

PROTECTING STUDENTS FROM THE HEALTH IMPACTS OF ELEVATED AIR POLLUTION

ASSESSING THE OUTCOMES OF THE QUEZON CITY SCHOOL SUSPENSION DURING THE SEPTEMBER 2026 HAZE

This discussion paper is drafted to provide insight on the successful implementation of the Quezon City Government's Memorandum Circular No. 3 Series of 2025: Class Suspension Guidelines on September 1, 2026 in response to the air pollution haze transported from the forest fires in Indonesia.

Key message

Clean Air Asia fully supports the proactive response and leadership of the Quezon City Government to protect the health of students during the air pollution episode. The swift action is a clear demonstration of implementing a science-based approach aligned with local and national policies, reducing the air pollution health risks of more than 400,000 young individuals. We encourage other local government units and national agencies interested to develop similar systems to draw from Quezon City's experience to ensure timely, health-proactive action.

1. Understanding what happened and the risks involved

Hazy skies, poor air quality across the Philippines

Elevated levels of air pollution, visually seen as *haze*, have been observed by individuals across the country starting August 30, 2026. Various air quality monitoring sites in Metro Manila^{1,2} reflected air quality index (AQI) values reaching "*Acutely Unhealthy*" level. For PM_{2.5} or the particles smaller than 2.5 micrometers, levels reached more than 55 micrograms per cubic meter (µg/m³) for the past 24 hours³. This is nearly four times higher than the recommended World Health Organization (WHO) Air Quality Guideline of 15 µg/m³.

Air pollution in the country is mainly attributed to mobile (transport) sources especially in urban locations. Regions with significant industrial and commercial activities, as well as burning of residue, biomass, and other wastes in agricultural and residential areas, also contribute to poor air quality. Elevated pollution levels are usually observed during New Year's Eve, while distinct pollution episodes have also been recorded during volcanic eruptions, and the April 2026 landfill fire in Navotas⁴. The observed haze at the end of August was due to the forest and land fires in Indonesia, carried to the Philippines by the southwest monsoon⁵.

¹ DENR Environmental Management Bureau (<https://www.facebook.com/DENREnviBureau/>)

² Breathe Metro Manila and ACRI (2026 September 2). *Transboundary Haze Affecting Metro Manila and Environs, 30 August – 2 September 2026*.

³ DENR Administrative Order 2020-14. *Establishing the breakpoints for PM_{2.5} AQI*; Note: Each country has their own AQI breakpoint, this policy is specific to the Philippines

⁴ Breathe Metro Manila and ACRI (2026 April 18). *Post-incident air quality monitoring report: Navotas Sanitary Landfill fire (10–17 April 2026)*. Ateneo de Manila University.

⁵ Bosano, R. (2026, September 1). *Smoke from Indonesian forest fires: What is transboundary haze?* ABS-CBN News.

The science behind the need for rapid response to pollution episodes

One in every 8 deaths globally is attributed to air pollution. The evidence on the health impacts of air pollution has established that increasing pollution levels is associated with higher risks for respiratory and cardiovascular diseases, lung cancer, dementia, and Type-2 diabetes. The health burden is higher for disadvantaged lower-income populations, especially the elderly, health-compromised, and the young⁶.

During air pollution episodes, the health of people is at risk due to elevated PM_{2.5} levels. Peer-reviewed evidence on short-term PM_{2.5} exposure in children establishes that measurable respiratory harm can occur within hours, with impacts accumulating over time even after exposure. Some of the key studies in other countries described below serve as strong evidence of the need to suspend classes on the same day pollution rises. Delaying action until air quality deteriorates further has detrimental effects on children's health.

- Higher number of emergency room visits and hospital admissions due to respiratory diseases have been recorded during elevated air pollution levels from transboundary haze^{7,8}.
- For children with asthma, airway inflammation has been observed to increase significantly within 1 to 4 hours, which indicates that air pollution impacts can happen well within the timeframe of a single school day⁹.
- For those with severe asthma, reduced lung function has been measured even during hourly pollution peaks and not a whole day (24-hour) exposure¹⁰.
- Impacts on asthmatic children, especially those in pre-school age, were observed two days after the day with pollution episode¹¹.
- Another study found that same-day PM_{2.5} exposure was associated with airway inflammation, but a 5-day cumulative average of PM_{2.5} was associated with reduced lung function even for non-asthmatic schoolchildren. This finding indicates that repeated exposure across multiple haze days compounds respiratory risk beyond that of a single event¹².
- Hospital records spanning 14 years in Thailand show that on haze days with PM_{2.5} above 50 ug/m³ (and for a day or two after), asthma flare-ups became notably more likely, with children more sensitive to this than the overall patient population¹³.

