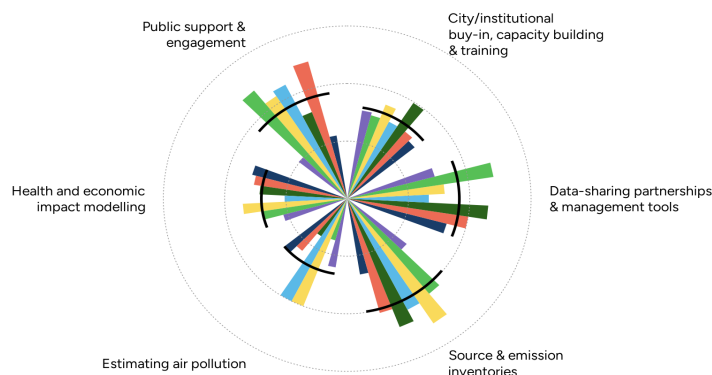


# EQuiPD: Equity in Air Quality Policy & Data Ecosystem

## Self-Assessment Tool



## Overview

The Equity in Air Quality Policy and Data Ecosystem self-assessment (EQuiPD) tool will help you understand your city's ability to effectively manage, use, craft, and implement policies at the intersection of air quality and equity - informed by air quality, health and equity data. EQuiPD is designed to guide your development around data, air quality monitoring, technical capacity, training, and infrastructure so that you can address air quality with full consideration of health and equity. You can use EQuiPD-generated results to ensure you have the necessary data for a more complete understanding of your city and determine if you have fundamental information necessary for designing equitable air quality policies and assessing policy benefits aligned with the five equity impact areas outlined in the C40 report: Clean air, healthy and thriving communities: Opportunities for city leadership [1]. Finally, EQuiPD will guide you in identifying gaps across your city's equity in air quality policy ecosystem so you can focus development and strengthen the underlying data resources, technical capacities to manage and process data, and partnerships for sharing and integrating air quality, health and equity data that can compliment your city's efforts to ensure more equitable policy outcomes.

[1] [Clean air, healthy and thriving communities: Opportunities for city leadership](#)

## How to use the self-assessment tool

The EQuiPD self-assessment contains 80 questions regarding data in our city. These questions are broken down across how data is collected, linked, disaggregated and integrated, analyzed, and communicated. Your responses to these questions will be used to calculate scores across six categories within four ecosystem domains and three themes of equity (see [2] for more detail). As you make progress in developing your city's data ecosystem for equitable air quality policies, you are encouraged to redo this assessment again in the future and reflect on growth over time.

**\*\*Note:** Questions marked **\*\*** are essential to answer and should not be skipped. Other questions will help add nuance for EQuiPD to understand your city's policy and data ecosystem and are highly recommended to answer.

**Self-scoring is necessary as you have the best knowledge of your own city's capacities. The scoring scale for all questions is described as follows. You may assign fractional scores (e.g., 2.5) if you fall between two scores.**

- 0** No implementation or unknown.
- 1** Limited implementation. Pilot work is underway related to some aspects of this question, but it is not sustainable or will not provide long-term actionable insights.
- 2** Partial implementation. There is operational work related to this question that is ongoing but may be limited in terms of equity integration (e.g., it has not reached marginalized neighborhoods or cannot fully quantify or address potential disparities).
- 3** Full implementation. Long-term, sustainable, and transparent ability to address this question. Equity is given full consideration with disaggregation (when applicable) across multiple characterizations (i.e., demographic, socioeconomic).

After assigning scores to all questions, you can directly upload this document into the online tool for visualization and identification of strengths and gaps as well as recommendations or examples to enhance and prepare your city's data ecosystem for equitable policy development.

