CALIFORNIA
AIR RESOURCES BOARD

The California Air Toxics Assessment (CATA)

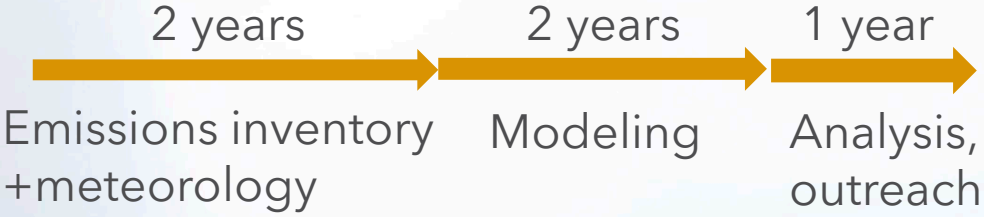
Informational Update
May 22, 2025

Today's Presentation

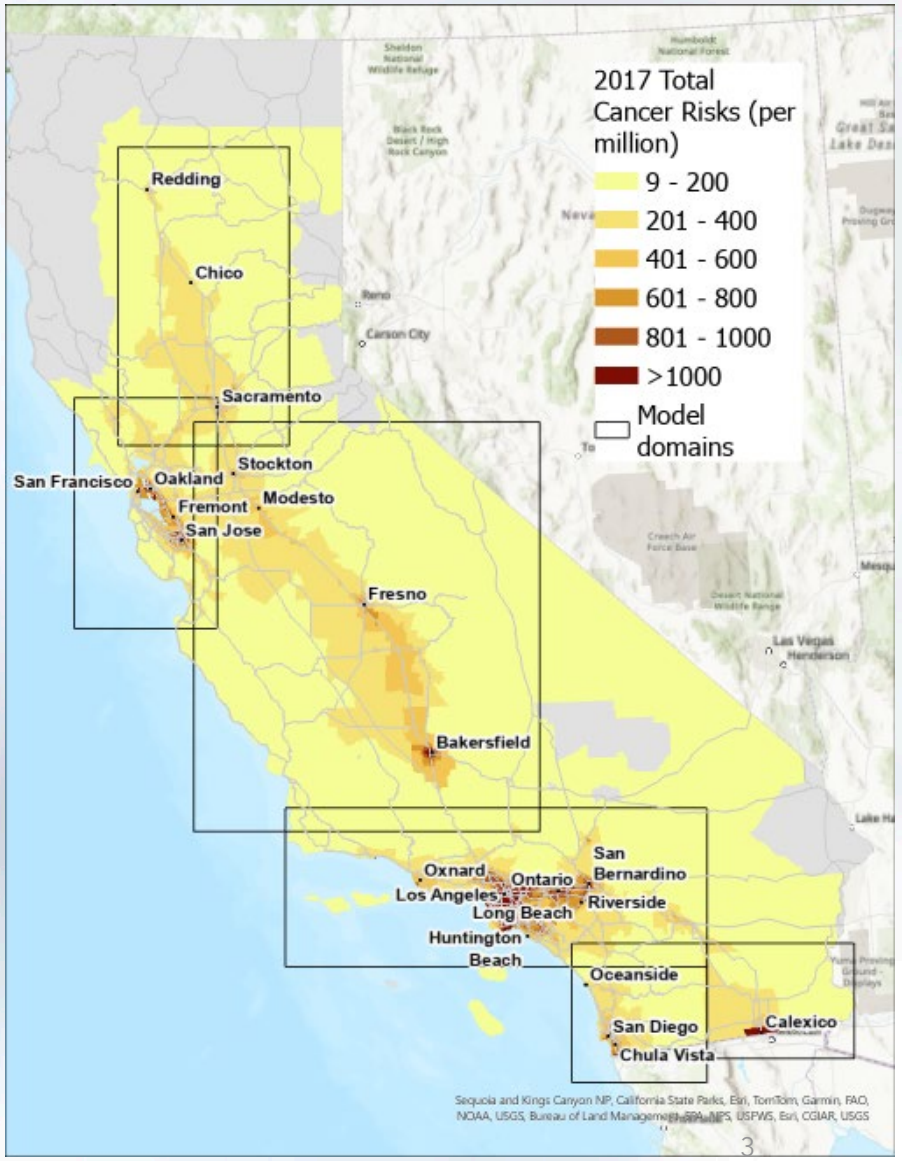
- What is CATA
- How can CATA be used
  - Inform the public of the exposure and health risks associated with air toxics in California
  - Track trends in risk reductions
  - Support communities and CERPs
  - Supplement monitoring
- Progress so far and looking forward

What is CATA

- A model-based assessment of the risk associated with exposure to air toxics in California by emission sector.
- Iterative, multi-year effort on CARB's HPC (supercomputer) (equivalent to 10000+ laptops running simultaneously for a year, with 2000 laptops storage).



- Reflects current best estimates of air toxics emissions and meteorology.
  - Example: Diesel Particulate Matter (DPM), toxic VOCs such as formaldehyde, heavy metals like Hex. Chromium.
- Modeled exposure and risk can be updated as new emissions information becomes available.



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California's Air Toxics Program and CATA

Major bills:

1983

AB1807: Identifies and Controls air toxics.

1987

AB2588: Requires stationary sources to identify, report and reduce their air toxics emissions, which pose significant health risks.

