



CALENVIROSCREEN: A NEW TOOL FOR EVALUATING COMMUNITIES IN CALIFORNIA

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CALENVIROSCREEN 1.0

CALIFORNIA COMMUNITIES ENVIRONMENTAL HEALTH SCREENING TOOL, VERSION 1 (CALENVIROSCREEN 1.0)

GUIDANCE AND SCREENING TOOL



April 2013

Matthew Rodriguez, Secretary
California Environmental Protection Agency

George V. Alexeeff, Ph.D., Director
Office of Environmental Health Hazard Assessment



- ❖ A broad picture of the relative burdens communities face from environmental pollution.
- ❖ 18 indicators of environmental, health, and socioeconomic conditions.
- ❖ Guidance on potential uses of tool.

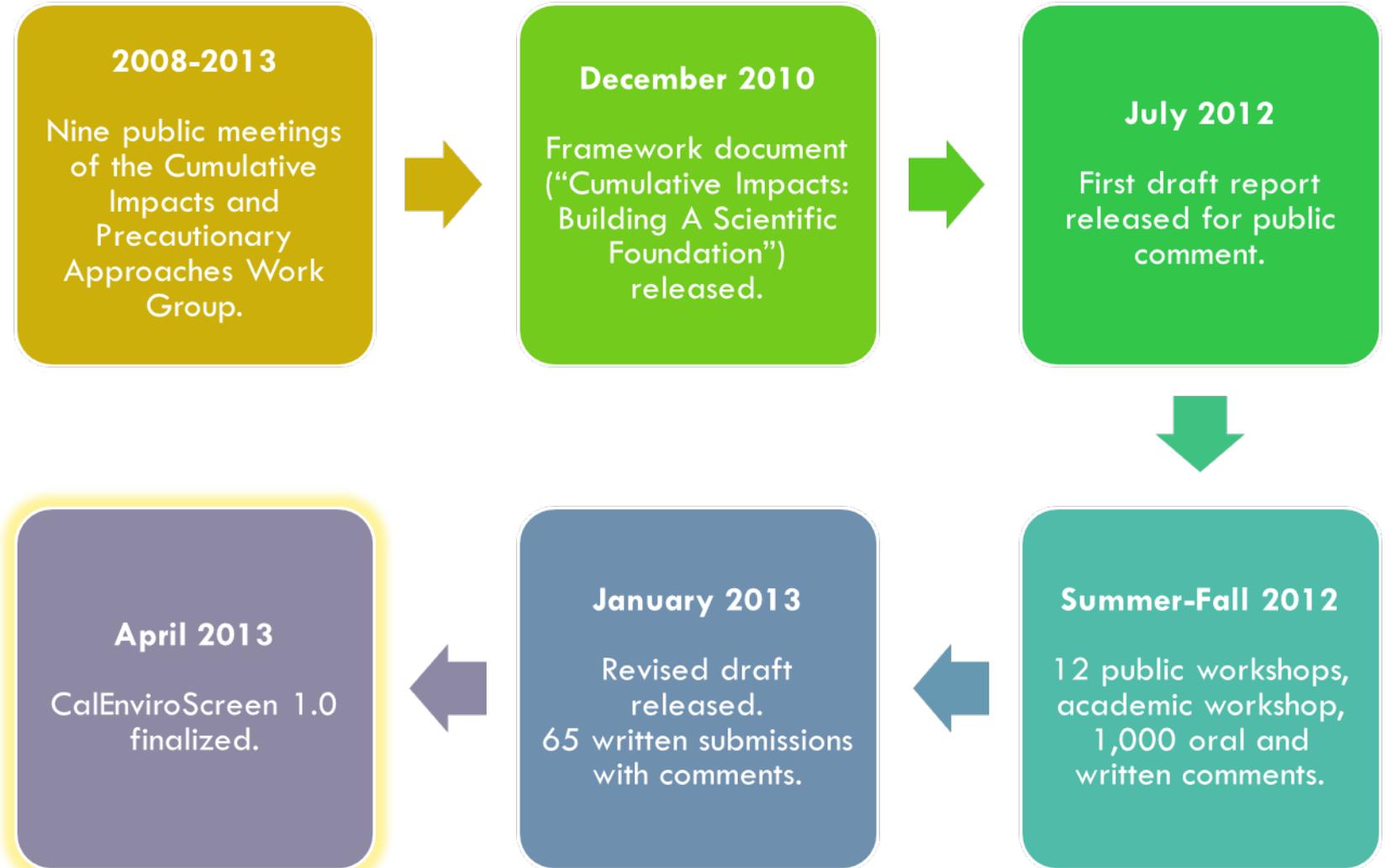
PROGRAM ORIGINS IN ENVIRONMENTAL JUSTICE

- 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), 1999
- Cal/EPA’s responsibilities
 - Required development of interagency environmental justice strategy for Cal/EPA (Completed 2004)
 - Required each of the Cal/EPA boards and departments to review, identify, and address program obstacles impeding the progress of environmental justice