[2] [Additional descriptions on categories, domains, and themes of equity used throughout this tool](#)

## Self-Assessment Questions

| Preliminary   | Answers |
|---|---------|
| City name? (Use dropdown list to select from C40 cities, or enter 'Not listed') |         |
| Other city (write here, formatted as "Country - City")                          |         |
| Name of person filling out this self-assessment?                                |         |
| Date completed  |         |
| Are you willing to share your results with other C40 cities? (Yes/No)           | Yes     |

| Data Collection (Health, Air Quality, Demographics, Socioeconomics) | Score (0-3) | Notes |
|---|-------------|-------|
|---|-------------|-------|

|   |  |  |
|---|--|--|
| 1 | <p>*Do air pollution monitoring locations prioritize high-risk groups (for example, children, elderly, people with pre-existing conditions) and neighborhoods with historical underinvestment?</p>   |  |
| 2 | <p>Are community members from marginalized or vulnerable groups—or from disproportionately exposed areas of your city—engaged in decisionmaking about where to locate air pollution monitors?</p> <p>Marginalized community members may include low-income residents, racial or ethnic minority groups, migrants, linguistic minorities, religious minorities, Indigenous peoples, women, or any other oppressed or disenfranchised group.</p>   |  |
| 3 | <p>Are labor unions, worker cooperatives, and community organizations actively engaged in decisionmaking about where to locate air pollution monitors?</p> <p>Spatial and temporal resolution should be high enough to identify specific neighborhoods and other areas of your city that are disproportionately impacted by air pollution.</p>   |  |
| 4 | <p>*Does your city collect air pollution data at high spatial and temporal resolution, especially in areas of concern and prioritize high risk groups (e.g., children, elderly, underinvested neighborhoods)?</p> <p>Spatial and temporal resolution should be high enough to identify specific neighborhoods and other areas of your city that are disproportionately impacted by air pollution.</p>  |  |
| 5 | <p>*Does your city collect air pollution data from point, area, and mobile sources, including power plants, shipping lanes, transportation hubs and routes, and industrial areas?</p>  |  |
| 6 | <p>Are smaller, un-inventoried, unconventional, hyper-local, or illegal sources of air pollution tracked by your city, preferably in consultation with vulnerable communities?</p> <p>Such sources may include backyard burning or unlicensed chemical use.</p>  |  |
| 7 | <p>*Does your city collect detailed social, demographic, and economic data about its residents and where they live?</p> <p>These datasets might include resident age, sex and gender, income, migration status, county of origin, racial or ethnic identity, religious affiliation, primary language spoken, education level, employment status, and occupation. They might also include area-level variables like poverty rates or joblessness rates.</p> <p>This data is critical to understanding the sociodemographic composition of neighborhoods and how some groups might be affected by air pollution and air quality policies more than others.</p> |  |

|    |  |  |
|----|--|--|
| 8  | Does your city government have partnerships with industry, transportation, and agricultural sectors to improve emission inventories?   |  |
| 9  | <p>*Is data collected regarding the type of energy sources (coal, oil, gas, renewables, etc.) used by households in your city, as well as the location and number of such households?</p> <p>For example, do you know the location and number of households that have access to “clean energy,” which includes energy sources that produce no greenhouse gas emissions during their production or use?</p>   |  |
| 10 | Does your city have the ability (sensors, expertise, etc) to gather indoor air quality data across diverse housing types and locations (e.g., underinvested neighborhoods, high-rise apartments)?  |  |
| 11 | <p>Does your city collect data on indoor air quality proxy measures?</p> <p>“Proxy measures” include any data points that indicate potential indoor air quality problems. For example, mold complaints or mold abatement requests can indicate homes with poor indoor air quality.</p>   |  |
| 12 | <p>*Does your city collect or have access to real-time meteorological forecast data for your city and the surrounding areas?</p> <p>Meteorological data can be important both for air quality monitoring and for alerting residents to potential health hazards. Such data is particularly important for cities that experience extreme weather events.</p>  |  |
| 13 | <p>*Does your city collect data on accessibility that can characterize inequities for specific vulnerable populations, such as low-income or elderly populations?</p> <p>For this question, “accessibility” refers to whether all city residents—regardless of their physical or intellectual abilities—can interact with the information on air quality and related issues that you provide.</p>  |  |
| 14 | *Is there data to characterize access to public clean air spaces, including by multiple transportation modes, e.g. sidewalks, roadways, public transit?  |  |
| 15 | <p>*Does your city collect health outcome data at high spatial and temporal resolution?</p> <p>For example, does it collect data on the number of daily visits to specific clinics or hospitals (and the causes for those visits), or the number of child absences from city schools?</p> <p>“High spatial resolution” means that you know the approximate location (residential address, address of medical facility, or neighborhood) of the health event.</p> <p>“High temporal resolution” means daily or, at a minimum, weekly counts, though yearly counts can still be helpful when modeling the impacts of air pollution policies over long periods of time.</p> <p>Note: this question only asks whether the city government collects this data directly. Separate questions later in the questionnaire will ask about data sharing with hospitals, ministries of health, and other groups that may have health data.</p> |  |
| 16 | Does your city track and make available data on competing risks to health and equity (e.g., drinking water quality, pesticide use, chemical exposures)?  |  |
| 17 | *Does your city collect labor market data (e.g., by gender, race/ethnicity, age, region, occupation) on current workforce composition, sectoral vulnerabilities related to air quality policies and energy transitions, and potential for participation in green job sectors?  |  |
| 18 | Do you collect data on how air quality-related costs (such as energy or transportation expenses) affect households and businesses?   |  |

