

OUTCOMES OF ENVIRONMENTAL JUSTICE ORGANIZATION INTERVIEWS

A SUMMARY OF TECHNICAL ENGAGEMENT FOR
MAPPING TOOL DEVELOPMENT



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WHAT is the project?

The Office of Sustainability is developing a publicly accessible **environmental justice (EJ) mapping tool**. The tool will identify Philadelphia neighborhoods disproportionately impacted by environmental hazards and lacking equitable access to key services and amenities necessary for community resilience. The final product will include dynamic and interactive visualizations, regularly updated data, and offer the ability to download data in multiple formats.

WHY are we doing it?

Existing EJ tools are not working for Philadelphia residents, EJ-focused organizations or City Departments.

We are addressing critical gaps:

- Local context
- Usability and education
- Customizability
- Resources and solutions
- Training

HOW are we soliciting input into the tool development?

This project includes extensive engagement with community members through a series of public workshops (see “Community-Based Environmental Justice Mapping Workshops” summary report), interviews with City agencies, and interviews with environmental justice-focused nonprofit organizations. This document focuses on information collected from environmental justice organizations, including potential tool use cases, key dataset types, tool functionalities and interfaces, and strategies for tool implementation.

WHO will use the tool?

- City departments and agencies to inform policy, planning and resource allocation.
- Residents and Community Organizations to educate, organize and advocate for change.
- Residents and Educators to explore environmental and social data in meaningful ways.



WHAT is Environmental Justice?

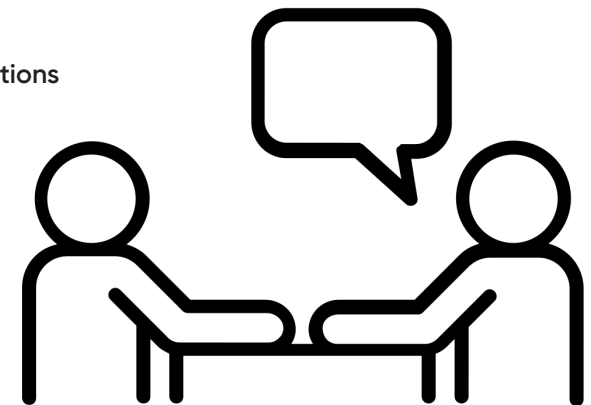
Environmental Justice is the equitable distribution of environmental benefits and burdens; righting of past harmful environmental policies and practices; and meaningful involvement of residents in decision-making, particularly for those most impacted.

WHO did we speak with?

This project conducted 90-minute interviews with staff from 19 environmental justice-focused nonprofit organizations in Philadelphia. Interview questions covered:

- Organizations' experience using existing mapping tools
- Topics and datasets they want included in this mapping tool
- What they want the tool to look like and how they want it to function
- How they would like the City to use the tool
- How they hope to use the tool for their initiatives and programming

The table on the following page (page 5) summarizes relevant advocacy areas for each of the organizations interviewed.





Project Background

ENVIRONMENTAL JUSTICE ORGANIZATIONS

	air quality	dumping	energy	flooding	food access	green space	health	land use	recycling / reuse	trees
Circular Philadelphia		█					█	█	█	
Clean Air Council	█	█	█				█			
Eastwick United CDC		█		█						
Energy Justice Network	█		█							
Esperanza							█			█
Germantown Residents for Economic Alternatives Together (GREAT)				█	█			█		
Philadelphia Holobiont Laboratory			█							
Kensington Corridor Trust	█	█					█	█		
Neighborhood Gardens Trust					█	█		█		
Overbrook Environmental Education Center	█						█			
Pennsylvania Horticultural Society					█	█				█
POWER Interfaith			█				█			
The Public Interest Law Center						█	█	█		
SEAMAAC		█			█	█	█			
Sunrise Movement Philadelphia	█				█	█		█		
Trash Academy		█				█			█	
UC Green										█
University City District (UCD)						█				
Urban Creators					█	█				