Public Resources Code §71113, 2000

DEVELOPMENT OF CALENVIROSCREEN 1.0



FOCUS OF CALENVIROSCREEN

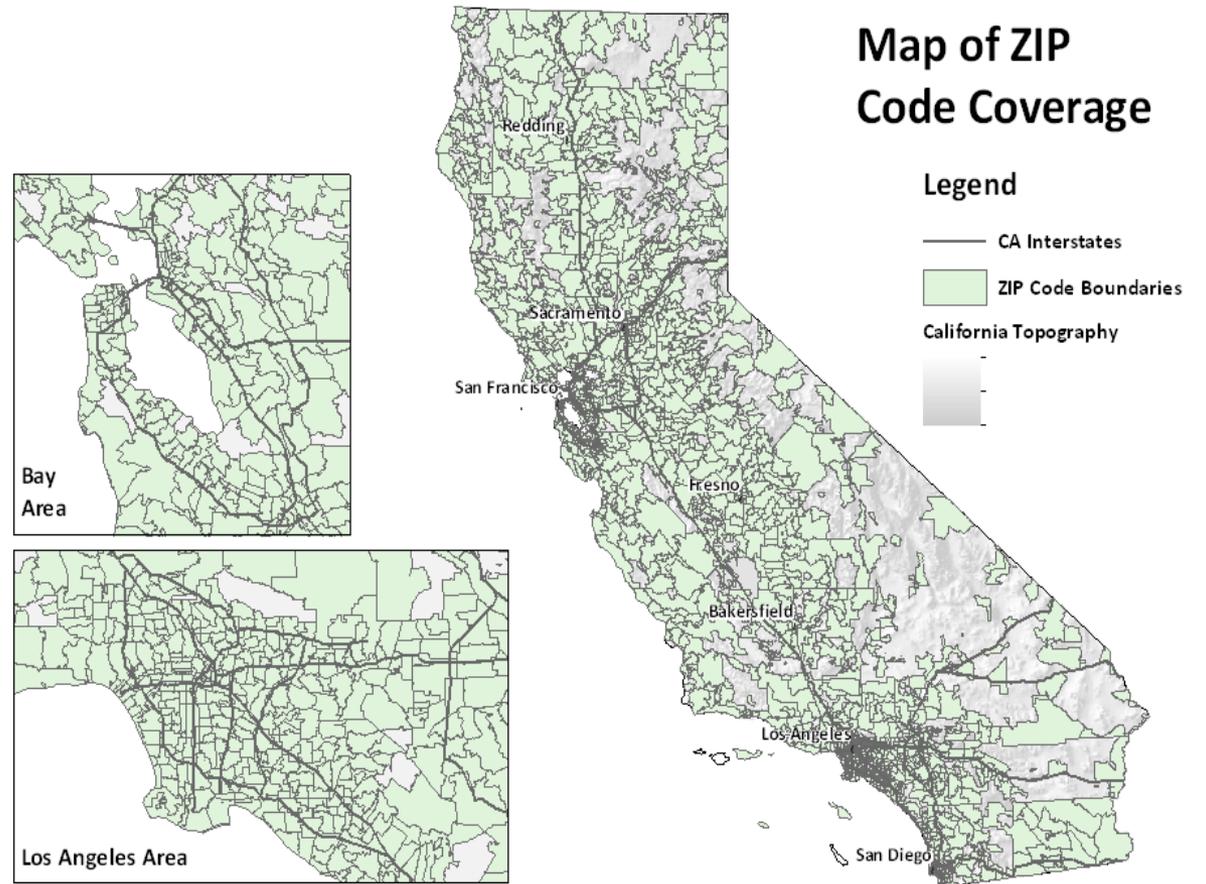
“...**exposures, public health or environmental effects** from the combined **emissions and discharges** in a **geographic area**, including environmental **pollution** from all **sources**, whether single or multi-media, routinely, accidentally, or otherwise released. Impacts will take into account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

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



GEOGRAPHICAL UNIT: ZIP CODE

- Familiar scale
- Publicly established
- Not too large
- Not too small



INDICATORS

| Pollution Burden | | Population Characteristics | |
|--|---|--|---|
| Exposures | Environmental Effects | Sensitive Populations | Socioeconomic Factors |
| <ul style="list-style-type: none"> <input type="checkbox"/> PM 2.5 concentrations <input type="checkbox"/> Ozone concentrations <input type="checkbox"/> Diesel PM emissions <input type="checkbox"/> Pesticide use <input type="checkbox"/> Toxic releases from facilities <input type="checkbox"/> Traffic density | <ul style="list-style-type: none"> <input type="checkbox"/> Cleanup sites <input type="checkbox"/> Groundwater threats <input type="checkbox"/> Impaired water bodies <input type="checkbox"/> Solid waste sites and facilities <input type="checkbox"/> Hazardous waste facilities and generators | <ul style="list-style-type: none"> <input type="checkbox"/> Prevalence of children and elderly <input type="checkbox"/> Asthma emergency department visit rate <input type="checkbox"/> Rate of low birth weight births | <ul style="list-style-type: none"> <input type="checkbox"/> Educational attainment <input type="checkbox"/> Linguistic isolation <input type="checkbox"/> Poverty <input type="checkbox"/> Race/ethnicity |

