OEHHA

SCIENCE FOR A HEALTHY CALIFORNIA

CALENVIROSCREEN

USED OIL/HHW TRAINING AND CONFERENCE • *SACRAMENTO* • *NOVEMBER 3RD, 2016*

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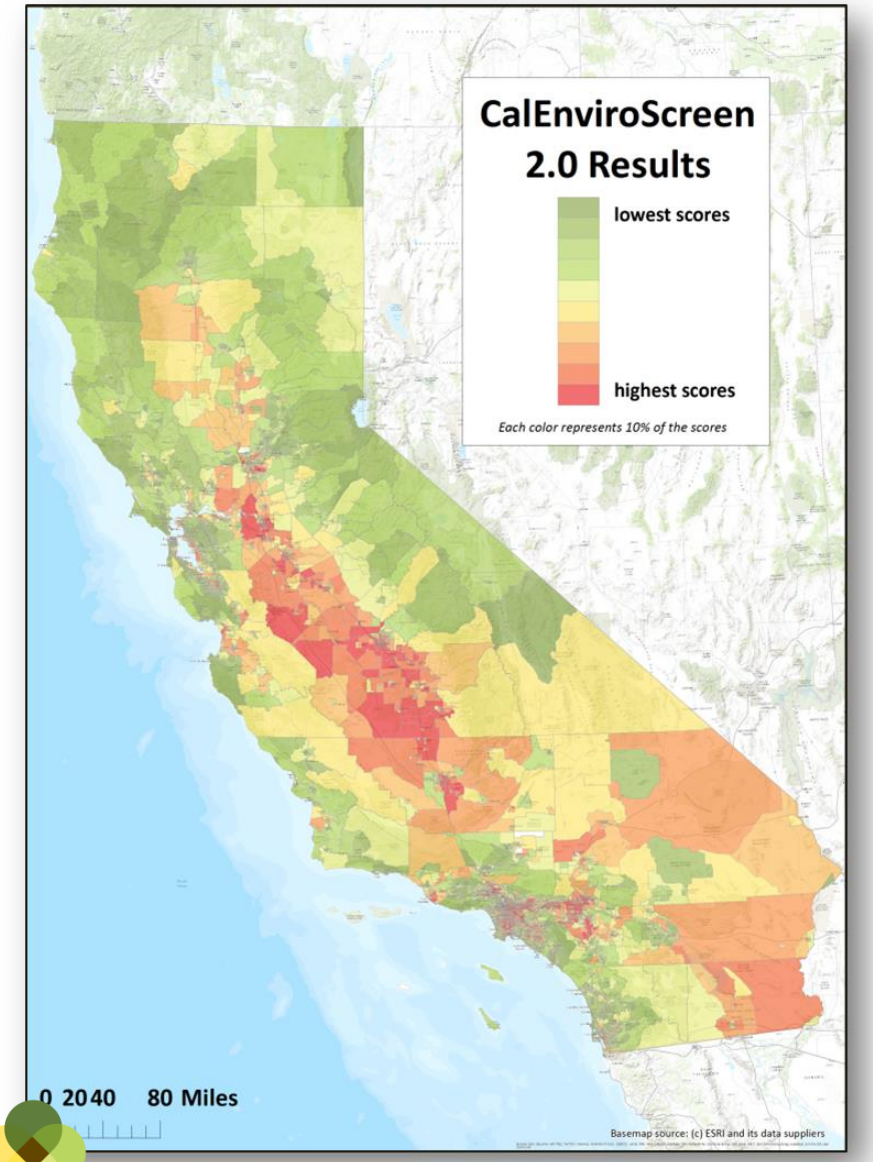
Summary of Presentation

- What is CalEnviroScreen?
  - Development / overview of the Tool
  - Input datasets
  - Results / data access
  - Example uses of CalEnviroScreen
  - New website
  - Q&A

What is CalEnviroScreen?



- Screening tool to identify California communities that are disproportionately burdened by multiple sources of pollution and vulnerability
- Uses 19 indicators of environmental, health, and socioeconomic conditions

Origins in Environmental Justice Laws

- Statutory definition of EJ
  - "Environmental justice means the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation and enforcement of environmental laws, regulations, and policies." Gov. Code §65040.12(e)
- CalEPA's responsibilities
  - "…identify and address any gaps in existing environmental programs, policies, or activities that may impede the achievement of environmental justice." Public Resources Code §71113