Project Background

A NOTE ON EXISTING ENVIRONMENTAL JUSTICE TOOLS

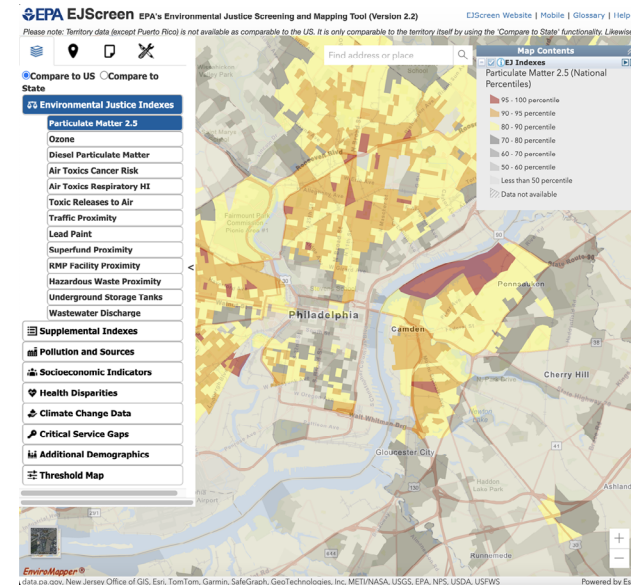
Environmental justice mapping tools provide visual representations and interpretation of data about individual and cumulative environmental burdens, social and economic characteristics of communities, and effects of chronic disinvestment. Federal and state-level tools have been effective mechanisms for informing policy, ensuring equitable distribution of funds and resources, and providing data access for users with necessary technical skills.

EPA EJScreen (archived): EPA used this tool to inform outreach/engagement and for decisions related to permitting, enforcement, and compliance. It provided public access to a wide variety of datasets and custom report creation.

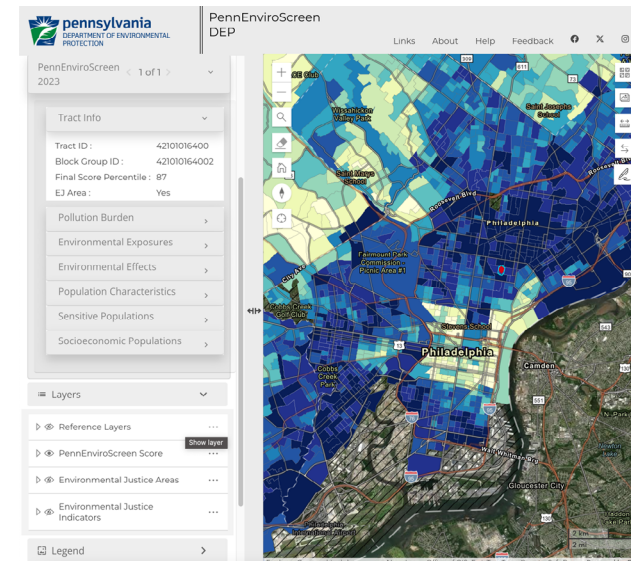
CEJST (archived): The previous administrations' White House's Council on Environmental Quality created this tool to classify certain census tracts as “disadvantaged” for the purposes of the Justice40 initiative.

PA DEP PennEnviroScreen: This tool uses both federal and state-level data to provide access to datasets in four categories: environmental exposure, environmental effects, sensitive populations, and socioeconomic populations. It identifies certain census block groups as “Environmental Justice Areas”.

These tools, however, lack locally-relevant data and were not created in partnership with place-based organizations or residents of environmentally burdened communities. Consequently, many potential users find the tools inaccessible or insignificant to their work. With federal EJ mapping tools and resources disappearing, new local tools are needed to both fill these gaps as well as drive city-level environmental justice progress by meeting the specific needs of communities most impacted by environmental burdens as well as the organizations that serve them.



