pit use on the rise in Lethbridge](#) Canada, Alberta, **Lethbridge. Burning** can only take place in a designated fire pit or fireplace located at least 1.5 ... Only clean, dry, and untreated **wood** can be **burned**. RAWSEP View: Some concern about fire pit or fireplace usage.

COVID and PM 2.5

[Air pollution can contribute to serious COVID-19 results - Community99](#) Exposure to common air pollutants such as fine particles (**PM2.5**), nitrogen dioxide (NO₂), and ground-level ozone (O₃) contributes to the global ... RAWSEP View: PM 2.5 can contribute to serious COVID 19 results.

Colorado

[Emergency fire authority granted to Durango city manager](#) Colorado, Durango. Durango has issued its first fire emergency **ordinance** since 2018, ... **wood burning** stoves and burn barrels; restrict smoking to areas with more ... RAWSEP View: Colorado, Durango issued its first fire emergency ordinance since 2018.

COVID 19 & PM 2.5

[Exposure to Air Pollution Linked to Severe SARS-CoV-2 Outcomes - Consumer HealthDay](#) The association of long-term exposure to fine particulate matter (**PM2.5**), nitrogen dioxide (NO₂), and O₃ with the risk for COVID-19-related ... RAWSEP View: Canada. PM 2.5 can contribute to severe COVID 19 outcomes.

New Zealand

[Air quality emissions survey underway - Marlborough District Council | Voxy.co.nz](#) New Zealand, Marlborough. "Previous inventories have shown domestic fires and **wood smoke** are the greatest ... "These include controls on open fires and solid fuel burning ...

[Marlborough Air Quality Emissions Survey Underway | Scoop News](#) New Zealand, Marlborough. "Previous inventories have shown domestic fires and **wood smoke** are the greatest ... "These include controls on open fires and solid fuel burning ...

Steel & PM 2.5

[EPA settles with U.S. Steel for \\$1.5M and facility's compliance with federal law | Pennsylvania Record](#) Pennsylvania. According to the plaintiffs, the main concern is a pollutant called particulate matter, including one called **PM 2.5**. Particulate matter includes ... RAWSEP: This is probably not PM 2.5 caused by wood burning.

Stroke and PM 2.5

[Does the size of air pollution particles affect a person's risk of death from stroke? - Medical Xpress](#) Fine particulate matter, **PM2.5**, is less than 2.5 microns in diameter and includes fly ash from coal combustion. Respirable particulate matter

[Particulate Matter Size Tied to Stroke Mortality | MedPage Today](#) — Association stronger among individuals with ischemic strokes · PM1: OR 1.240 (95% CI 1.217-1.265) · **PM2.5**: OR 1.105 (95% CI 1.094-1.116) · PM10: OR ...

[Exposure to Air Pollution May Increase In-Hospital Stroke-Related Deaths - Consumer Health News](#) Each 10 $\mu\text{g}/\text{m}^3$ increase in short-term, long-term average exposure to PM1, **PM2.5**, PM10 linked to increased risk for in-hospital fatality. hospital.

[Exposure to Air Pollution May Increase In-Hospital Stroke-Related Deaths - Physician's Weekly](#) ... characterized the association between ambient PM of different sizes. ... **PM2.5**, and PM10) and in-hospital case fatality among stroke patients ...

[Exposure to Air Pollution May Increase In-Hospital Stroke-Related Deaths | Health and Fitness](#) Lincoln. ... **PM2.5**, and PM10) and in-hospital case fatality among stroke patients in ... Seven-day and annual averages of PM prior to hospitalization were ...

U.K. about U.S.

[Living in an area with more pollution directly correlates with an increased risk of death - Daily Mail](#) Americans who live in areas of high **PM 2.5** air pollution are more likely to die than their peers, a new study finds. The gap in mortality risk ...