Focus of CalEnviroScreen

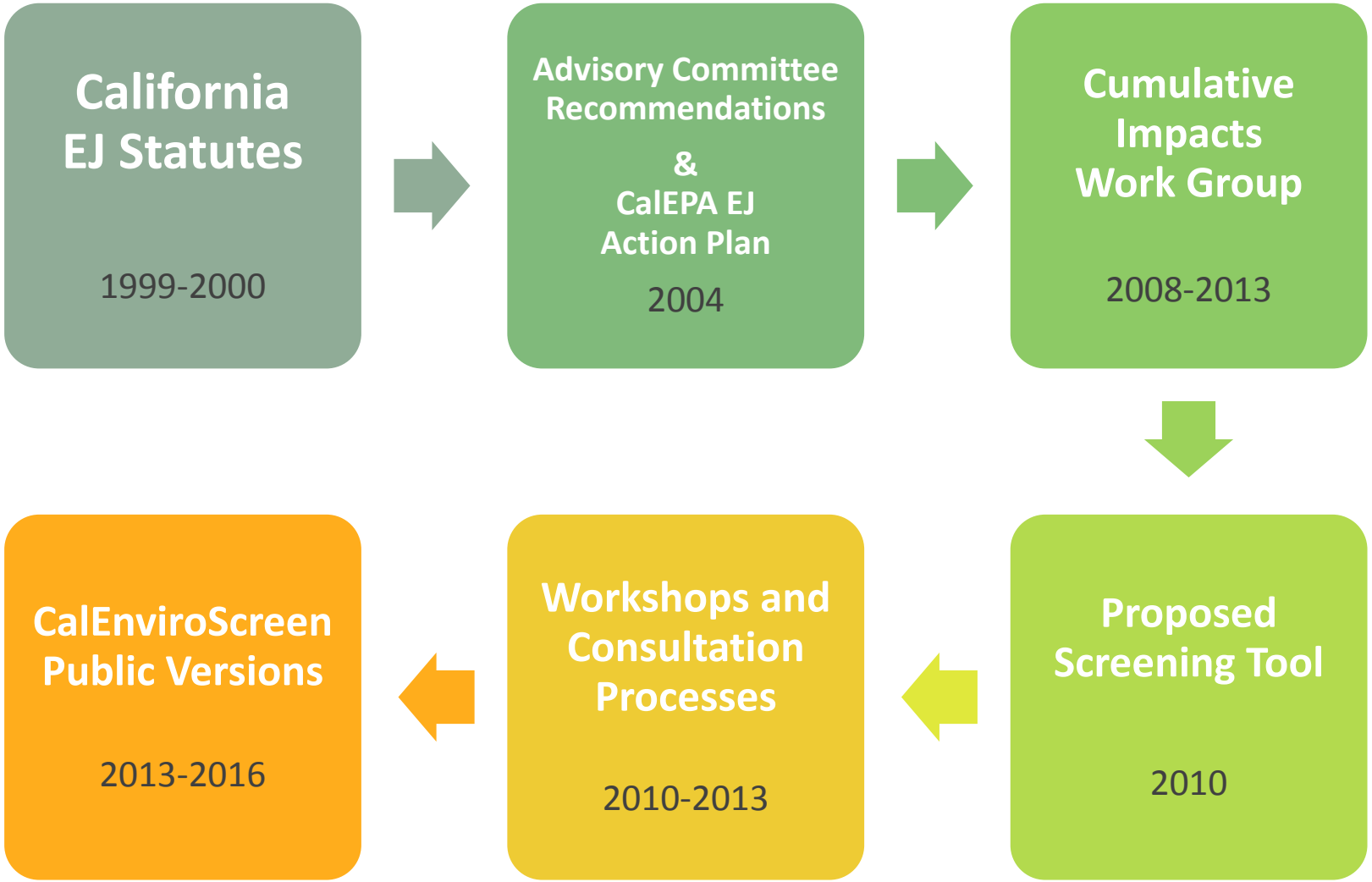
"…exposures, public health or environmental effects from the combined emissions and discharges in a geographic area, including environmental pollution from all sources, whether single or multi-media, routinely, accidentally, or otherwise released. Impacts will take into account sensitive populations and socioeconomic factors, where applicable and to the extent data are available."

-- definition of "cumulative impacts" by Cal/EPA Interagency Working Group on Environmental Justice

Basis for environmental justice concerns

- Numerous studies have shown that multiple pollution sources are disproportionately concentrated in low-income communities with high-minority populations.
- Studies have reported communities with certain socioeconomic factors (i.e. low-income, low-education) have increased sensitivity to pollution.
- Combination of multiple pollutants and increased sensitivity in these communities can result in higher cumulative pollution impacts.
- Issues reviewed in 2010 OEHHA Report:
  - California Environmental Protection Agency, Office of Environmental Health Hazard Assessment. "Cumulative Impacts: Building a Scientific Foundation", (2010) http://oehha.ca.gov/ej/pdf/CIReport123110.pdf

Development of CalEnviroScreen



Features of CalEnviroScreen

- Relatively simple
- Combines information from multiple media
  - Air, water, soil
- Data represent multiple factors
  - Exposures, environmental conditions, population sensitivity, health conditions, and socioeconomic factors
- Provides information at roughly community scale
  - Geography based
- Allows for comparison between geographic areas

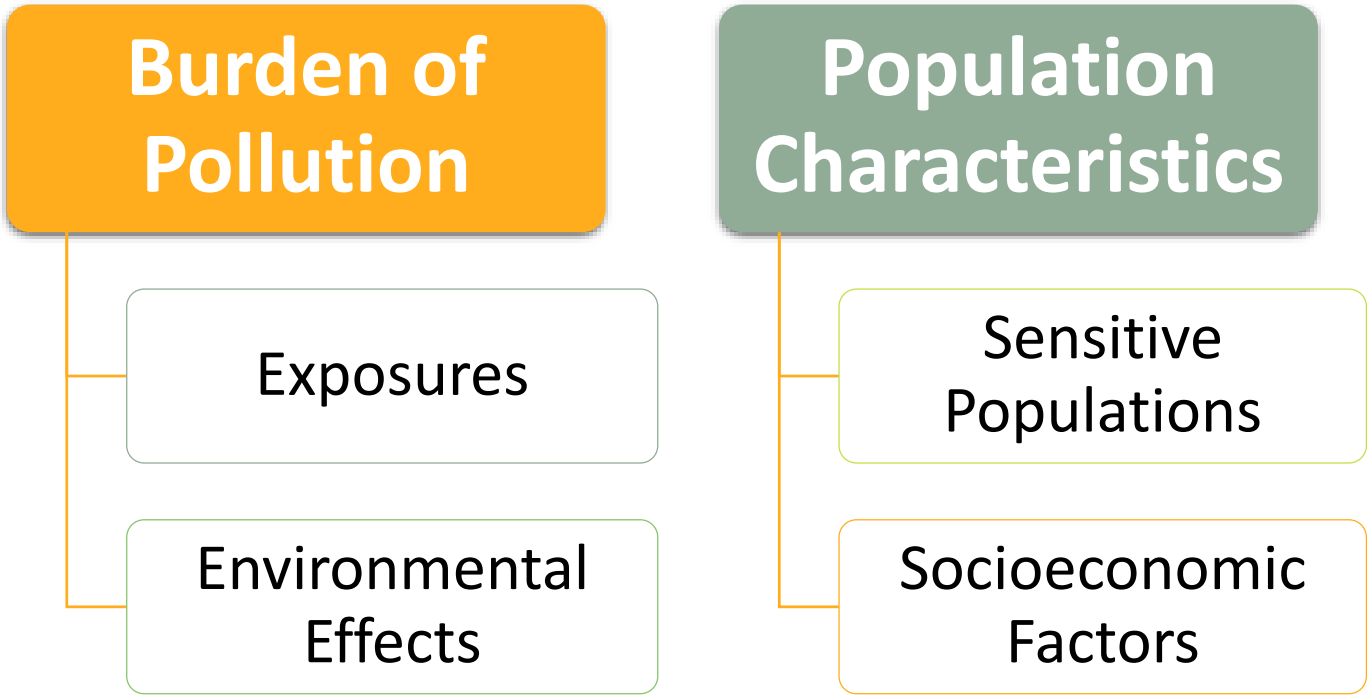
CalEnviroScreen Model

- Compares pollution levels in communities

- Examines if communities are more vulnerable to pollution

- **Identify communities that have high pollution and high vulnerability**

CalEnviroScreen Model



Pollution Burden & Population Characteristics

Exposures	*Contact with pollution*
Environmental Effects	*Adverse environmental conditions caused by pollutants*
Sensitive Populations	*Populations with biological traits (including health status) that may magnify the effects of pollutant exposures*
Socioeconomic Factors	*Community characteristics that result in increased vulnerability to pollutants*

