

POLICY PAPER

Zero Smog: Lessons Learned from the Navotas Landfill Fire and Urban Fires

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Introduction

The Navotas Landfill Fire and the urban fires in Manila, Lapu-Lapu, Taguig, and Valenzuela turned dirty air from a background worry into a clear threat to public health and the economy. Cleaning the air we breathe, and preventing the next disaster, now needs steady attention and action.

During the Navotas Fire alone, the burning of landfill waste blanketed Luzon in thick pollution. For weeks after, coupled with succeeding urban fires, air quality data from the Philippine Space Agency (PhilSA)¹ and Breathe Metro Manila (BMM)² show that communities continued to suffer from elevated levels of fire-related pollutants. This put people at great risk for coughing, wheezing, and difficulty in breathing in the short-term as well as cardiovascular diseases in the long-term.

This crisis makes one thing plain. We need to move from scrambling during emergencies to clean air policies that prevent them. The question is how. To work through it, Liveable Cities convened a Co+Lab session with Ayala Corporation, Globe, and Breathe Metro Manila (BMM), titled "**Zero Smog: Lessons Learned from the Navotas Landfill Fire and Urban Fires.**" Building on an earlier session on air quality, this one focused on practical steps that government and the private sector can put in place to protect communities.

This paper sets out what the experts and stakeholders in the session found, the lessons they drew, and the steps they recommend to close the gaps and build the partnerships that will deliver cleaner air.

Impact of the Navotas Landfill Fire on Our Air

On the evening of April 10, 2026, the Navotas Sanitary Landfill caught fire. Drawing on reports from national agencies, local governments, and Clarity, Engr. Ethel Garcia of Clarity described how the landfill burned openly for four days before the Bureau of Fire Protection (BFP) declared it "under control." Even then, it kept smoldering underground and pushing out smoke.

The weather made it worse. Heat and humidity trapped the smoke close to the ground, and the wind carried it quickly across Metro Manila and to the north, covering whole areas in thick, toxic smog ([Figure 1](#)).

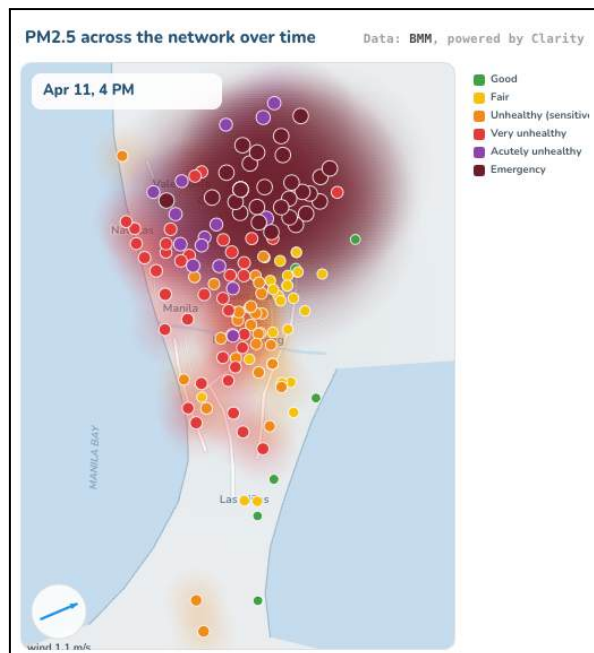


Figure 1: Air Quality Monitoring Map of Metro Manila at the Height of the Navotas Landfill Fire Incident (BMM and Clarity, 2026)³

The fire was declared fully extinguished a month later, on May 10. [Figure 2](#) shows the history of the air pollution (i.e., PM2.5 emissions) through air quality sensor data.

