Open Data for U.S. Local and State Climate Action

4 September 2025

Agenda

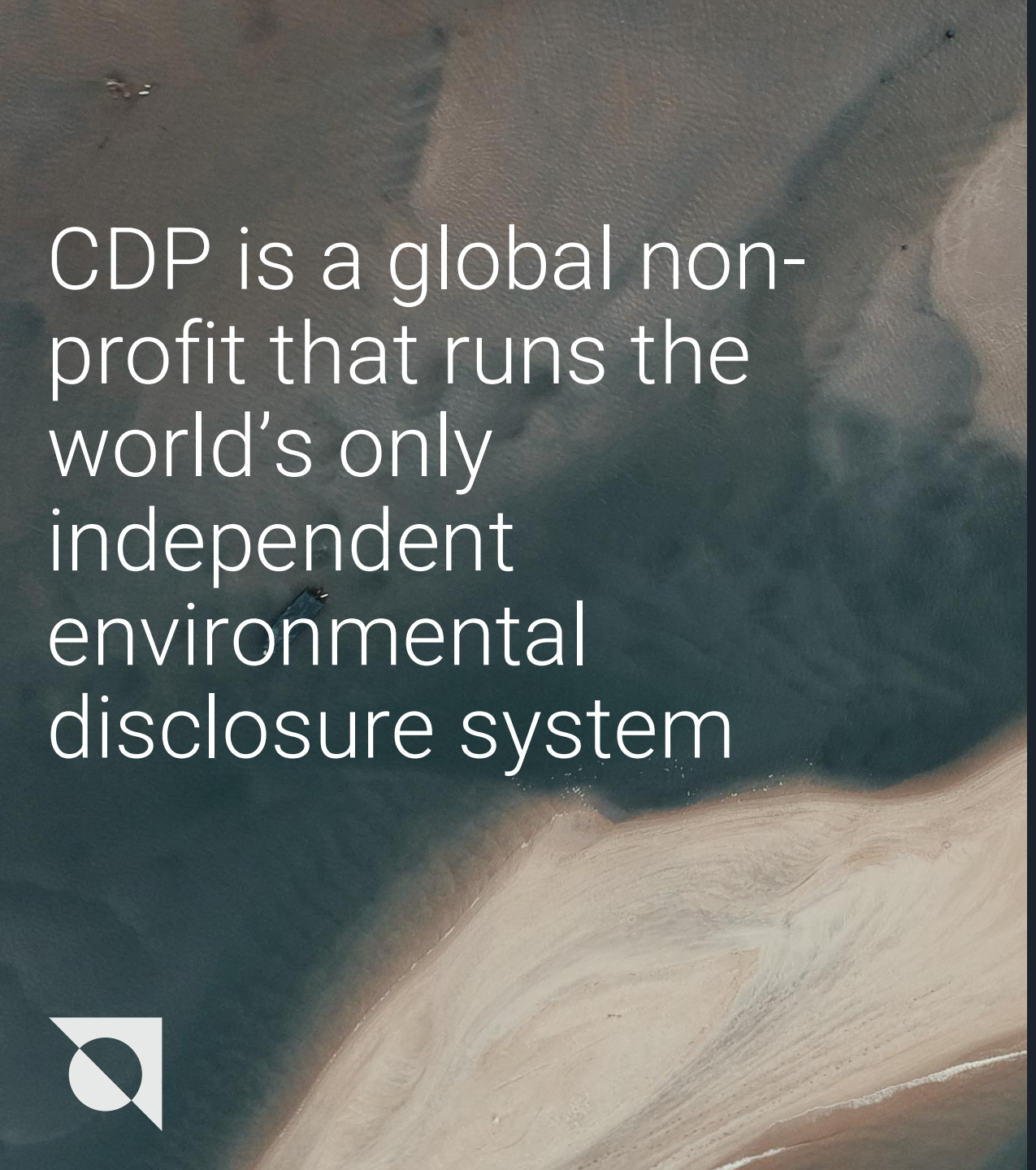
- Introduction from Mayor Buffaloe, Columbia, MO
- Katie Walsh, CDP
- Presentation – Climate TRACE, Lekha Sridhar
- Presentation – Clayton, MO, Deborah Goodman
- Moderated Q&A
- Open Discussion

Introduction to CDP

Public Sector Disclosure

Support for CDP's efforts for this webinar are funded by

Mitsubishi Corporation Foundation for the Americas



CDP is a global non-profit that runs the world's only independent environmental disclosure system

700+
investors, with US$142+ trillion of assets

340+
purchasing organizations, with an annual spend of US$6.4 trillion

24,800+
disclosing companies

~1,000
disclosing cities, states and regions

How we work

1. Local governments manage climate and environmental data to drive decision making
2. Local governments provide data to CDP-ICLEI Track
3. CDP manages the data
4. All public data is made available on the Open Data Portal
5. Our partners receive the data through CDP
6. CDP and our partners work with local governments

Technical Assistance | **Research & Advocacy** | **Events**

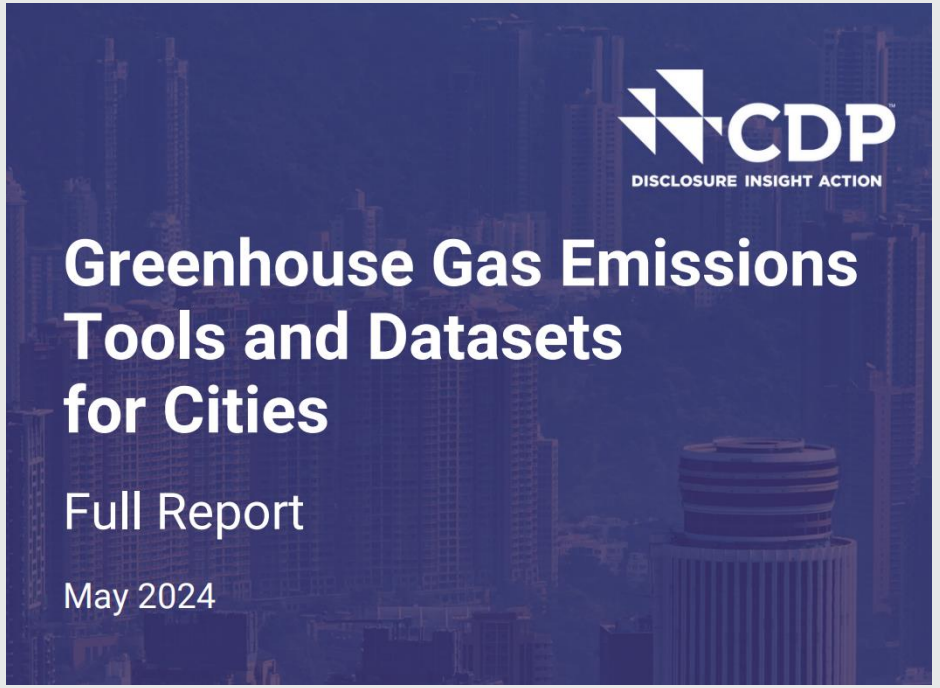
CDP Cities, States and Regions Open Data Portal

Explore climate change and sustainability data from more than 1,200 city, state and regional governments.

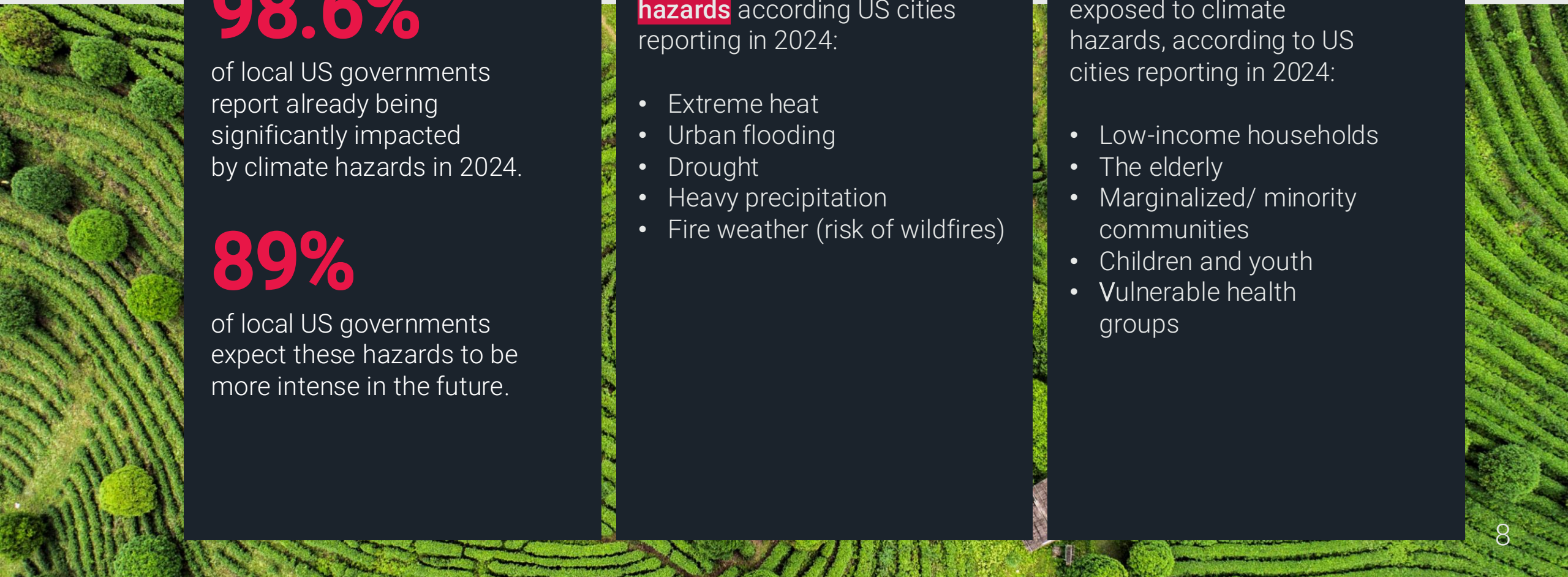
This data is reported by cities, states and regions (via CDP-ICLEI Track), providing rich insight that is informing policy and investor decisions.