Criteria for indicator selection

- Provide a good measure of environmental or socioeconomic conditions
- Data qualities
  - Publicly available
  - Location-based information (e.g., address, latitude/longitude)
  - Statewide
  - Accurate
  - Current

CalEnviroScreen 2.0 Indicators

Pollution Burden


Ozone


Particulate Matter


Toxic Releases


Diesel


Drinking Water


Groundwater


Traffic


Cleanup Sites


Impaired Water


Solid Waste


Pesticides


Hazardous Waste

Population Characteristics


Linguistic Isolation


Poverty


Children & Elderly

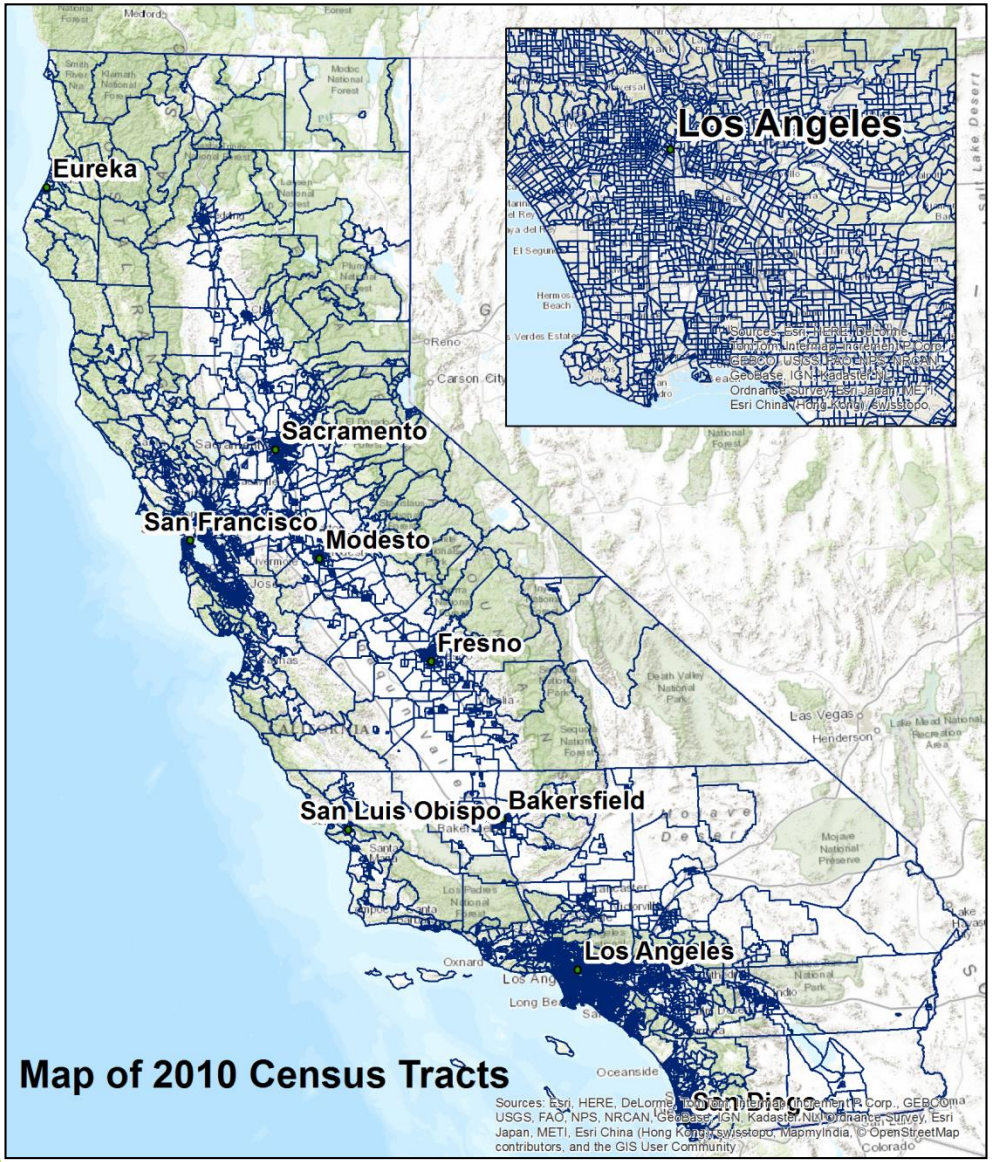

Asthma


Low Birth-Weight

Unemployment

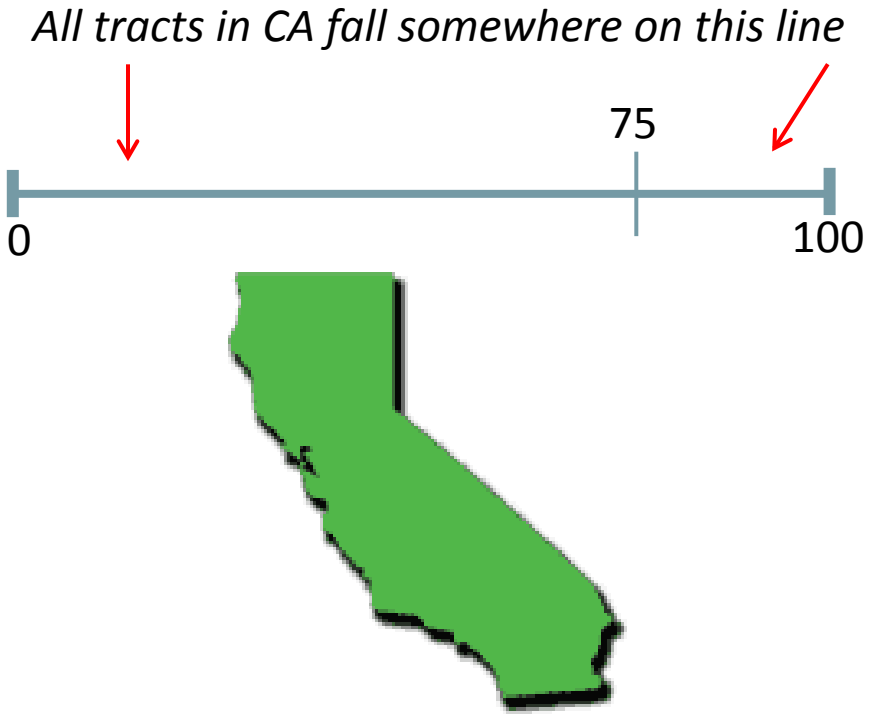

Educational Attainment

Census Tracts Used to Represent Communities



- 2010 Census Tracts used
- Represent relatively fine scale
- ~8,000 census tracts in California
- ~4,000 people per tract (range 1,200 -8,000)
- Commonly used