Taken together, these findings establish that (1) respiratory harm in children begins within hours of elevated PM_{2.5} exposure, (2) hourly pollution levels carry independent risk beyond daily averages, and (3) exposure effects can accumulate over multiple days. A suspension decision issued before the school day begins is therefore consistent with the documented exposure-response timeline and reduces the window of exposure when risk is highest.

⁶ Health Effects Institute. (2025). *State of Global Air 2025*. <https://www.stateofglobalair.org>

⁷ Kasiravat P, Dejchanchaiwong R, Ingviya T. *Effects of transboundary haze on hospital outpatient visits due to respiratory and cardiovascular diseases in Regional Health* 12. RTN Med J. 2022;49(3):594–614.

⁸ Chan SL, Ho AF, Ding H, Liu N, Earnest A, Koh MS, et al. *Impact of air pollution and trans-boundary haze on nation-wide emergency department visits and hospital admissions in Singapore*. Ann Acad Med Singap. 2020;49(2):78–87.

⁹ Mar, T. F. et al (2005). *Exhaled nitric oxide in children with asthma and short-term PM_{2.5} exposure in Seattle*. Environmental Health Perspectives, 113(12), 1791-1794.

¹⁰ Yamazaki, S. et al. (2011). *Effect of hourly concentration of particulate matter on peak expiratory flow in hospitalized children: A panel study*. Environmental Health, 10, 15.

¹¹ Zhou, J. et al. (2022). *The effects of short-term PM_{2.5} exposure on pulmonary function among children with asthma-A panel study in Shanghai, China*. International Journal of Environmental Research and Public Health, 19(18), 11385.

¹² Barraza-Villarreal, A. et al (2008). *Air pollution, airway inflammation, and lung function in a cohort study of Mexico City schoolchildren*. Environmental Health Perspectives, 116(6), 832-838.

¹³ Varopichetsan, S. et al (2025). *Short-term exposure to fine particulate matter and asthma exacerbation: A large population-based case-crossover study in Southern Thailand*. Environmental Health, 24, 1-14.

2. The Quezon City response

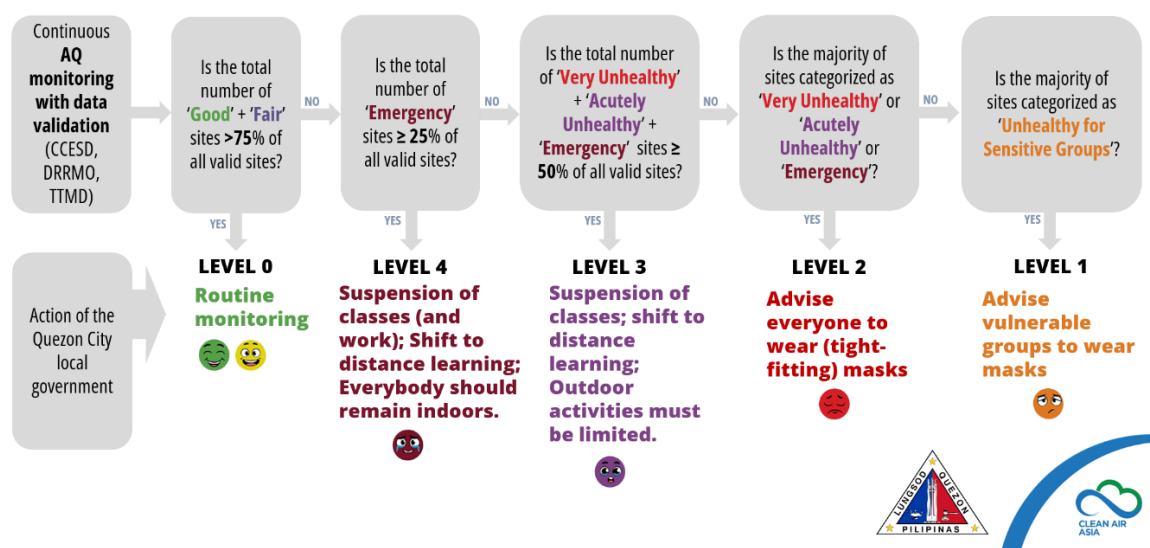
Putting Air Quality Management into Action

The Quezon City (QC) Government, through the Climate Change and Environmental Sustainability Department (CCESD) has been working with Clean Air Asia since 2020 in the establishment of its air quality monitoring network, city-level emissions inventory of air and climate pollutants, modelling studies to assess the air quality and health benefits of policies and the city's Air Quality Communication Plan. All the knowledge generated in these activities informed the development and implementation of the **Quezon City Air Quality Management Plan**¹⁴.

