



After the Navotas Landfill Fire

Where We Are and How We Move Forward

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(Rappler, 2026)



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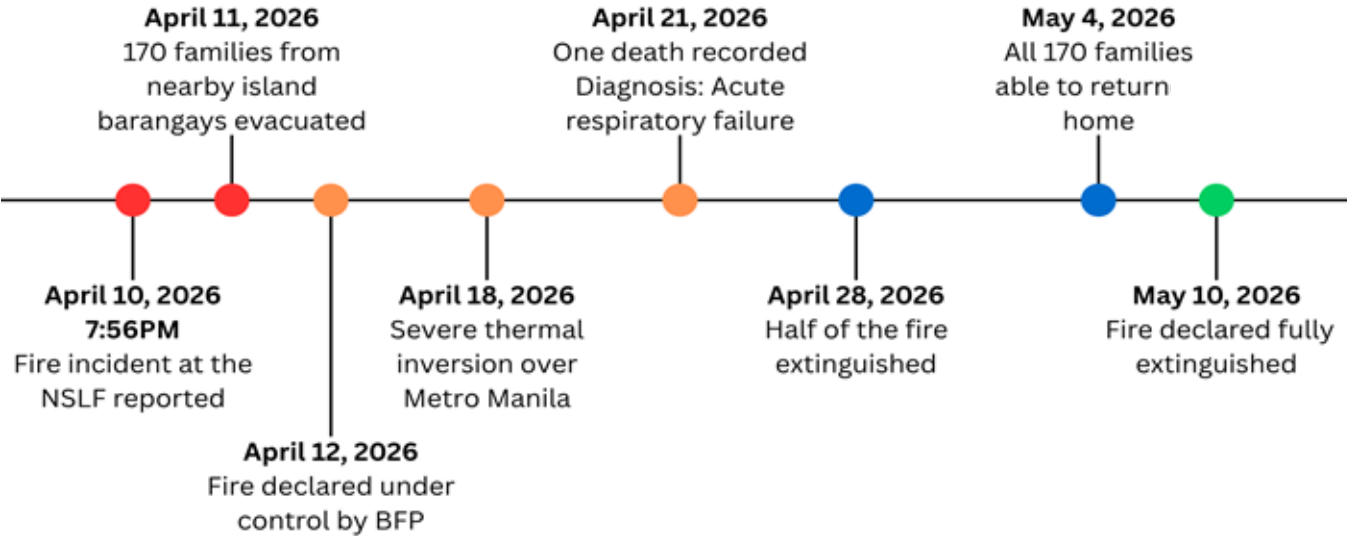


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Navotas Landfill Fire: Timeline of Events



(PhilSA, 2026)

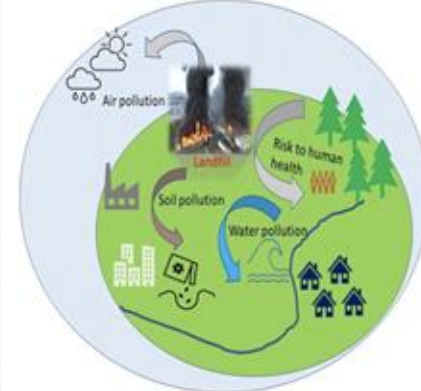
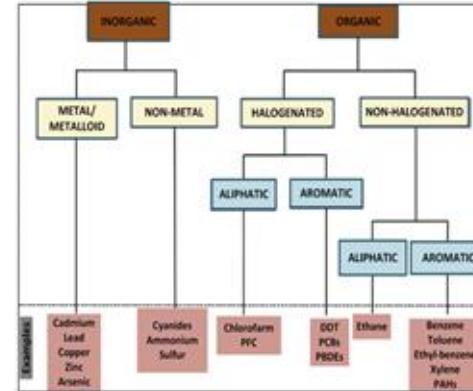
"We are uncertain until when the fire will be fully extinguished"

-BFP, April 20, during an Inter-agency Meeting

~70% of 44-hectare landfill burned
~170 families (~500 people)
evacuated



A Complex Fire in a Complication Situation



**Difficult to Contain;
Subsurface smoldering**
(Donn, 2022)



Complex cocktail of air pollutants
(Weichenthal et al, 2015)



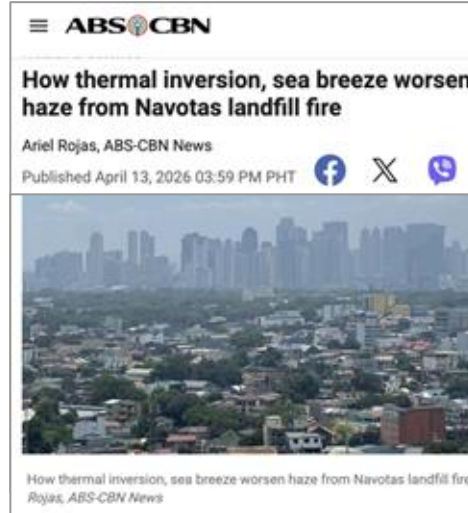
Mobilization of heavy metals and POPs
(Jakhar et al, 2023)