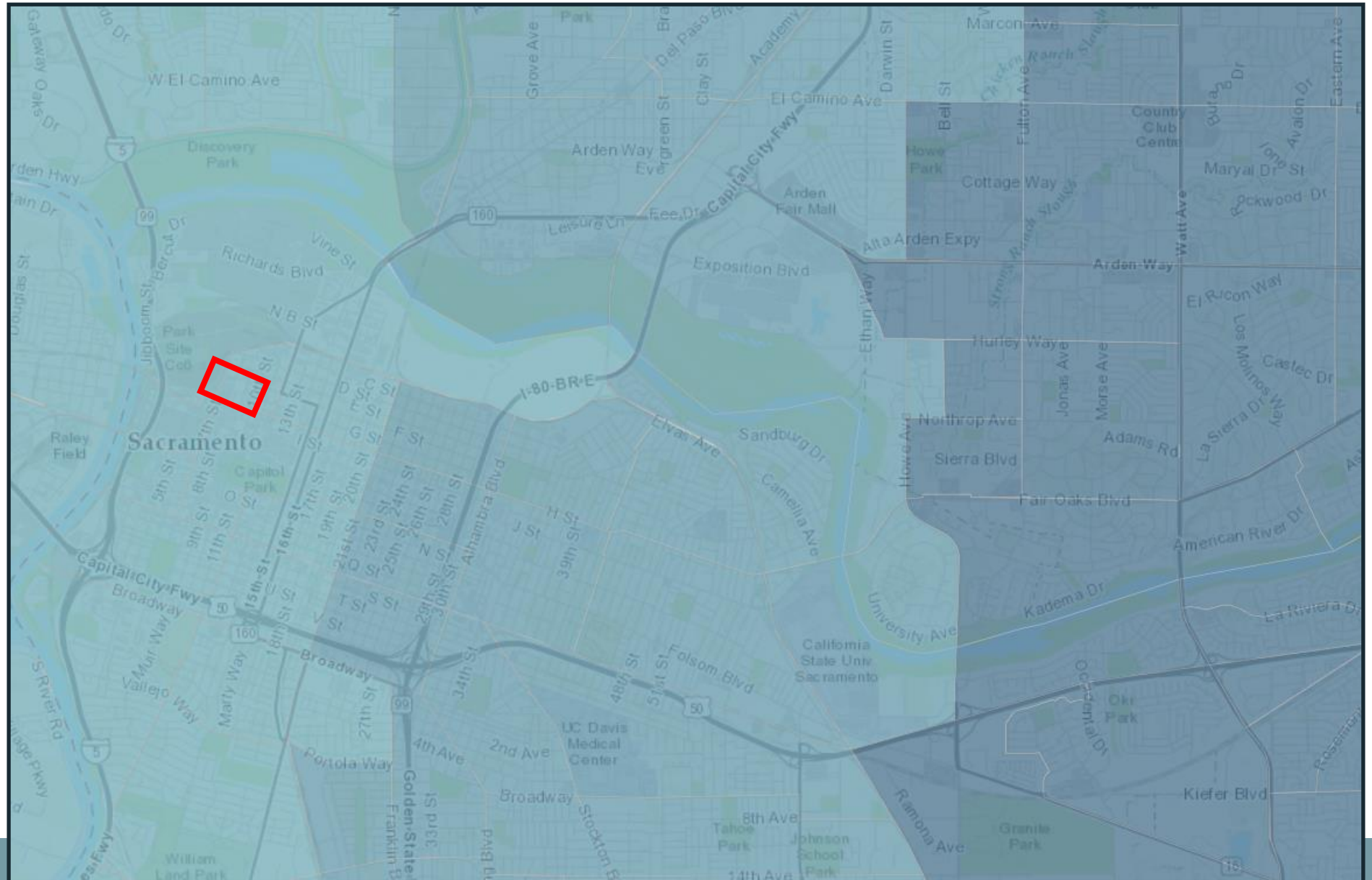
Indicator Scoring



- For each indicator, each census tracts is assigned a percentile value based on where it falls in the statewide distribution

