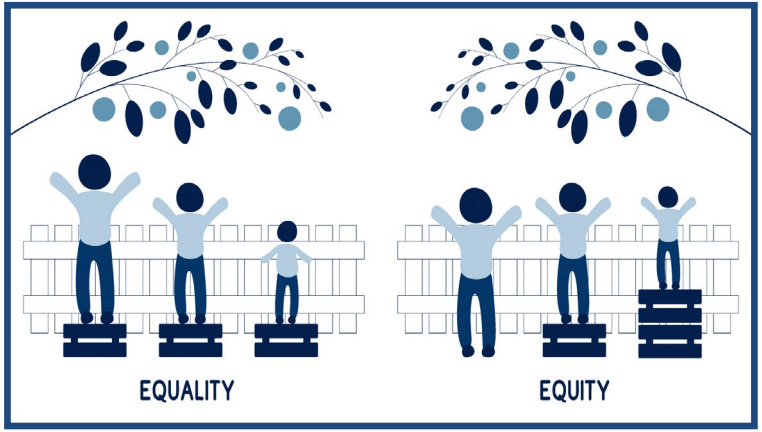
Bridging the Gap: Health Equity in Emergency Preparedness

12-3/23

Presentations from:

- CalEPA Office of Environmental Health Hazard Assessment
- Monterey County
- San Diego County
- California Department of Public Health, Office of Health Equity



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Health Equity and Emergency Response: Disadvantaged Communities Social Vulnerability and Disasters

March 23, 2022

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Overview

- Environmental Justice and disadvantaged communities
- Social vulnerabilities
- Indicators and mapping
- Risk Communication in disasters
- Factors to consider regarding disasters and vulnerable populations

Environmental Justice/Equity and Disaster Response: CalEPA's Definition of Environmental Justice

https://www.healthandenvironment.org/environmental-health/social-context/history/environmental-justice-or-rather-injustice

"The principles of environmental justice call for fairness, regardless of race, color, national origin or income, in the development of laws and regulations that affect every community's natural surroundings, and the places people live, work, play and learn." (CalEPA, 2019)

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Disadvantaged Communities

- In 2010, CalEPA began the development of a screening methodology to evaluate the cumulative impacts of multiple sources of pollution in specific communities or geographic areas.
- Designating **disadvantaged communities** included consideration of socioeconomic, public health, and environmental hazard criteria (CalEPA 2017)(SB 535)
- Identifying disadvantaged communities ultimately promotes environmental justice

- Concerns that minority and lower socioeconomic communities "Socially Vulnerable Populations" bear high and disproportionate burdens of environmental pollutants

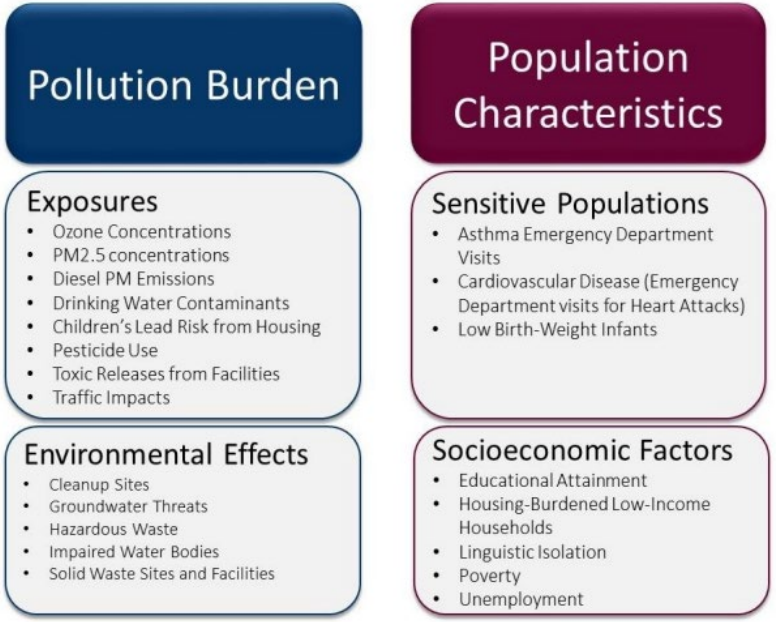
- And may be disproportionately impacted by disasters!

Social Vulnerability

- Social Vulnerability refers to the resilience of communities when confronted by external stresses
- When emergencies affect a community, some members of society may suffer more than others
- Indicators can be used to characterize impacts to vulnerable populations

Mapping tools for Both Social and Environmental Vulnerabilities in Communities

OEHHA's CalEnviroScreen 4.0 uses 21 indicators covering pollution sources and drivers of vulnerability within California's approximately 8,000 census tracts, to measure overall cumulative burdens affecting California communities.