GHG Emissions Tools and Datasets

1. Establishing an emissions baseline
2. Identifying specific sources of emissions
3. Tracking progress over time



Physical Risks Reported by US Cities



98.6%

of local US governments report already being significantly impacted by climate hazards in 2024.

89%

of local US governments expect these hazards to be more intense in the future.

Most widespread **climate hazards** according US cities reporting in 2024:

- Extreme heat
- Urban flooding
- Drought
- Heavy precipitation
- Fire weather (risk of wildfires)

Vulnerable groups most exposed to climate hazards, according to US cities reporting in 2024:

- Low-income households
- The elderly
- Marginalized/ minority communities
- Children and youth
- Vulnerable health groups

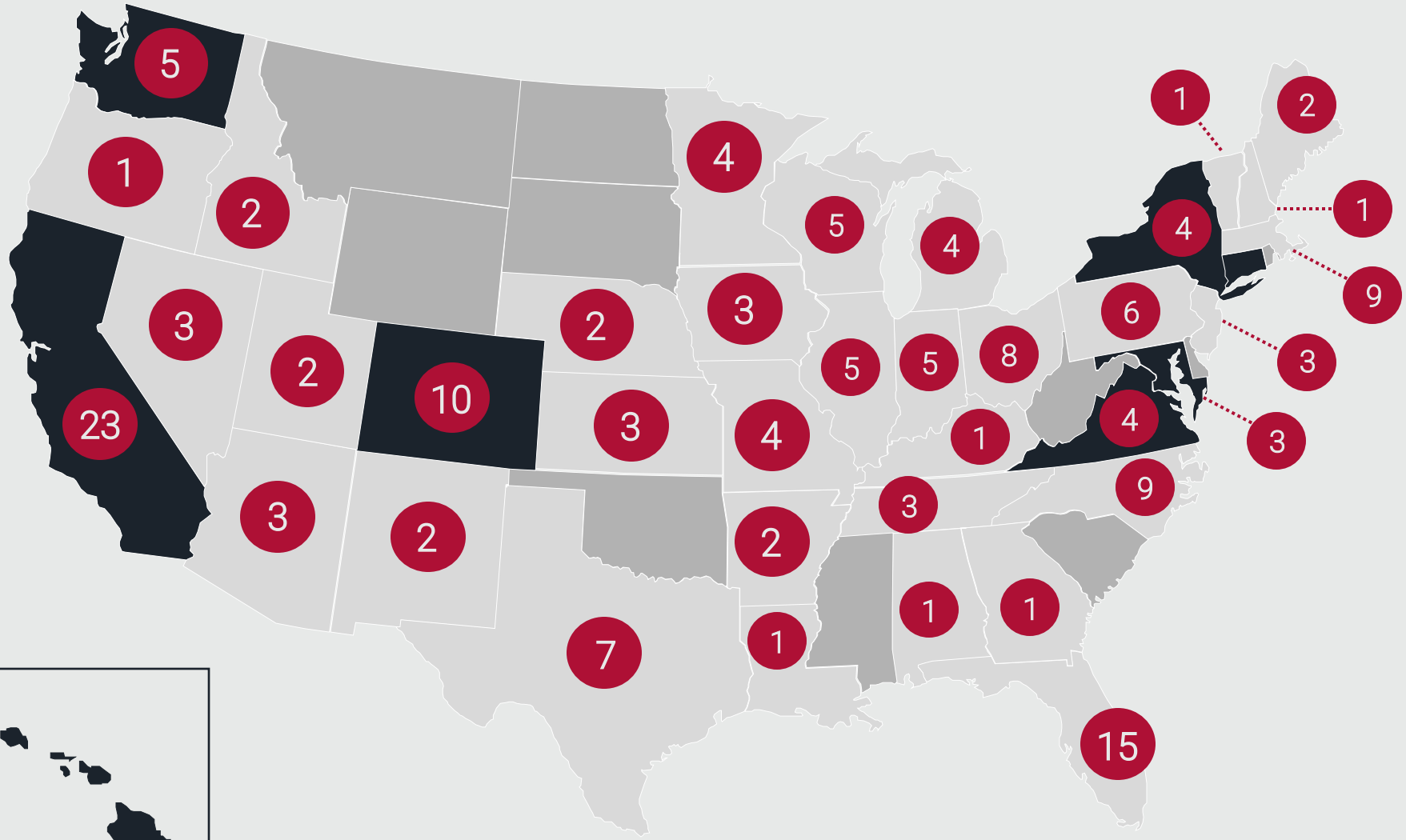
U.S. participants

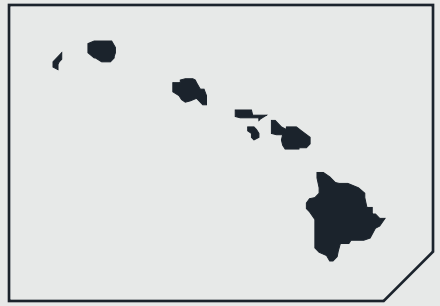
2024 State Participants

California, Colorado, Connecticut, Hawaii, Maryland, New York, Virginia, Washington

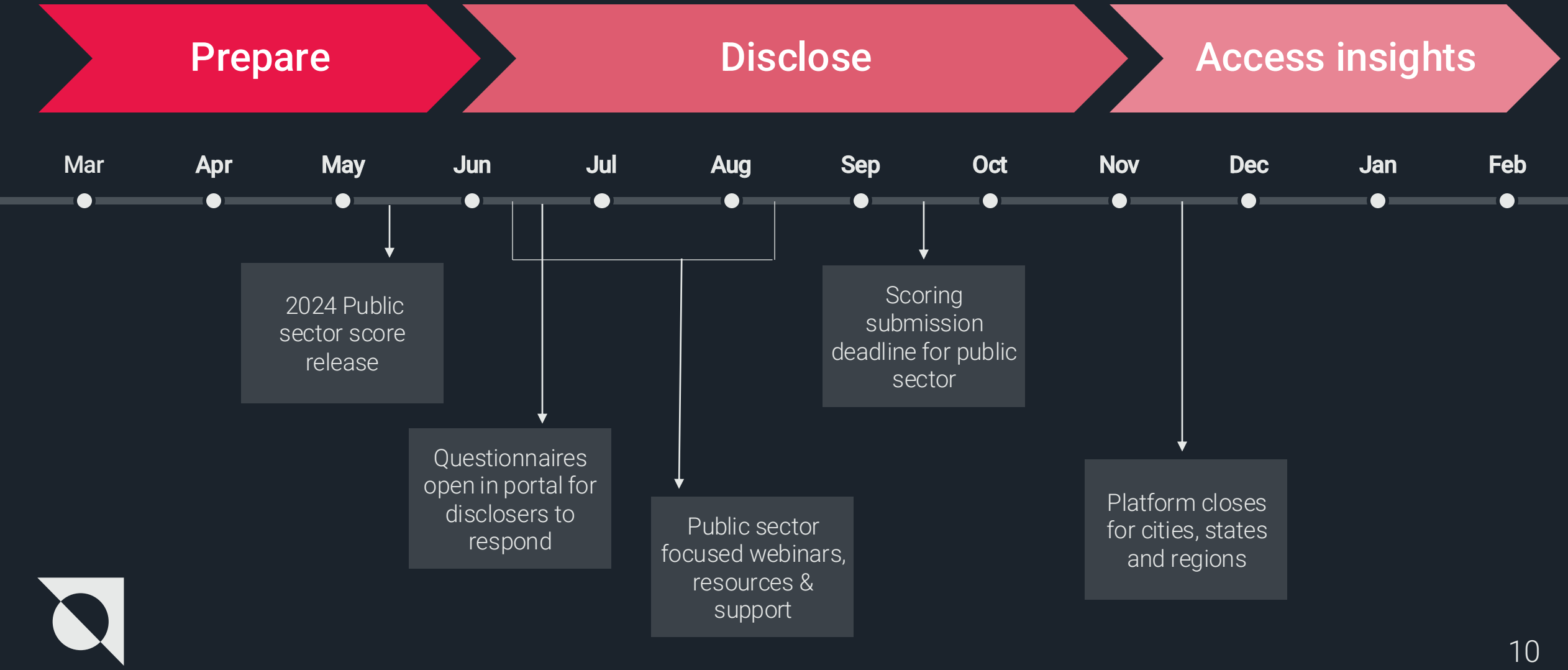
169 U.S. local governments disclosed in 2024

