

Cumulative Environmental Vulnerabilities: Opportunities for Enhancing Regional Clean Air Policy and Quality

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San Joaquin Valley Air Pollution Control District

Fresno, CA

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Road Map

- EJ 101 (what is it?, how can we achieve it?)
- Framing the challenge and opportunity
- Research methods and findings (CEVA)
- Policy Opportunities
- Discussion

Three Dimensions of EJ Issues

- Outcomes: Who bears disproportionate impacts?
- Process: Who is included in decision-making? How?
- Science: Whose knowledge is considered legitimate?

Three Responses to EJ Issues

- Social movement(s) contesting inequitable distribution of environmental risks, opportunities and decision-making based on race, ethnicity, class, gender, etc.
- Policy responses to address environmental disparities
- Academic cross-discipline drawing from sociology, geography, political science, cultural studies, history and others that analyzes environmental inequalities and responses to them.

Defining Environmental Injustice

“in which racial minorities are **disproportionately exposed** to environmental hazards and **systematically excluded** from environmental decision-making.”

Pulido, Laura. 1996. *Environmentalism and Economic Justice: Two Chicano Struggles in the Southwest*. Tucson, AZ: The University of Arizona Press.

Defining Environmental Justice

Environmental Justice Principle



Environmental justice embraces the principle that all peoples and communities are entitled to equal protection of our environmental, health, employment, housing, transportation, and civil rights laws.

Regulating Environmental Justice

Federal: Executive Order 12898 (1994)

“...each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, **disproportionately high and adverse human health or environmental effects** of its programs, policies, and activities on minority populations and low-income populations...”

CA Government Code 65040.12 (c):

“Environmental Justice (EJ) means “the **fair treatment of people of all races, cultures and income** with respect to development, adoption and implementation of environmental laws, regulations and policies.”

- (After SB 115: Solis, 1999)

Regulating Environmental Justice

“ The **fair treatment and meaningful involvement** of all people regardless of race, color, national origin, or income with respect to the **development, implementation, and enforcement** of environmental laws, regulations and policies. Fair treatment means that **no group of people, including racial, ethnic, or socio-economic groups should bear a disproportionate share of the negative environmental consequences** resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies.”

U. S. Environmental Protection Agency. Guidance for Incorporating Environmental Justice in EPA's NEPA Compliance Analysis. Washington, DC: USEPA, 1998

Precautionary Principle



“When an activity raises threats of harm to human health or the environment, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically.”

“In this context the proponent of an activity, rather than the public, should bear the burden of proof.”

-- (Wingspread Conference on the Precautionary Principle, 1998)

Cumulative Impacts in Policy

“The 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 socio-economic factors, where applicable and to the extent data are available.”

Cal/EPA Interagency Working
Group on Environmental
Justice (IWG)

Voices on Cumulative Impacts

“...it’s not just about the headaches, it’s not just about the running nose, it’s not just about the watery eyes, it’s not just about the dizziness, and it’s not just about losing one day’s work. It’s an effect that’s creating many impacts on your body. And, it’s about, what’s going to happen to you later on? And you know, it’s a whole.... toxic.”