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CalEnviroScreen 4.0 | OEHHA: https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-40

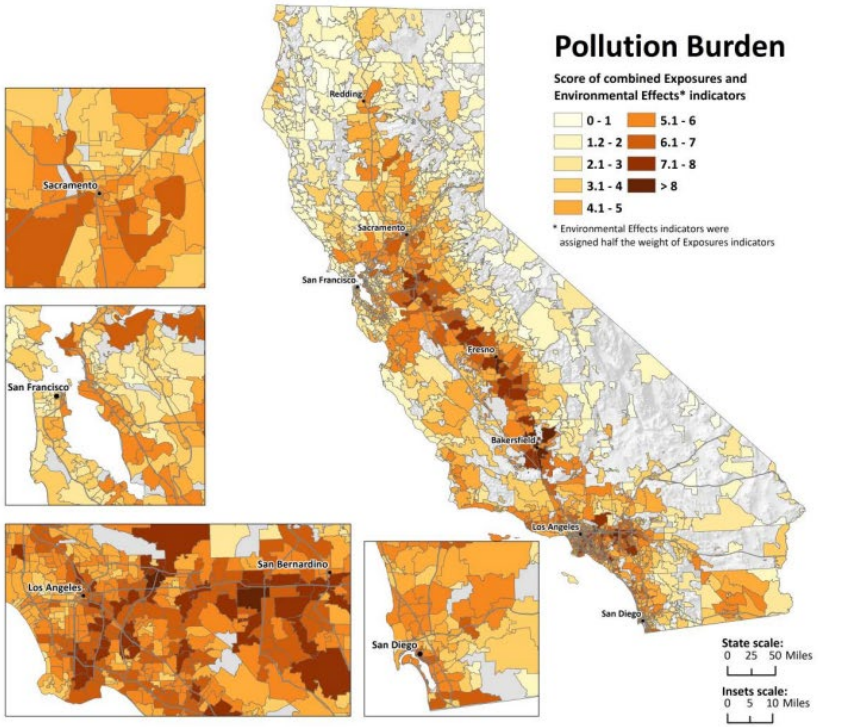
Mapping Social and Environmental Indicators

OEHHA's CalEnviroScreen: Pollution Burden

Permitted Hazardous Waste Sites

Indicators

- Ozone
- PM 2.5
- Diesel PM
- Toxic Releases
- Traffic Density
- Pesticide Use
- Cleanups (½)
- Groundwater Threats (½)
- Solid & Hazardous Waste (½)
- Impaired Water Bodies (½)



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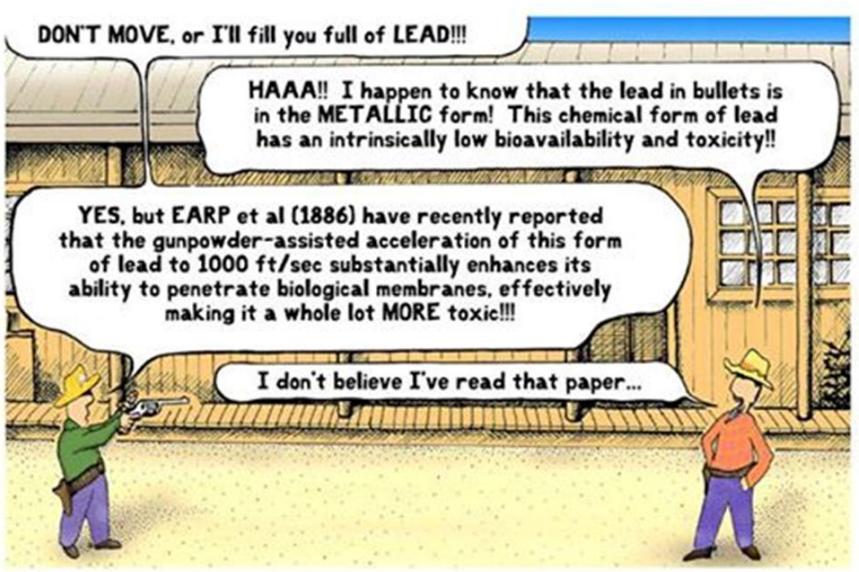
Cumulative Risk/Impacts

- The idea that the effects or impacts from things in our environment can "add up"
- This can also hold true for the cumulative impacts from disasters
  - Especially for vulnerable populations

ENVIRONMENTAL HAZARD

Knowing Who and Where is not enough…

Communicating Risk dependent on:
Audience, Source of information, and
Type of Message



ENVIRONMENTAL TOXICOLOGIST IN THE WILD WEST

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Disasters and Risk Communication

- **Socially vulnerable populations may be less likely to receive, understand, or believe warnings.**

RECEIVE

- Dissemination of information: TV, radio, community groups, social media, posting on a website, holding a public workshop
- Cell phone service or Internet Access
  - The lack of broadband in rural communities and access to cell service make it difficult to communicate information
- Written Publications: Newspaper, magazine, newsletter: What do people read?