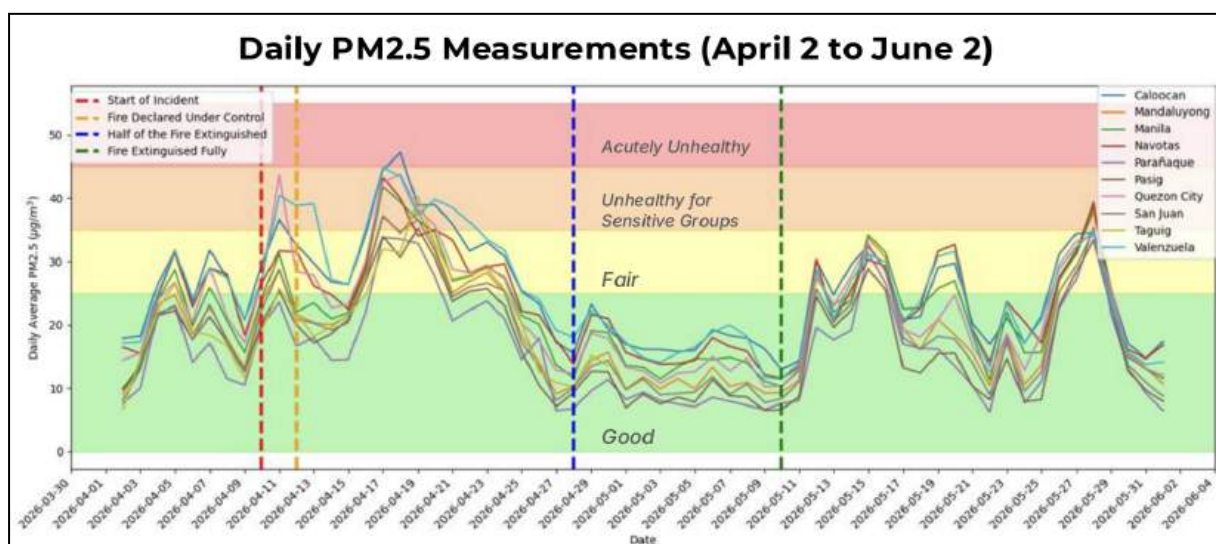


Figure 2: Daily PM2.5 Measurements (April 2 to June 2) Across Affected Cities (Breathe Metro Manila, 2026)

[Figure 2](#) shows that the pollution did not stop when the fire was called "under control." The steady underground smoldering pushed air quality to "Acutely Unhealthy" levels. Even after the fire was out, pollution spiked again as heat and wind held the smog over the cities. Bad air can linger far longer than people expect.

The fallout was wide. It forced 170 families to evacuate, shut down classes, cut into local livelihoods (farmers near the site were hit hardest), damaged nearby wildlife, water, and soil, and drove up respiratory illness across Luzon.

Many groups stepped in. National agencies (including the BFP, the Department of Environment and Natural Resources or DENR, and PhilSA), the affected local governments, private companies, and international development partners worked to contain and put out the fire.⁴ They also warned the public to leave the areas nearest the landfill, stay indoors, and wear masks to reduce their exposure.

Public Health Perspective: Problems and Protocols

This was no ordinary fire. Dr. Annelle Chua of the Ateneo School of Medicine and Public Health - Center for Research and Innovation (ASMPH-ACRI) explained that what made it so dangerous was what was burning. The smoke carried harmful substances, including burning plastics and metals, carbon monoxide, heavy metals, volatile organic compounds, and dioxins and furans.

With that mix of pollutants, the heat holding the smoke in place, and a month of exposure, air quality hit "Acutely Unhealthy" levels at times. That put everyone at risk, and people with existing respiratory conditions most of all.

The smog could trigger or worsen airway and skin irritation, reduced lung capacity, deep lung damage, cancer, and harm to the nervous system and kidneys. One person died of acute respiratory failure linked to the smoke. This is why how we respond to these crises, and the clean air policies behind that response, need to change.