EPA EJScreen (Archived)



PA DEP PennEnviroScreen



How to Read This Report

This report summarizes insights from extensive conversations from a range of EJ organizations.

Information provided is organized into the following sections:

1. Use Cases

This section describes how EJ organizations want different audiences — themselves, the City, and residents — to use the mapping tool.

2. Datasets

Datasets are grouped by Assets and Resources and Environmental Burdens. Each section includes a description of the data category and lists some of the datasets EJ organizations mentioned during interviews. Frequently mentioned datasets

are identified as high priority. A complete list of datasets organizations mentioned is provided in the appendices.

3. Functionalities and User Interface

This section provides descriptions of the tool functions EJ organizations prioritize.

4. Implementation

Implementation refers to how the tool will be launched and maintained to ensure it remains useful over time.



Additional details on feedback from organizations are provided in the appendices.



Use Cases

The use cases described below are ways that organizations want their staff, residents, and the City to use this tool to support their efforts to reduce environmental burdens and increase access to resources.

Advocacy and Casemaking



EJ organizations want the tool to inform and strengthen their advocacy, including demonstrating the need for specific resources and policy change, backing up community members' lived experiences, and providing materials to include in grant applications.



Public Education and Information Access

Through intuitive and accessible presentation of data, organizations would like residents to use the tool to:

- build environmental literacy
- understand past and current neighborhood conditions
- connect their lived experience of burdens with data
- learn about the cumulative impacts and interconnectedness of environmental burdens, socioeconomic and health vulnerabilities, and chronic disinvestment and marginalization.

Strategy and Decision-Making



EJ organizations want to use this tool to help inform their internal strategies and decision-making about how to best focus their efforts, including resource distribution, outreach and canvassing efforts, and program design.

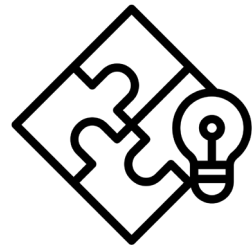
Use Cases

The use cases described below are ways that organizations want their staff, residents, and the City to use this tool to support their efforts to reduce environmental burdens and increase access to resources.

City Accountability and Transparency



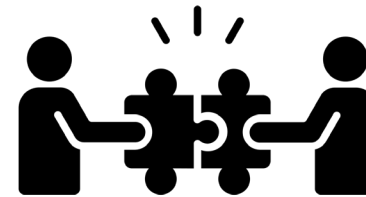
Organizations want the tool to have buy-in and sustained use by as many agencies, departments, and elected officials as possible, as well as for the tool to help break down silos within the City. They also want the tool to both inform and provide transparency around legislative priorities, policy development, zoning, and funding decisions.



Connection to Resources and Solutions

Interviewees requested that the tool connect indicators to both action-steps that organizations and residents can take as well as connect them to available, relevant, and regularly-updated resources, services, and assets.

Collaboration and Reducing Silos



Organizations requested that the map have information about organizations, projects, and initiatives to reduce silos and spark collaboration between organizations working on similar issues and/or in the same neighborhoods. In addition to the tool itself, people emphasized using tool-related convenings to spur connection and collaboration among users.



Datasets

EJ organizations requested that the tool include data that describe socioeconomic characteristics of neighborhoods, indicators of chronic disinvestment and marginalization, environmental burdens, and assets and resources that can help reduce those burdens. The descriptions below include information about broad categories of data as well as potential datasets that could represent each topic.

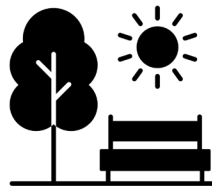
Assets and Resources

Description

Mapping assets and resources in Philadelphia will provide users with information about where to go for specific needs and identify gaps in service throughout the city. In addition, including assets and resources in the tool can provide an up-to-date source on place-based projects to inform people about work being done to serve communities.