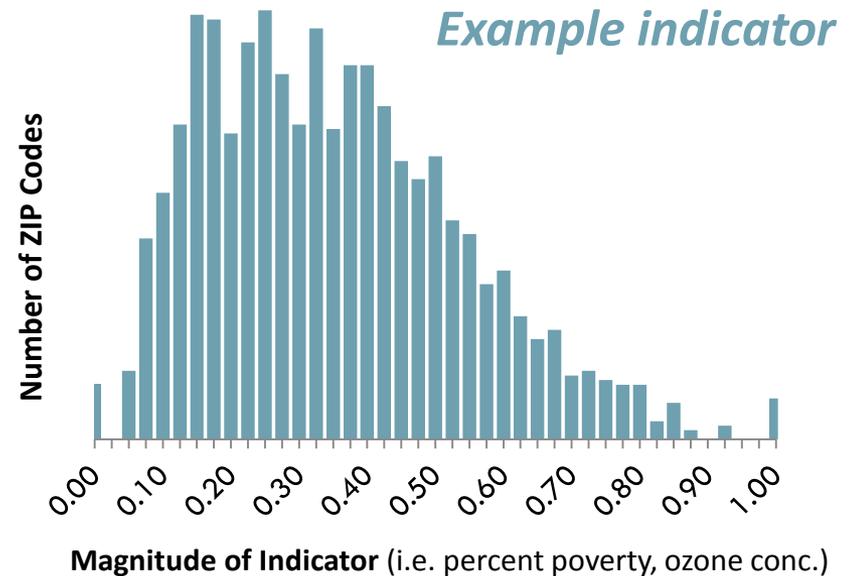
CRITERIA FOR INDICATOR SELECTION

- Provide a good measure of the contribution to the component
- Pollution burden indicators should relate to issues that may be actionable by Cal/EPA
- Population characteristic indicators should relate to factors that may influence vulnerability to disease
- Publicly available
- Statewide, with location-based information
- Good quality data (e.g., accurate, current)



SCORING

For each indicator and ZIP, calculate a percentile value based on where they fall in the statewide distribution.



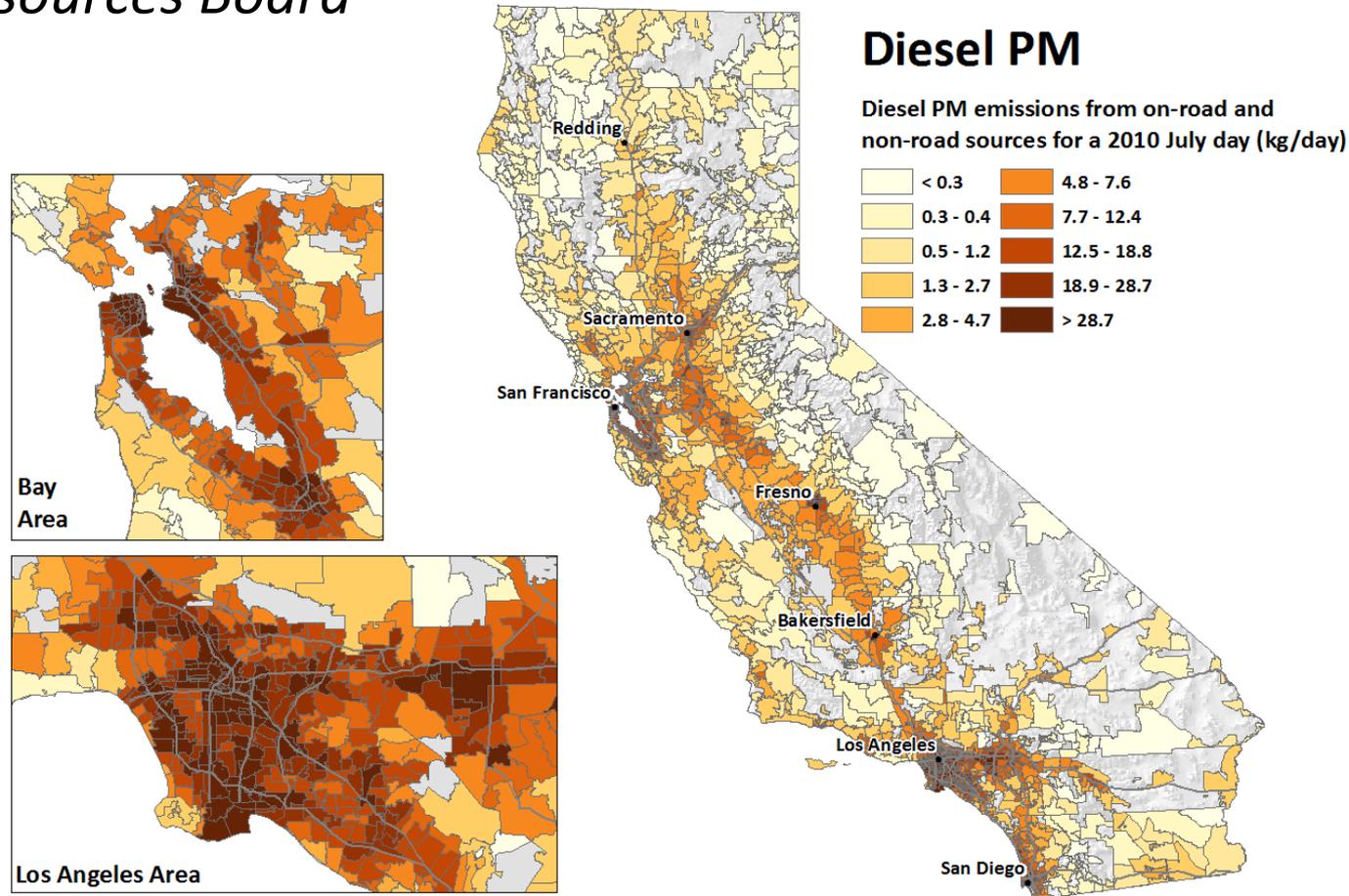
| Components | Maximum Score |
|---|------------------------------|
| Exposures & Environmental Effects (1/2) | 10 |
| Sensitive Populations & Socioeconomic Factors | 10 |
| CalEnviroScreen Score | Up to 100 (= 10 x 10) |