2017

AB617: Identifies and reduces exposure in communities that experience high cumulative exposure to air pollution, evaluates their control measures.

CATA work started in 2017 in support of AB617 and other toxics programs.

Emission Sources of Air Toxics

Air toxics (e.g., Diesel PM, formaldehyde, hex. chromium, etc.)

On-Road Mobile (road-following lines)

Off-Road Mobile

- Locomotives
- Seaports: Ocean-Going Vessels, Cargo Handling Equipment, Commercial Harbor Craft, etc.
- Aircraft and Airports
- Transport Refrigeration Units

Area Sources

- Agricultural activities
- Construction
- Burns and fires
- Consumer products, biogenic, etc.
- Mexico sources

Stationary Point Sources

- Refineries, power generation plants, etc.

10+ million sources modeled in CATA (and growing with each update)

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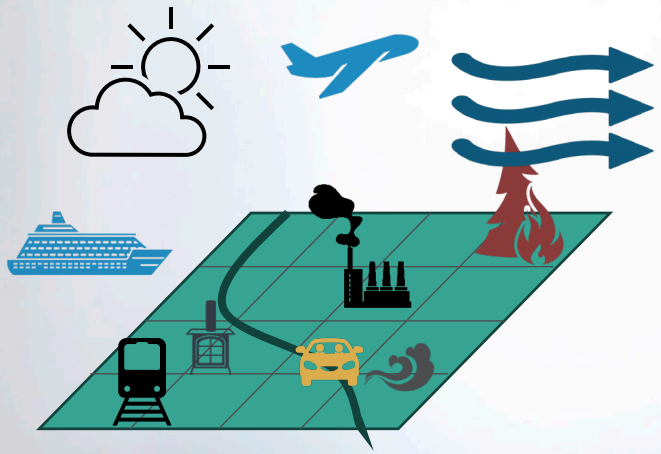
CATA's workflow