To guide citywide action, Dr. Chua urged national and local governments to adopt clear action triggers, such as the Aircare Protocol developed by ASMPH-ACRI ([Figure 3](#)). It matches each air quality level to a set response for government, health systems, the private sector, and the public, with extra care for vulnerable groups. Much like fire drills or earthquake drills, it tells everyone what to do when the air turns bad, so fewer people get sick.

AIRCARE Protocol Air-Quality Integrated Response, Communication, and Action for Resilient Environments Developed by: Ateneo School of Medicine and Public Health - Center for Research and Innovation							
AQI Level	General / Healthy Population	Sensitive Groups (Children, elderly 65+, pregnant, asthma/COPD/CVD)	Dynamically Vulnerable Groups (Outdoor workers, drivers, vendors, commuters, informal settlers)	Health Risk Evidence (Acute and Mortality Effects)	Health System Response	Risk Communication	Cumulative Trigger (2+ consecutive days at same level)
Level 1: GOOD	- Normal activities. - No restrictions.	- Normal activities. - Continue routine medications.	- Normal activities. - Standard PPE practice only.	No measurable acute risk at population level.	- Routine operations. - Baseline stock check for bronchodilators and nebulization supplies.	- No alert needed. - Maintain standing health literacy materials at health centers.	No escalation needed.
Level 2: FAIR	- Normal activities. - Unusually sensitive individuals may notice mild symptoms during prolonged vigorous outdoor exertion.	- Reduce prolonged outdoor exertion. - Keep windows closed near major roads. - Ensure maintenance medications are current. - Monitor for new cough, wheeze, or breathlessness.	- Wear surgical mask or better if outdoors more than 4 hours continuously. - Drivers: keep windows closed in heavy traffic. - Take 15-minute indoor rest breaks every 2 hours.	- Minimal acute effects per individual day. - Subclinical blood pressure elevation and systemic inflammation accumulate over consecutive days even at moderate concentrations.	- Flag asthma/COPD registry patients for monitoring. - Log respiratory complaints daily as trend indicator. - No hospital escalation yet, routine supply check.	- Barangay-level advisory via group chats and community boards. - Message: "Air quality is Fair. Sensitive individuals should limit outdoor activities, especially near traffic."	- Escalated messaging to Unhealthy for Sensitive Groups level even if AQI has not formally reached it. - Activate proactive outreach to all registered asthma/COPD patients. - Advise schools to move outdoor activities indoors.
Level 3: UNHEALTHY	- Limit prolonged or heavy outdoor exertion. - Consider reducing time outdoors if experiencing unusual symptoms such as coughing or shortness of breath.	- Stay indoors; close all windows and doors. - Children: no outdoor activities. - Elderly: avoid all outdoor transit unless urgent. - Activate personal asthma/COPD action plan. - Seek medical attention proactively; do not wait for severe symptoms.	- N95 or KN95 mask mandatory outdoors (surgical mask insufficient at this level). - Limit continuous outdoor work to 2-hour intervals with indoor breaks. - Drivers: keep cabin closed; avoid idling in enclosed terminals. - Informal settlers: no open burning of any kind.	- ER visits and hospitalizations for asthma and COPD rise measurably. - Cardiovascular events elevated in those with hypertension and prior heart disease. - Same-day and next-day respiratory ER visits rise predictably.	- Surge triage for respiratory complaints at health centers. - BHW home visits to bedridden and oxygen-dependent patients. - Suspend all outdoor health outreach activities. - Coordinate hospital referral pathway. - Hospitals: alert ER and pulmonology; check oxygen and nebulizer stocks. - Begin daily respiratory admission tracking. - Notify DOH CHD-NCR.	- LGU-wide advisory via official social media, LGU website, and barangay PA systems. - Coordinate with DepEd on indoor-only activities. - Advise employers of outdoor workers in writing. - Message: "Air quality is unhealthy for sensitive groups. Children, elderly, and those with heart and lung conditions should stay indoors. Outdoor workers must wear N95 masks."	- Escalate to Level 3 health system response even if AQI has not formally reached that category. - Issue formal press advisory with QCHD spokesperson. - Suspend outdoor school activities citywide. - Hospitals shift to respiratory surge monitoring mode.