8 U.S. states disclosed in 2024





2025 disclosure timeline

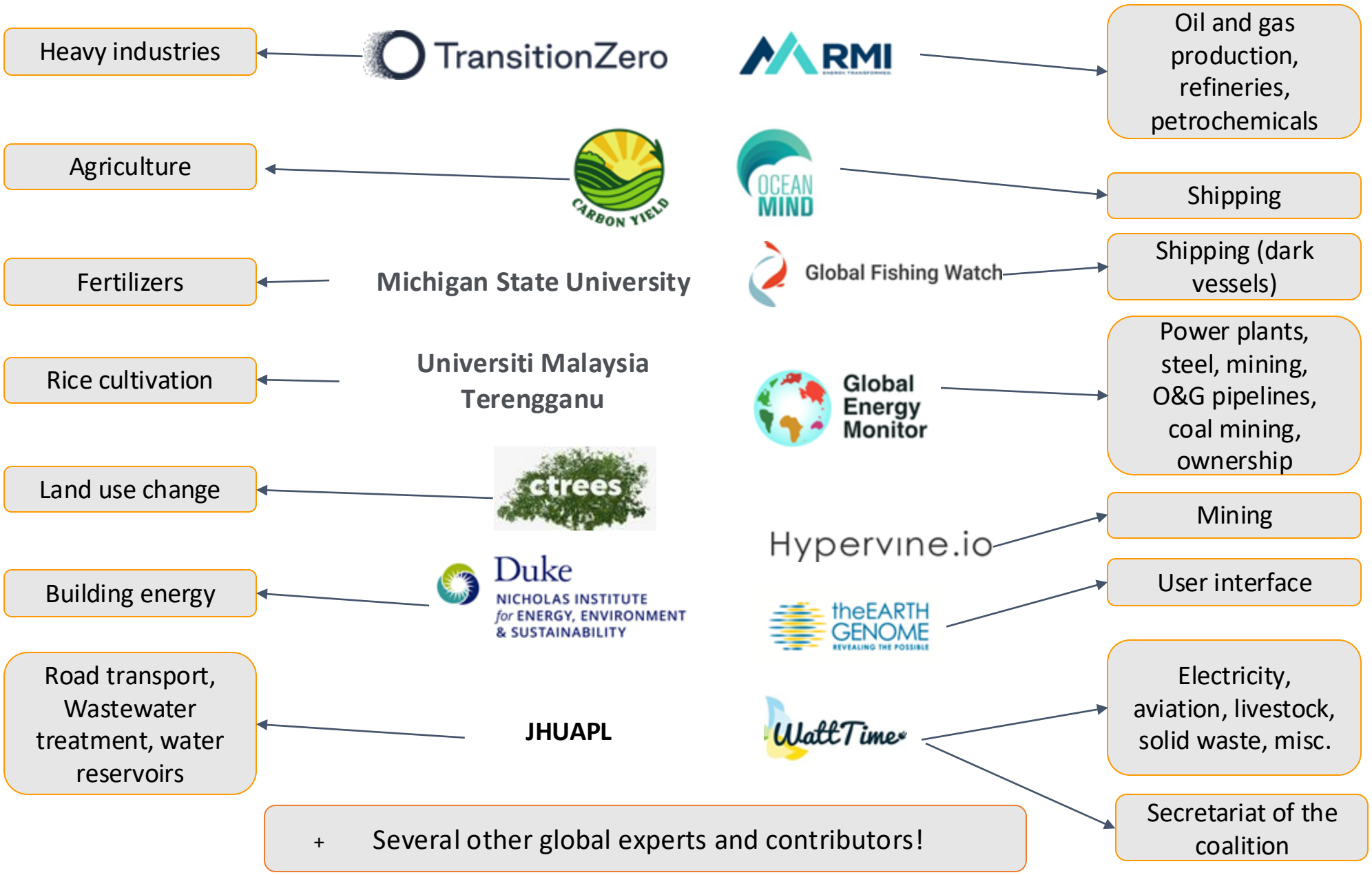


Open emissions data for local and state climate action

Lekha Sridhar
Research and Special Projects Lead

CLIMATE TRACE

About Climate TRACE



Climate action plans need actionable data!

Traditional GHG data sources and methods can be:

01	**OUTDATED**	Inventories are not always prepared annually and typically have a lag time of 2 - 5 years.
02	**NOT GRANULAR**	Emissions data tend to be available at a very high level – at the country level or for the overall sector
03	**REQUIRE A LOT OF RESOURCES**	Inventory preparation requires a lot of time, expertise, and other resources – can take between 1-2 years to prepare
04	**BEHIND PAYWALLS, FRAGMENTED**	Granular and detailed data – when available – are only available to paid subscribers.
05	**NOT AVAILABLE SUBNATIONALLY**	Many data sources are only available in specific geographies or only at the national level

Many new tools and datasets are now available for cities and states

Sector-specific data

Global Energy Monitor

Google Environmental Insights Explorer

Carbon Monitor CITIES

Tools for cities

CityCatalyst

WASTEMAP

Methane Data

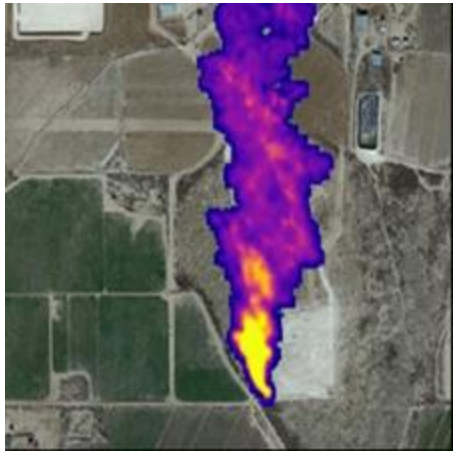
CARBON MAPPER

UN environment programme | International Methane Emissions Observatory

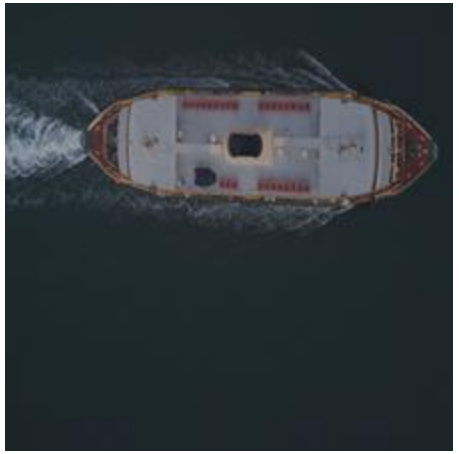
Climate TRACE uses satellites and AI techniques to estimate emissions down to