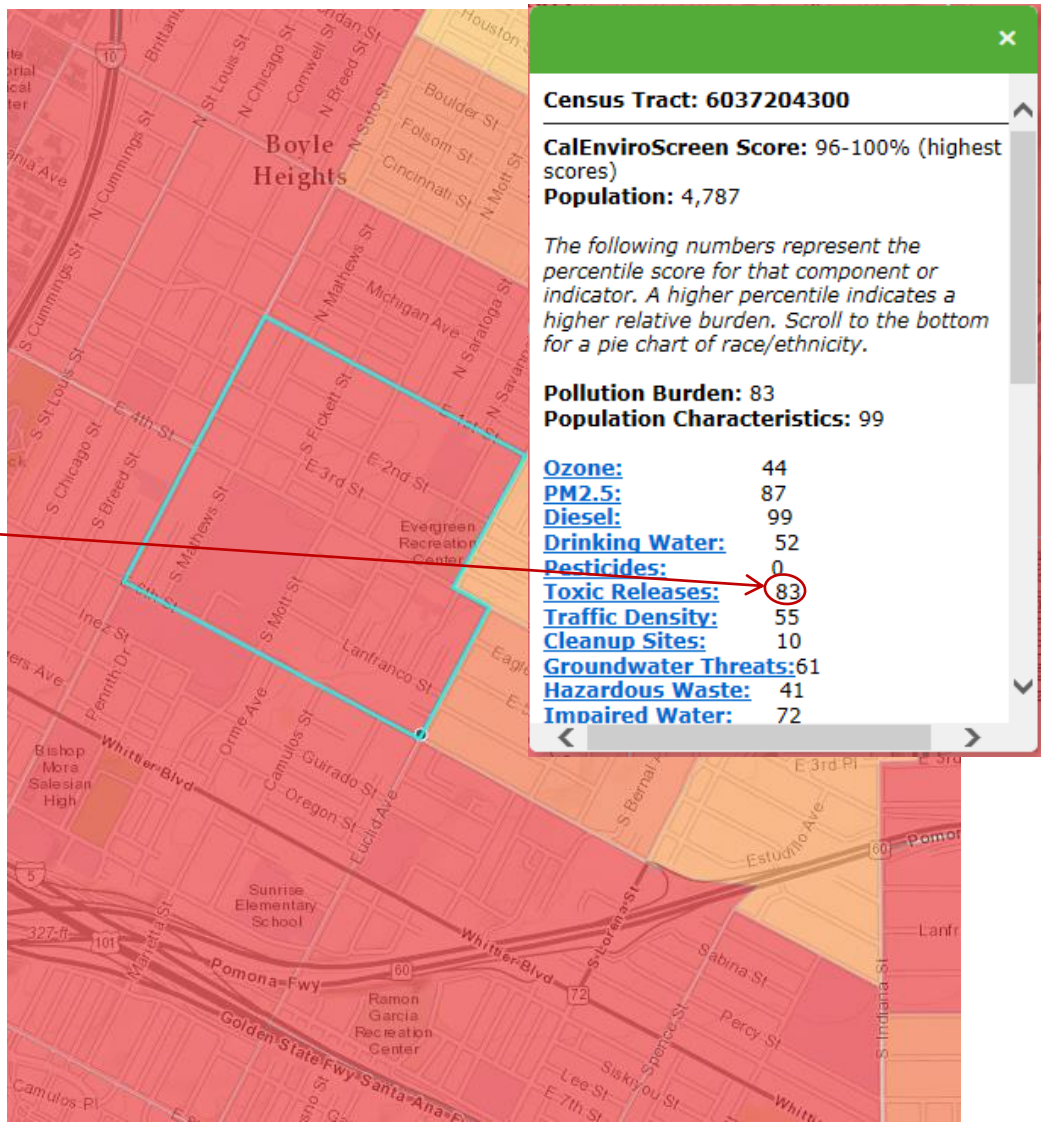
- The percentile represents a relative score for all 19 indicators
  - For example, a 75th percentile means that census tract is higher than 75% of other census tracts in California.

How were indicators calculated? Example



INDICATOR SCORING EXAMPLE

- Every census tract is scored for each indicator
  - For example, this Boyle Heights census tract has a 83rd percentile for toxic releases, meaning it's higher than 83% of all other census tracts in California.