Potential datasets

- ❗ CDCs and EJ Organizations
- ❗ Parks and Greenspaces
- ❗ Healthy Food Stores
 - Recreation Centers
 - Transit
 - Local Businesses
 - Cooling Centers



"... I feel like there's something interesting about some of these mapping projects that are also trying to map community assets and community resources, so that you're not only ever using these tools as the lens of your own burden of deprivation..."

EJ organizations emphasized the importance of including information on community assets and resources in the mapping tool, in contrast to many existing EJ tools. A tool that includes information on how people can take action, get the help they need, and learn more about work going on in their communities is important to these organizations.



❗ Identified as high priority datasets across interviews



Datasets

Data on environmental burdens is a key element of any environmental justice-focused tool. This section on datasets related to environmental burdens is more detailed than other dataset sections to reflect the detail of conversation in interviews with organizations, and the data type's importance in EJ mapping products.

Environmental Burdens | *Air Quality*

Air Quality was identified as an important topic in EVERY interview

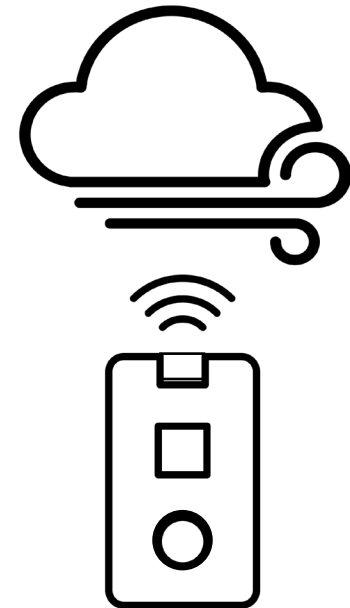
Description

Air quality has significant impacts on people's health; degraded air quality correlates with increased rates of asthma and other pulmonary conditions. While the federal government has monitored air quality for decades, there are very few monitors and the spatial resolution of this monitoring is insufficient for improving local air quality or monitoring site-specific air pollution.

Potential datasets

! Air Quality Monitoring: US EPA and Purple Air Monitors

- Air Pollution Sources:
 - Permitted industrial pollution sources
 - Heavy traffic and truck routes
 - Trash incinerators



! Identified as high priority datasets across interviews

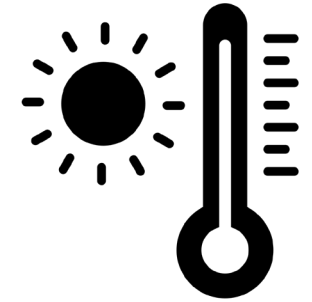


Datasets

Environmental Burdens | *Climate Change*

Description

The primary ways people experience climate change hazards are through the immediate effects and long-term health and quality-of-life impacts of increased intensity and frequency of floods and heat waves. EJ organizations expressed that current datasets used to understand both heat and flooding are insufficient and often unreliable.



Potential datasets

- ! Heat Exposure
- ! FEMA Flood Zones
 - Future climate risks:
 - Drought
 - Extreme heat
 - Precipitation



"...Philly is definitely going to experience is hotter and wetter [weather]. So like a way to think not about what that means to folks, both [in areas such as] Eastwick, that are clearly gonna be flood zones, but also are there other ways to think about what [increasing rainfall means], even for the areas that aren't immediate flood plains. ...a lot of these older houses [can't] handle that level of [increasing rainfall]...are there more additional ways we can be thinking about [flooding] burden[s]?"