Every power plant,

every oil field,



every ship,



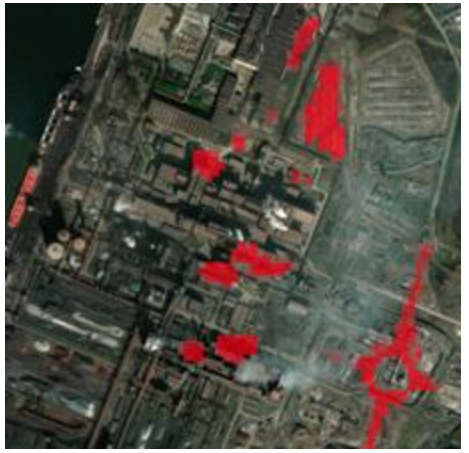
every landfill,

every forest fire,

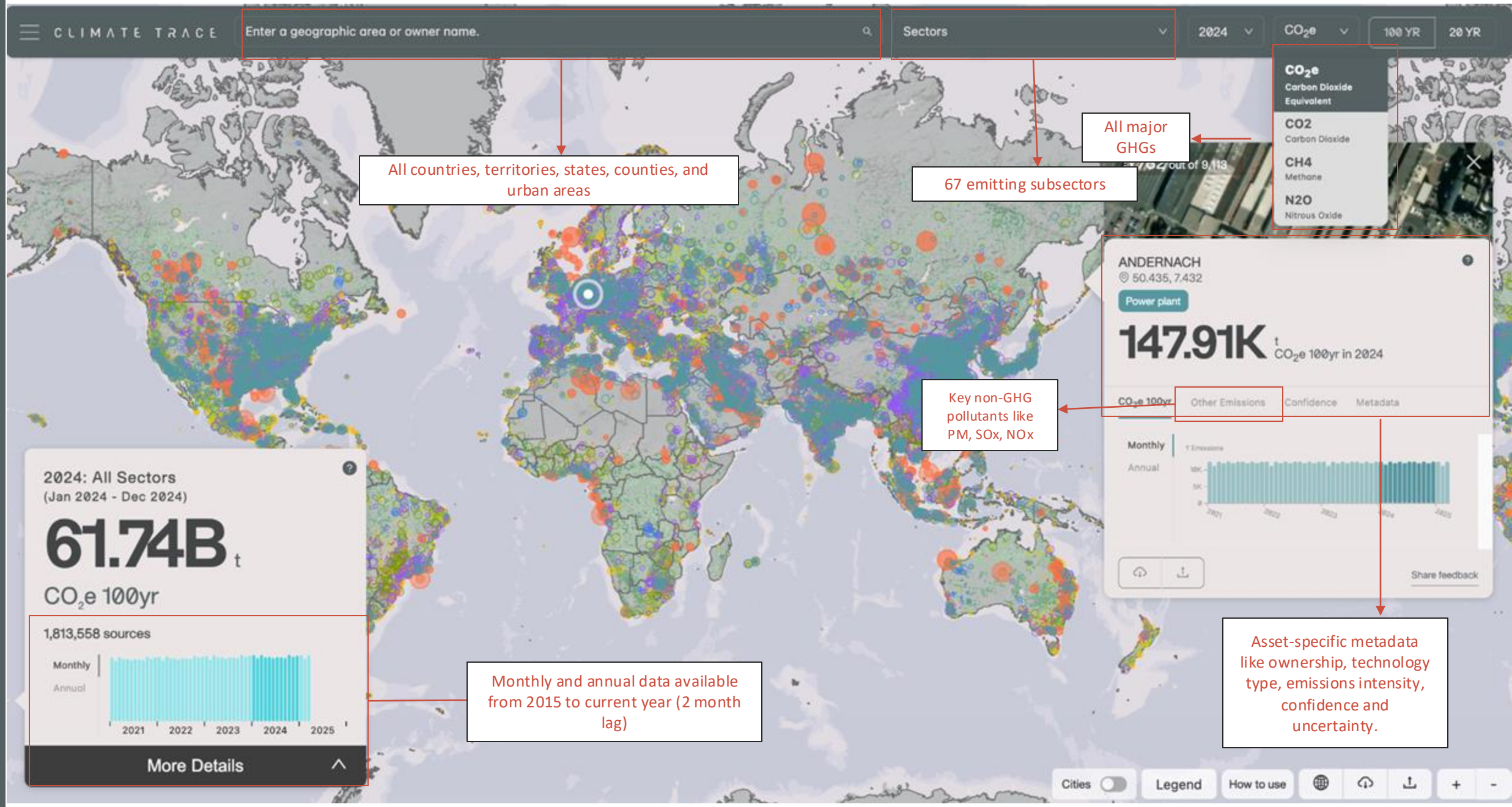
every mine,

every cattle farm,

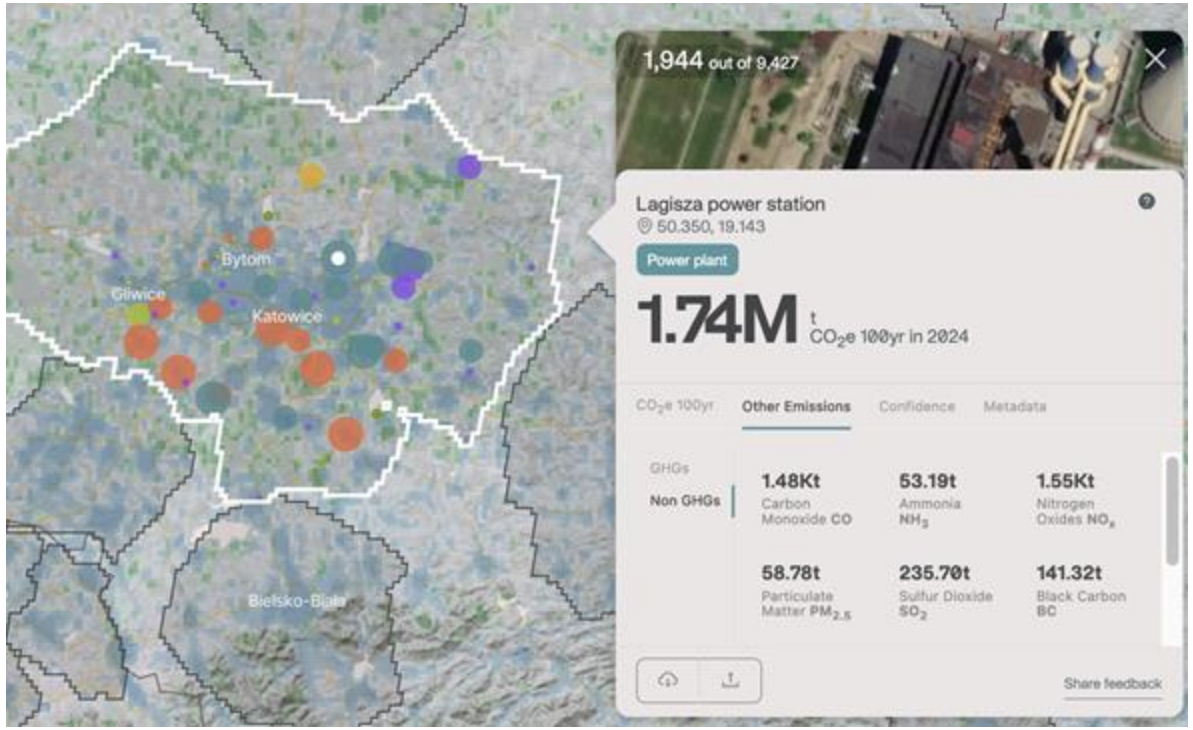
every steel mill, etc

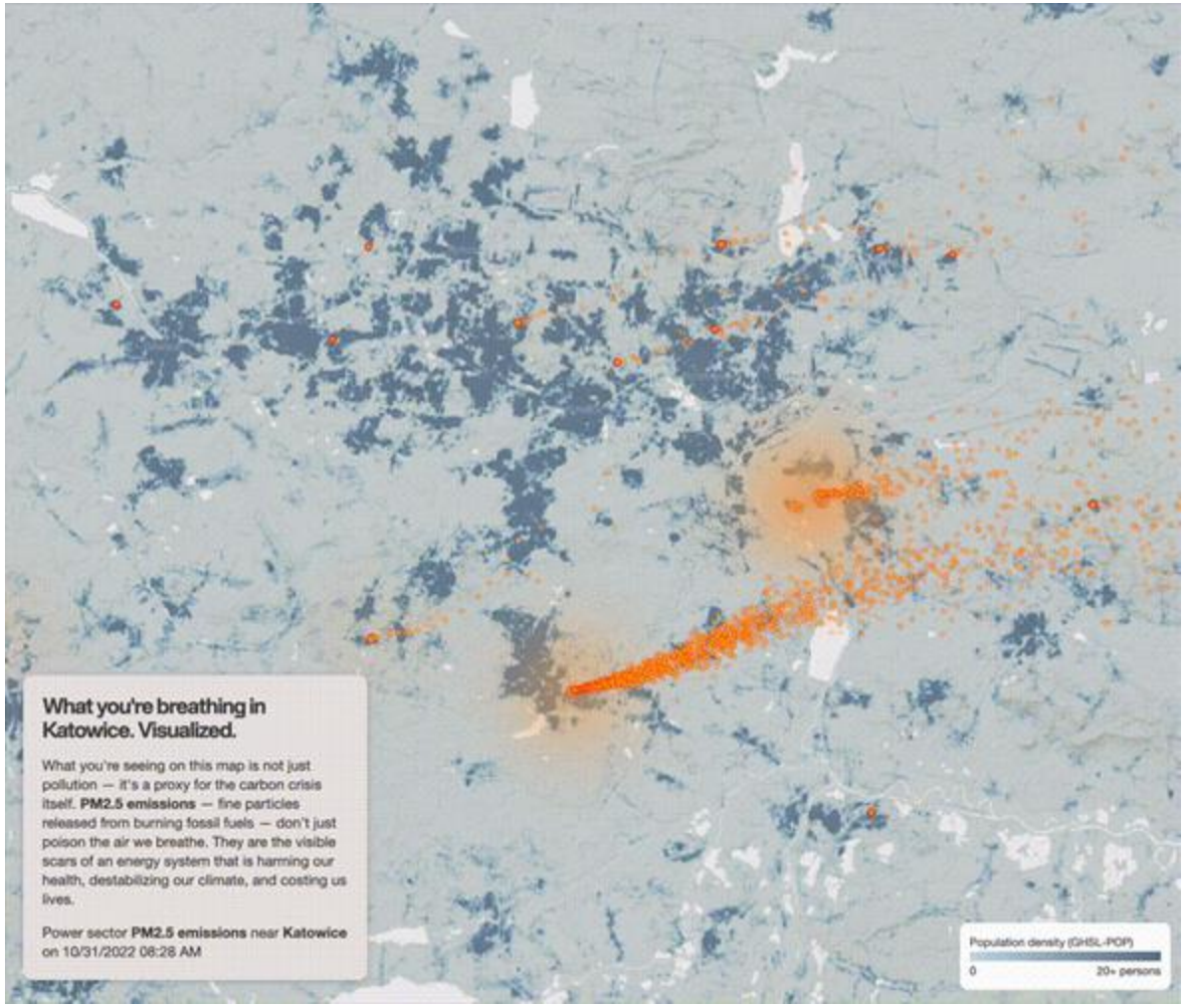


The resulting Climate TRACE inventory covers:



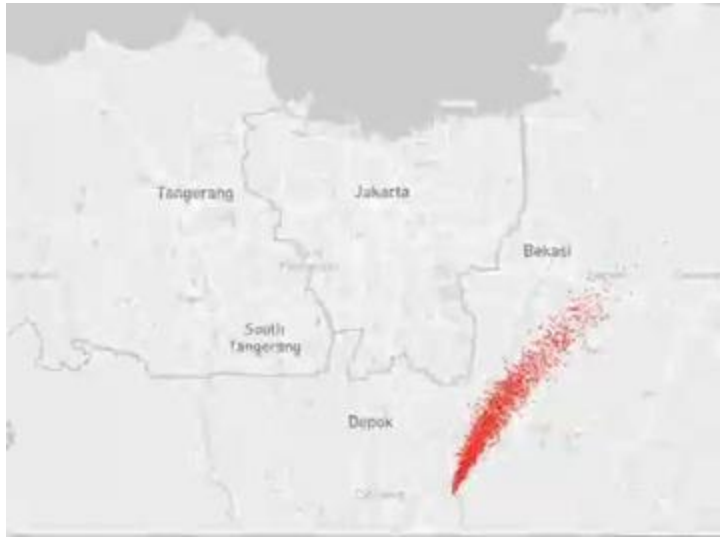
Sources of GHG emissions are also harmful to human health