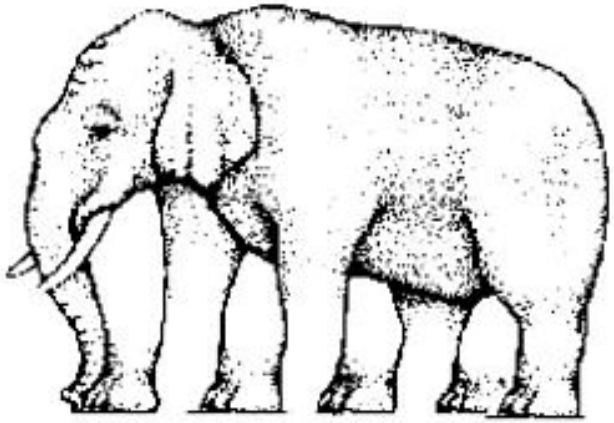
Disasters and Risk Communication

- **Socially vulnerable populations may be less likely to receive, understand, or believe warnings.**

UNDERSTAND

- Language barriers
- Fluency in English; reading level; sensitivity to use of certain terms
- Familiarity with scientific terminology or "technical jargon"
- Cultural differences: Types of pictures or comparisons likely to be understood

We may lack the language ability to communicate lifesaving messages to vulnerable communities. We need to be cognizant of our limitations and work to overcome them.



How many legs does this elephant have?

Environmental Health Issue like Vector Control: Mosquitos

Socially vulnerable populations may be less likely to receive, understand, or **believe** warnings.

BELIEVE

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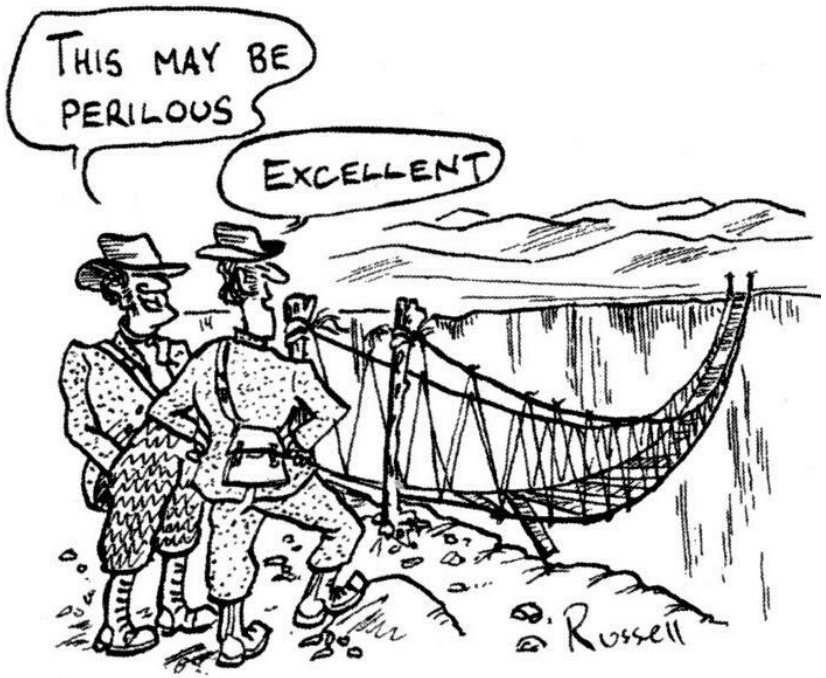
- People want and believe different things
- Who will people trust and listen to?
  - Government officials
  - Doctors or other experts
  - Politicians
  - Public representatives/Locals
  - Non-governmental organizations (NGOs) and community groups
  - Neighbors or faith community

May have distrust of government or source of information

May not report issues or problems (like Vector Control) to a government authority

- **What does the audience <u>care</u> about?**
  - **Pets, Children, Self or someone you know affected**
- **Risk Perception**
  - **Differing views of what is risky**



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Wrong beliefs or attitudes:

- Everything must be toxic
- Why bother
- Not risky, dangerous, or an emergency
- Is it really a disaster? OR I'll take my chances