INDICATOR: DIESEL PARTICULATE MATTER

Emissions from on-road and non-road sources for 2010

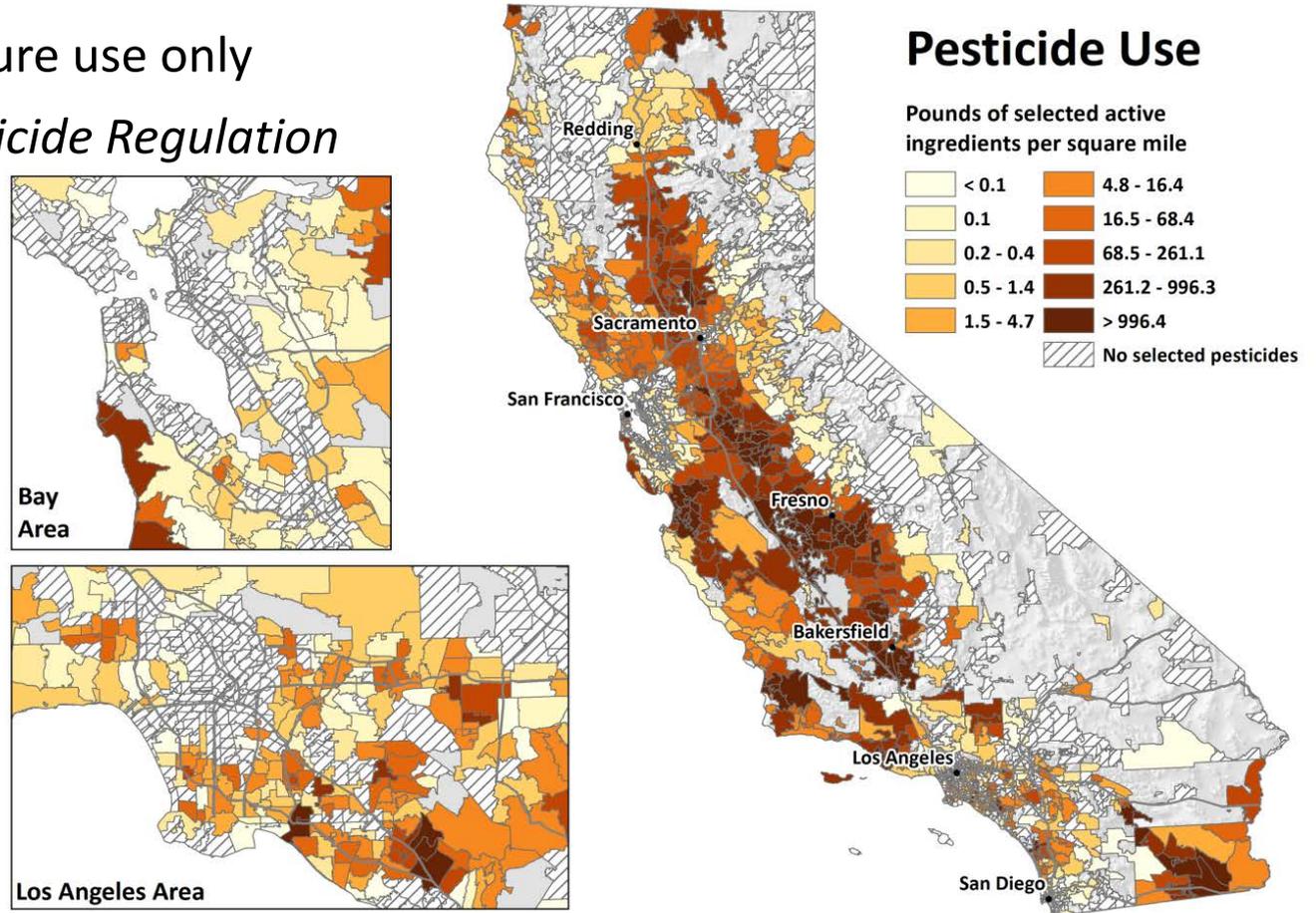
□ *California Air Resources Board*



INDICATOR: PESTICIDE USE