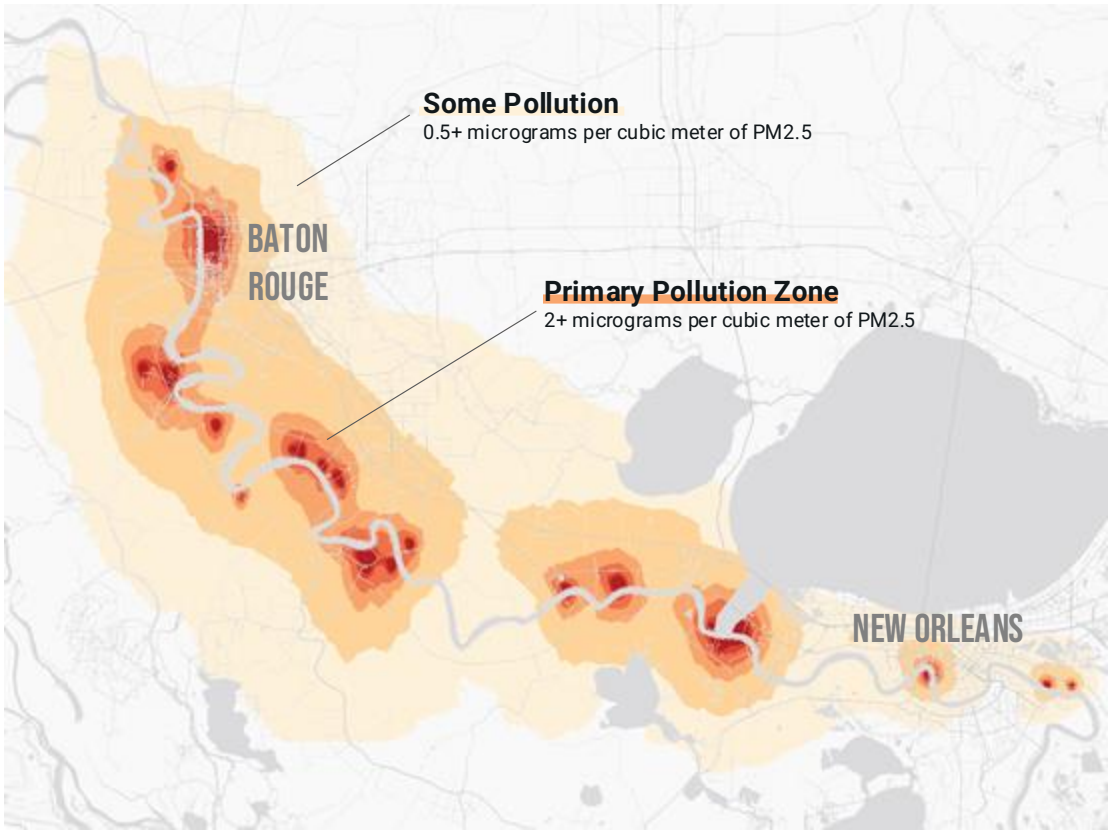




In addition to GHGs, Climate TRACE is also modeling air pollutants like PM 2.5, SOx and NOx, and how the particles travel in the atmosphere.

Some facilities can have an outsized influence on local air quality





Overlapping plumes from multiple facilities amplify risks, creating pollution zones with elevated concentrations

PM 2.5 plumes for manufacturing assets modeled by CMU Create Lab

How are cities and states using Climate TRACE data?

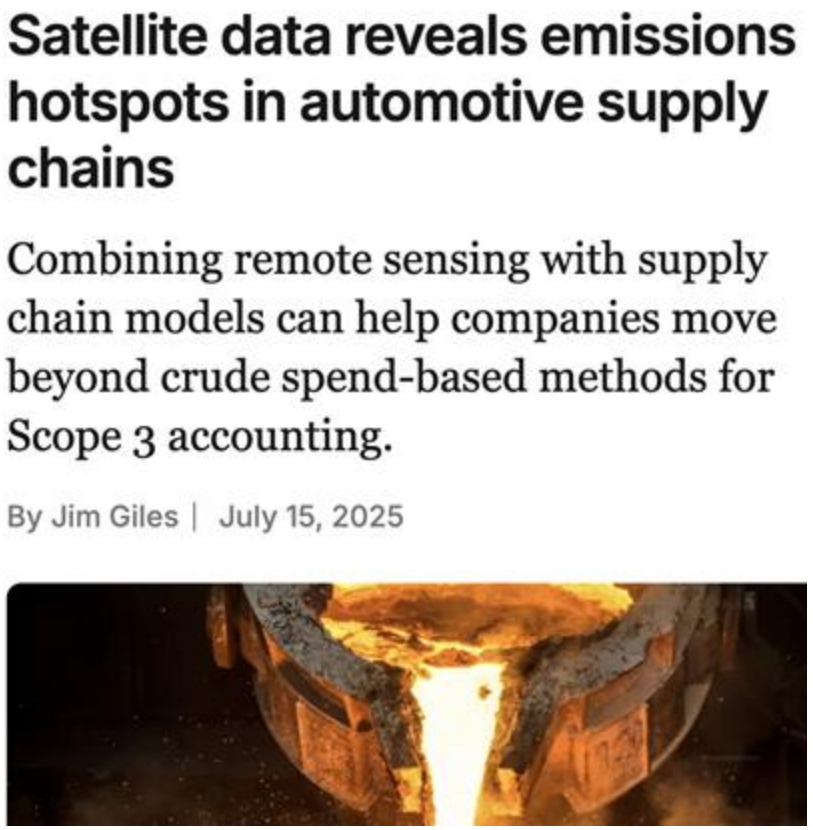
01	VALIDATING INVENTORY DATA	Having an additional dataset to compare against can improve confidence or identify areas for improvement
02	FILLING GAPS	Many states/ cities lack regional EFs, data on sources which are federally regulated, or hard-to-quantify sectors.
03	BASELINE EMISSIONS DATA	For cities/states that are preparing an inventory for the first time. Climate TRACE can provide a useful baseline dataset
04	CLIMATE ACTION PLANNING	Granular and actionable data can help in climate understand which sectors/ facilities can have the biggest impact

Climate TRACE works closely with city and state networks like the Under2 Coalition, Subnational Methane Action Coalition and others to support local climate action

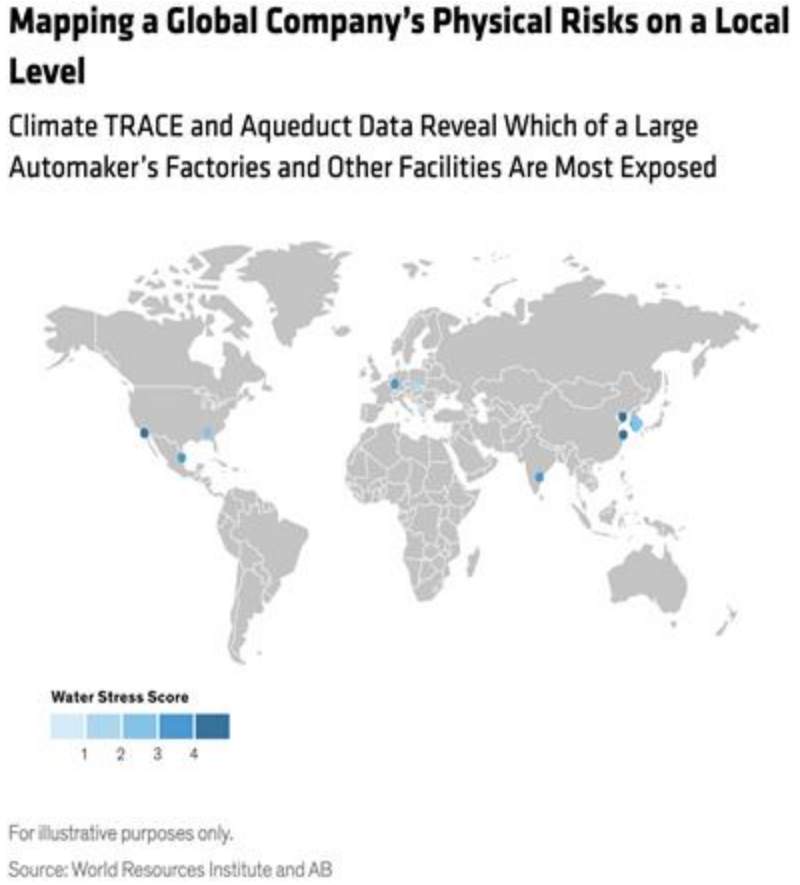
Other uses for Climate TRACE data

Financed emissions

Supply chain optimization

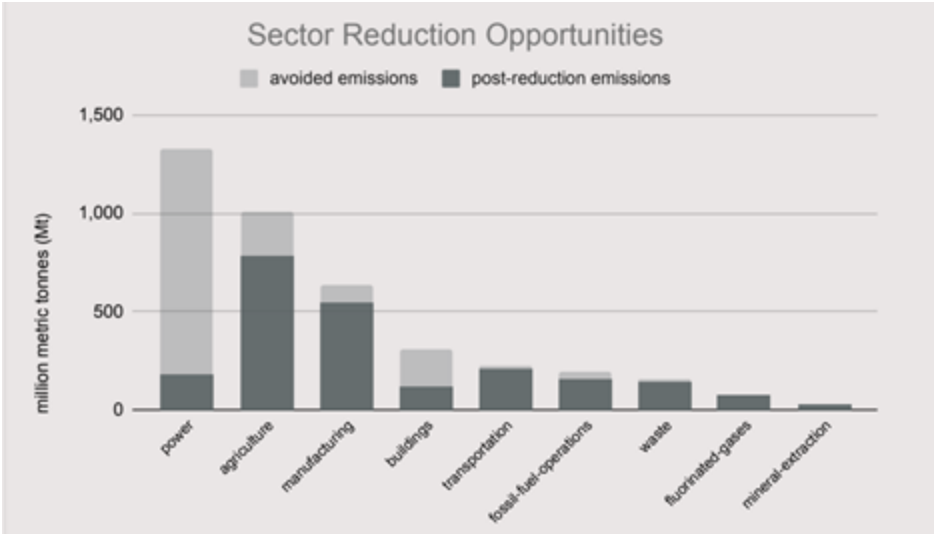


Mapping physical risk



Coming soon: emission reduction pathways tool for every city, state, and county

- **Goal:** help policymakers and investors prioritise the highest impact opportunities by highlighting mitigation solutions and their potential for avoided emissions for each asset
- *Expected launch: Q425*
- *Example: excerpts of the decarbonisation planning tool for India prepared for an international organisation*



The tool will also identify the facilities with the highest impact potential

Asset name	Sector	Subsector	Solution	Current (2023) estimated emissions in tons CO2e	Estimated reduction potential per year in tons CO2e
Chennai					
North Chennai Thermal Power Station	power	electricity-generation	building renewables	9,991,000	8,924,890
Vallur Thermal Power Plant	power	electricity-generation	building renewables	8,189,300	7,315,460
CPCL Manali Refinery	fossil-fuel-operations	oil-and-gas-refining	improved technologies	2,402,509	917,165
Chennai Urban Area	buildings	residential-onsite-fuel-usage	lower emitting fuels	1,690,741	853,337
BASIN BRIDGE GT	power	electricity-generation	building renewables	161,460	135,282
			% of city total	80%	65%

Thanks for your time

Contact:
lekha@watttime.org

City of Clayton
Data For Climate Action

September 4, 2025

Clayton's Sustainability Advisory Committee (SAC)

- Established in the 1990s and consists of:
  - Three wards (two representatives each, six total) plus chair
  - Board of Aldermen (two representatives)
  - Key staff

- Advises Mayor, Aldermen, and City Manager on the development and/or support of ecologically sound programs and practices within Clayton's municipal government, community, and the metro St. Louis region.