|                                       |   |                             |
|---------------------------------------|---|-----------------------------|
| 19                                    | <p>Are members of communities that are disproportionately impacted by air pollution engaged in the design and review of data systems that monitor labor market data and other job-related outcomes?</p> <p>For this question, “job-related” outcomes include opportunities to participate in job retraining, job placement, and green job creation programs.</p> <p>This is important because air quality policies may not be equitable if they result in economic hardship for vulnerable populations. Instead, equitable air quality policies should provide benefits to vulnerable populations, including economic and job-related benefits.</p> |                             |
| 20                                    | Does your city collect data to track economic transitions related to air quality (e.g., shifts in employment, consumer prices, small business closures/openings)?   |                             |
| 21                                    | <p>*Does your city collect data on the combined impacts of air quality interventions on employment in economically disadvantaged communities?</p> <p>For example, are potential job losses or gains due to air quality interventions monitored?</p> <p>For this question, consider all types of “air quality interventions,” including transitions to clean (or cleaner) energy, clean (or cleaner) transportation, clean (or cleaner) waste management systems, or any other policy or program meant to reduce air pollution.</p>  |                             |
| 22                                    | <p>*Does your city systematically keep track of and report data gaps (for example, missing or unavailable data) in its datasets that might disproportionately impact disadvantaged communities?</p> <p>For this question, “datasets” include all datasets relevant to equity analyses, such as data on health burdens, employment opportunities, economic activity, accessibility (e.g., transportation), etc.</p>  |                             |
| 23                                    | Is there a mechanism (for example, regular meetings in neighborhoods across your city) to ensure that community-generated data and lived experiences are collected and used by city government staff for policy, resource allocation, and program design?   |                             |
| 24                                    | *Does your city have systems for documentation and version control for all of its datasets?   |                             |
| 25                                    | *Do air quality modeling staff collaborate with staff maintaining air quality monitoring networks so that they can bias-correct model predictions?  |                             |
| <b>Data Partnerships and Linkages</b> |   | <b>Score (0-3)    Notes</b> |
| 26                                    | <p>*Does your city employ staff or consultants responsible for maintaining and linking air quality, environmental, demographic, health, economic, and other datasets and data pipelines?</p> <p>A “data pipeline” can include computing scripts—often in Python, R, or a similar language—that can make data available for analysis and sharing.</p>  |                             |
| 27                                    | <p>*Has your city established data sharing partnerships between each department within your city that collects datasets that are important for analyzing the equity impacts of air quality policies?</p> <p>These departments in your city may include environmental and air quality departments, planning departments, health departments, transportation departments, and economic development or employment departments.</p> <p>Partnerships may take many forms, including regularly scheduled communication among departments, cross-department working groups, or data sharing agreements and Memorandums of Understanding.</p>               |                             |