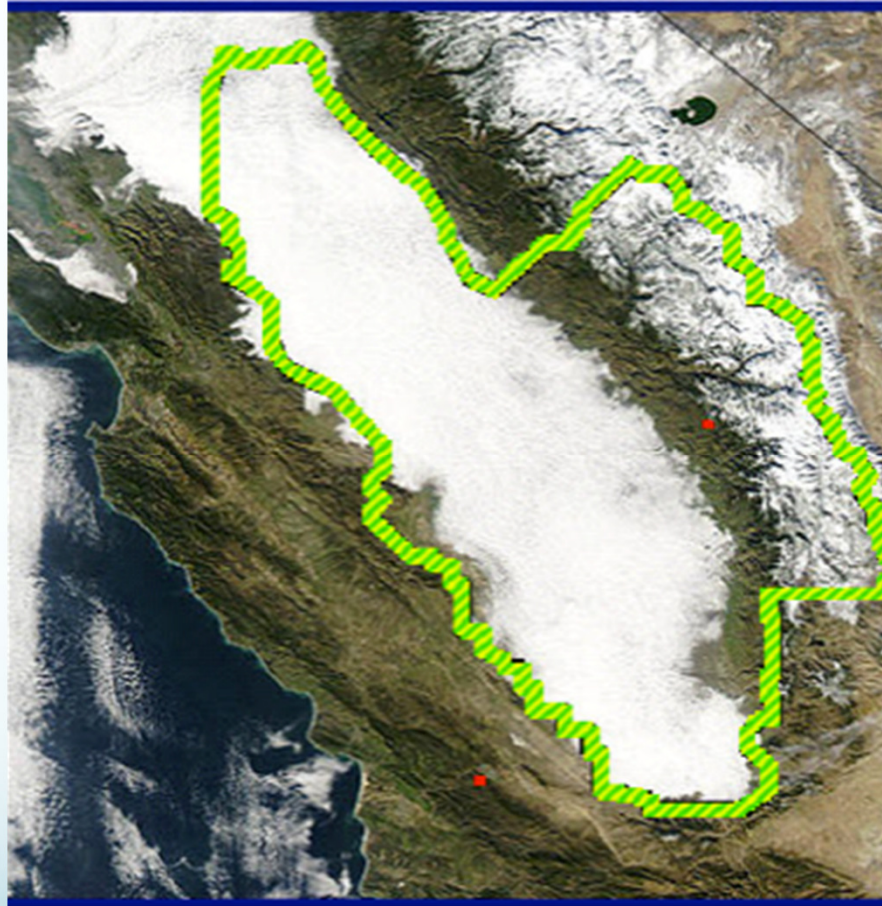
- EJ leader

Challenges in EJ Process

Author's studies of EJ advisory committees (CalEPA, CalFed, DPR, CARB/ AB 32) highlight common challenges:

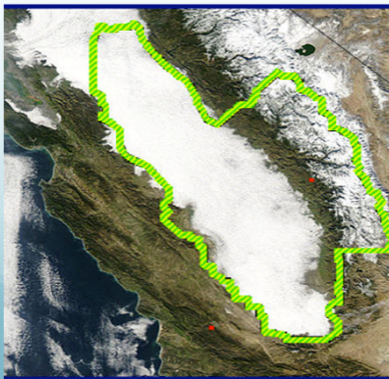
- Limited decision-making authority
- Reactive versus proactive approach
- Limited responsiveness to advisor's concerns
- Inadequate resources (staff, information, funding)
- Concerns over process lead to more conflict, not conflict resolution.

EJ in the SJV



Regional **Challenges** and **Opportunities**

- The hot/cold inverted bowl of the SJ Valley
- Wealthy land/ less-wealthy people and communities
- Limited philanthropic and public funding
- Disconnection between sources of problems and effective policy levers
- Important progress in cleaning valley air
- Innovative public engagement (EJAG, CAC)
- Committed non-profit organizations
- Strong research base for understanding air quality and informing policy
- Recent agency innovations on cumulative impacts (OEHHA, CARB, SGC, EPA)



Air District Commitments

- The District's Risk-based Strategy for the 2012 PM2.5 Plan will “proactively prioritize public health benefits”
- “The District is looking for opportunities to prioritize future regulatory control measures, incentive programs, and public engagement efforts that achieve disproportionate health benefits.”

"Action Plan for Development of
Upcoming Attainment Plans for New
Ozone and Particulate Standards"
Feb. 16, 2012

EJ Requirements

Air Districts with more than 1 million inhabitants are required to spend at least 50 percent of their state incentive funds, including Carl Moyer Program funds, in a manner that directly benefits low-income communities and communities of color *that are disproportionately affected by air pollution.*

- CA Health and Safety Code Section 43023.5 (after AB1390, Firebaugh)