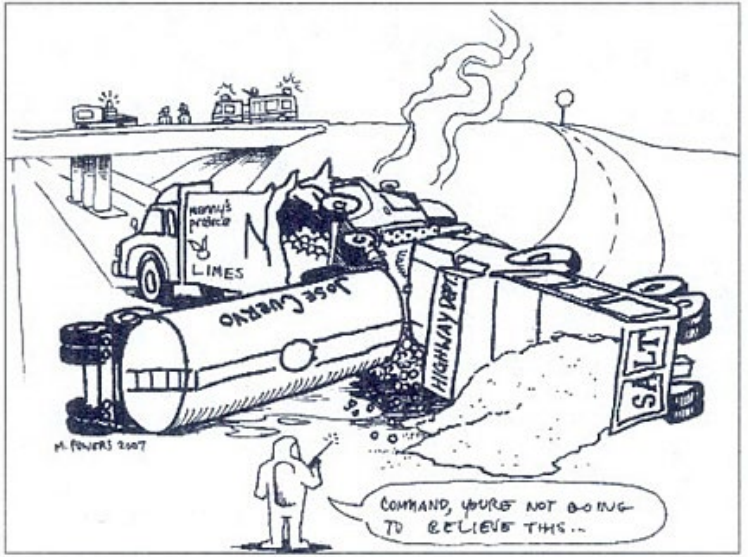

Image 1 With emergency response you never know what you'll get! (Cartoon by Matt Powers)

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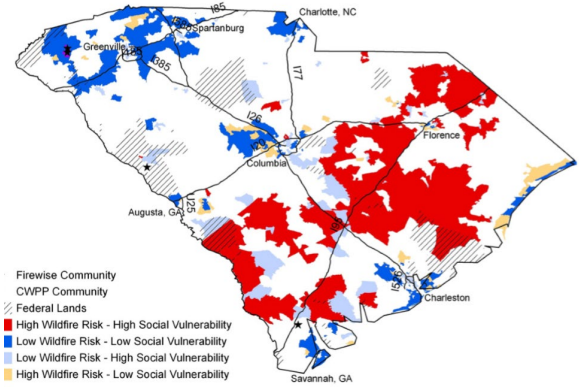
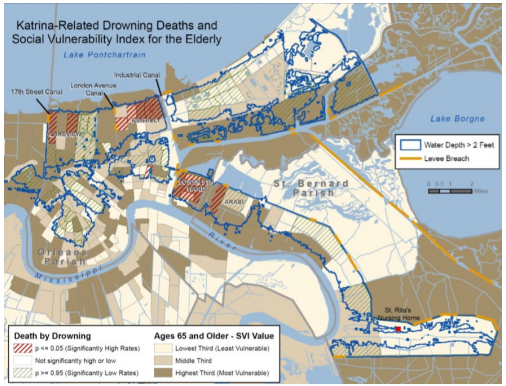
Social Vulnerability Populations and Disasters: Examples of Using Mapping Tools to Study Social Vulnerabilities and Disasters

- Gaither et al.,2011 mapped Social Vulnerability and Wildfire Risk in the Eastern United States
- Davies et al., 2018 mapped Community Vulnerability and Wildfire Hazard Potential
- Flanagan et al., 2011 mapped Social Vulnerability and Katrina-Related drowning deaths from the disaster





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Factors to consider about: Before a disaster: Emergency Preparedness

- Prepare and Plan—who does this?
- Emergency supplies –who has these?
- Mitigation: Fire perimeter around home, insurance, escape routes
- Mitigation of health effects –supply of medicine; access to care
- Hospital preparedness –number of beds, insurance
- Evacuation center or destination –
- What will I do with my pets/livestock
- Education of risks/disasters

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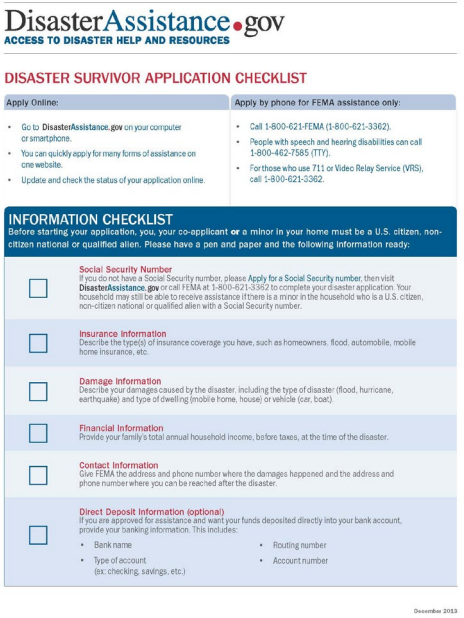
Factors to consider: During a Disaster:

- Ability to leave –transportation
  - Road capacity
- Will I still have a job if I leave?
- Where do I go? Cost and availability of alternate accommodations
- No money for supplies, gas, etc.
- Other populations: tourists, chronically homeless
- Extra medical attention, disabled, elderly