"One of the things that concerns me is the heat island effect and the number of deaths that happen because of high temperatures and certain neighborhoods...to be able to see the impact of climate change, with these increasing heat levels day upon days of over 95 high humidity, it impacts life"

! Identified as high priority datasets across interviews

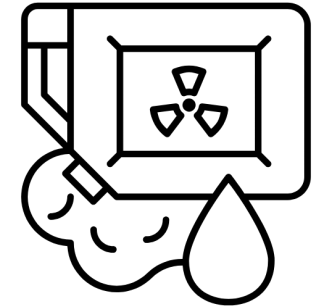


Datasets

Environmental Burdens | Contamination and Hazardous Site Exposure

Description

Proximity to toxic and hazardous sites affects communities' health, safety, and quality of life. Communities experiencing marginalization and disinvestment are more likely to house these sites. Datasets provide information about the density and characteristics of these sites, including the types of hazards, pollutants, and compliance with local regulations.

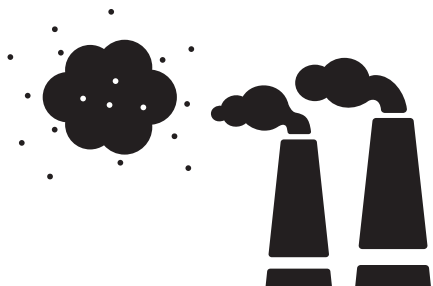


Potential datasets

- ! Permitted Toxic Release Inventory sites, releases, & compliance
- ! Incinerators
 - Brownfields
 - Superfund sites
 - Landfills & recycling centers
 - Hazardous waste treatment, storage, & disposal sites

"[Industrial polluters] measure some pollutants once a year in a self-administered test which grossly underestimates the emissions and most of them they don't even measure it all."

"Obviously there are things like we've seen recently, like the chemical spill of Bartrams...or the leeching at Tinicum Creek...if there's an ability to track anything like that and have good graphic explanation of what these issues are and the impacts that they have and whether these are... neighborhood issues, or whether they are extensive to the whole city. I think it would be really beneficial to our clients and to our staff as well."



! Identified as high priority datasets across interviews



Datasets

Environmental Burdens | *Dumping*

Description

Illegal dumping was a top concern in almost every interview. Dumping impacts neighborhood-level environmental health and quality of life, and communities view it as a visual indicator of disinvestment and disinterest by the City. While many organizations, as well as the City, organize clean-ups, these efforts alone are ineffective. Environmental organizations also noted a lack of up-to-date, reliable, Philadelphia-wide data sources that accurately portray the location and frequency of dumping sites.

Potential datasets

- ❗ Litter Index
- ❗ Vacant lots experiencing frequent dumping
 - 311 complaints
 - Remote or crowd-sourced data
 - City dumping cleanup sites



*To all these groups, a **major issue is dumping** and when you see that trash is a common thing amongst different people from all over the city. That means something needs to be done.*

❗ Identified as high priority

Dumping was identified as an important topic in EVERY interview



Datasets

Health

Description

The health component of environmental justice is cyclical - environmental burdens can increase the prevalence and severity of health conditions, and health conditions can also make people more vulnerable to impacts of these burdens. The relationship between health and environmental justice was a primary concern for most EJ organizations. Interviewees also emphasized that community members will be better able to engage with the mapping tool and understand the importance of environmental burdens if the tool communicates these burdens through the lens of health impacts.

Potential datasets

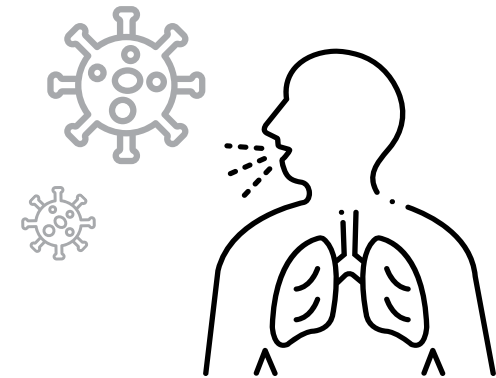
! Asthma rates

! Cancer rates

- Chronic Obstructive Pulmonary Disease rates
- Diabetes rates
- Disability rates
- Hypertension rates
- Life Expectancy
- Child Elevated Blood Lead Levels
- Licenses & Inspections health-related violations

! Identified as high priority datasets across interviews

"Definitely asthma rates, that's a big one. We know that a lot of our community members suffer from asthma and related conditions, and it's directly related to many things like tree canopy coverage and [industry]. But also cancer rates because, believe it or not, right around the recycling center... there are entire families affected by cancer, and I'm pretty sure it is related."