Carl Moyer Program Criteria

Table III-3

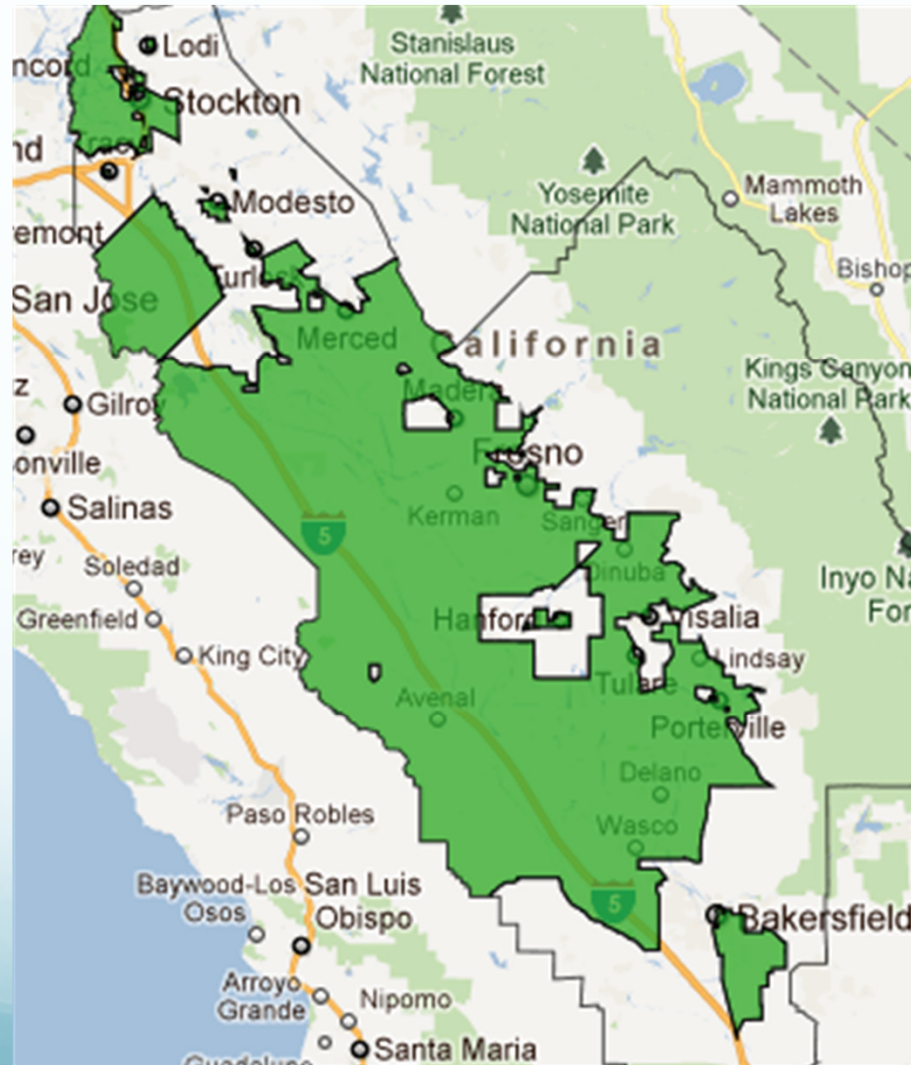
**Environmental Justice Criteria Used
by Air Districts for Project Selection**

	PM Exposure	Criteria or Toxic Pollutant Exposure	Poverty Level	Communities of Color	Sensitive Population ^a
Bay Area AQMD	X	X			X
South Coast AQMD	X	X	X		
San Joaquin Valley APCD			X	X	
Sacramento AQMD		X	X	X	
San Diego AQMD	X		X		
Mendocino County AQMD			X	X	
Monterey Bay Unified APCD		X	X	X	

a. Includes communities with high numbers of children and elderly (newborn to 17 and ≥65 years of age).

SJVAPCD EJ Map

- 50% Hispanic/Latin o AND
- ($\geq 10\%$ below federal poverty level)



EJAG Action Plan 2010

Goal/Objective 4: Develop a complete understanding of the manner by which the District utilizes EJ maps in disbursing emission reduction incentive grants and develop recommendations for the use of EJ maps in grant funding decisions and public outreach and education.

Action Plan

Action Item	Who's Responsible?	Timeline	Deliverables
Receive a presentation from the District concerning the use of District EJ maps that were developed with input from EJAG.	EJAG District	2 nd quarter 2010	Description and purpose of the maps
Develop recommendations for the use of EJ maps in grant funding decisions and public outreach and education	EJAG Members	2 nd and 3 rd quarter 2010	Develop specific recommendations Present recommendations to CAC for approval Submit recommendations to APCO if approved by CAC

**LAND OF
RISK**

**LAND OF
OPPORTUNITY**



**Cumulative Environmental Vulnerabilities
in California's San Joaquin Valley**

**Jonathan London Ph.D.,
Ganlin Huang Ph.D., and Tara Zagorsky M.S.**

UCDAVIS
CENTER FOR REGIONAL CHANGE

November 2011

San Joaquin Valley

CUMULATIVE HEALTH IMPACTS PROJECT (SJV-CHIP)

SJVCHIP is a collaborative of environmental justice and community health organizations who seek to reduce the cumulative impact of environmental contamination particularly in communities that are heavily burdened by or especially vulnerable to pollution such as low-income and communities of color within the San Joaquin Valley.

PARTNER ORGANIZATIONS:



NOW AVAILABLE:

2011 REPORT

Jonathan London Ph.D.,
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Tara Zagotsky M.S.