Factors After a Disaster: Recovery

- Cleanup costs and hazardous debris: health impacts
- Impacts on water systems: clean water and health
  - Access to food and clean water
- Housing: Renters vs. owners and insurance
- Employment: Lost job and/or wages
  - Day laborers/Agricultural workers
- Stress/Mental Health: Loss of home or "sense of normal" and stress related to health impacts.
- Access to Aid: Government and bureaucracy
  - Access to system; government aid, recovery assistance



DisasterAssistance.gov
ACCESS TO DISASTER HELP AND RESOURCES

DISASTER SURVIVOR APPLICATION CHECKLIST

Apply Online:	Apply by phone for FEMA assistance only:
• Go to DisasterAssistance.gov on your computer or smartphone. • You can quickly apply for many forms of assistance on one website. • Update and check the status of your application online.	• Call 1-800-621-FEMA (1-800-621-3362). • People with speech and hearing disabilities can call 1-800-462-7585 (TTY). • For those who use 711 or Video Relay Service (VRS), call 1-800-621-3362.

INFORMATION CHECKLIST
Before starting your application, you, your co-applicant or a minor in your home must be a U.S. citizen, non-citizen national or qualified alien. Please have a pen and paper and the following information ready:

- ☐ **Social Security Number**
  If you do not have a Social Security number, please Apply for a Social Security number, then visit DisasterAssistance.gov or call FEMA at 1-800-621-3362 to complete your disaster application. Your household may still be able to receive assistance if there is a minor in the household who is a U.S. citizen, non-citizen national or qualified alien with a Social Security number.
- ☐ **Insurance Information**
  Describe the type(s) of insurance coverage you have, such as homeowners, flood, automobile, mobile home insurance, etc.
- ☐ **Damage Information**
  Describe your damages caused by the disaster, including the type of disaster (flood, hurricane, earthquake) and type of dwelling (mobile home, house) or vehicle (car, boat).
- ☐ **Financial Information**
  Provide your family's total annual household income, before taxes, at the time of the disaster.
- ☐ **Contact Information**
  Give FEMA the address and phone number where the damages happened and the address and phone number where you can be reached after the disaster.
- ☐ **Direct Deposit Information (optional)**
  If you are approved for assistance and want your funds deposited directly into your bank account, provide your banking information. This includes:
  - Bank name
  - Routing number
  - Type of account (ex: checking, savings, etc.)
  - Account number

December 2013

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Karen Riveles
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Monterey County

Focus on Agricultural Field Workers Vulnerability During Disasters

March 23, 2022

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Monterey County, Ag Industry & the Ag Worker

- Primary industry
- Permanent and transient workforce
- Varying living conditions
- Disadvantaged communities
- Vulnerable population

Health & Racial Equity

- Language barriers
- Lack of rapport and trust of government
- Locations of services focused within Monterey and Salinas
- Issues with culturally appropriate response
- Intersectionality of vulnerability

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Language Barriers

Impacting ability to communicate:

- emergency and health information
- direct people to resources
- including need to provide verbal interpretation in languages indigenous to Oaxaca: Triqui, Mixteco, Zapoteco

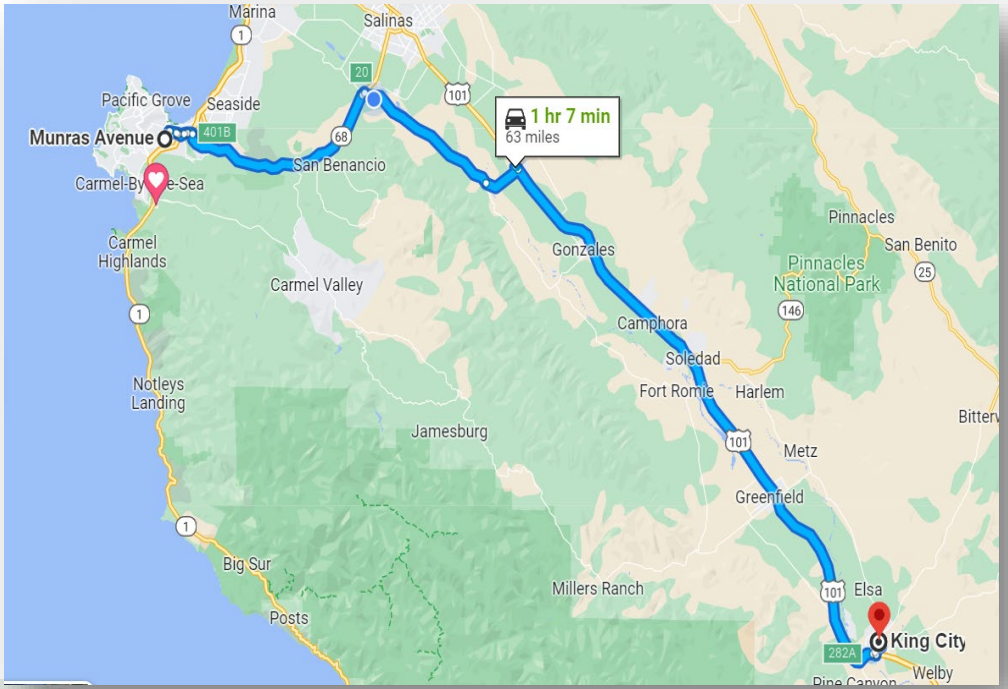
Lack of rapport and trust of government

- Pre disaster impacts:
  - Communication
  - Ability to assist disadvantaged communities