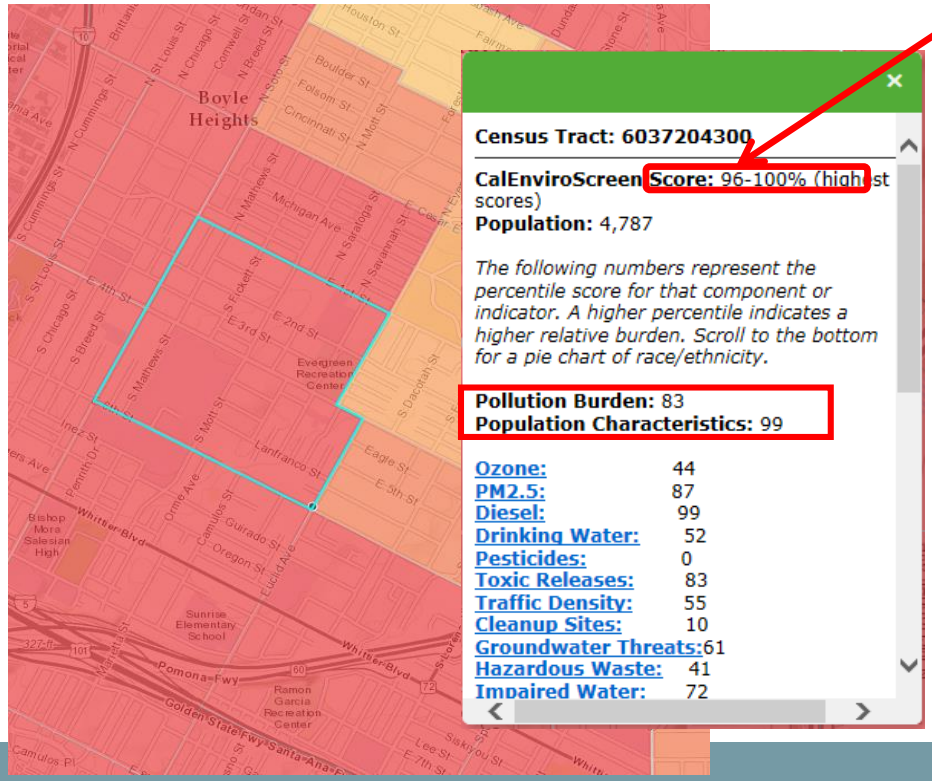


How the CalEnviroScreen Score is Calculated

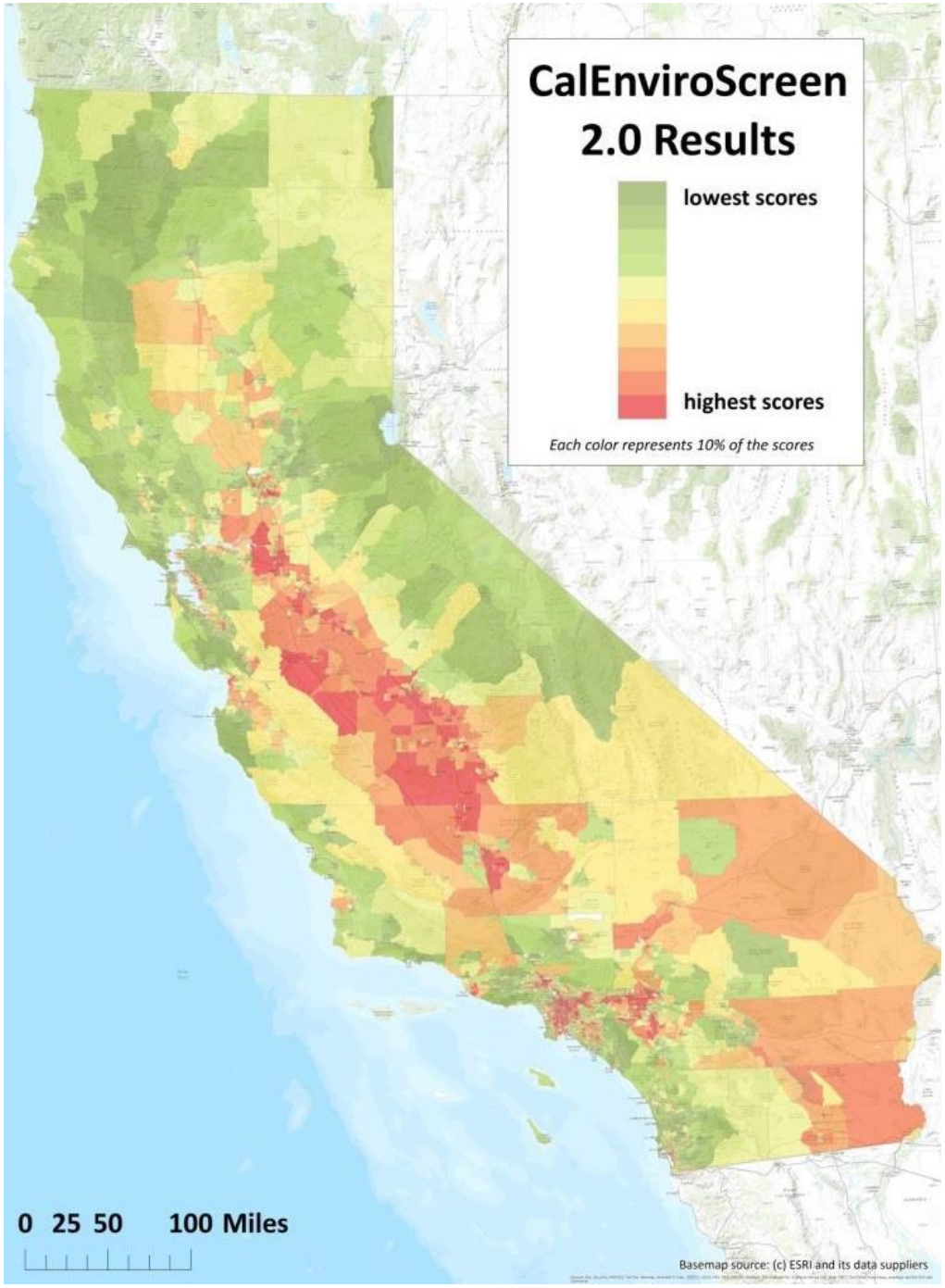
- CalEnviroScreen score is calculated by combining all indicator scores which allow for comparison of different areas
- Higher scores mean greater pollution burdens and population vulnerability.
- The highest 75-100th percentile (top 25%) represent "disadvantaged communities" under SB 535.

How the CalEnviroScreen Score is Calculated

Pollution Burden (ex. 83) × **Population Characteristics (ex. 99)** = **CalEnviroScreen Score (ex. → 96-100 %ile)**



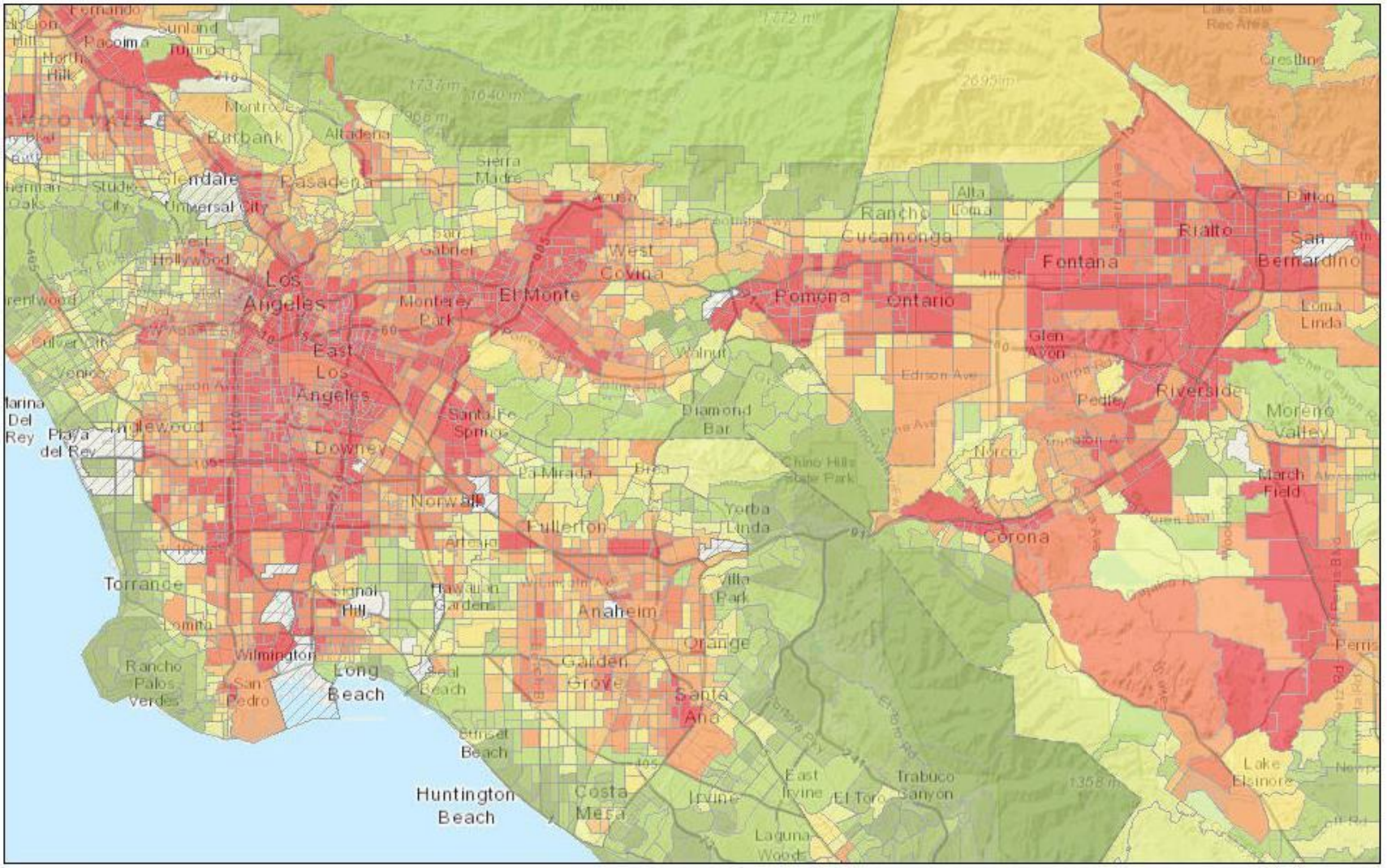
Highest 5% in State



CalEnviroScreen Version 2.0 Results

Statewide

CalEnviroScreen 2.0 Results: Greater Los Angeles Area



February 19, 2015

CalEnviroScreen 2.0 Results

- Lowest Scores (Bottom 10%)
- 11 - 20%
- 21 - 30%
- 31 - 40%
- 41 - 50%
- 51 - 60%
- 61 - 70%
- 71 - 80%
- 81 - 90%
- Highest Scores (91 - 100%)
- High pollution, low population