Emissions + Meteorology

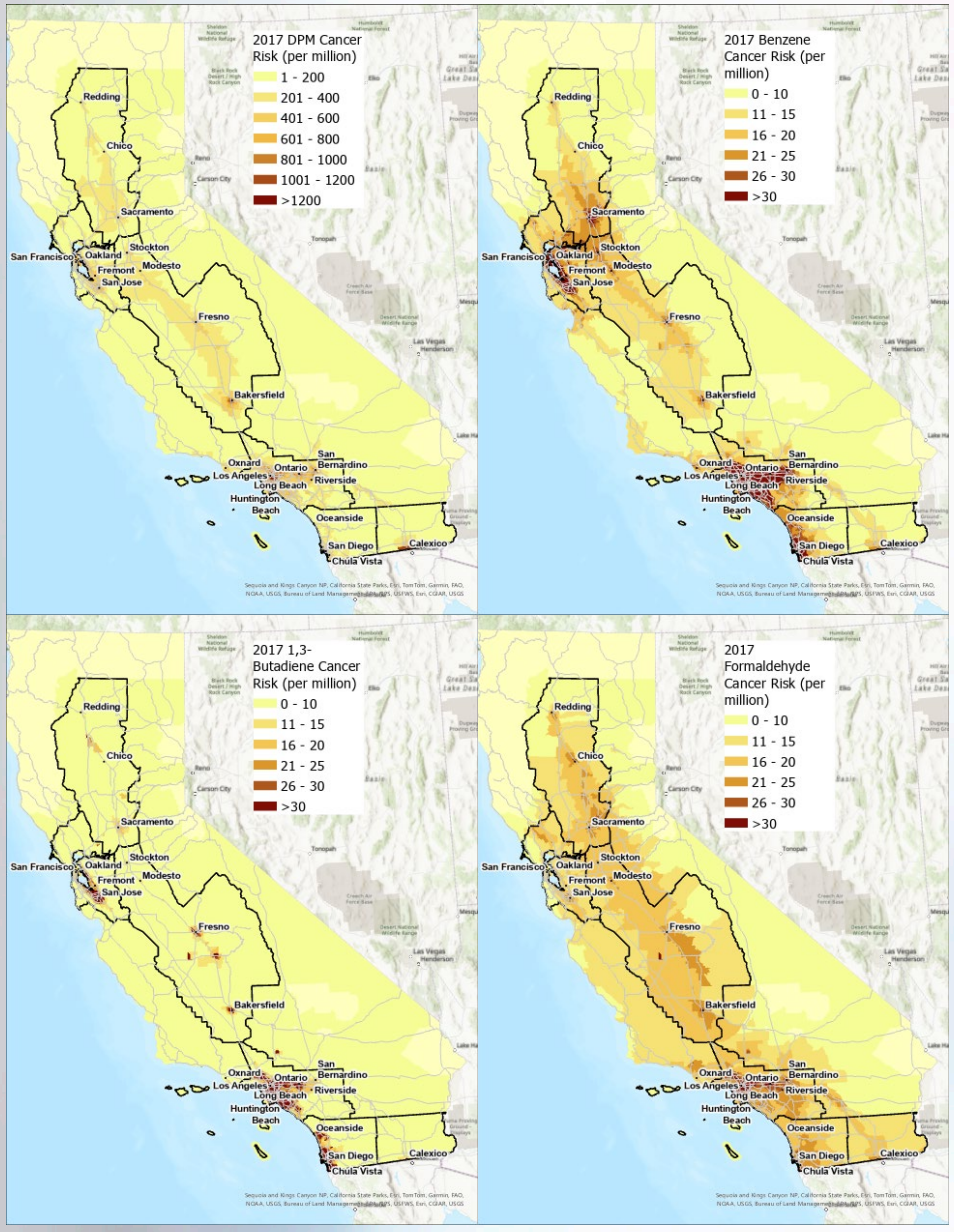


Air Quality Models

Exposure and Cancer Risk in Census Blocks and Tracts

Validated against monitor observations

How Can CATA be used: Inform the public

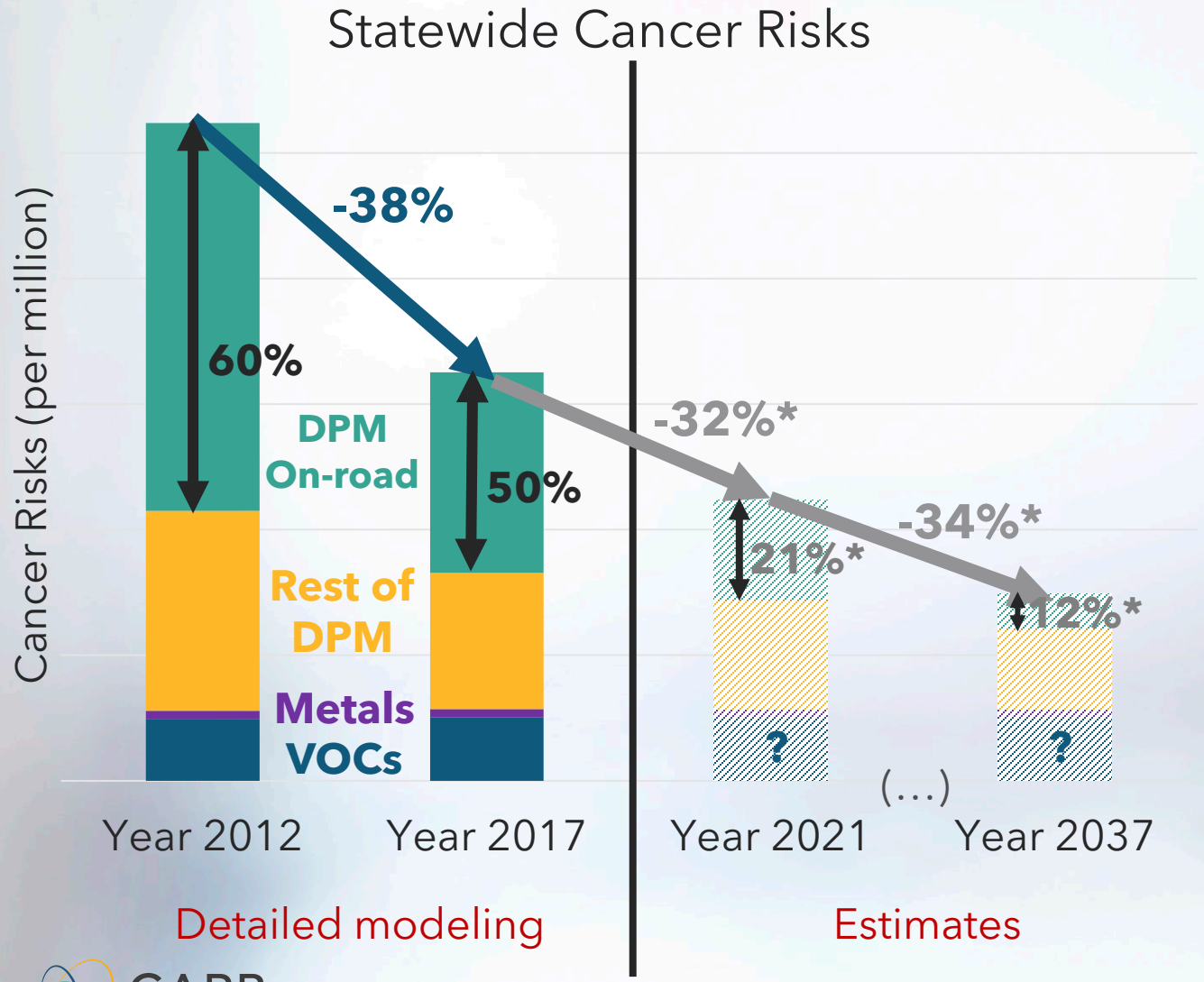


- Statewide ambient concentrations, exposure and health risk of air toxics in California at census blocks and tracts.

→ **Provide public information** about major air toxics and associated health risks throughout the state over time. Support AB1807.

→ Bridge the gap between national (NATA/AirToxScreen) and regional (e.g., SCAQMD MATES) air toxics studies, complement OEHHA's CalEnviroScreen.

Use CATA to inform the present and future



Through iterative assessments (2012, 2017, 2021, …):

- **Track health risk reduction trends** and provide insights into future toxics control at the statewide, regional and community levels.
- **Evaluate the progress in reducing air toxics exposure** from sector-based regulations and help assess health benefits of those regulations.