LAND OF RISK

LAND OF OPPORTUNITY

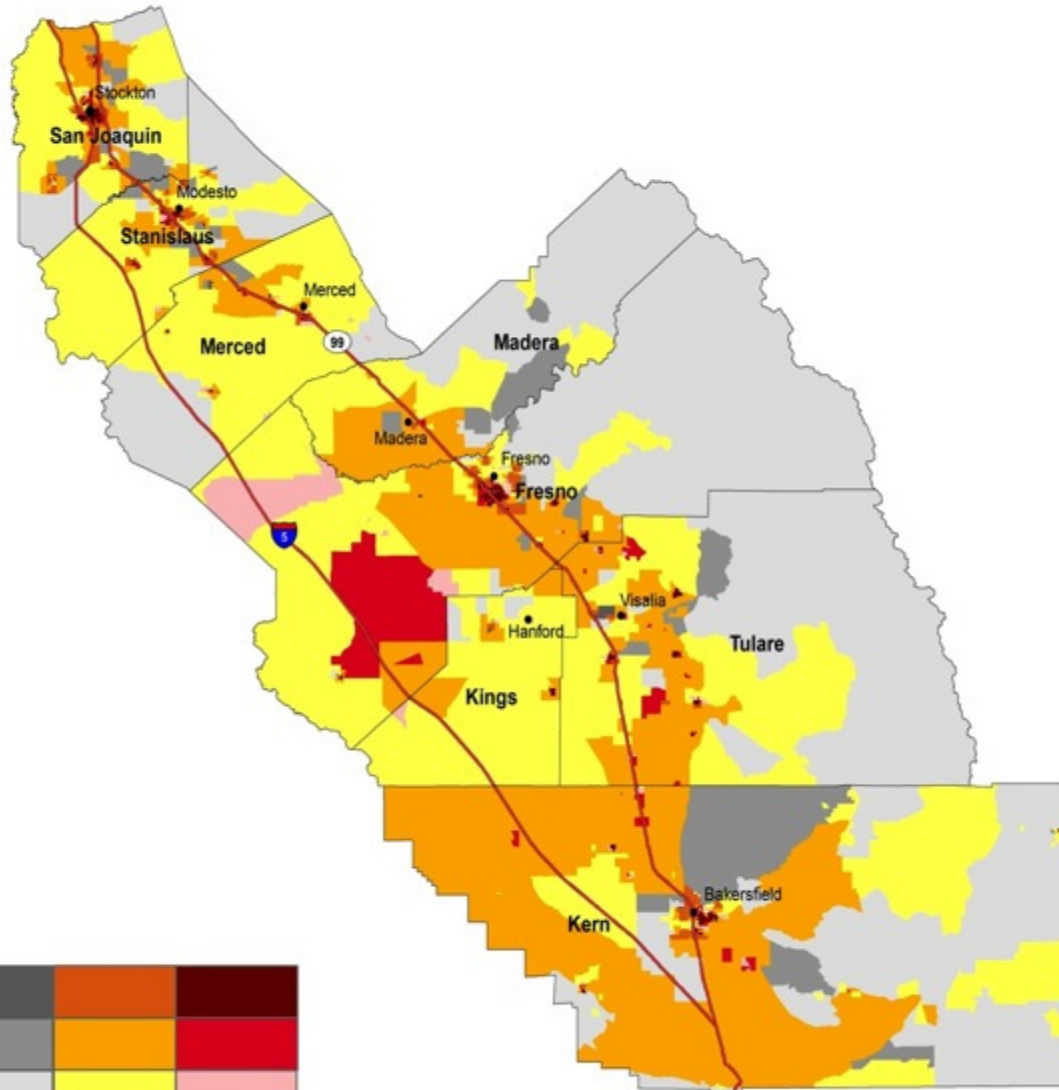


Key Findings

- **A region at risk.** Nearly 1/3 (1.2 million) of San Joaquin Valley residents face extreme cumulative environmental and social vulnerability.
- **More environmental hazards exist than are publically documented:** Residents identified many more environmental hazards than are documented or addressed by the state and federal regulatory inventories.
- **Not all vulnerability is equal:** The combination of environmental risk and social vulnerability is not randomly distributed across the region, but rather concentrated within particular communities.
- **Collaborative action** is needed, focused on the most vulnerable people and places.

Index	Dataset		Source
Cumulative Environmental Hazards Index	Point source pollution emission sites	Toxic release inventory sites	U.S. EPA, 2006
		Petroleum refineries	U.S. EPA, 2006
		Hazardous waste treatment, storage and disposal facilities	U.S. EPA, 2006
		Chrome platters	U.S. EPA, 2006
	Pesticide application	Total amount active ingredient of pesticide application per square mile.	CA Dept. of Pesticide Regulation, 2007
Cancer risks from inhaled air toxics	National Air Toxics Assessment	U.S. EPA, 2005	
Social Vulnerability Index	Sensitivity of receptors	Percent of people younger than 5 or older than 60 in census block group	American Community Survey 2005-2009
		Locations of health care facilities	Cal -Atlas, 2010
	Availability of social/ economic resources	Percent of linguistically isolated households	American Community Survey 2005-2009
		Percent of population in poverty	American Community Survey 2005-2009
		Percent of people of color	American Community Survey 2005-2009
		Percent of people older than 25 without a high school diploma	American Community Survey 2005-2009
Health Index	Health condition	Low birth weight rate	CA Dept. of Public Health, 1999-2007
		Years of potential life lost before age 65	CA Dept. of Public Health, 1999-2007
		Asthma hospitalization rate ages 0-19	CA Office of statewide health planning and development, 1999-2007