Keeping Track

SAC completed a plan of action in May 2023 to outline the Committee's priorities (carbon reduction) and maintains a scorecard of actions. Measurement matters.

- Dashboard – Complete breakdown of SAC goals, progress, and previous/ongoing projects
- Scorecard – Progress update on the four key categories: building emissions, transportation emissions, waste, and green space

Priority Projects

- Building Performance and Benchmarking: BOA approved Ordinance 6889 (1Q 2025) requiring commercial buildings over 100K sq. feet to benchmark energy usage.
- SolSmart: Achieved Bronze Level (3Q 2023) and Silver Level (1Q 2024)
- Green Dining Alliance: Restaurant Sustainability Certification Program. City offers 100% reimbursement of GDA certification fees for local restaurants.
- Transportation: Work on fleet electrification, charging stations and idling reduction
- Waste Collection and Recycling: Reduce waste production (communication, water monster, GDA)
- Green Spaces: Recover from Q2 2025 tornado. Urban tree canopy, stormwater management. Urban Dark Skies Application

Tools we Use

Crosswalk Emission Data

Energy Star Portfolio Manager -- EPA’s energy benchmarking tool

American Forests Tree Equity Score

Itree Tools

Republic Waste Reports

City of Clayton Sustainability Advisory Committee Scorecard – Spring 2025

Needs focus Process ongoing

Carbon Footprint: Buildings

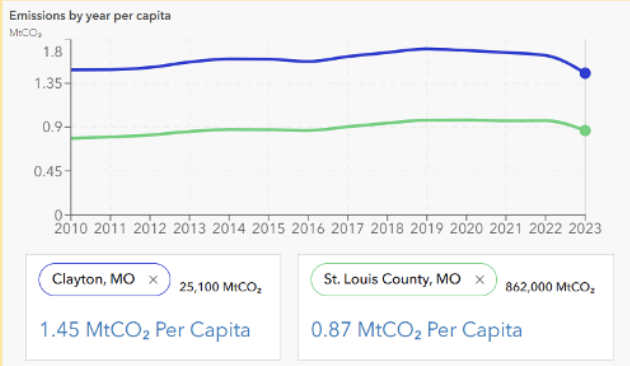
GHG Emissions

- **2023 - 25%** from commercial buildings.
- **2023 - 26%** from residential buildings.
- Clayton passed a benchmarking ordinance for commercial buildings in 2025.

City Buildings

- City Hall's total GHG emissions decreased by **62%** since 2018.
- City-owned buildings' cost of energy decreased by **20%** since 2018.

Why this Matters: Buildings use significant amounts of energy. Reducing energy usage lower their carbon footprint and Clayton-wide emissions.

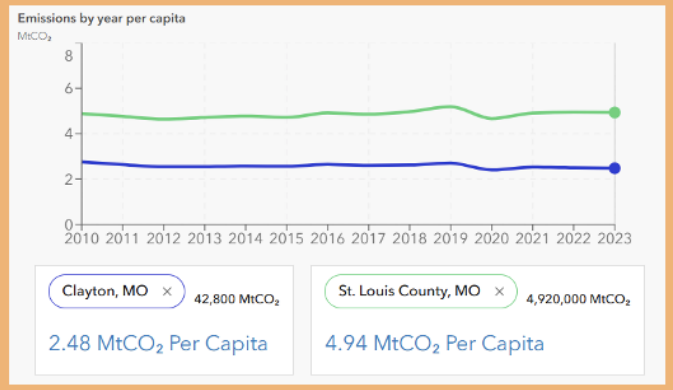


Emissions by year per capita from buildings in Clayton (dark blue) and St. Louis County (green) (Data acquired from Crosswalk)

Carbon Footprint: Transportation

- **2023 – 44%** of Clayton's emissions are from vehicles.
- A 2024 fleet electrification study identified City vehicles as replacement candidates.
- In 2025, signs were placed and flyers distributed to raise idling awareness. Ordinance 3421 prohibits idling for more than three consecutive minutes.

Why this Matters: Electric vehicles and limiting idling improves public health by emitting less air pollutants and reducing Clayton's carbon footprint.

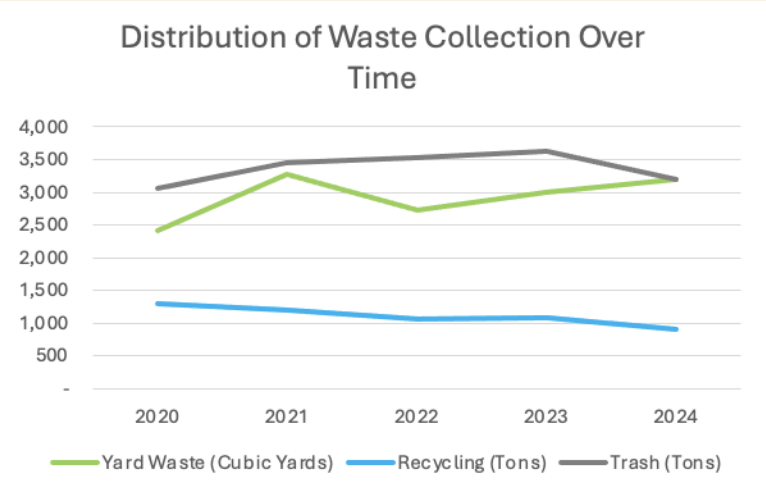


Total direct emissions from transportation per year per capita in Clayton (dark blue) and St. Louis County (green) (Data acquired from Crosswalk)

Waste Collection/Recycling

- Clayton's average diversion rate was **22%** in 2024 (excluding December) .
- **3,193 tons** of yard waste and **904 tons** of recycling were collected in 2024.
- Clayton will reimburse **100%** of Green Dining Alliance membership fees for local restaurants as of 2025.

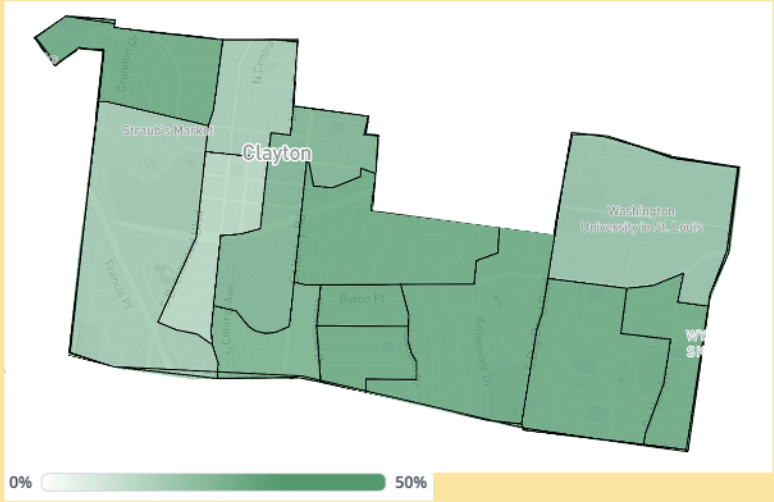
Why this Matters: Recycling diminishes the demand for carbon-intensive manufacturing. Reducing waste in landfills is central to lowering Clayton's emissions. The resources required for food that is wasted in the US is responsible for 170 million metric tons of carbon dioxide. Limiting food waste and composting reduces this impact.



Clayton's Green Space

- Clayton has an average tree equity score of **94.**
- **10/13** census block groups do not meet the canopy goals set by American Forests, the oldest national conservation nonprofit in the US.
- Clayton has applied to certify Oak Knoll Park as an Urban Night Sky Place by DarkSky International.

Why this Matters: Urban tree canopies absorb carbon dioxide and reduce the urban heat island effect. A denser tree canopy cleans and cools Clayton's air and decreases our carbon footprint.