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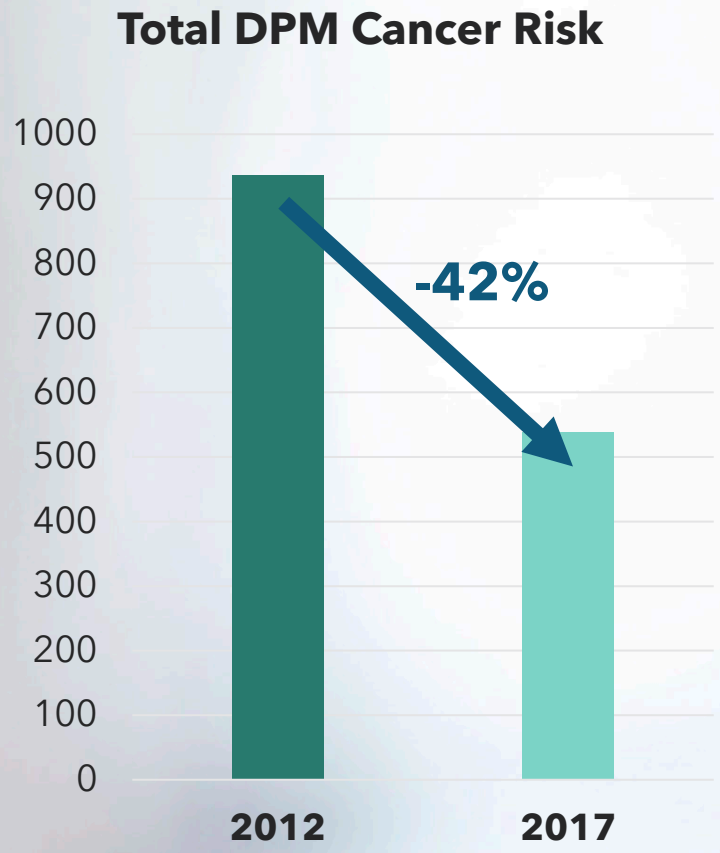
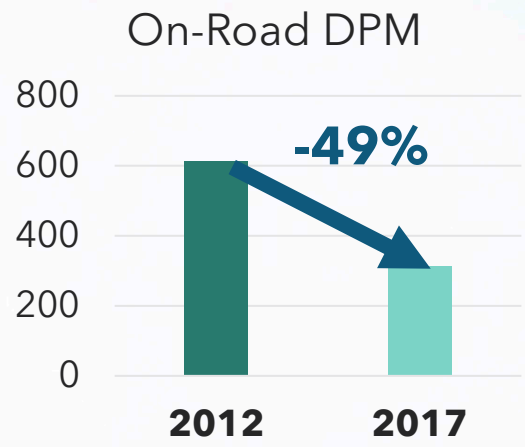
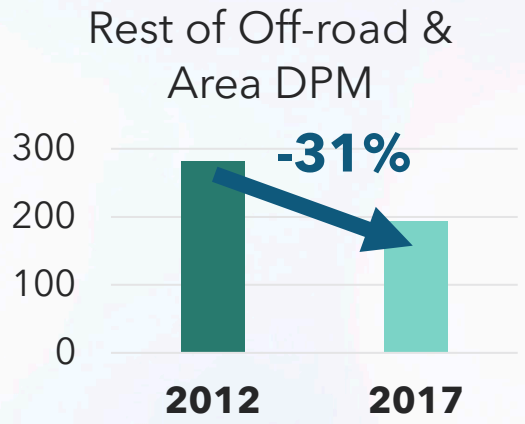
How Can CATA Data Be Used: Track Trends by Source







Examples of regulations:

Truck and Bus

Ocean-Going Vessels

Commercial Harbor Craft
Cargo Handling Equipment
Transport Refrigeration Units

*Impact of new and existing regulations will be reflected in future iterations.