"If I went into a non-scientists room of community people and I started talking about carbon levels, they will listen and may nod along. But if you discuss how poor air quality is linked to hypertension or how chemical displacement affects lung function, it resonates more."



Datasets

Chronic Disinvestment, Development, and Gentrification

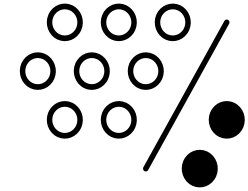
Description

Many EJ organizations prioritized datasets that measure chronic disinvestment, development, and gentrification. These datasets visualize which communities are experiencing present-day displacement and barriers to equal housing access throughout Philadelphia.

"So, I think the updated data and real-time data are valuable for many reasons. One is because of the rate at which Philly is redeveloping, revitalizing, and gentrifying in different areas"

Potential datasets

- ! Gentrification Index
- ! Redlining
- ! Building and Zoning Permits
 - City Investment Locations
 - Public Space Funding



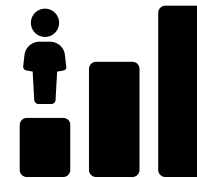
Demographics

Description

Demographic data describe populations and are a vital component to understanding how environmental burdens disproportionately impact low-income communities and communities of color. Demographic data can also help inform environmental-justice focused interventions to ensure that funding and resources are focused on communities experiencing the effects of chronic marginalization and disinvestment.

Potential datasets

- ! Race and ethnicity
- ! Median household income
 - Population living under 200% of the Federal Poverty Line
 - Youth and senior populations
 - Educational attainment
 - Linguistic isolation



! Identified as high priority datasets across interviews

Functionality and User Interface

This section describes the functions that organizations want the tool to perform, attributes that the tool needs to be useful, and how the tool should be built to ensure accessibility and ease of use.



Layer Selection and Standard Index/Cumulative Burdens

EJ organizations want to view layers individually and layer different datasets on top of each other to demonstrate cumulative burdens. However, it is important that the number of indicators does not overwhelm users. Additionally, there is interest in developing a standard index based on the map indicators for the City to use as its official EJ Index.

"So I think having something dynamic that you can ingest different sets and layer maps on top of each other, I think important that ability to do that in a map, I think are you get as many layers on the upfront that you can choose from and plugin, but that people are able to have the ability to add other ones as they go."



Data Analysis

In addition to a standard EJ index, EJ organizations want the tool to calculate custom indices on the fly based on a selection of indicators that are the most relevant to their work. They want to be able to view individual layers and indices at a variety of geographic levels, including existing boundaries such as census tracts and zip codes, as well as custom boundaries. They also requested that the tool include mechanisms for comparing data over time, as well as between two locations. To better communicate the results of such analyses, the tool should also include supplementary data visualizations.

"[I want to be] able to look at the same data for different years or decades...Seeing how things have either not changed or have changed over time is a useful tool to make the case for anything."

Functionality and User Interface

This section describes the functions that organizations want the tool to perform, attributes that the tool needs to be useful, and how the tool should be built to ensure accessibility and ease of use.

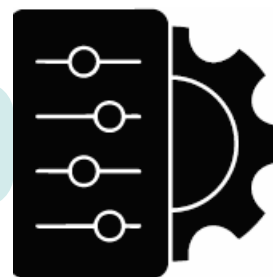
Explainers and Supplemental Information

EJ organizations expressed the importance of having explainers to help users understand the definitions of datasets, how indicators relate to each other, and their importance in relation to users' lived experiences. This can take the form of a glossary, links to concise and easily digestible information, methodology behind calculated values, and resources to policies or solutions associated with different concepts.