Most recent tree canopy cover (Data acquired from American Forests)

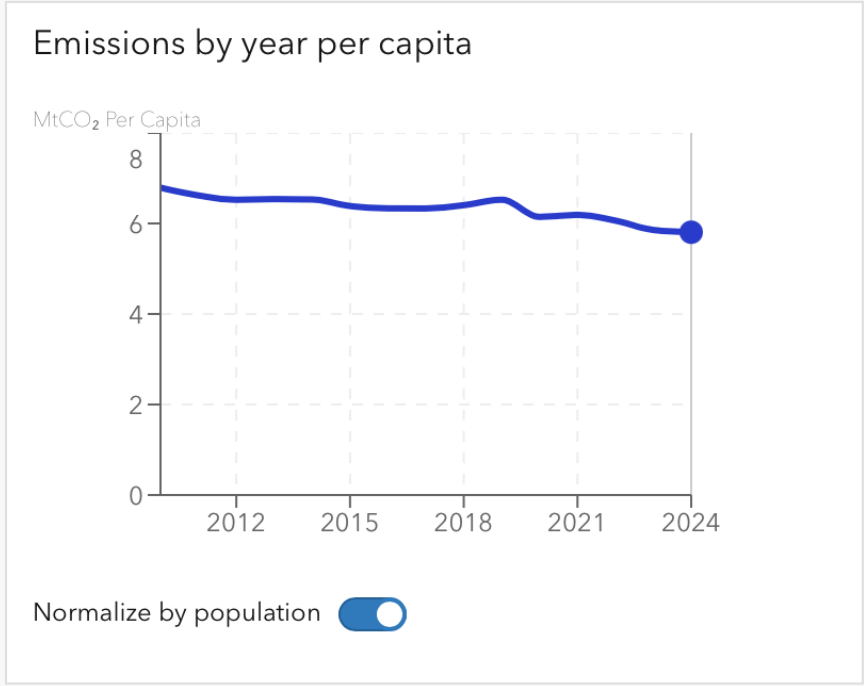
Crosswalk Labs Data

- Tracks greenhouse gas emissions data over time to inform decision makers on greenhouse gas mitigation efforts.
- Takes activity data from public and private partnerships sources and uses it to model estimated emissions going back a decade or more.
- Saves time and money by providing a detailed, peer-reviewed approach to emissions data validated by atmospheric science.
- Estimates can be aggregated to any larger geographic area, such as a neighborhood, city, county, or state.

Total Emissions Data

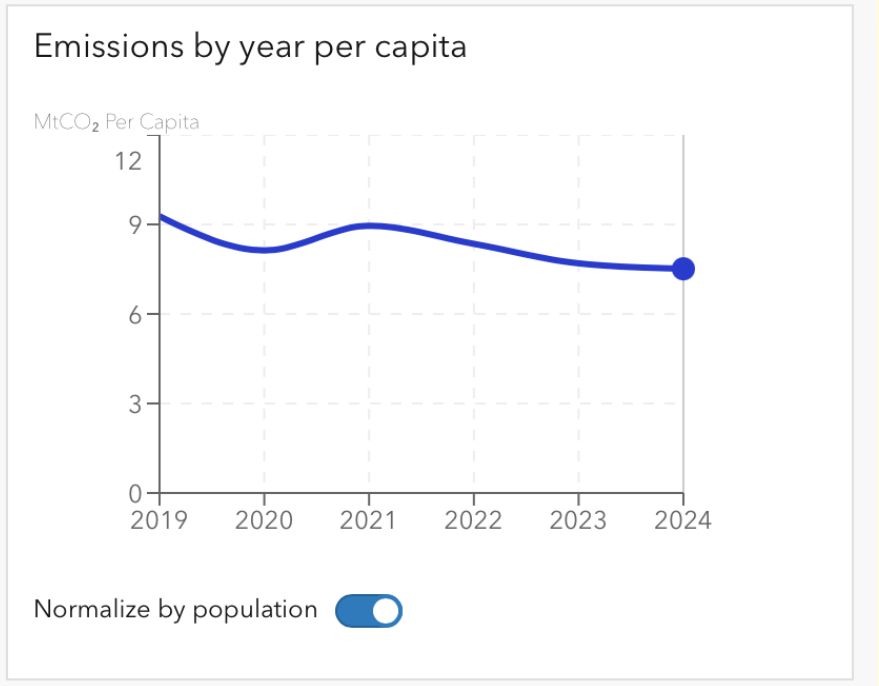
Total Direct Emissions in Clayton, MO throughout 2024

5.81 $MtCO_2$ Per Capita



Total Emissions from Electricity Use in Clayton, MO throughout 2024

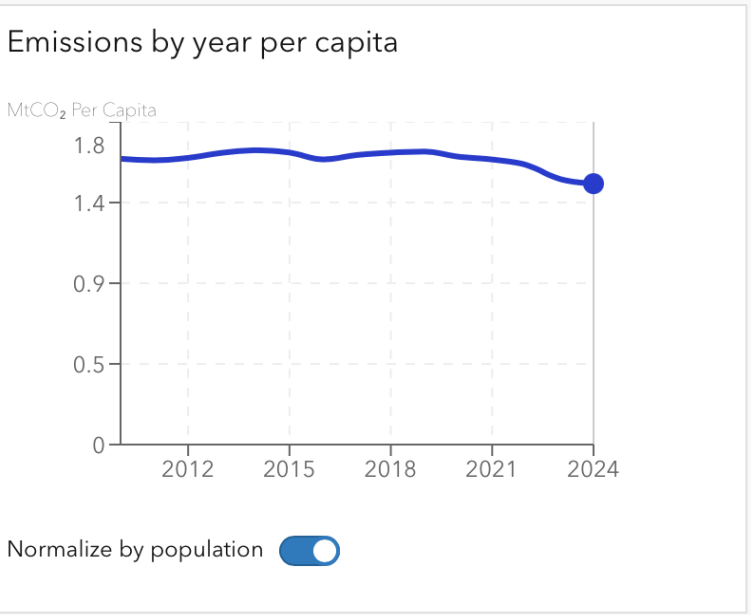
7.51 $MtCO_2$ Per Capita



Emissions Data By Segment

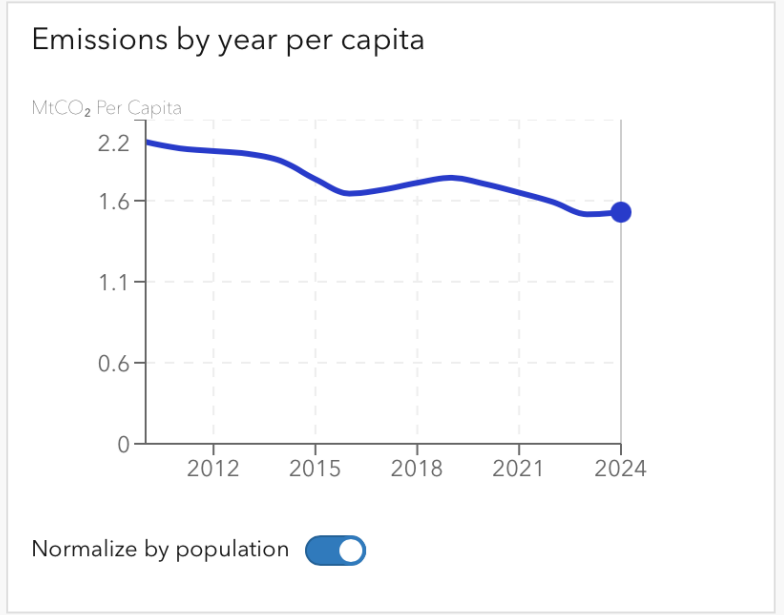
Total Direct Emissions by Commercial buildings in Clayton, MO throughout 2024

1.46 $MtCO_2$ Per Capita



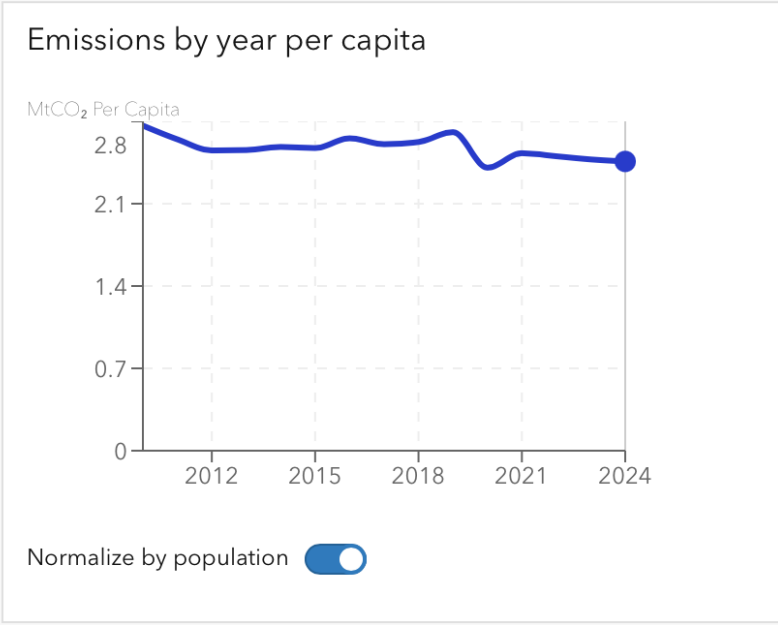
Total Direct Emissions by Residential buildings in Clayton, MO throughout 2024