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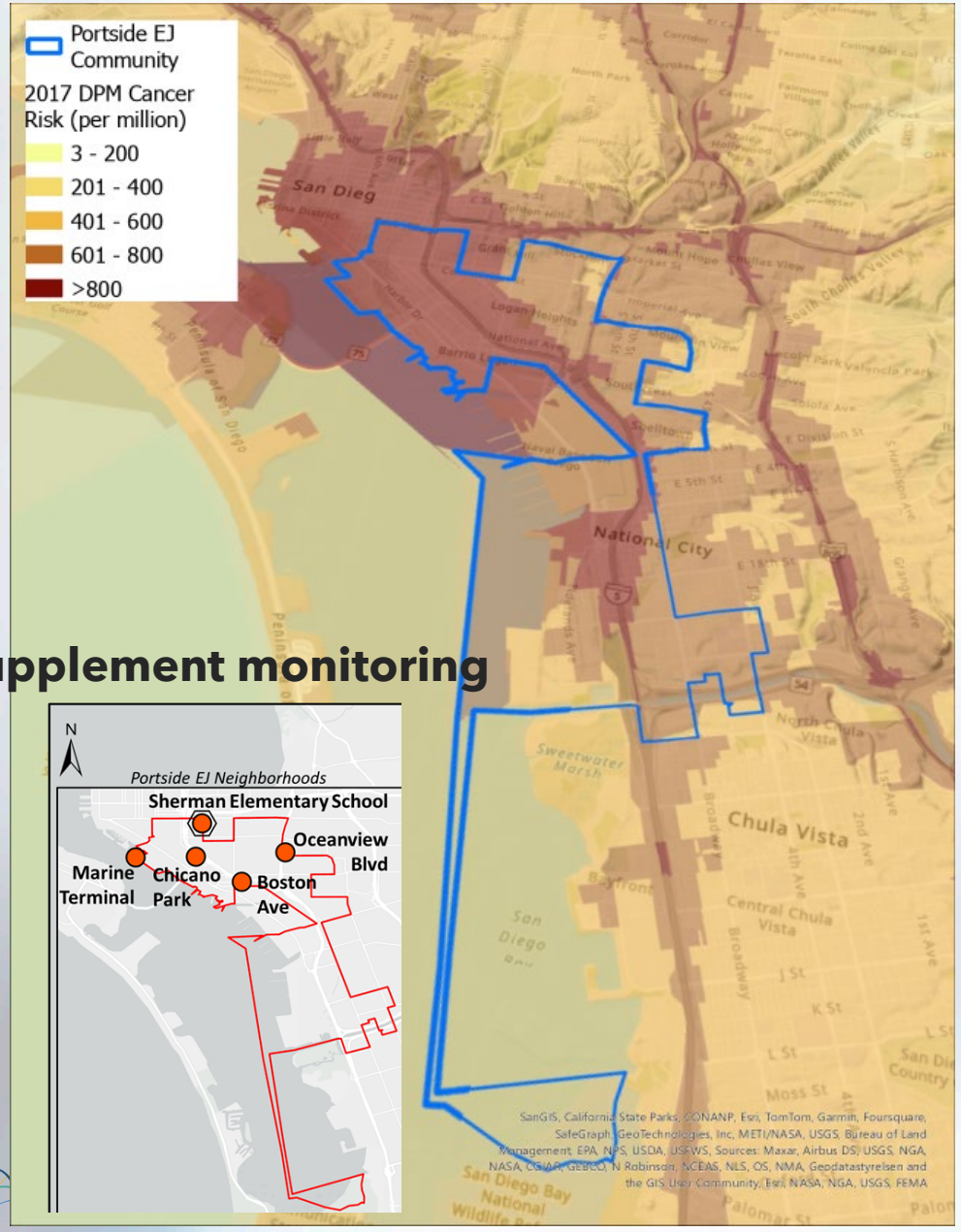
How Can CATA Data Be Used: Communities

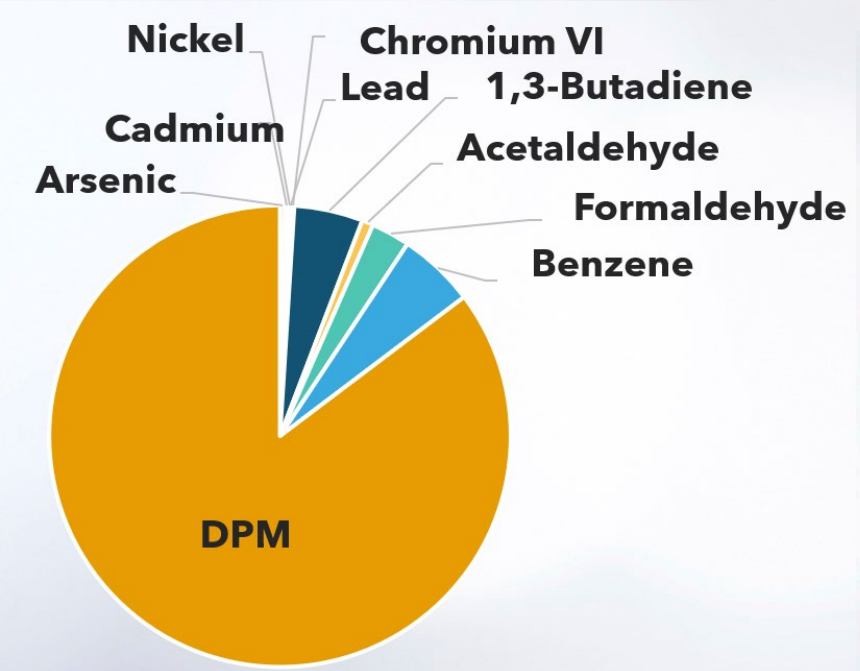
- **Inform the public**.
- **Track trends**.
- Help identify **communities** disproportionately impacted by air toxics, support development of Community Emission Reduction Plans (**CERPs**) and **EJ** programs.

How Can CATA Data Be Used : Portside Community



Supplement monitoring

Portside EJ Community



How Can CATA Data Be Used: Supplement Monitoring

- **Inform the public.**
- **Track trends.**
- **Support communities.**
- **Complement the monitoring network**: fill gaps in time and space, support future deployments. Monitoring is used for evaluation.