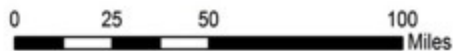
Cumulative Environmental Vulnerability Assessment (CEVA)



Cumulative Environmental Hazards



Social Vulnerability



Cumulative Environmental Vulnerability Action Zones (CEVAZ)

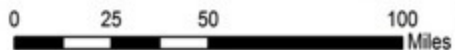
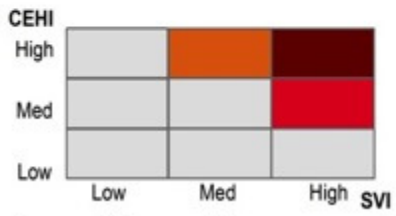
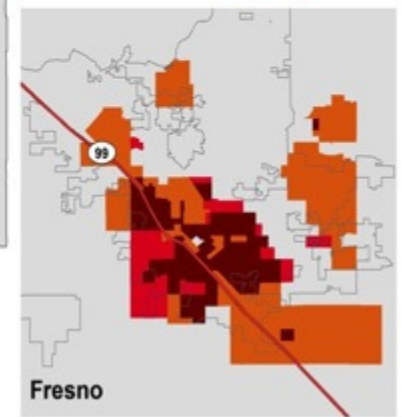
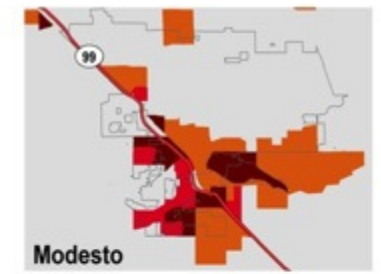
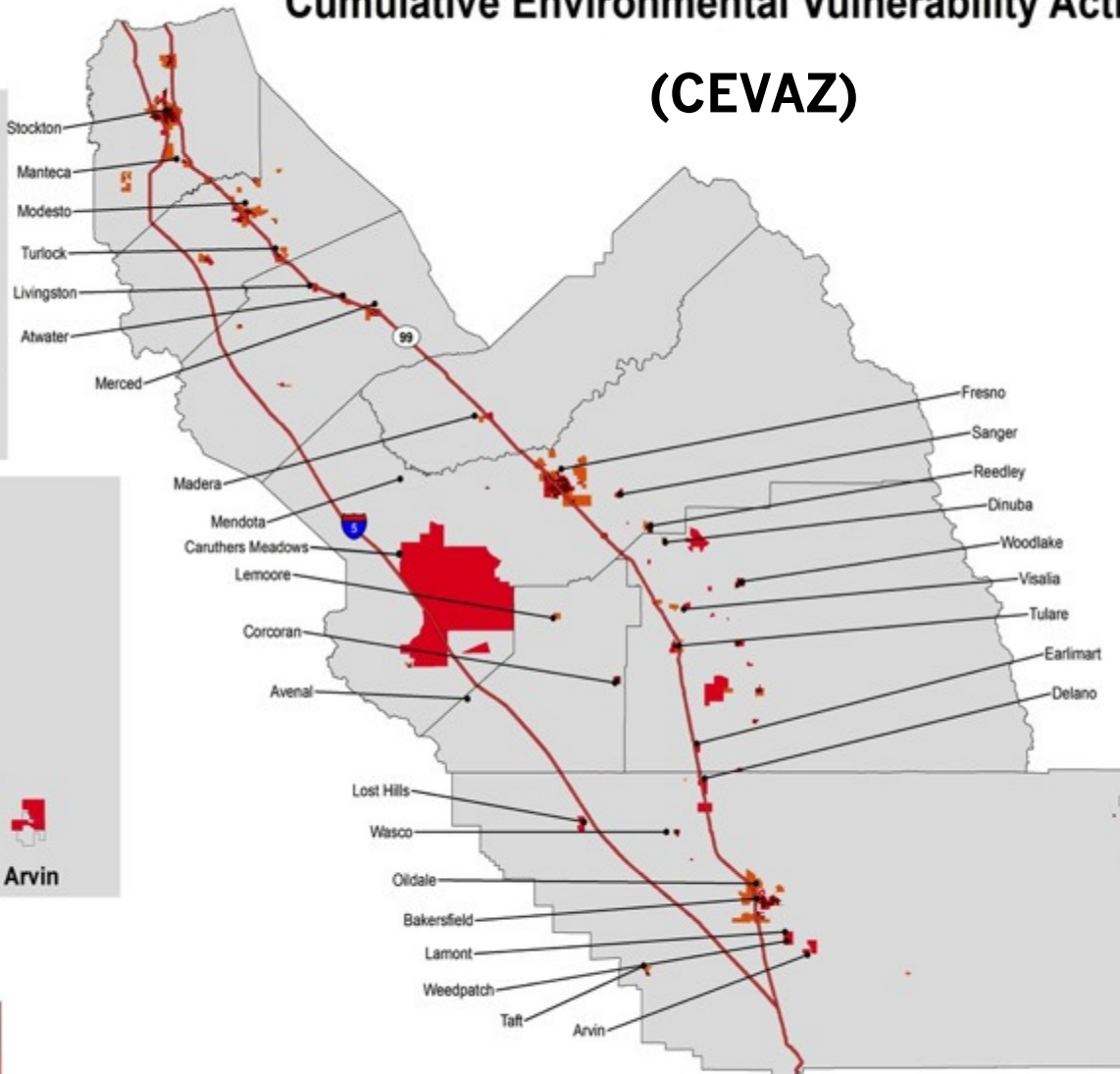
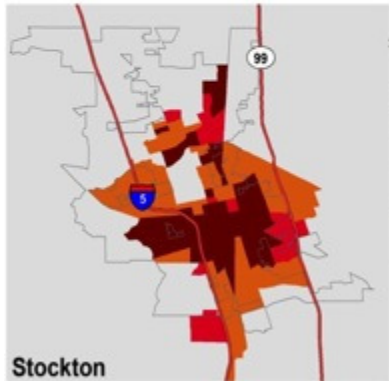