Recognizing the urgent need to prioritize the health of students, the *Quezon City School Response and Suspension Guidelines on Air Pollution Episodes*¹⁵ was developed to guide *when* to act and *what* can be done. Building on the expertise and experience of the US, India, and Thailand, the guideline implementation is driven by data from the city's air quality monitoring network, which is the largest city-owned real-time and calibrated network of air pollution monitors in the country. As of Sept 2026, there are **68 monitoring sites** which continuously provide PM_{2.5} levels in the city, with a robust system in place to validate data on-the-ground through site visits and coordination across the QC Air Quality Technical Working Group (TWG)¹⁶.

Air quality advisories are posted daily in the CCESD [Facebook Page](#), with increased frequency and clear health advisories when pollution concentrations pose risks. When a significant number of the 68 stations fall within specific AQI categories, the city is placed under various 'levels' which trigger clear actions from relevant offices, ranging from wearing of masks to suspension of classes and work (see summary diagram below).

School suspension guidelines during air pollution episodes



¹⁴ Quezon City Resolution No. SP-10464, S-2026 Adoption of the Quezon City Air Quality Management Plan

¹⁵ Quezon City Memorandum Circular No. 3 Series of 2025. Class Suspension Guidelines 2025

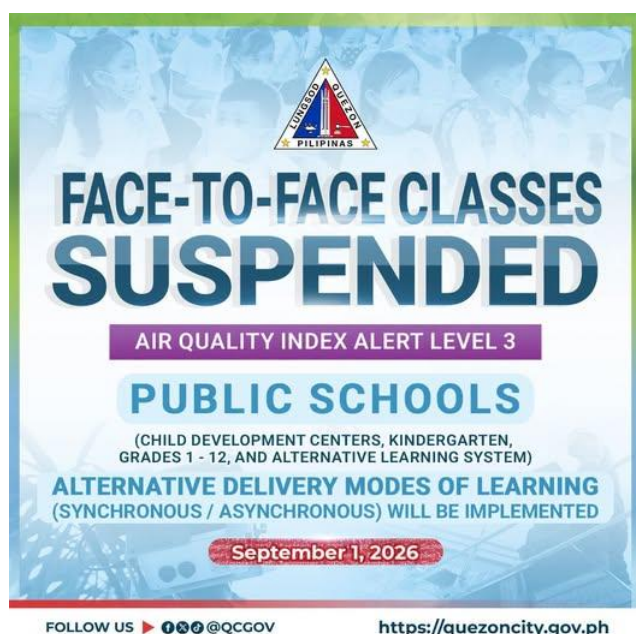
¹⁶ Quezon City Executive Order No. 4, Series of 2023 Establishment of the QC Air Quality Technical Working Group

School Suspension Guidelines: Aligning city-level action with national policies and directives towards timely action

A significant increase in the number of sites with *Unhealthy for Sensitive Groups* (orange) AQI was recorded by the CCESD based on the 24-hour rolling average of PM_{2.5} from 8AM of August 30 to 8AM of August 31, prompting a Level 1 response (mask advisory). By 4PM of August 31 (a national holiday), multiple sites recorded *Very Unhealthy* (red) AQI while some reached *Acutely Unhealthy* (purple) AQI levels.

By 4AM of September 1, Quezon City issued the suspension of classes across all public schools in the city with 6 sites with *Acutely Unhealthy* AQI, 56 sites with *Very Unhealthy* AQI, and 5 *Unhealthy for Sensitive Groups* AQI. This timely response is aligned with the developed guidelines, ensuring that the announcement is made before students travel for morning school classes. Quezon City is the sole city to issue such guidance in the country, using a data-driven system co-developed with all AQ TWG members and Clean Air Asia.

The decision to suspend and shift to online modality was not made lightly, ensuring alignment with national policies and the welfare of the public. The guidelines itself were based on the Department of Education Order No. 022, s 2024, which states that **“local chief executives shall decide on the suspension of face to face classes” when AQI is *Acutely Unhealthy* (purple)**. Consistent with the Department of Environment and Natural Resources Administrative Order 2020-14, this means PM_{2.5} levels are ranging from 55.1 to 90 µg/m³, with an advisory that “people should limit outdoor exertion; people with heart or respiratory disease such as asthma should stay indoors and rest as much as possible; unnecessary trips should be postponed; motor vehicle use may be restricted; and that industrial activities may be curtailed”.