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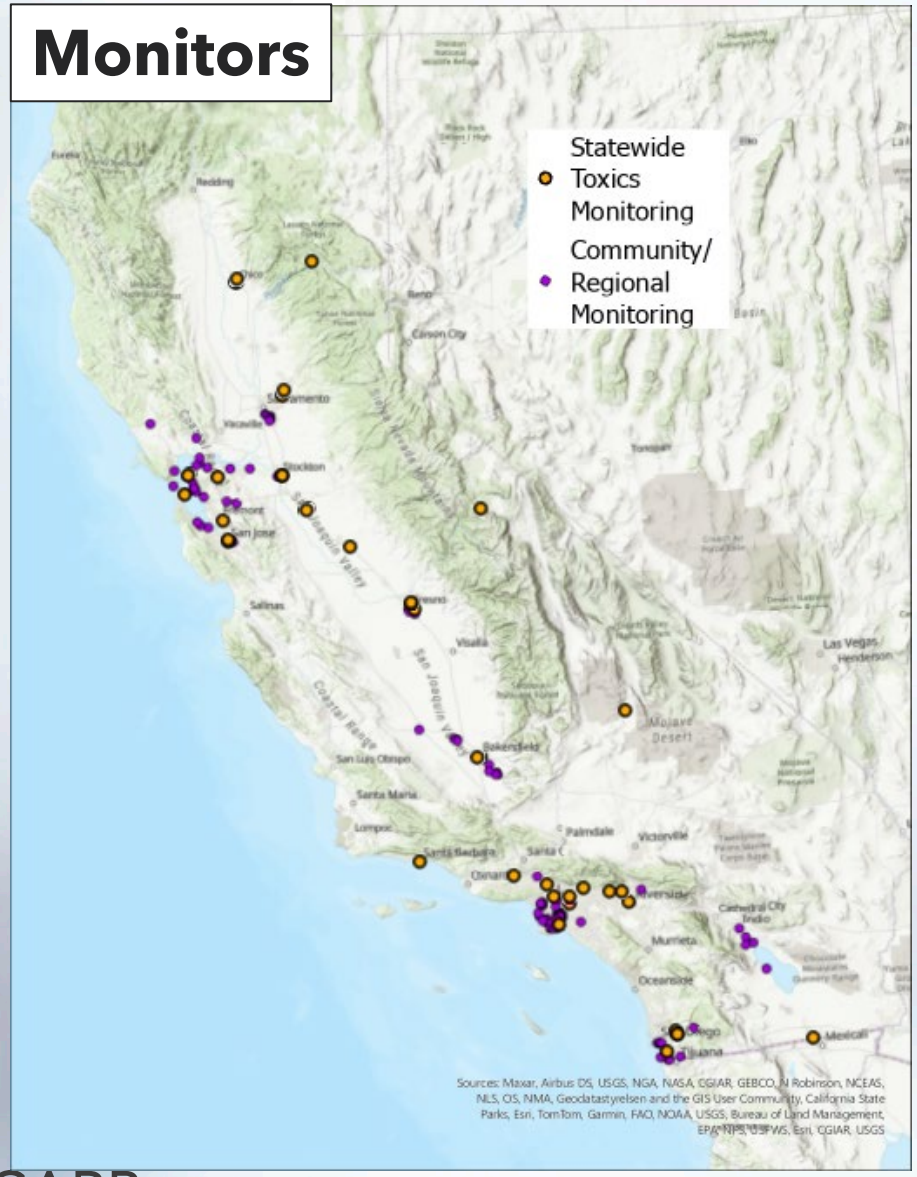
How Can CATA Data Be Used: Statewide Coverage

Monitors



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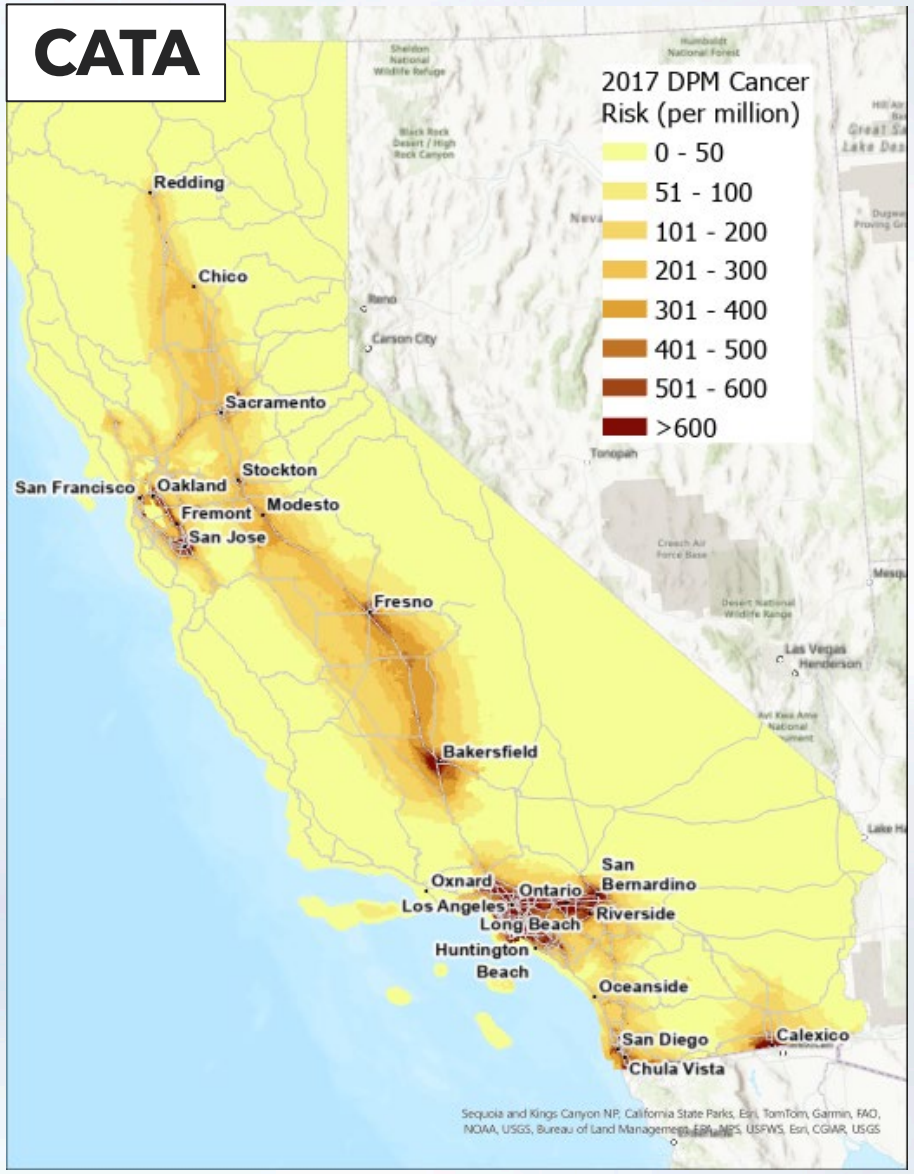