Pounds of pesticides used per square mile

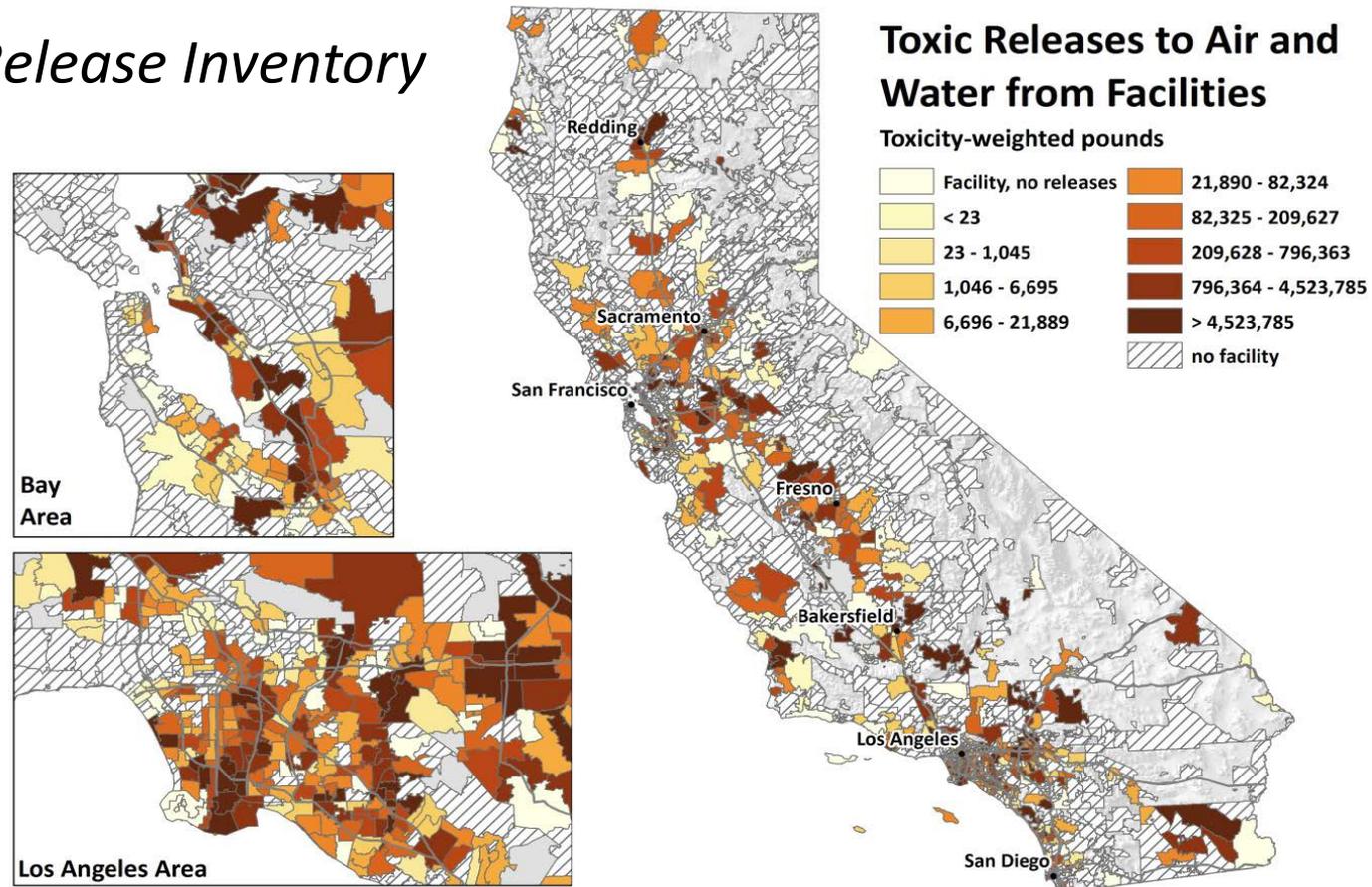
- Toxic and volatile pesticides only
- Production agriculture use only
- *Department of Pesticide Regulation*