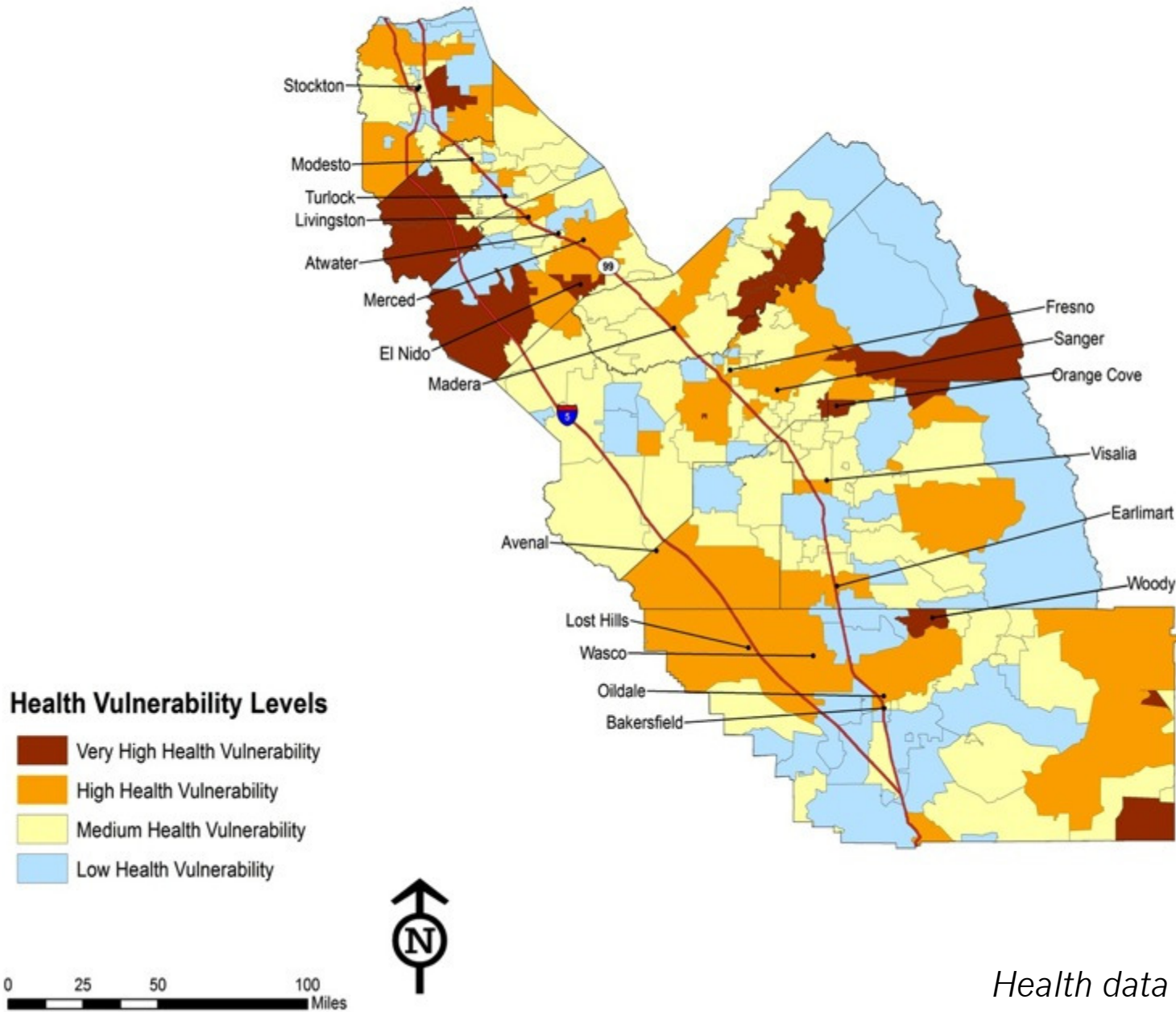
Table 1: Identification of Cumulative Environmental Vulnerability Action Zones