Customized Exports

For EJ organizations to use the data and analysis from this tool for communication, advocacy, and funding requests, the tool should have robust options for exports. EJ organizations requested that the tool allow for highly customized reports based on selected locations or extents and selected indicators and/or indices. The reports should also have options for additional visualizations, supplementary text, and high-resolution map images. For users with more complex data needs, the tool should include direct data downloads and an API.



Functionality and User Interface

Qualitative and Narrative Data

EJ organizations are interested in how qualitative data could capture information in a more narrative and storytelling format that will both add texture to and validate other datasets on the map. This includes participatory, narrative data collection. Stories could be included at points in the map or on a separate story map. Storytelling as a tool allows people to better understand how various indicators relate to each other and cumulative impacts as well as connect data to actions and policies.



"...[consider] that people perform and have their own axe to grind...a good qualitative analysis would incorporate that.."

Simplicity and Accessibility

While EJ organizations requested a wide range of functionalities and use cases, they also emphasized that the tool's interface needs to be as simple and intuitive as possible, as well as include sufficient instructions and help guides. Meeting the requests of EJ organizations, as well as those from residents and the City, may require multiple interface options with varying degrees of complexity, as well as a mobile-friendly version. All interfaces should include accessibility features, such as screen-reader compatibility, options for large text, and color-blindness-friendly color schemes. Organizations expressed that the tool should be translated into as many languages as possible.



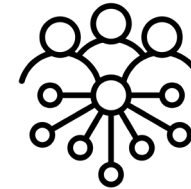
"Make it as useful as possible, but keep it simple enough that you don't overwhelm anyone—especially if it's meant for people outside of government agencies. You don't want to overwhelm them with a thousand pieces of data."

Implementation

This section describes how the tool can best be put into action so that it is as effective, accurate, and useful as possible.

Accountability and Feedback

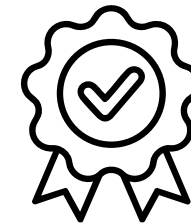
The tool will need multiple forms of ongoing feedback mechanisms. For the tool's initial and subsequent releases, the tool development team will need to facilitate in-person demonstrations where people can give feedback, as well as user surveys. The tool should have easily accessible contact information for questions and support. The tool should also have mechanisms for people to report that data presented in the map differs from their lived experience.



"Ask: 'is this usable, can you use this...[Reach] out to organizations that you think would use it, and maybe aren't...[and] ask why.'"

Data Reliability

The tool should include the most up-to-date data possible, as well as include clear information on data sources and methodologies used to create indices. EJ organizations shared that community members will be more likely to trust the data in the tool if they learn about it through trusted community-based organizations and community leaders.



"Yeah, I [want to] know it's a reliable, well-cited source. All the metadata's there, I can cite it, and grab what I need off of it. That would save me a ton of time trying to keep my own databases together"

Implementation

Outreach and Training

The distribution and outreach around the tool needs to be linked to on-the-ground actions. It should involve in-person convenings where the tool is demonstrated and the community can give feedback, be trained on how to use the tool, as well as connect with each other and spark collaboration.

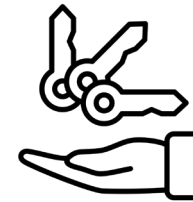
Distribution should also make use of trusted messengers and consider how different communities best receive information. Where possible, outreach should make use of art.

Outreach should focus on the value of the tool – why should people use it? How can it impact their lives and work? Communities may be hesitant because previous data-related work has not meaningfully changed their lives.



Data and Tool Ownership

Some EJ organizations that want to use the tool for advocacy and city accountability were wary of the City owning the tool and requested that the code for the tool be open-source. Organizations also emphasized that any use of crowd-sourced or community-generated data should use a data sovereignty framework, allowing individuals control over how their submitted data is used.





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