Of the 68 monitoring sites in Quezon City, 33 are strategically located in public elementary and high schools. Air monitors in these locations continued to show elevated air pollution that is *Acutely Unhealthy*, even by 2PM of September 1. Considering that the same air pollution level was observed in other parts of the city and that students would be traveling to their schools, the decision to proactively suspend classes even before schools opened for the day reduced the health risk of students. **The science-based decision reduced air pollution exposure of a minimum of 405,000 students from Kinder to Grade 12, avoiding increased likelihood of respiratory health impacts**, including asthma attacks, irritation of the eyes, nose, and throat, even at short periods of exposure.

3. Why the response is crucial: Guiding next steps

Protecting students while setting a standard

The successful implementation of Quezon City of the landmark suspension guidelines in the country clearly demonstrates that a proactive, people-centered, and data-driven approach is possible. Air pollution has no boundaries, and this response encourages actions not only within the city but across the National Capital Region (NCR), and even across the country where transboundary haze continuous to be observed.

On September 9, 2026, the QC School Suspension and Response Guidelines was presented to the NCR Airshed Governing Board meeting to encourage other local governments to develop their own. Building on the experience of Quezon City, a technical framework development and the NCR Air Quality Episode Response Protocol has been included in the NCR Airshed Action Plan (2026-2028). Clean Air Asia has also formally shared the approach to the national government through the Environmental Management Bureau (EMB) Air Quality Management Section, for reference during Inter-Agency Committee on Environmental Health (IACEH) meetings where a national level protocol is being discussed.

Key takeaways and way forward

Urgent and proactive action during air pollution episodes is imperative as it is the duty of governments to protect the health and well-being of their constituents. Leaders are encouraged to continue using detailed and accurate data as the basis for their decisions, allowing them to act with confidence and clear justification which will avoid public confusion. While some cities are still in the process of improving their data systems, close coordination with national agencies and neighboring cities are encouraged to inform their decisions. Effective emergency response does not begin at the peak of a crisis, but well before it. We thus call on local and national government agencies to continuously strengthen coordination, data collection, and analysis, to enable efficient and timely responses to future air pollution episodes.

The QC School Suspension and Response Guidelines has set the standard, but it can also be treated as a living document that can be improved as more information becomes available and mechanisms are developed. As it stands, the current thresholds can be viewed as appropriately conservative, given that the overarching goal is to err on the side of caution rather than risk under-protecting students. We likewise recommend against averaging air quality readings across the city or by district, as air pollution is inherently hyperlocal in nature and doing so risks masking localized spikes and undermining the accuracy of health risk assessments for specific areas.

Finally, Clean Air Asia emphasizes the need for continuous and effective local air quality management across the region to further reduce baseline pollution levels. This will help minimize the intensity of impacts of transboundary haze and other natural and manmade emergencies that can contribute to poor air quality during pollution episodes. Together with governments, academia, private sector, and all stakeholders, science-based proactive actions must be the norm to protect the health of all.

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About Clean Air Asia

Clean Air Asia is an international non-government organization whose vision for the decade is a world with clean air, blue skies, and a stabilized climate for people and the planet. Our mission is to reduce air pollution and greenhouse gas emissions in Asia and contribute to the development of a more sustainable, equitable, and healthier region. We empower governments and cities by inspiring action and focusing efforts on the planning and implementation of solutions at scale, fostering regional cooperation to address issues of mutual concern, and ensuring the integration of air quality management across sectors and institutions.

We work with partners to reduce air pollution and greenhouse gas emissions across Asia by building capacity, advocating for effective and appropriate policies and practice, and informing stakeholders of air pollution and climate change impacts. We aim to reduce air pollution and

greenhouse gas emissions in 1000+ cities in Asia through a range of innovative policies and programs covering air quality, transport and industrial emissions, and energy use.

We work with energy, environment, health and transport ministries, cities, the private sector, development agencies, academia and civil society to provide leadership and technical knowledge in Air Quality and Climate Change, and Sustainable Transportation (Low Emissions Urban Development, Clean Fuels and Vehicles, Green Freight and Logistics).

Since 2008, we have been a United Nations-recognized partnership comprised of more than 250 organizations in Asia and internationally, with country networks across the region. Our headquarters are in Manila, Philippines, and we have offices in Beijing, China, New Delhi, India and Jakarta, Indonesia.