|    |   |  |
|----|---|--|
| 28 | <p>*Has your city established partnerships and processes to share <b>air quality</b> data with relevant officials in other levels of government, including state / provincial and national levels, that affect your city?</p> <p>Relevant officials may include those in ministries of health, public health, environment, transportation, economic development, infrastructure, and others.</p>                                  |  |
| 29 | <p>*Has your city established partnerships and processes to share <b>health and economic impact/disparities</b> data with relevant officials in other levels of government, including state / provincial and national levels, that affect your city?</p> <p>Relevant officials may include those in ministries of health, public health, environment, transportation, economic development, infrastructure, and others.</p>       |  |
| 30 | <p>Are satellite products linked with other air pollution monitoring data and with health and economic data (e.g., hospitalizations, asthma prevalence)?</p> <p>Satellite-derived air quality data can complement air quality monitoring data, particularly where monitoring data is sparse.</p>  |  |
| 31 | <p>*Does your city have the capacity to link air pollution model data (versus monitor data), particularly where either regulatory or low-cost air pollution monitor data is sparse?</p> <p>Air pollution model data (rather than monitor-based data) are often produced by outside experts. Thus, model-based data often needs to be linked. This question asks whether your city has the capacity to link this type of data.</p> |  |
| 32 | <p>Does the city or sponsor have access to long-term air quality monitoring data from national or state / provincial governments?</p> <p>By “long-term,” this question refers to data collected over several years. Ideally, this data will be at high spatial and temporal (e.g., daily) resolution as well.</p>   |  |
| 33 | <p>Does your city have access to historical meteorological data for your city and the surrounding areas that can be linked to other data sources?</p> <p>Historical data can be helpful when estimating air pollution over time.</p>  |  |
| 34 | <p>Can your city obtain and link data from low-cost sensors maintained by non-governmental organizations or private individuals?</p>  |  |
| 35 | <p>Is dedicated technical support provided to community groups managing their own low-cost sensor projects to ensure data quality and sensor calibration?</p>   |  |
| 36 | <p>Is your city able to link and map yearly data on instances of floods, heat waves, toxic chemical contamination, and other environmental burdens?</p>   |  |
| 37 | <p>*Does your city link data on housing conditions, energy use patterns, household activities and behaviors, and indoor air pollutant sources?</p>  |  |
| 38 | <p>*Are emission and/or air quality datasets linked with workforce data (e.g., employment sectors, wages, occupational health)?</p>   |  |
| 39 | <p>Are multiple years of historical land use and zoning data available to link to other data sets?</p> <p>This type of data linkage can support air quality projections, health impact projections, and economic policy impact projections, among other topics.</p>   |  |
| 40 | <p>*Does your city link source-specific emissions monitoring data to health and economic datasets?</p> <p>For example, traffic-related NO2 data could be linked with childhood asthma rates, or shipping sulfur data could be linked with respiratory hospitalizations.</p>   |  |

| Data Disaggregation and Integration  | Score (0-3) | Notes |
|--|-------------|-------|
| <p>41 *Does your city map historical data (e.g., data over many years) on environmental burdens (air pollution, heat waves, floods, chemical exposures, etc.) and social variables (including poverty rates, migration status, race / ethnicity of residents, etc.) across neighborhoods?</p> <p>Put differently, can you visualize on a map the number of environmental burdens each neighborhood in your city has experienced over time to understand whether and where vulnerable populations may face higher levels of total environmental burdens?</p> <p>Burdens may include floods, heat waves, toxic chemical contamination, and other environmental burdens?</p>  |             |       |
| <p>42 *Is your city able to disaggregate air quality data to measure how different groups in your city—and particularly vulnerable and marginalized groups—are exposed to different levels of air pollution?</p> <p>This process generally requires cities to be able to link and map sociodemographic and air pollution data, and to understand both (1) how air pollution differs across neighborhoods and (2) demographic characteristics of groups living in highly polluted neighborhoods.</p>  |             |       |
| <p>43 *Are you able to disaggregate all other environmental data sources—including those measuring point / source emissions, meteorology, floods, and chemical use—by sociodemographic characteristics?</p> <p>As in the question above related to air pollution data, this ability is central to understanding health and economic equity impacts of air pollution.</p>   |             |       |
| <p>44 *Can your city disaggregate labor market and economic data sources—including those job creation, job loss, and other economic costs—by sociodemographic characteristics?</p>   |             |       |
| <p>45 *Are all health outcomes related to air pollution exposure disaggregated by demographics such as race, income, age, gender, and geography?</p>   |             |       |
| <p>46 *Does your city disaggregate air pollution, environmental, health, and economic data by multiple demographics simultaneously?</p> <p>For example, some cities may disaggregate air pollution exposure by one characteristic (e.g., nativity) at a time. However, more detailed equity analyses consider the impact of intersecting facets of identity and social position. As such, they may disaggregate data based on two or more characteristics (e.g., nativity and poverty status) at the same time.</p> <p>In these cases, you might consider how air pollution exposure differs among, for example, low-income migrant residents, high-income migrant residents, low-income native residents, and high-income native residents.</p> |             |       |
| <p>47 Do models incorporate local source contributions to identify drivers of inequitable exposures using resident-collected air quality data that is integrated with official datasets?</p>   |             |       |
| <p>48 *Do your city's analyses incorporate spatially and temporally aligned (i.e., "harmonized") demographic, air quality, health, and economic outcome data?</p> <p>In other words, if you use demographic, air quality, health, and economic data in your analyses, were the various types of data collected during the same time period and at the same spatial scale (for example, street-level, neighborhood-level, city-level, province-level, etc.)?</p>  |             |       |
| <p>49 Are community-generated data sources and data from lived experiences integrated into official city data sources?</p>   |             |       |