Locations of services focused within Monterey and Salinas

Leaving many rural regions with:

- limited resources
- limited assistance available
- issues with cell service in some rural areas further limiting communication ability



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Issues with culturally appropriate response

COVID and other disasters

- Food and cultural sensitivity
- hotel vouchers and migrant worker population

FOOD Heals

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Intersectionality of vulnerability

Can exasperate issues

- Ex. low income + lack of transportation + language barriers + living in crowded housing + broadband access

Developed by Monterey County

- Pandemic Disparate Impact Report
- Community Resilience Plan

Pandemic Disparate Impact Report

- **Purpose:** A data-based report of identifying populations who experienced disproportionate impact by COVID-19 and address the underlying conditions through strategic and equitable distribution of resources

- **Outline:** Provides strategies for response. Incorporates Health Equity and Governing for Racial Equity (GRE) principles

Pandemic Disparate Impact Report

- **How it will be used** – Close gaps in county services. Inform stakeholder and drive decisions.
- **Current status** – The report has been approved and is published online in English (Spanish ver. pending) www.co.Monterey.ca.us/pandemicDI
- **Future –** Codify recommendations related to Health / Race equity.

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VIDA: Virus Integrated Distribution of Aid

TRUSTED MESSENGERS

100 Community Health Workers

$4.9m County investment – ARPA Funds

10 Community partner organizations

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Community Resilience Plan

- **Purpose:** A guide to fostering community disaster resilience in Monterey County so that communities come together to better prevent, reduce, manage, recover, and learn from disaster experiences.
- **Outline:** Provides an analysis of the whole community and its vulnerabilities and capabilities in managing disasters, along with projects, strategies and recommendations for building resilience.

Community Resilience Plan

- **How it will be used** – To engage, inform, unite, and empower all sectors of the community to start or get involved with projects that foster disaster community resilience
- **Current status** – The plan has been approved and is published online at www.co.monterey.ca.us/resilience in English and Spanish
- **Future –** Implementing all 61 initiatives outlined in the plan, with the goal of updating the plan every 3 years and as needed.

Any Questions?

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SAN DIEGO COUNTY
DEPARTMENT OF ENVIRONMENTAL HEALTH AND EQUITY

Community Needs Assessment Projects

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ABOUT

Hazmat Facilities:

Bring facilities that require a permit from the Hazmat Program into compliance, focusing first in underserved communities.

- 2,800 potential unpermitted facilities identified
- Community education, outreach, engagement, and establish trust
- Identify, inspect, and permit facilities, first in underserved communities