INDICATOR: TOXIC RELEASES FROM FACILITIES

Total toxicity-weighted pounds of chemicals released

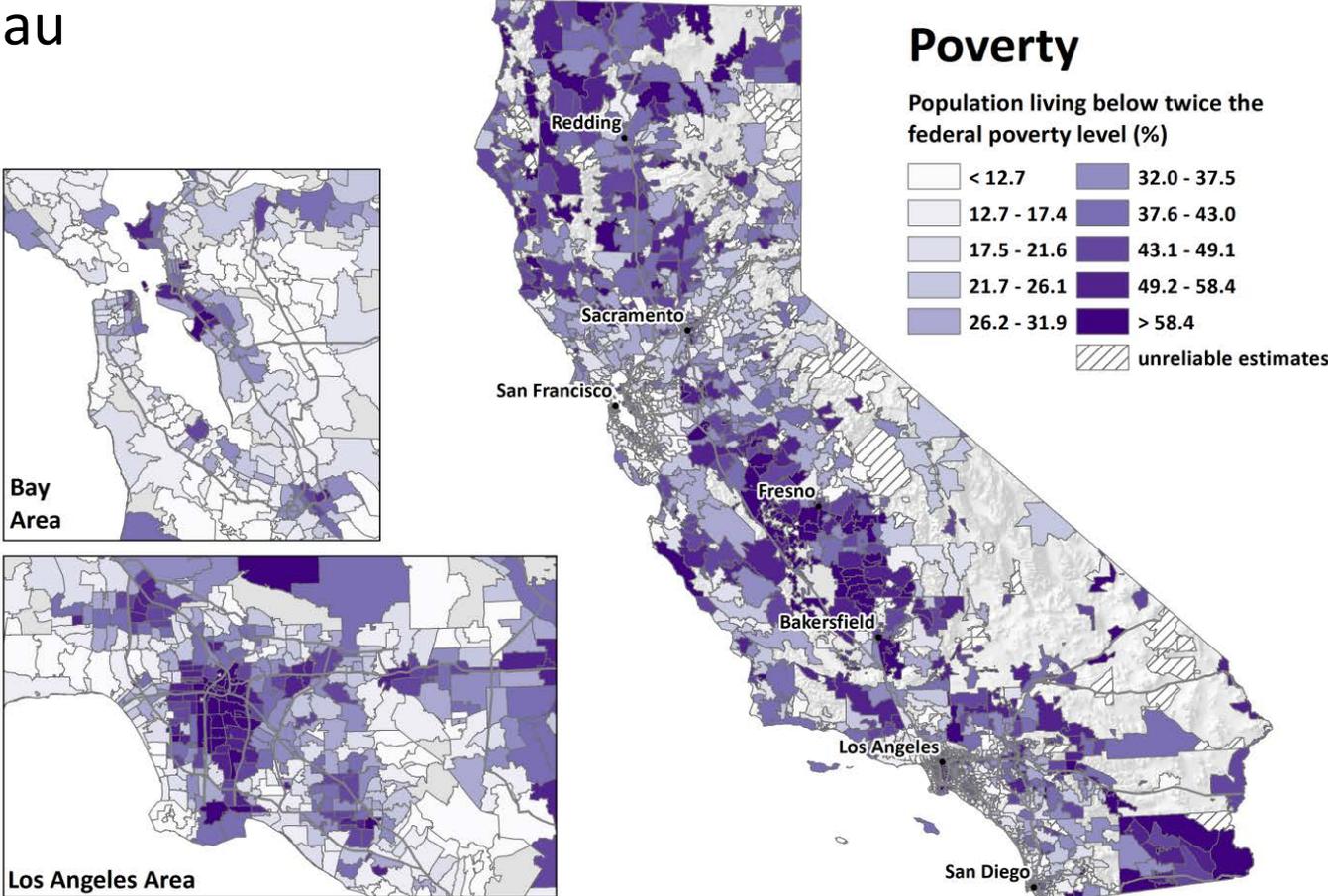
- On-site releases to air or water
- *US EPA's Toxic Release Inventory*



INDICATOR: POVERTY

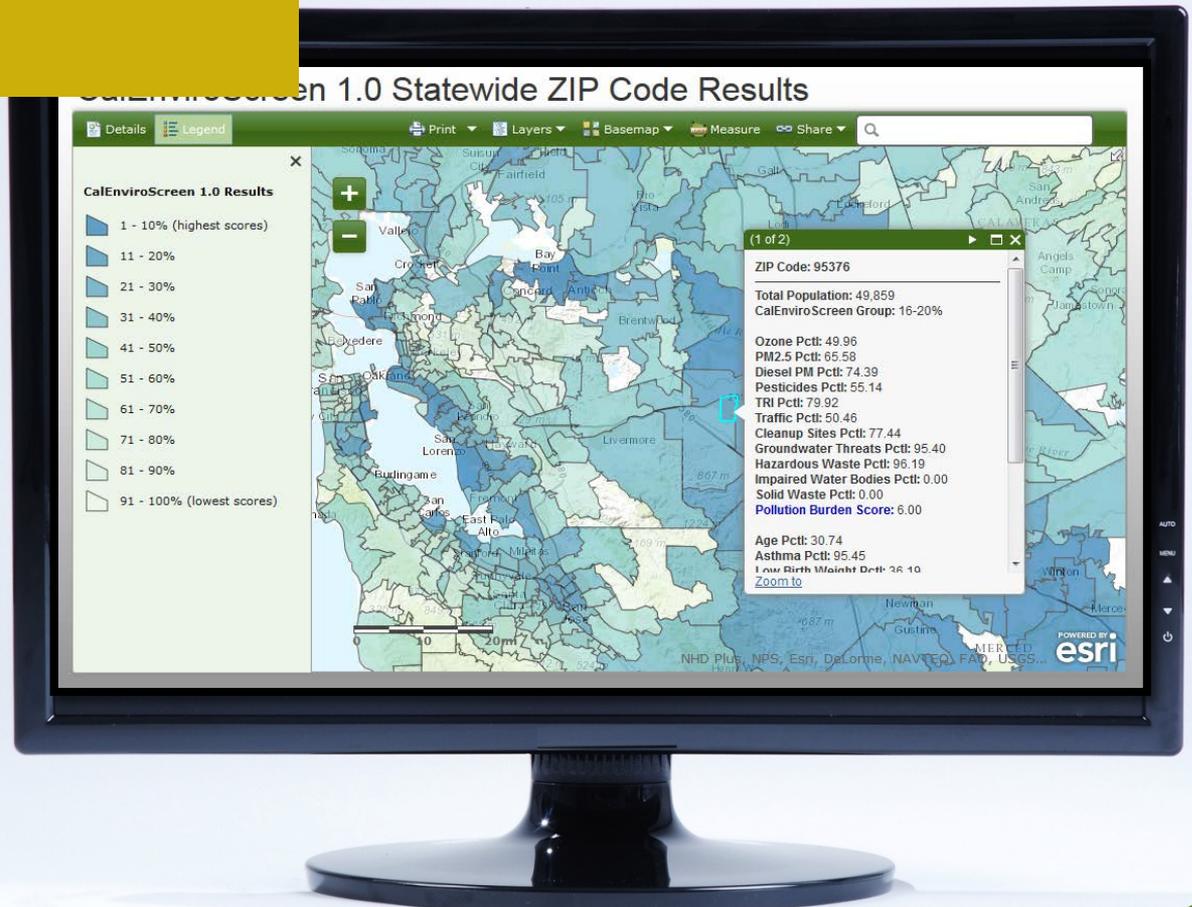
Percent of the population below twice the federal poverty level