| Data Analysis and Modeling  | Score (0-3) | Notes |
|---|-------------|-------|
| <p>50 *Does your city have access to computing resources including computers and statistical analysis software (e.g., R, SAS, or similar software, as well as GIS software) that can (1) process large-scale datasets and (2) estimate differences in air pollution risks across different population groups?</p> <p>It is important that these computing resources are powerful enough to handle large datasets and to estimate how health and economic outcomes are affected by air pollution (i.e., so-called "exposure-response datasets and risk models").</p> |             |       |
| <p>51 Does your city use open-source data analysis tools (e.g., R, QGIS) for its analyses?</p> <p>Using open-source tools can ensure your city's technical capacity is robust because they do not require your city to purchase new software every few years.</p>   |             |       |
| <p>52 *Does your city systematically measure the effects of air quality policies to ensure they reduce inequities in air pollution exposure and related health economic effects?</p> <p>For example, the AQUA tool from C40 is one tool that can be used to measure health effects, but your city may choose other tools for this purpose.</p>  |             |       |
| <p>53 *Are health risks from air pollution explicitly modeled for multiple demographics, and do these risks consider non-chemical stressors?</p>  |             |       |
| <p>54 Are data fusion techniques used to combine remote sensing, ground-based, and modeled data to enhance exposure assessment?</p>   |             |       |
| <p>55 Are model assumptions and data limitations clearly documented and communicated?</p>   |             |       |
| <p>56 Are exposure models evaluated for accuracy where monitoring data may be sparse?</p>   |             |       |
| <p>57 Are appropriate concentration-response functions available and applied?</p>   |             |       |
| <p>58 *Are baseline population and health outcome incidence data available?</p>   |             |       |
| <p>59 *Are analyses stratified by socio-demographic groups to assess whether vulnerable populations benefit equally from interventions?</p>   |             |       |
| <p>60 Is population-specific epidemiological literature used for equity analysis? (i.e., using research from/with affected populations)</p>   |             |       |
| <p>61 *Do evaluations attempt to assess whether health and economic disparities among marginalized groups (compared to groups who are not marginalized) from air pollution and air quality policies are narrowing or widening over time?</p>  |             |       |
| <p>62 *Are policy-based scenarios evaluated for distributional fairness (who benefits most/least)?</p>  |             |       |
| <p>63 *Are health and equity outcomes among marginalized, vulnerable, or particularly susceptible groups (children, elderly, people with chronic illness) explicitly quantified?</p>  |             |       |
| <p>64 *Do health and economic impact assessments of air quality policies include analyses of differential burdens across diverse groups and local economies (e.g., low income workers)?</p>   |             |       |
| <p>65 *Does your city analyze health and economic costs associated with policy compliance or adaptation and how this is distributed across communities and businesses of different sizes?</p>   |             |       |
| <p>66 *Does your city have programs or policies to ensure that community members from marginalized, vulnerable, or disproportionately exposed areas are engaged in decisionmaking about how to interpret and analyze air pollution data from your city?</p>   |             |       |
| <p>67 Do evaluations report whether health outcomes (e.g., fewer hospital visits, lower asthma rates) improve after interventions?</p>  |             |       |
| <p>68 Do marginalized groups or their representatives have a clear mechanism to provide input on—or object to—the data and assumptions underpinning equity impact analyses?</p>   |             |       |

