

# Environmental Justice Screening Method Webinar

Wednesday, May 13, 2015

## Comparison of Metric Indicators:

Indicators	EJSM	CEVA	CES
<b>Hazard Proximity Metrics - Sensitive Land Uses</b>			
Childcare facilities	X		
Healthcare facilities	X		
Schools	X		
Urban Parks Playgrounds	X		
Senior Residential	X		
<b>Hazard Proximity Metrics - Polluting Facilities/Land Uses</b>			
CARB Facilities of Interest (FOI) (air toxics and GHG emissions facilities )	X		
Industry-wide facilities (auto paint/body, gas stations)	X		
Hazardous/solid waste facilities, cleanup sites	X	X	
Railroads	X		X
Ports	X		X
Refineries	X	X	
Intermodal distribution facilities	X		
Traffic exposure	X		X
Chrome plating facilities (FOI)	X	X	
Cleanup sites (EnviroStor)		X	X
Solid waste (FOI)	X	X	X
Groundwater threats from leaking underground storage sites and cleanups (GeoTracker)		X	X
Impaired water bodies		X	X
<b>Health Risk and Exposure Metrics</b>			
Risk Screening Environmental Indicators	X		X
National Air Toxics Assessment – cancer risk	X		
National Air Toxics Assessment – respiratory hazard	X		
PM <sub>2.5</sub> (interpolated from CARB monitors)	X		X
Ozone (interpolated from CARB monitors)	X	X	X
Diesel PM emissions*	X		X
Pesticide exposure	X	X	X
Water quality – contaminants	X	X	X
Water quality – source vulnerability	X		
Impaired water bodies		X	X
<b>Social and Health Vulnerability Metrics</b>			
Race/ethnicity	X	X	
Poverty level	X	X	X
Educational attainment	X	X	X
Age (<5 and >64)	X	X	X
Linguistic isolation	X	X	X
Unemployment		X	X
% renters	X	X	
Median house value	X		
Voter participation	X		
% Low birth weight and/or SGA	X	X	X
Asthma hospitalization		X	X
<b>Climate Vulnerability Metrics</b>			
Tree canopy	X		
Impervious surfaces	X		
Projected temperature and temperature changes	X		
Projected increase in warm nights	X		
% elderly living alone	X		
% car ownership	X		

\*In the EJSM, diesel PM emissions data are folded into the NATA cancer risk data.

## Differences among Screening Methods:

### Metrics Categories and Scoring

- Variation in number of indicator metrics
  - Variation in grouping of indicators for scoring
  - Different range of scores among methods
- } Implies different “weighting” for some metrics
- **EJSM:**
    - Linear ranking within each category that are summed and re-ranked
    - Open-ended to accommodate additional indicators (3-15)
    - Elevates regional scoring
  - **CES:**
    - Indicator categories multiplied for a continuous, open-ended score
    - Scores grouped into percentiles—same number of tracts for each score value
    - Statewide scoring only
  - **CEVA:**
    - 3x3 scoring matrix (1-9) with separate axes for impact and vulnerability
    - Scores have been applied to selected regions

### Maps and Geographic Analysis

- Differences in spatial units for analysis and scores/mapping across methods
  - **EJSM:** uses smallest spatial unit available for each data type, but eventually aggregated to census tracts for final analysis and scoring
    - Land Use: tax parcels, municipal land use or zoning data, interpreted aerial imagery
    - Hazard proximity first weighted by census block population before aggregating up to tracts
  - **CES** and **CEVA** use census tracts
- Resulting map pattern:
  - **EJSM:**
    - Uses “land use masks” to focus on populated areas
    - Scores follow bell-shaped curve, meaning fewer tracts at the extreme ends
  - **CES:**
    - Maps have 20 different score colors, each with the same number of tracts
  - **CEVA:** Census block groups have greater size across some regions than do tracts, which may affect map pattern