	<p><u>Low SVI/High CEHI</u> Population: 17,945 % of Valley Population: <1% % in Poverty: 7% % Non White: 23%</p>	<p><u>Medium SVI /High CEHI</u> Population: 563,780 % of Valley Population: 15% % in Poverty: 16% % Non White: 48%</p>	<p><u>High SVI /High CEHI</u> Population: 369,338 % of Valley Population: 10% % in Poverty: 37% % Non White: 82%</p>
	<p><u>Low SVI/Medium CEHI</u> Population: 84,579 % of Valley Population: 2% % in Poverty: 8% % Non White: 22%</p>	<p><u>Medium SVI/Medium CEHI</u> Population: 746,720 % of Valley Population: 20% % in Poverty: 16% % Non White: 50%</p>	<p><u>High SVI /Medium CEHI</u> Population: 232,036 % of Valley Population: 6% % in Poverty: 34% % Non White: 82%</p>
<p>CEHI →</p>	<p><u>Low SVI/Low CEHI</u> Population: 289,153 % of Valley Population: 8% % in Poverty: 7% % Non White: 25%</p>	<p><u>Medium SVI/Low CEHI</u> Population: 1,162,596 % of Valley Population: 31% % in Poverty: 14% % Non White: 44%</p>	<p><u>High SVI /Low CEHI</u> Population: 325,386 % of Valley Population: 9% % in Poverty: 34% % Non White: 79%</p>