| Data Communication |  | Score (0-3) | Notes |
|--------------------|--|-------------|-------|
| 69                 | <p>*Can the public access your city's air quality and emissions data for free?</p> <p>Public access could include internet-based tools or apps.</p> <p>Note: This specific question refers only to the ability of the public to access your data. It does not refer to whether the public actually uses whatever tools may exist.</p>                                    |             |       |
| 70                 | *Are public-facing data platforms designed with community input to ensure accessibility (e.g., mobile-friendly, low-data consumption, interactive maps) rather than relying solely on raw data files?  |             |       |
| 71                 | <p>*Are real-time air quality alerts and warnings, resources, and recommendations for protective actions available to residents in all neighborhoods in your city?</p> <p>For this question, consider whether these resources (alerts, recommendations, etc.) are disseminated through multiple platforms, including websites, apps, text messaging, or other media.</p> |             |       |
| 72                 | <p>Does your city track public engagement with any publicly available air quality data?</p> <p>This could include simply counting the number of visits to relevant webpages, and it would be a helpful datapoint to consider when building equitable air quality policies.</p>   |             |       |
| 73                 | *Are policy effects evaluated and reported back to communities in a transparent and publicly accessible way?   |             |       |
| 74                 | Are there frequent, accessible training opportunities provided to communities and neighborhoods on how to use monitors, and store/access and interpret air quality data?   |             |       |
| 75                 | Is air monitoring data translated into non-technical summaries and available in the primary languages spoken by residents in the monitored communities?  |             |       |
| 76                 | *Are local community members and business leaders actively engaged in decision-making regarding data sources, data use, and data analyses, not just consulted after the fact?  |             |       |
| 77                 | *Are stakeholders within the government able to access and distribute quality-assured air quality data?  |             |       |
| 78                 | Are equity-focused and community organizations meaningfully included in governance and capacity-building on issues related to data sources, data use, and data analysis, and not just technical agencies?  |             |       |
| 79                 | Are mechanisms in place to ensure that the data and findings used for just energy transition planning and air quality policy implementation are communicated to and validated by women, youth, Indigenous peoples, racial/ethnic minorities, and other frontline communities relevant to your city and context?  |             |       |
| 80                 | Are the health sector and community organizations actively engaged in decision-making regarding data sources, data use, and data analyses, not just consulted after the fact?  |             |       |

[Finished? Visit the 'Scoring' tab to see your results](#)



# EQuiPD: Equity in Air Quality Policy & Data Ecosystem

## *Definitions*

### **Categories**

#### **Data-sharing partnerships & management tools**

Robust capacity in data collection, analysis, and public transparency is essential for equitable air quality policies. This means systems that detect health and economic disparities, integrate diverse datasets, and map cumulative environmental burdens by community and socioeconomic status. Open access to data, strong local partnerships, and active involvement of marginalized communities in monitoring and decision-making help ensure that interventions are both effective and just. Regular, transparent reporting and evaluation of outcomes are crucial for accountability and ongoing policy improvement.

#### **City/institutional buy-in, capacity building & training**

Building and sustaining robust technical and organizational capacity is vital for equitable air quality policy-making. This involves having political buy-in to channel resources and mandate and accessible tools and trained staff to map, analyze, and communicate air quality gradients, their health and equity impacts, as well as resources for ongoing public and community training. Budgets and leadership structures must support long-term system upgrades, prioritize high-burden communities, and ensure regular, transparent evaluations—including independent audits and mechanisms for community input. Effective capacity also requires cross-sector coordination, sustained funding, and a commitment to policies that target disparity reduction and reflect the needs and diversity of the most affected populations.

#### **Public support & engagement**

Ensuring that air quality policy-making addresses the diverse needs of all communities, especially the most vulnerable is critical to building public support & engagement. This means collecting and sharing data on access to clean air spaces, transportation, and public warnings, while tailoring resources and risk communications in multiple formats and languages. Economic impact assessments and compliance costs should explicitly analyze and address differential burdens, and feedback mechanisms must enable meaningful input from marginalized groups. Accessible and inclusive information about air pollution, impacts from policies and live tracking of changes over time can be game changing when it comes to building public support and addressing backlash. Sustained training, participatory processes, and investments in clean air monitoring infrastructure—combined with regular evaluation of health outcomes, public accountability, and integration of citizen data—ensure that policies are both effective and equitable for populations such as low-income, elderly, Indigenous, and minority residents.