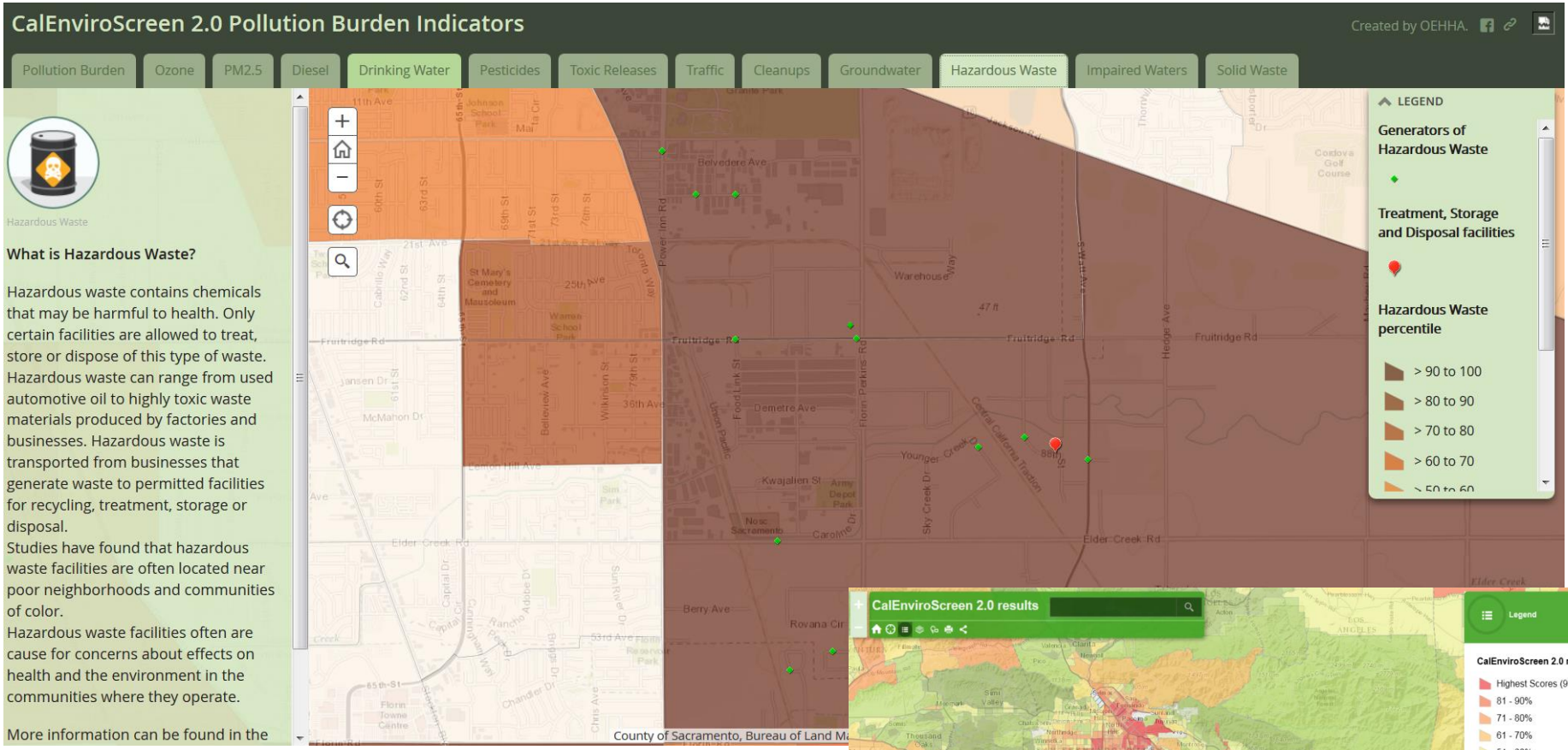
1:577,791

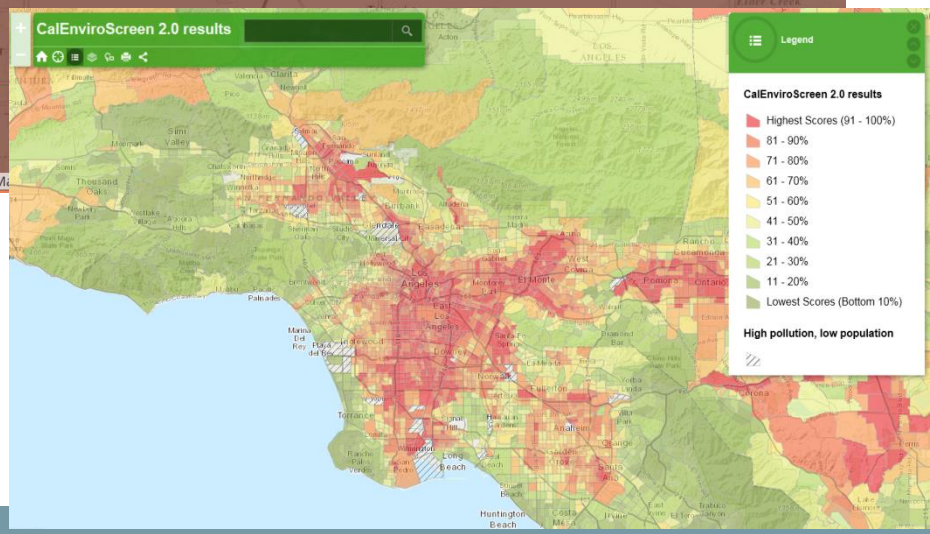
0 5 10 20 mi

0 5 10 20 km

Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL,

RESULTS—ONLINE TOOL

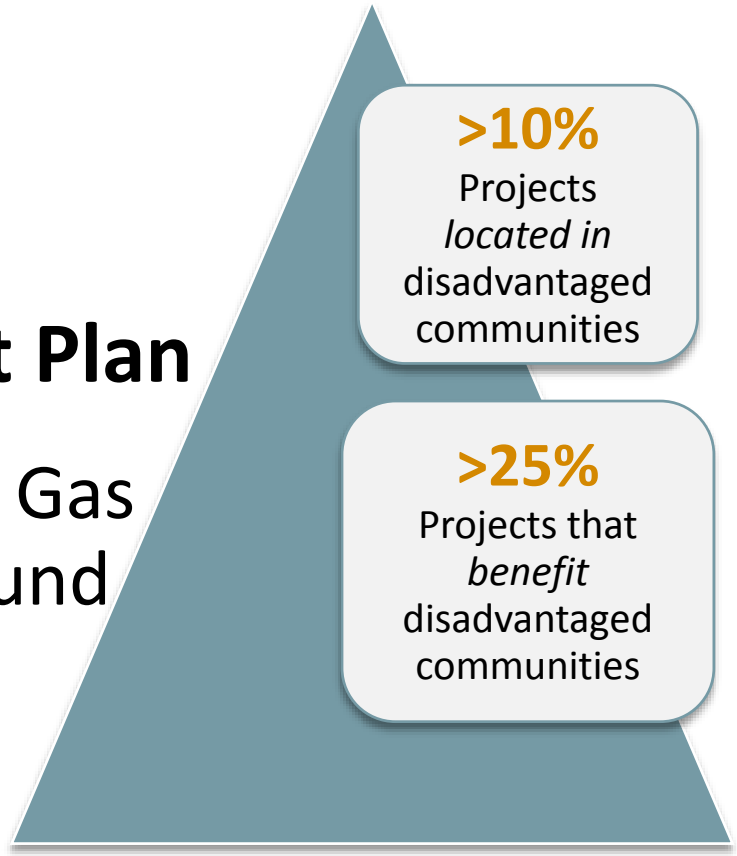




oehha.ca.gov/calenviroscreen

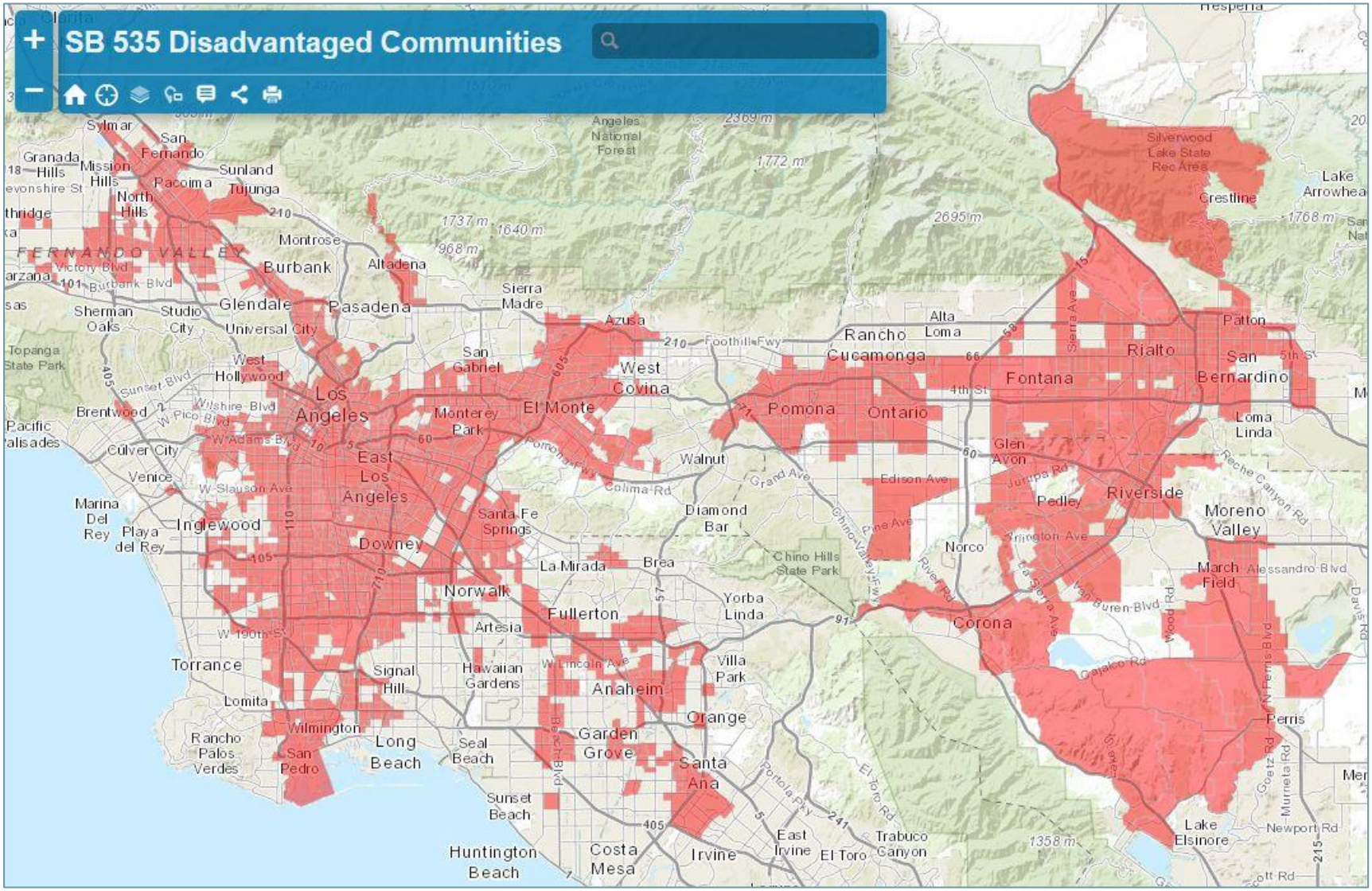
USING CALENVIROSCREEN SB 535 (DE LEÓN, 2012)

- **Investment Plan**
- Greenhouse Gas Reduction Fund



"CalEPA shall identify 'disadvantaged communities' for investment opportunities based on ***geographic, socioeconomic, public health*** and ***environmental hazard*** **criteria**."

SB 535 Disadvantaged Communities in Greater Los Angeles Area



NEXT VERSION OF CALENVIROSCREEN

- Expected early 2017
- Update with most recent data across indicators
- Evaluate additional health data – cardiovascular disease
- Evaluate cost of living considerations for income-related measure
- Improve characterization of California-Mexico border area (AB 1059, Garcia)
- Proposal to remove age indicator and perform separate analysis

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