Ecosystem effects (air, soil, land, biodiversity)
(Jakhar et al, 2023)



A Complex Fire in a Complication Situation



**Access issues
and limited fire
suppression
options**



**Contextual factors
for transboundary
spread &
persistence**



**Politico-legal
issues and
accountability
challenges**



**Protracted
environmental,
social and health
impacts**

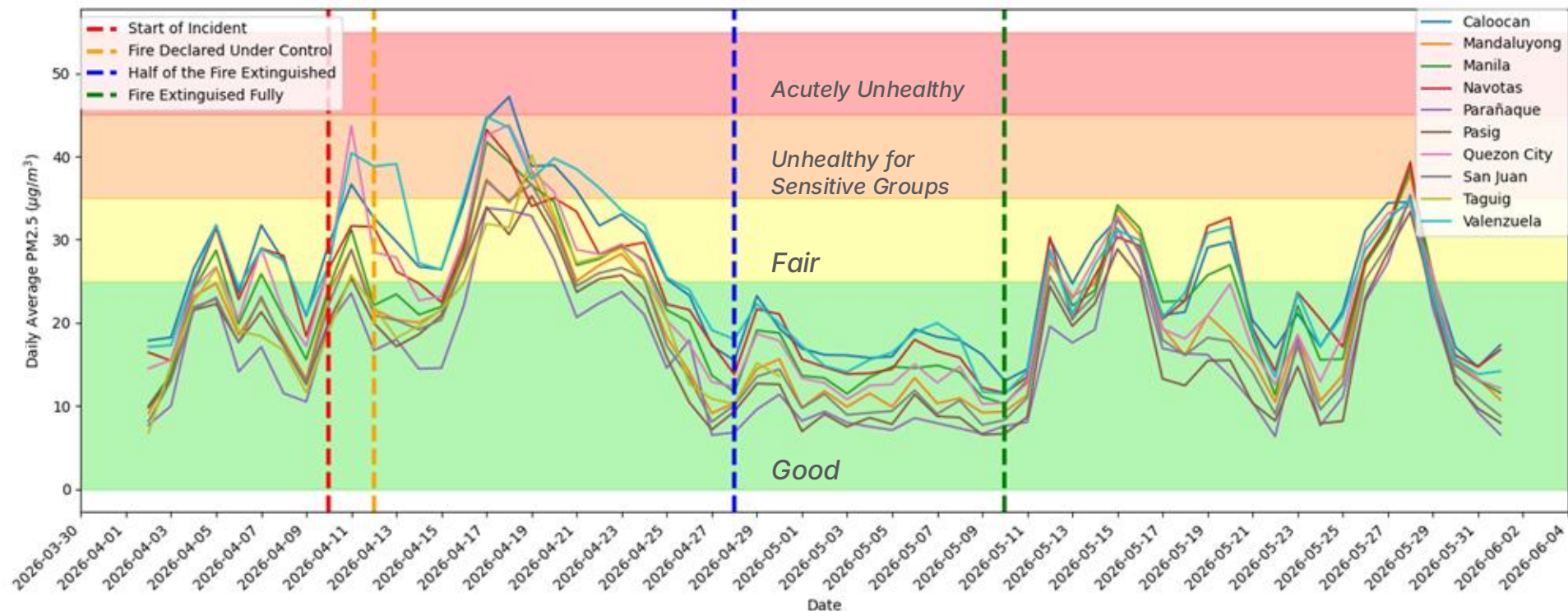
A Cocktail of Toxins Released into the Air

Air Pollutant	Health Effects
Particulate Matter & Heavy Metals <i>(PM_{2.5}, PM₁₀, Lead, Mercury)</i>	• Deep lung tissue damage and reduced lung function • Increased risk of cardiovascular disease and lung cancer • Heavy metals cause neurological damage and kidney toxicity
Nitrogen Oxides (NO _x) & Sulfur Oxides (SO _x)	• Airway irritation • Contributes to ground-level ozone (smog) formation
Dioxins and Furans	• Severe skin conditions (e.g., chloracne) • Endocrine and hormonal disruption • Known human carcinogens (linked to cancer)



How is the air quality afterwards?

Daily PM2.5 Measurements (April 2 to June 2)





Protective Measures at the Individual Level

Avoid	Reduce	Protect
• Avoid high exposure areas (e.g. construction sites, traffic corridors), especially during peak hours • Stay indoors and close your windows • Evacuate from the immediate area	Short-term • Ensure your indoor and outdoor fuel sources are clean • Minimize burning waste in open areas • Ban indoor smoking and vaping Long-term • Use safe construction materials	• Effective face masks ◦ N95 ◦ KN95 • Run an air purifier equipped with HEPA-filter in common areas

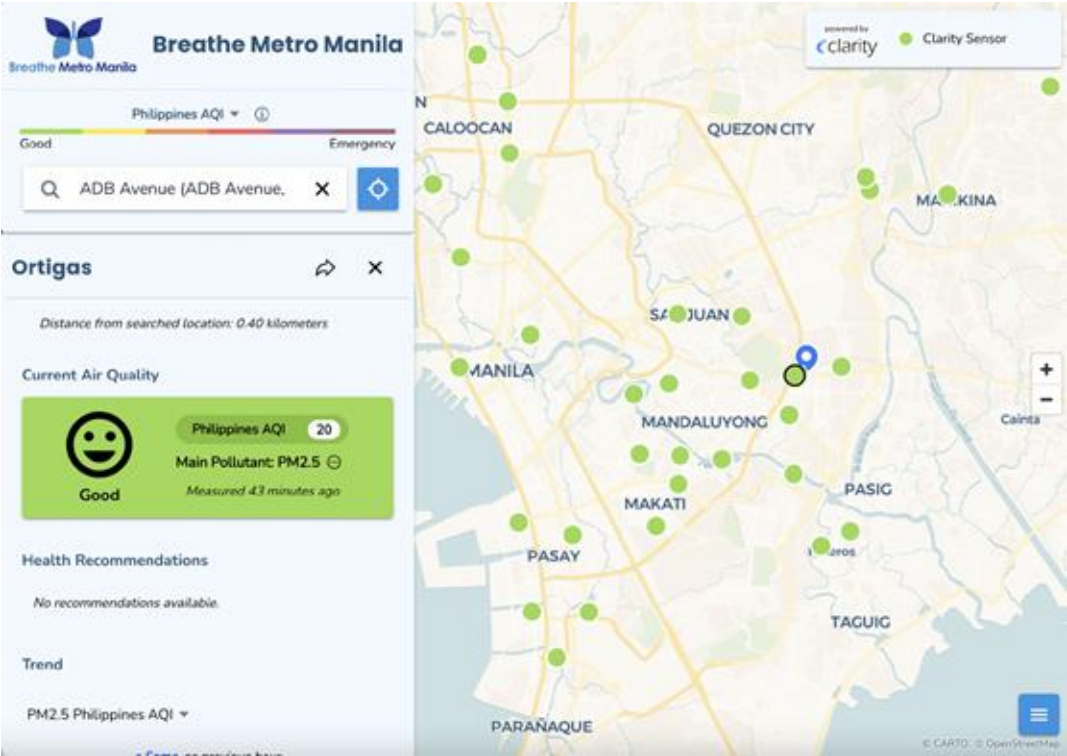


Extra Caution is Advised for...

- Vulnerable populations
 - Children and elderly
 - Patients with cardiovascular and respiratory conditions
 - Pregnant women
- High-exposure groups
 - Traffic enforcers
 - Street vendors
 - Commuters



Know Before You Go: On Risk Communication



PH AQI Category	PM2.5 ($\mu\text{g}/\text{m}^3$)	General healthy population	Sensitive groups (elderly, children, those with respiratory/ cardiovascular disease, pregnant women)	Dynamically/exertionally at-risk groups (outdoor workers, drivers, street vendors, commuters)
Good	0–25	Normal activities.	Normal activities. Note any new respiratory symptoms given recent event.	Normal activities. Wearing a mask is optional but advisable near the incident area.
Fair	25.1–35	Limit prolonged strenuous outdoor activity.	Reduce outdoor exertion; keep windows closed during peak traffic hours.	Wear a surgical or N95 mask if working outdoors for more than 4 hours.
Unhealthy for Sensitive Groups	35.1–45	Avoid prolonged strenuous outdoor exercise.	Stay indoors; close windows; use air filtration if available. Seek medical attention if symptoms develop.	N95 or equivalent mask required outdoors. Limit continuous outdoor work to under 2-hour intervals with sheltered rest breaks. Employers are responsible for providing appropriate PPE.
Very Unhealthy	45.1–55	Stay indoors; avoid all vigorous outdoor activity.	Do not go outdoors. Activate asthma/COPD action plan if applicable. Proactively seek medical care; do not wait for severe symptoms.	Suspend non-essential outdoor work. Essential workers must use properly fitted N95 respirators. Seek care immediately for headache, difficulty breathing, chest tightness, or eye irritation.
Acutely Unhealthy	55.1–90	Stay indoors with windows and doors closed. Use N95 if going outside is unavoidable.	Shelter in the most protected indoor space available. Children must not attend outdoor classes or play. Call a doctor for any respiratory symptoms.	Suspend all non-critical outdoor work. Emergency response workers require appropriate respiratory protection. Report any worker symptoms to occupational health staff immediately.
Emergency	≥ 91	Shelter in place. Evacuate if directed by authorities.	Evacuate if directed; seek hospital care for chest tightness, difficulty breathing, or confusion.	All non-emergency outdoor activities must cease. Only life-safety personnel should operate outdoors, with appropriate respiratory protection and medical oversight.

Doing Better: On Public Health Response

AIRCARE Protocol

Air quality Integrated Response, Communication, and Action for Resilient Environments

AQI Level	General/ Healthy Population	Sensitive Groups (Children, elderly 60+, 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 (3+ 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."	• Escalate 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.





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Thank you for listening!

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