CATA's Progress So Far

2012

First assessment for the year 2012, completed in 2019.

2017

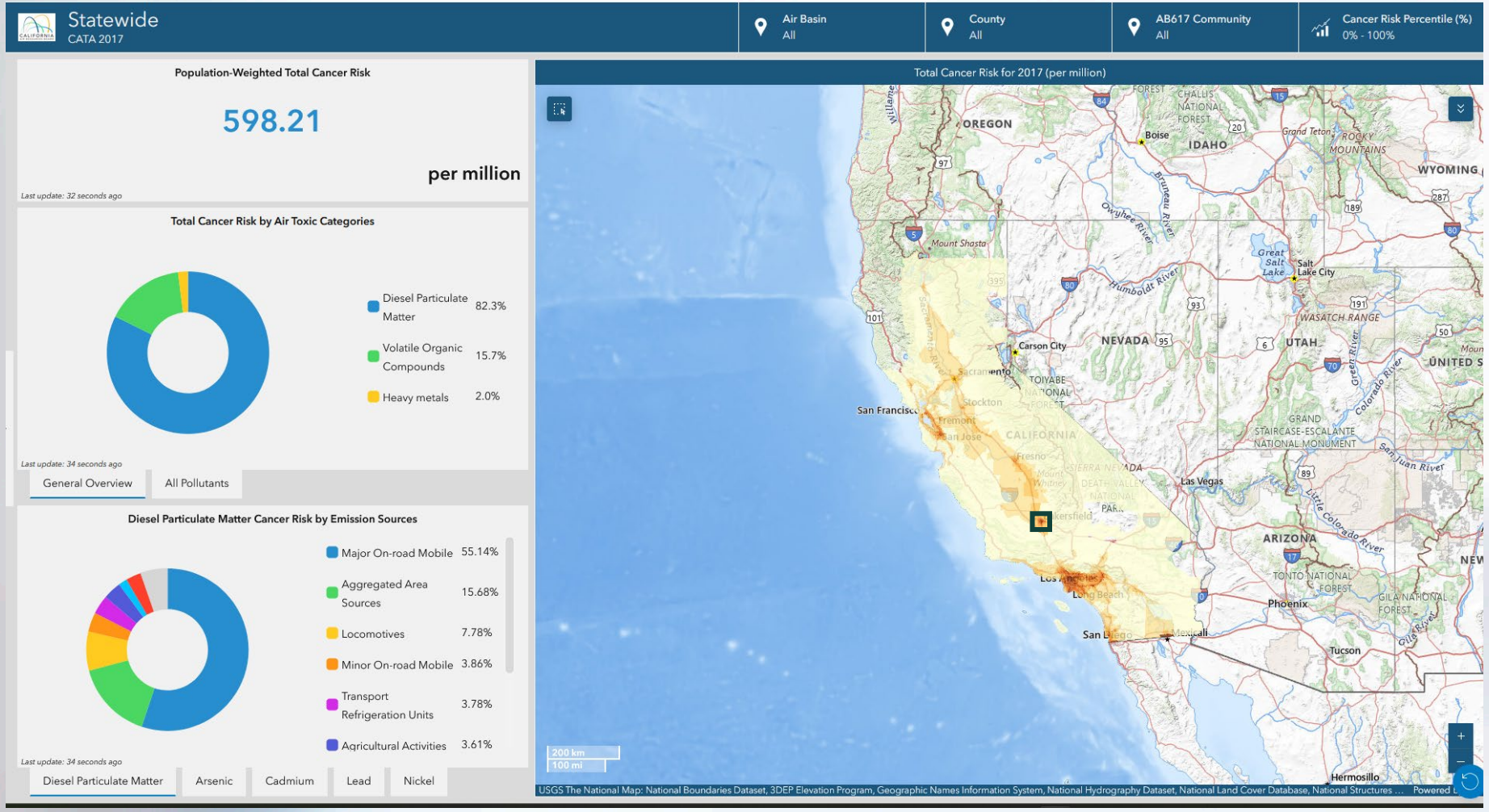
Second assessment for the year 2017, completed in 2022. Public release of report and GIS data portal.