Figure 3: AIRCARE Protocol (ASMPH-ACRI)

A Systems Approach: Best Practice in Air Pollution Response for Cities

Cities are where the response happens first, as Quezon City showed during the fire. In the session, Ms. Aleandra Rivera of the Quezon City Disaster Risk Reduction and Management Department (QCDRRMD) walked through the setup that let the city act together.

Quezon City's response brings together several offices and departments, each with a clear job that depends on the others ([Table 1](#)):

Office/Department	Roles and Responsibilities
Office of the Mayor	oversees and leads preparedness and response operations, based on data and information from its relevant offices and partners
Climate Change and Environmental Sustainability Department (CCESD)	monitors and analyzes air quality data from its sensor network to inform long-term policy and immediate response protocols
Quezon City Disaster Risk Reduction and Management Department (QCDRRMD)	conducts on-the-ground monitoring and reporting to ensure the right information is cascaded and appropriate rescue response is implemented
Quezon City Health Department (QCHD)	provides health advisories and healthcare for its citizens
Public Affairs and Information Services Department (PAISD)	communicates health and disaster advisories to all its citizens, and helps collect feedback from barangays

Barangays and Clean Air Advocates and Reporters

report community concerns, cascade urgent advisories, and assist households

Table 1: Roles and Responsibilities of the Quezon City Government Departments in Advancing Air Pollution Response and Clean Air (Rivera, 2026).

What makes this work is that the departments, barangays, and Clean Air Advocates and Reporters keep sharing data and reports and keep talking to each other, so help reaches residents fast.

To speed things up, Quezon City built its work around sensors, indexes, and action triggers ([Figure 4](#)). Ms. Rivera said the city's 60-sensor network lets it see the pollution and forecast air quality, which then shapes its plans and the triggers that set its response in motion.

During the fire, for example, when air quality reached "Very Unhealthy," the city quickly told people to wear masks and avoid the worst spots, such as areas near fires or heavy traffic. Putting the AIRCARE Protocol into practice ([Figure 3](#)), these triggers kept the government, communities, and residents moving in step, so the whole city could respond at once.

The city is now reviewing what happened during the fire, using its data, reports, and resident feedback, and looking at how to strengthen its clean air work for the long term.