1.57 $MtCO_2$ Per Capita

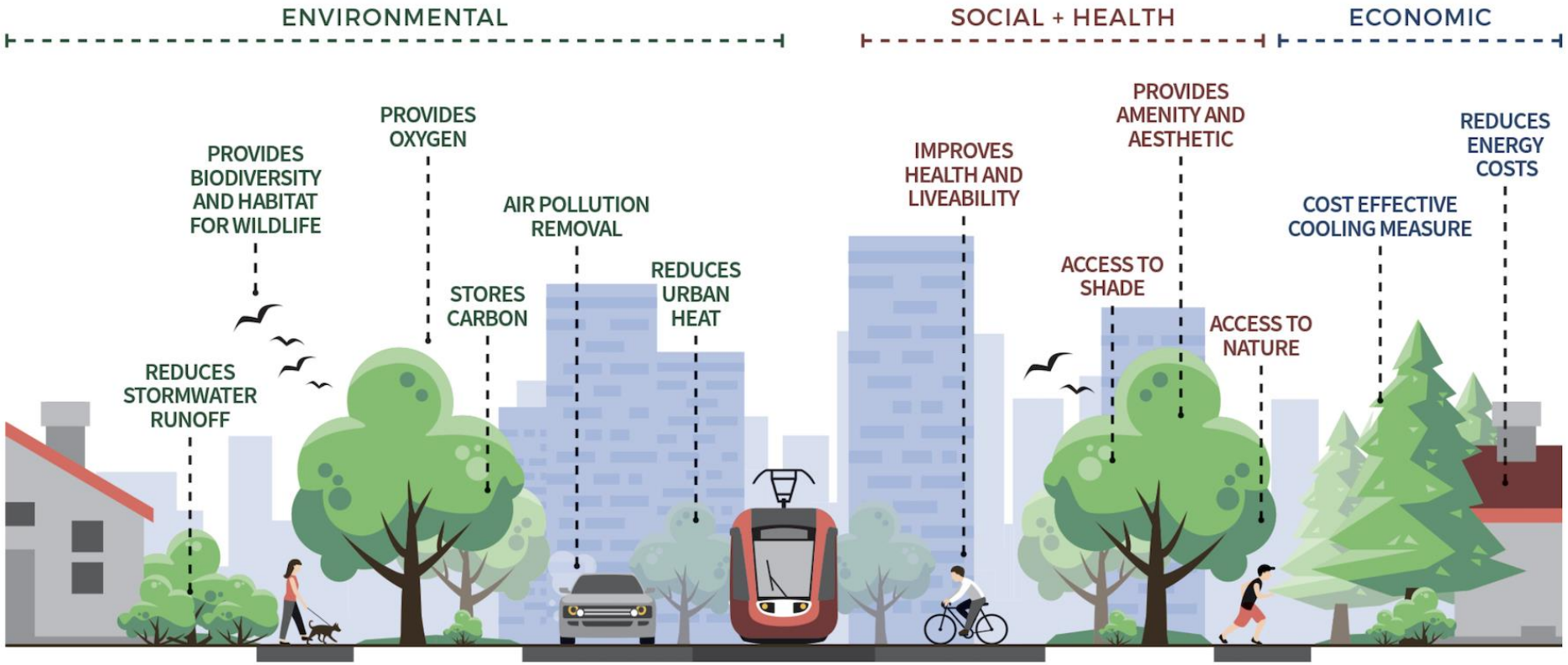


Total Direct Emissions by Vehicles in Clayton, MO throughout 2024

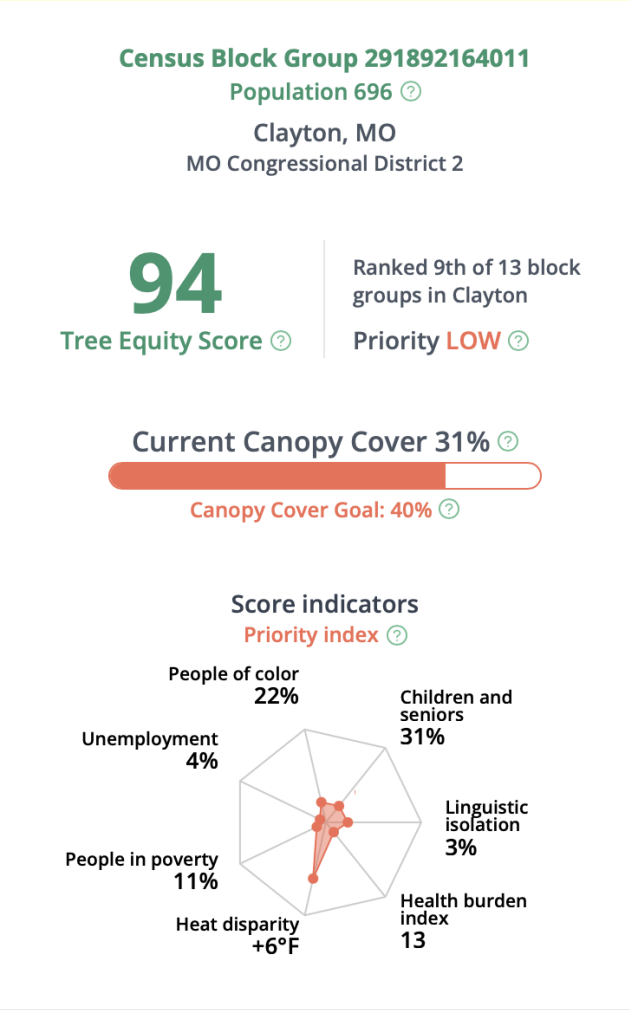
2.46 $MtCO_2$ Per Capita



Our Greenspaces Matter



Tree Equity Score



- Collaboration of U.S. Forest Service, University of Vermont, Google and iTree.
- A nationwide score calculated at the neighborhood (Census block group) level that highlights inequitable access to trees.
- Score ranges from 0-100 with lower scores indicating a greater need for trees. A score of 100 means the neighborhood has enough trees. Clayton's average score is 94.
- Tree Equity Score = Tree Canopy Goal – Existing Canopy x Priority

OurTrees Benefits

Trees in Clayton, MO

Serving Size:
25.96% tree canopy on 412 acres
51.33% impervious surfaces over 814 acres
Total i-Tree benefits for this year: **$455,032**

Annual values:	
Carbon Dioxide Uptake	**$237,736**
Carbon Sequestered	549 tn
CO_2 Equivalent[1]	2,014 tn
Storm Water Mitigation	**$87,881**
Runoff Avoided	10 MG/yr
Rainfall Intercepted	36 MG/yr
Air Pollution Removal	**$129,415**
Carbon Monoxide	232 lb/yr
Ozone	20,231 lb/yr
Nitrogen Dioxide	2,783 lb/yr
Sulfur Dioxide	2,131 lb/yr
$PM_{2.5}$	1,411 lb/yr

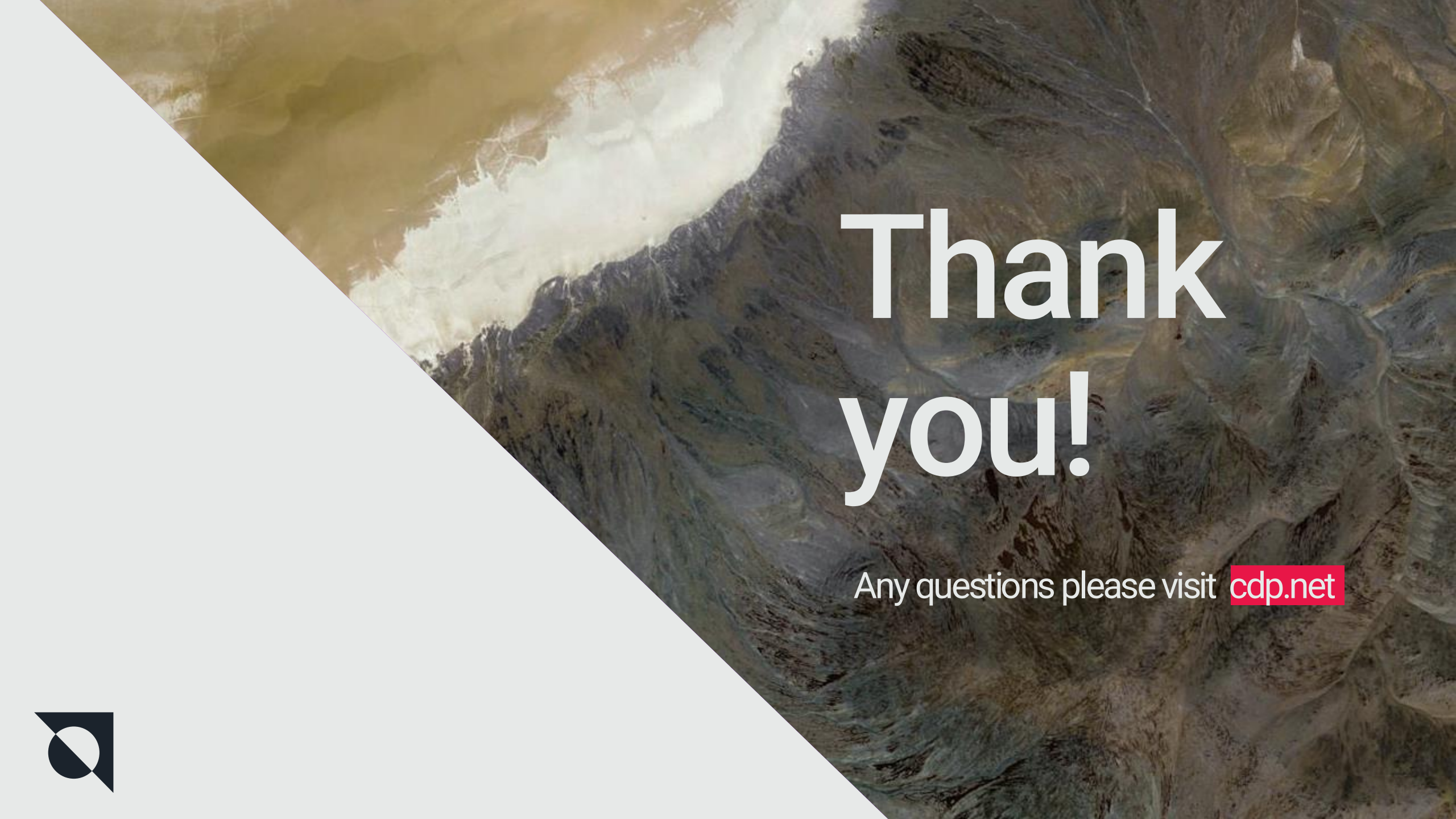
Values are totals to date:	
Carbon Dioxide Uptake	**$6,018,980**
Carbon Storage	13,909 tn
CO_2 Equivalent[1]	51,001 tn

Why it Matters…

What gets Measured gets Managed

Moderated Q&A

Open Discussion


Thank you!
Any questions please visit cdp.net