□ US Census Bureau



ONLINE TOOL

Available at:
oehha.ca.gov/ej





ONLINE TOOL DEMONSTRATION

PUBLICLY AVAILABLE RESULTS

- CalEnviroScreen Report
 - ▣ Maps for individual indicators (small)
 - ▣ Description of each indicator
- Excel spreadsheet
 - ▣ “Raw” values and percentiles for each indicator
 - ▣ Overall CalEnviroScreen scores
 - ▣ Grouped scores (e.g., Top 5 and 10% scoring ZIPs, etc.)
- Google Earth results (overall; Top 5 & 10%)
- ArcGIS geodatabase
- On-line mapping tool (ArcGIS On-Line)



POTENTIAL USES OF TOOL

- To aid ongoing planning and decision-making within Cal/EPA
 - ▣ Environmental Justice Small Grant program
 - ▣ Prioritize site-cleanup activities and promote greater compliance with environmental laws
 - ▣ Allocate funds from Greenhouse Gas Reduction Fund (Cap-and-Trade Program) to “disadvantaged communities”
- Caveat
 - ▣ The tool is not a health risk assessment

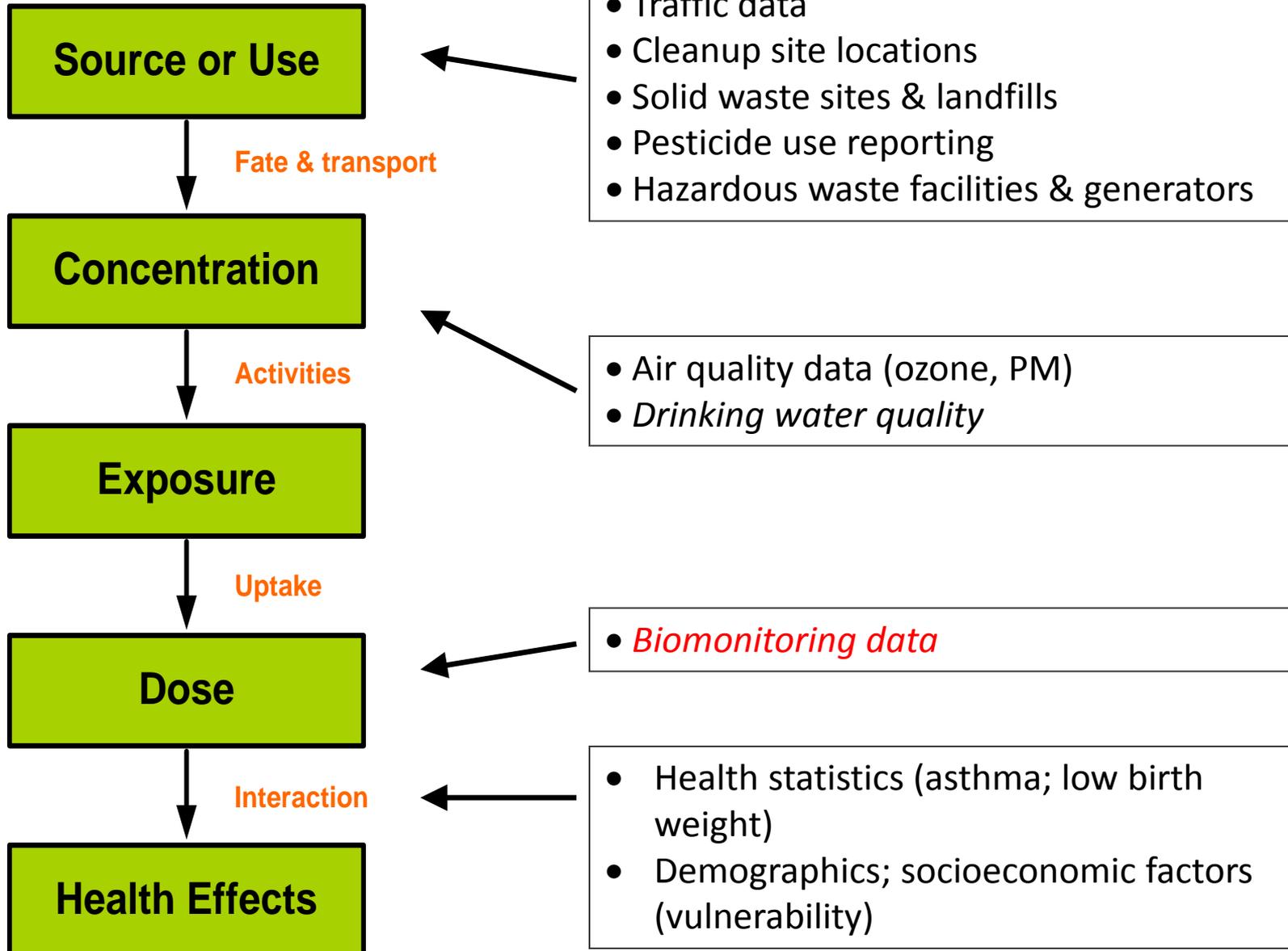


ONGOING AND FUTURE WORK

- Census tract scale analysis
 - ~8,000 census tracts in California vs. ~1,800 ZIP Codes
- Drinking water quality indicator

- Consider ways that data can be used to examine trends and improvements in environmental conditions.

THE HEALTH RISK MODEL



FOR MORE INFORMATION

CalEnviroScreen 1.0 report (English and Spanish), and online mapping application with information on individual ZIP codes:

□ <http://www.oehha.ca.gov/ej/ces042313.html>

E-mails when new information is available: OEHHA's listserv, select "Cumulative Impacts":

□ <http://www.oehha.ca.gov/Listservs/default.asp>

Email: CalEnviroScreen@oehha.ca.gov

ACKNOWLEDGEMENTS

OEHHA

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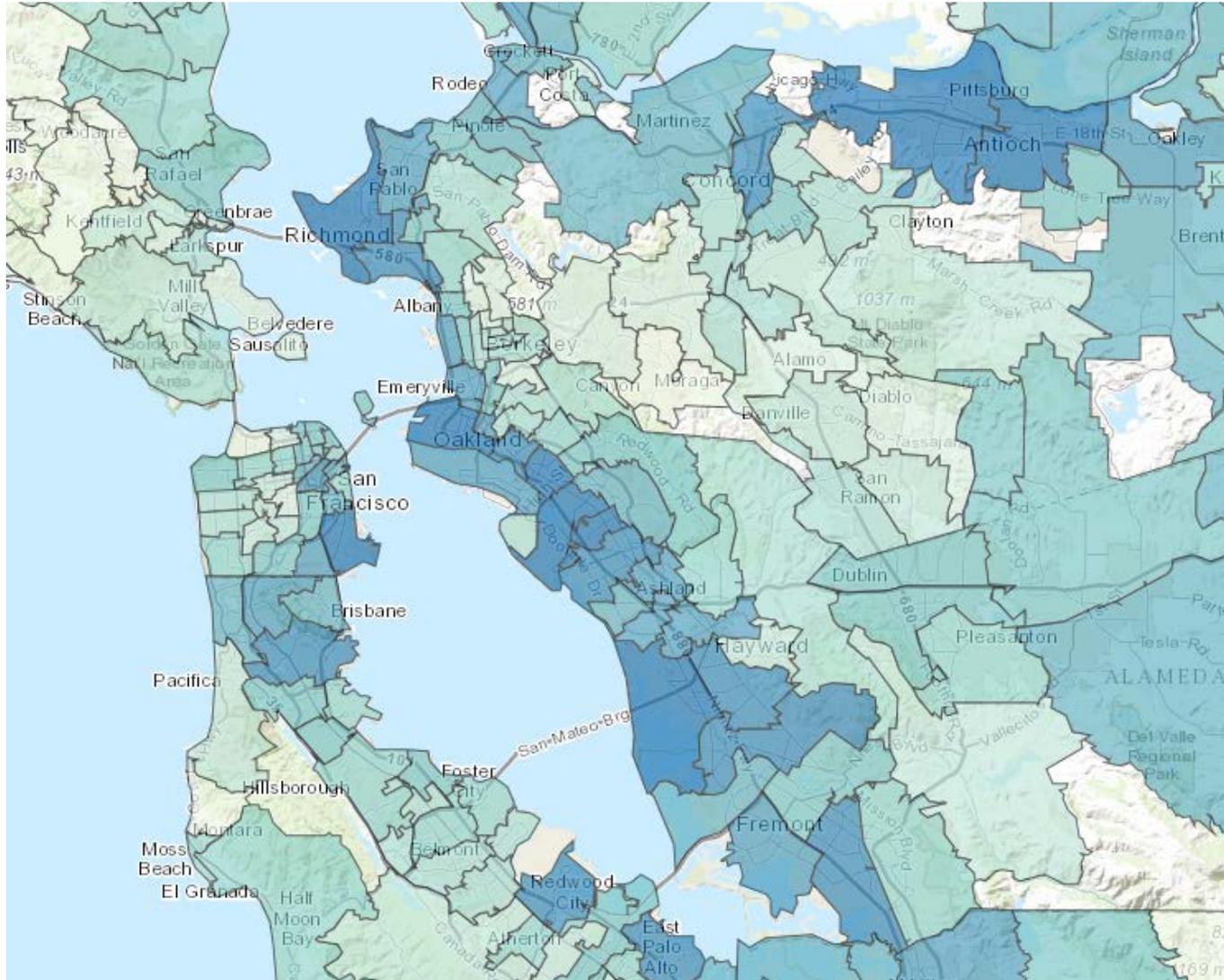
Cal/EPA

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- ▣ Academic expert panel who provided comments at a workshop in September 2012
- ▣ Graduate students assisting in the project

ALL CES SCORES: SAN FRANCISCO BAY AREA



ZIP CODE 94607: WEST OAKLAND

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