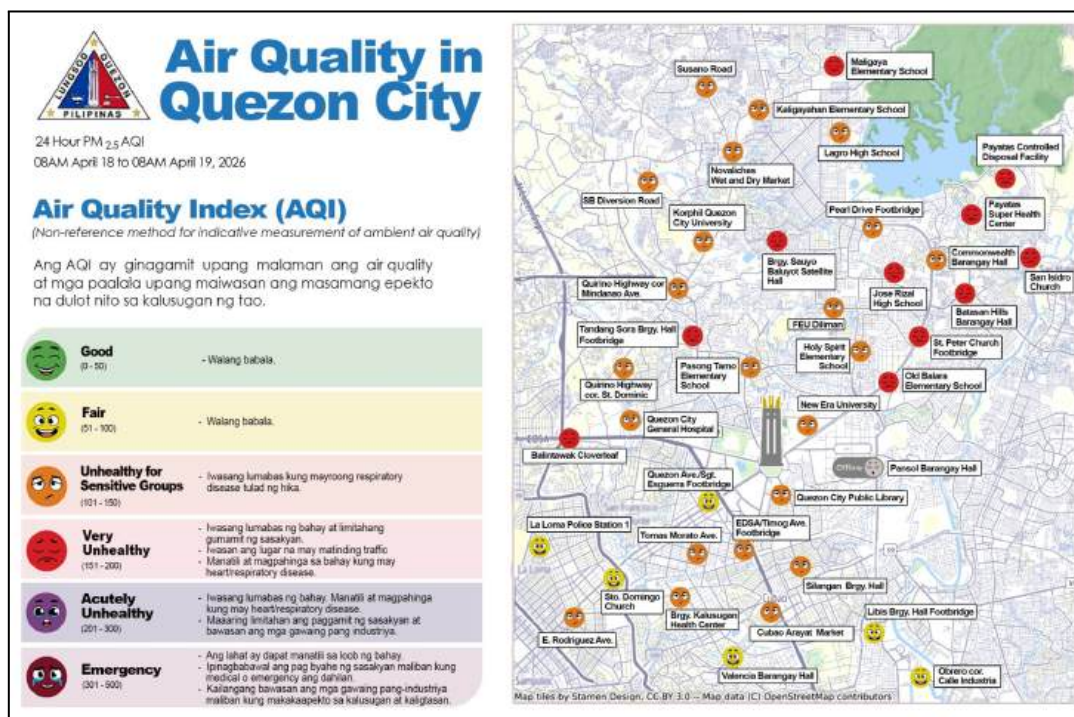


Figure 4: Quezon City Government's (18-19 April 2026)⁵ Air Quality Index and Action Triggers Advisory at the Height of the Navotas Landfill Fire

Quezon City shows what is possible when a city pulls its departments, its data, and its communities together. It can track environmental disasters and limit their damage, protect lives and surroundings, and deliver public service that reaches the people who need it most.

Recommendations

The session made clear that the strategies, tools, and people needed to prevent crises like this and clean our air already exist. What is missing is focus, follow-through on the plans, and joint effort. The recommendations below are offered for the shared action of national agencies, local governments, the private sector, and communities.

Recommendation 1: Approach Air Pollution Crises Systematically

- As Quezon City shows, departments, barangays, and community volunteers should work as one system. That means clear roles based on what each does best, a steady flow of information that mixes sensor data with reports from the ground, and action triggers that keep everyone's response in step.
- Air pollution does not stop at city limits. Neighboring local governments and national agencies can use this same approach to forecast pollution events, agree on how they will respond, and build clean air policies together based on evidence.

Recommendation 2: Make Air Quality Monitoring Interoperable

- Cities need the right information at the right time. Building a strong air quality sensor network across areas helps everyone see the pollution and respond to it.
- Place monitoring stations and sensors where they matter most, such as government buildings, schools, hospitals, and major roads, so they cover crowded areas and the people most at risk.
- The data from these sensors should work across national and local systems and be open to everyone, so people can take part in the response and in shaping policy. Quezon City offers an early look at what that can achieve.

Recommendation 3: Deploy Community Action Triggers

- Following the example of Aircare and Quezon City's action triggers, risk protocols and public messages should tie each pollution level to a clear action, so both government and households know how to prepare and respond quickly.
- This information has to reach and make sense to people at the community level. Cities should build their own networks of Clean Air Advocates and Reporters to make that involvement real and lasting.

Recommendation 4: Develop a Circular Economy

- Preventing another landfill fire means keeping a closer eye on landfill operators. National agencies should hold them to their duties, protecting nearby communities from risk, separating waste properly, and restoring a landfill before leaving it behind.
- Beyond that, it is time to move faster on circular economy policies, cutting reliance on old-style landfills, recovering as much waste as possible, and turning that waste into income for Filipinos.

About Liveable Cities Philippines

Liveable Cities Philippines (LCP) is an urban development initiative that works to make Philippine cities competitive, sustainable, and resilient through public and private collaboration.

Its Co+Lab program brings together local governments, technology providers, academe, and civil society to share what they know, test solutions, and build partnerships that move cities forward. The 'AI and Smart Solutions for Cities' track focuses on practical, evidence-based tools, including air quality monitoring, that help local governments serve their communities better.

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