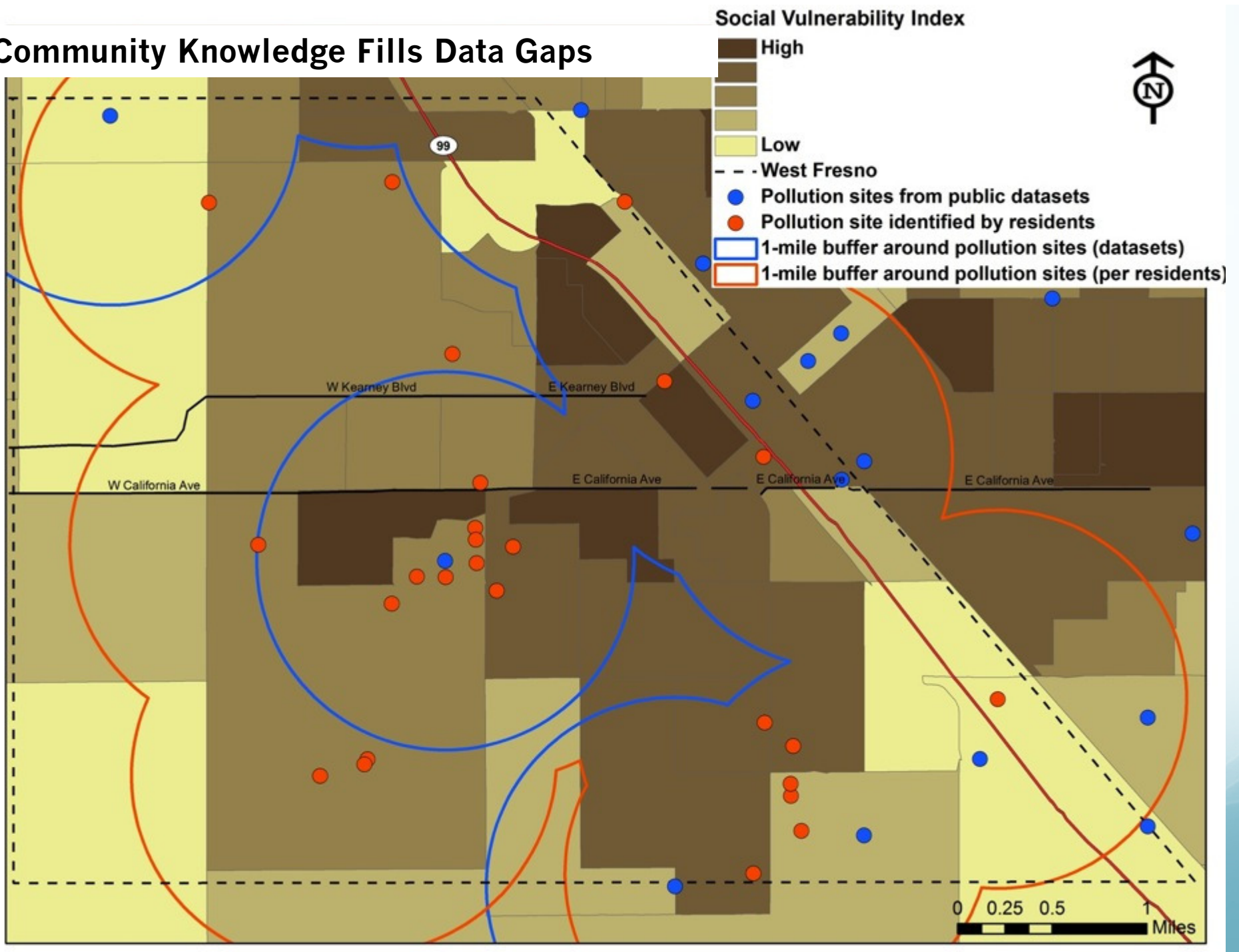
SVI →

CEVAZ are identified as the three categories in the upper right sector of this matrix and characterized by either High CEHI/High SVI, High CEHI/ Medium SVI, or Medium CEHI/ High SVI.

San Joaquin Valley Health Index



Community Knowledge Fills Data Gaps



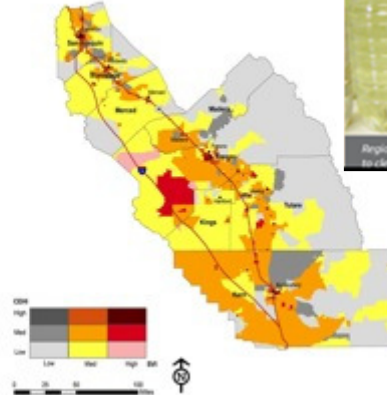
“EJ Communities”

West Fresno - *“The City of Fresno is one body; if one part of the body is ill, the entire body should respond.”*



West Fresno area leader, Mary Curry, uses a community-generated map of environmental hazards in a rally calling for the closure of a noxious rendering plant in the neighborhood.

Cumulative Environmental Vulnerability Assessment



Monterey Park - *“Safe drinking water should be a human right, not a constant struggle.”*



Regional water samples collected by the Community Water Center illustrate the limitations to the basic human right to clean water.

Earlimart - *“Breathing clean air is a human right.”*



Teresa DeAnda stands on the narrow strip of dirt and road that divide her home from the fields next door. Pesticide drift from these fields has sickened area residents.

Action Principles:

- ***Strive for environmental justice.*** Actions should reduce cumulative health impacts on the most affected and vulnerable communities.
- ***Action should be precautionary, not reactive.*** Agencies should act to introduce this type of precautionary, not reactive approach into decision making.
- ***Break out of silos and build bridges.*** Public agencies must work collaboratively across institutional boundaries.
- ***Residents speak for themselves.*** Agencies must engage with residents of the affected communities in a climate of mutual respect and shared learning.

Action Strategies

- Build on solid science of Cumulative Impacts (CI)
- Develop comprehensive CI reporting
- Implement CEVA Action Zone strategy
- Improve public participation in CEVA Action Zones
- Continue to innovate in CI science

SJVAPCD-Specific Opportunities

- Governing Board/ Staff:
 - Consider adopting CEVA map as new “EJ maps”
 - Focus District grant funding (Carl Moyer) in CEVAZ
 - Use report to advocate increased funding for air quality monitoring in highest vulnerability communities
 - Use CEVA to ensure new “risk-based” strategies align with EJ principles
- EJAG/ CAC:
 - Use report as basis for developing future strategies and work plans.

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