2021

Third assessment for the year 2021, expected completion in 2026.

Future iterations every few years.

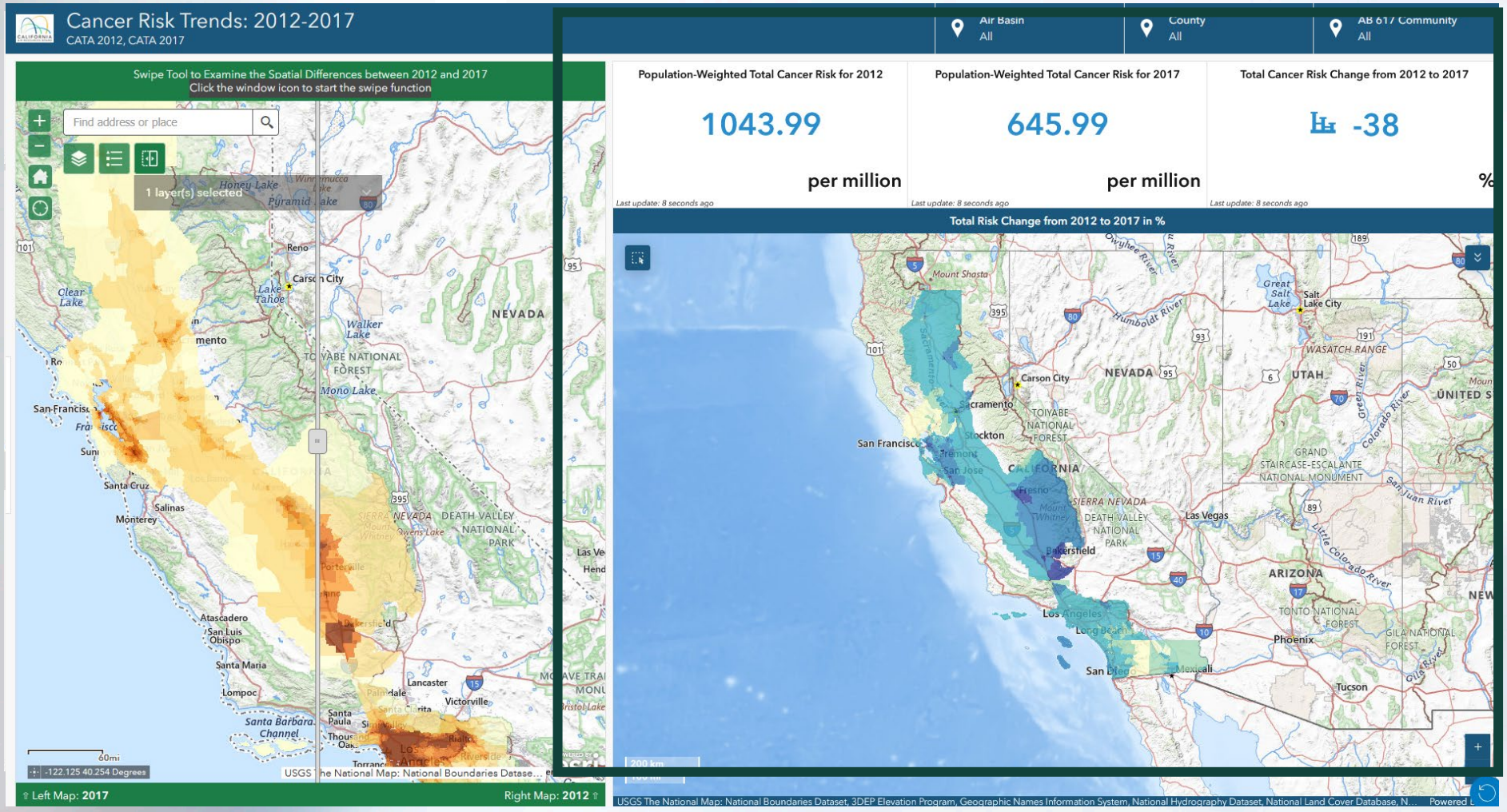
Public Data Portal



- Interactive maps.

Link: https://california-air-toxics-assessment-californiaarb.hub.arcgis.com/

Public Data Portal (continued)



- Interactive maps.
- Interactive charts.
- Risk trend maps.

Transparency:

- FAQs
- Public report and data download
- Contact us: **cata@arb.ca.gov**

Link: https://california-air-toxics-assessment-californiaarb.hub.arcgis.com/

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Public Outreach

- Briefings to air districts, CAPCOA, environmental groups
- Briefings to other CalEPA agencies (e.g., OEHHA)
- AB617 communities (e.g., Portside Environmental Justice Neighborhoods' CERP efforts)
- Presentations at international conferences
- Peer-reviewed journal articles in preparation

On-going Efforts

- **Health impact** from air toxics (both cancer and non-cancer) **have reduced** from successful implementation of regulations and policies.
- However, reductions are not uniform, and **disparities persist.**
- **Risk contributions** from different emissions sectors (On-road vs. off-road and area sources) and toxic species (DPM vs. VOCs, etc.) **may shift over time**.
- International transport.
- Future advances in quantifying toxics and associated health risk from wildfires, structural burns etc.
- CATA has a flexible framework and will include more information as they become available (e.g., CTR 2020 updates).

E.g., Southeast and South LA communities: