

Strength in Numbers

How cities are innovating through data to
unlock ambitious clean air action



 **Breathe
Cities**

An initiative delivered by Bloomberg Philanthropies,
Clean Air Fund and C40 Cities.

Acknowledgements

The principal authors of this report are:

Breathe Cities

Chloe Watson
Luisa Miranda Morel
Cheran Suriyaprakasam
Toby Coombes

Clean Air Asia

Everlyn Tamayo
Enrique Mikhael Cosep
Maria Jannell Feliz Talavera
Ma. Cristine Faye Denna
Precious Benjamin
Dang Espita-Casanova
Glynda Bathan-Baterina



The insights in this report have been shaped by Breathe Cities' local teams, experiences shared through C40's Equity in Air Quality Technical Working Group, including support provided by BenMAP Analytics, and guidance from external reviewers.

In particular, we would like to acknowledge the contributions of Breathe Cities Regional Leads, City Advisers, and Leads (Vivian Pun, Seneca Naidoo, Guillermo Gómez Pedrozo, Florinda Boschetti, Elvis Kyere-Gyeabour, Pongsatorn Greigarn, Nuttawut Teachatanawat, Luis Eduardo Tafur Herrera, Jaime Rueda, Fadhil Firdaus, Lunga Ngcukana, Nokuthula Dubazane, Zethu Zwane, Nick Smith, Lydia Smith, Andrea Bizberg, Georgina Echániz-Pellicer, Victor Indasi, and Marion Leherpeur); the BenMAP Analytics team (Bryan Hubbell, Neal Fann, Scott Delaney, and Daniel Mork); and external reviewers Tolullah Oni (UrbanBetter and University of Cambridge), Sebastian Diez (Universidad del Desarrollo and Allin-Wayra), Tim Dye (TD Enviro), and Sumi Mehta (Vital Strategies).

Cover photo by Air Quality Systems East Africa

Breathe Cities



at a glance

Breathe Cities is a global initiative supporting cities to clean the air and enhance public health. Delivered by **Bloomberg Philanthropies, Clean Air Fund and C40 Cities**, the initiative offers cities tools to take ambitious clean air action by expanding access to data and raising public awareness.






Launched in 2023 by Michael R. Bloomberg, the UN Secretary-General's Special Envoy on Climate Ambition and Solutions and founder of Bloomberg Philanthropies, and Sadiq Khan, Mayor of London and C40 Cities Co-Chair, Breathe Cities is accelerating action in 14 cities to improve the air 77 million people breathe.

To learn more, visit **Breathe Cities' website** or follow us on **Instagram** and **LinkedIn**.

Executive Summary

Cities are driving clean air action through innovative use of data

Around the globe, cities are taking ambitious steps to clean the air we breathe. Across diverse city contexts, data is central to this effort. **Data enables cities to strengthen evidence-based decision making and build sustained public support for ambitious clean air interventions.** Specifically, data supports cities to:

	Track air pollution levels, patterns, and trends.		Identify emission sources.		Assess how air pollution affects residents.
	Understand how residents perceive air pollution.		Evaluate associated health and economic impacts.		Prioritise high-impact and resource-efficient solutions and interventions.
	Determine groups and populations most exposed and affected, and enable a fairer distribution of benefits from action.		Build sustainable public support for clean air interventions.		
	Strengthen collaboration across sectors and departments.		Build transparency, trust, and accountability with communities and stakeholders.		
	Design evidence-based policies and regulations.		Measure progress and evaluate policy effectiveness.		





While measuring, managing, analysing, and communicating air quality data can be complex, cities worldwide are increasingly showing that by taking innovative approaches, they can accelerate action. Across different geographies, capacities and starting points, cities in the Breathe Cities initiative are innovating how they measure, use, and communicate air quality information in **four key areas**:

1



Data Collection:

Building a comprehensive air quality picture

Cities are expanding air quality monitoring through networks of low-cost air quality sensors that are complementing reference-grade monitors, community-generated data, and lived experience insights. Coupled with advanced analytics, these approaches improve spatial coverage, reveal pollution hotspots, capture how air quality is experienced at street and neighbourhood levels, and provide more granular insight to guide interventions.

2



Data Governance and Collaboration:

Unlocking the potential of data through strong institutional foundations

Cities are strengthening institutional systems to enable effective data sharing and use across departments within government and with external partners. They are also clarifying roles and responsibilities, developing shared frameworks, and upskilling personnel to help ensure the sustainability of efforts driven by data.

3



Analysis, Modelling, and Impact Assessment:

Evaluating how actions impact people

Leading cities are integrating and analysing air quality data with spatial data, and health, social, and economic indicators. This people-centred approach strengthens impact assessment and enables cities to design solutions that maximise health gains, consider economic costs and social benefits, and ensure that the benefits of clean air action reach those most affected.

4



Communication and Engagement:

Empowering communities through data

Cities are translating technical information into open and accessible formats and directly involving communities in data collection and decision-making. This strengthens public understanding of the impacts of air pollution and builds the public trust necessary for ambitious climate, clean air, and public health policies.

The case studies across Breathe Cities featured in this report provide several **key lessons to inspire other cities:**



Enhance data through innovative monitoring technologies.

New technologies, such as low-cost air quality sensors, are providing effective and affordable ways for cities to collect air quality data and use this to inform policies. Cities can build data collection capabilities over time, progressively strengthening and expanding monitoring networks and complementing them with other sources of data, leveraging external partnerships, satellite or remote sensing data, community-generated data, and lived experience insights to inform effective action.



Invest in systems and people, not monitoring alone.

Data has greater impact when integrated across sectors and institutionalised in government processes. Systems that enable effective data-sharing mechanisms and continuous in-house capacity building ensure information is used consistently and effectively to guide decisions.



Connect data to people's lives to drive policy.

Air quality data is most powerful when it reflects how pollution affects daily life. Framing evidence around health, cost of living, mobility, and general quality of life strengthens its relevance and impact. Elevating the importance of lived experience data, validating it with residents, and connecting this to technical findings help build understanding and support for clean air action.



Put data in the hands of residents to strengthen action.

Supporting residents to access and interpret local air quality data with tools like open data platforms fosters public trust and enables community oversight of clean air action. Through community-led monitoring initiatives that involve residents as active partners in measuring local air quality, cities can expand monitoring coverage, improve local insight, and empower communities as champions for action. Together, these approaches position air quality data as a shared civic resource that empowers communities and supports locally grounded action.