#### **Health & economic impact modeling**

Equitable air quality policy-making relies on comprehensive, accurate modeling and monitoring systems that explicitly quantify health and economic impacts of particular policies for vulnerable and marginalized groups. This involves ensuring exposure and scenario-based models reflect real-world conditions through collaboration with monitoring networks, validation in data-sparse areas, and integration of fine-scale demographic and economic data. Analyses must be stratified by factors such as income, age, race, and geography, translating results into meaningful, accessible formats (e.g., public dashboards, maps, and plain-language summaries) that inform both policy and community resilience efforts. Ongoing community input, transparent communication of methods and limitations, and regular updates ensure that modeling truly supports fair distribution of benefits and burdens, strengthens preparedness, and provides targeted support to those most affected by air pollution and regulatory changes.

## **Estimating air pollution**

Ensuring equitable air quality policy-making demands comprehensive monitoring and modeling systems that achieve high spatial and temporal coverage (especially in historically underserved neighborhoods) and prioritize addressing impacts to vulnerable groups such as children and the elderly. This includes integrating data from diverse sources (e.g., reference monitors, low-cost sensors, models, satellite data, and meteorological stations) into accessible, central repositories and using analytical tools to assess how air quality, health, employment, and energy costs vary across communities. Collaboration among city staff, technical experts, and community partners in siting, operating, and interpreting monitors and models is essential for accurate, quality-assured data that drives action. Making all monitoring and modeling outputs user-friendly and publicly accessible, while linking environmental, health, workforce, and housing data, enables targeted interventions and supports transparency, accountability, and more equitable outcomes.

## **Source & emission inventories**

Equitable air quality policy-making requires systematic monitoring and evaluation of emissions, land use, and zoning decisions with a strong focus on communities facing the greatest risks, such as low-income and minority neighborhoods near industrial sites. Maintaining and openly sharing data on point, area, and mobile emission sources—alongside vehicle inspection programs, fenceline monitoring, and accessible records of land use changes—ensures transparency and helps link environmental and economic impacts to public health outcomes. Incorporating input from disproportionately exposed groups, workers, and community organizations into emission assessments, zoning, and policy review enables more just and inclusive decisions. Partnerships across government, industry, and labor, along with accessible platforms for data, green jobs, and retraining opportunities, support ongoing improvements, accountability, and equitable transitions, particularly for those most affected by pollution and economic changes.

## **Ecosystem Domains**

### **Technical Capability**

The city government's infrastructure, expertise, and resources for accurately monitoring, analyzing, and managing data. This includes the availability of appropriate equipment, digital platforms, skilled personnel, and technical support.

### **Data Integration**

The ability to combine and align air quality data with other relevant data sources (such as health, demographic, geographic, and socioeconomic data). This includes systems and processes for data sharing, interdepartmental data flows, interoperability, and the consolidation of data into actionable insights to inform policy and interventions.

### **Internal processes**

The city government's organizational procedures, policies, and practices for managing air quality, health, and equity initiatives. This covers strategic planning, interdepartmental coordination, budgeting, workflow management, staff training, and evaluation mechanisms to ensure effective implementation and accountability.

### **Participation and Empowerment**

The involvement and engagement of external parties—such as community groups, residents, businesses, academic institutions, nonprofits, and regional or national governmental agencies—in planning, decision-making, and program implementation related to air quality, public health, and equity. This includes collaboration, transparent communication, and shared governance where appropriate.

## **Equity Themes**

### **Distributional Equity**

Equity and air quality data is useful in and of itself to develop a more complete understanding of your city. This theme examines whether benefits, risks, costs, and opportunities from policies are fairly distributed among different social, economic, and demographic groups. Questions generally revolve around assessing health inequalities, cost of living, and fairness of air quality actions to better understand the components of air pollution injustice.

### **Socioeconomic Resilience and Opportunity**

Equity and air quality data provide fundamental information for assessing policy outcomes. This theme relates to communities and workers ability to adapt, benefit, and thrive amid policy-driven changes—such as job transitions, economic shifts, and changes in cost of living—while promoting fair access to new opportunities (e.g., green jobs, retraining). Questions generally focus on economic opportunities (including green jobs and training), cost of living, and access to information and public spaces to better understand the drivers of air pollution injustice

### **Access and Inclusivity**

Ensuring equitable outcomes along the five equity impact areas outlined by C40. This theme addresses equitable access to information, services, public resources, infrastructure, participation in decision-making, and physical environments for all communities, especially those historically marginalized. Questions focus on accessibility and inclusion to services, public spaces, and information as well as engagement and decision making around data.