HAZMAT FACILITIES

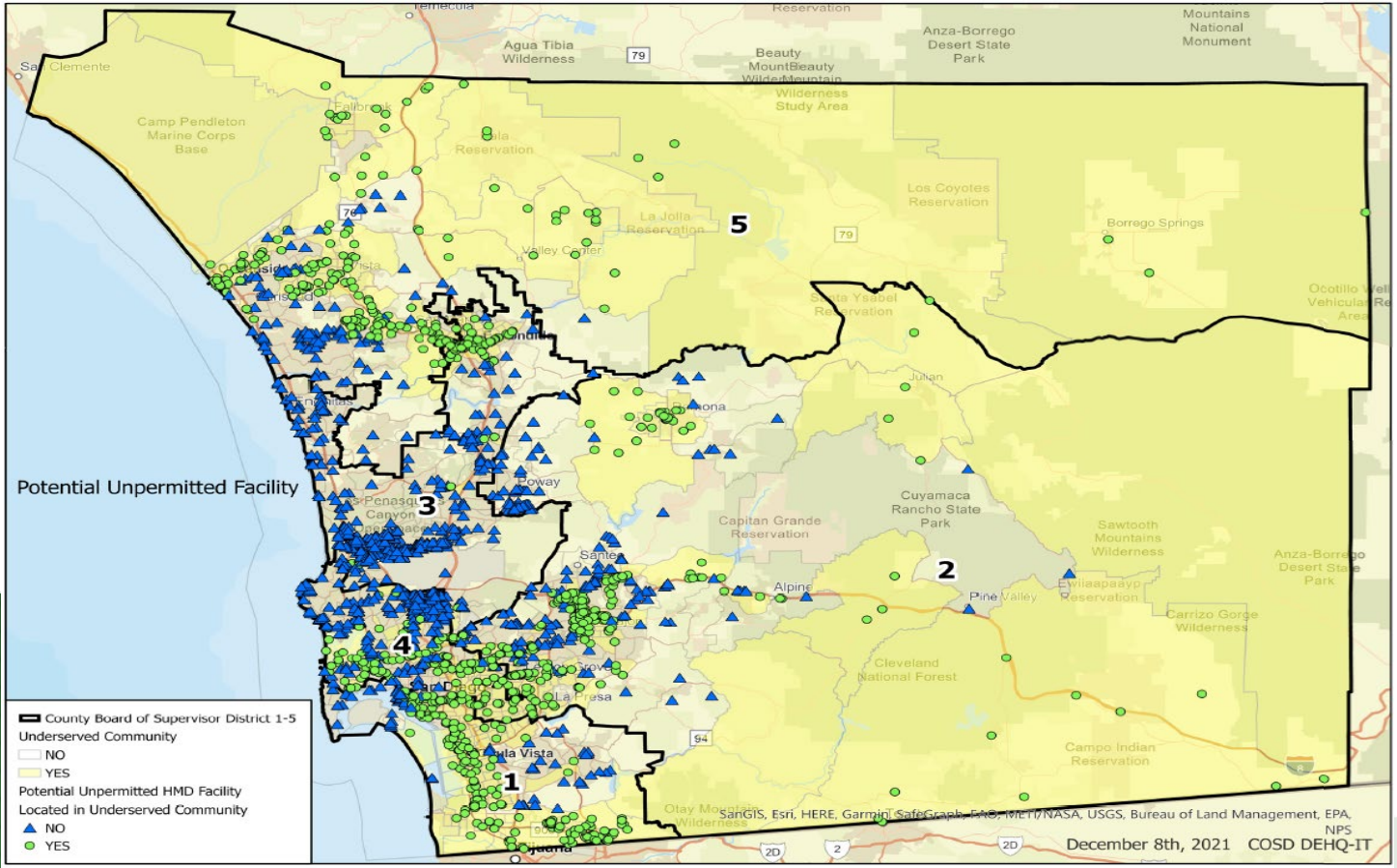
OBJECTIVES:

- Objective 1: Staff a dedicated group to identify and permit facilities.
- Objective 2: Establish a plan for identifying unpermitted facilities.
- Objective 3: Conduct outreach in underserved communities.
- Objective 4: Track ongoing efforts and feedback.

CURRENT STATUS:

- Opened and began staffing positions to identify and inspect unpermitted facilities.
- Created a list of stakeholder industry associations and community organizations in underserved communities identified in Logan Heights, National City and West Chula Vista to for future outreach.
- Developed outreach material.
- Mapped facilities using multiple GIS layers
  - **Of 2,800 potential unpermitted sites, 1,107 are in underserved communities.**

POTENTIAL UNPERMITTED FACILITIES



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3 IDENTIFIED SERVICES

HAZMAT FACILITIES

- Develop and implement tracking to monitor new permits concerns/feedback from community and complaints.
- Translate outreach materials and provide additional ongoing outreach and stakeholder engagement.
- Continue dedicated staff resources to evaluate and update data to identify additional potential unpermitted facilities.

ABOUT

Food Facilities:

Identify violation trends in underserved communities and assess the preferred languages to provide targeted education to bring facilities into compliance.

- Identify preferred languages spoken in food facilities.
- Identify areas with high CDC risk factor violations rates.
- Analyze overlay to determine needs and communication efforts.

FOOD FACILITIES

OBJECTIVES:

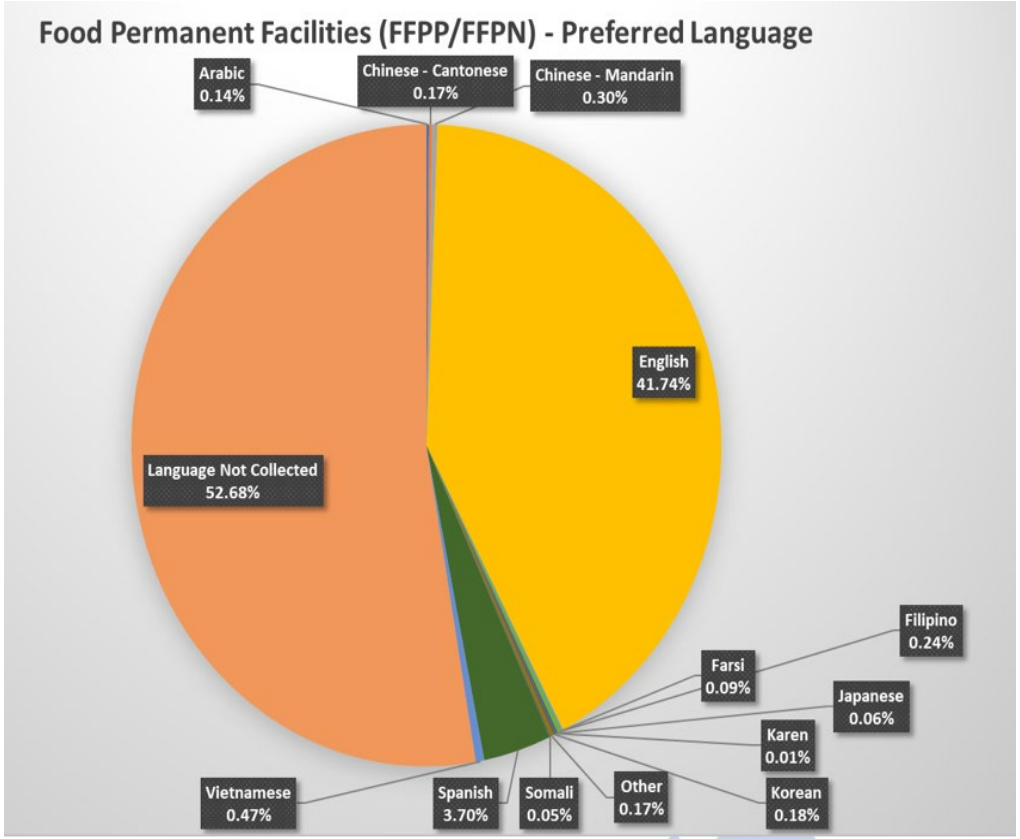
- Objective 1: Collect preferred language data at permanent food facilities within the County during Routine Field Inspections.
- Objective 2: One-time data pull effort by utilizing Survey Monkey to help collect preferred language data.
- Objective 3: Plot and Analyze data.
- Objective 4: Provide future outreach/training in identified languages for areas in underserved communities with high rates of CDC risk factor violations.

CURRENT STATUS:

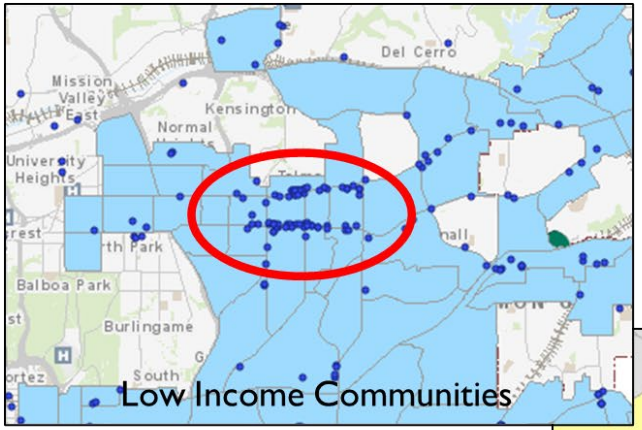
- Collected preferred language from 6,540 of 13,820 food facilities.
- Mapped preferred languages on the underserved community and low-income community maps provided by LUEG-GIS.
- Mapped the 5 CDC Risk Factor Violations within each census tract and overlayed with preferred languages.

FOOD FACILITIES

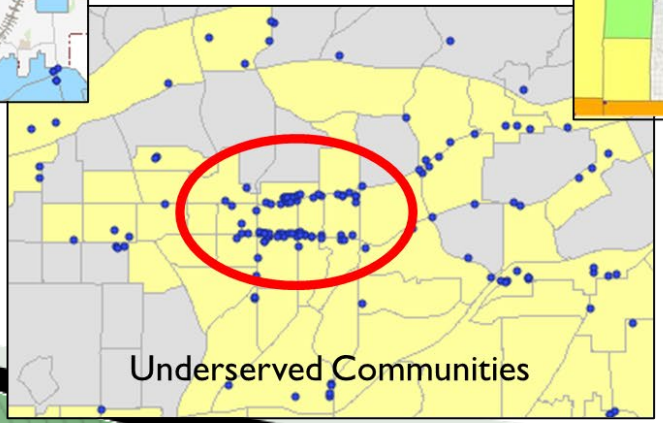
Preferred Language	Counts (Out of 13,820)
Arabic	19
Chinese - Cantonese	23
Chinese - Mandarin	42
English	5,768
Farsi	12
Filipino	33
Japanese	8
Karen	2
Korean	25
Other	24
Somali	7
Spanish	512
Vietnamese	65
Language Not Collected	7,280

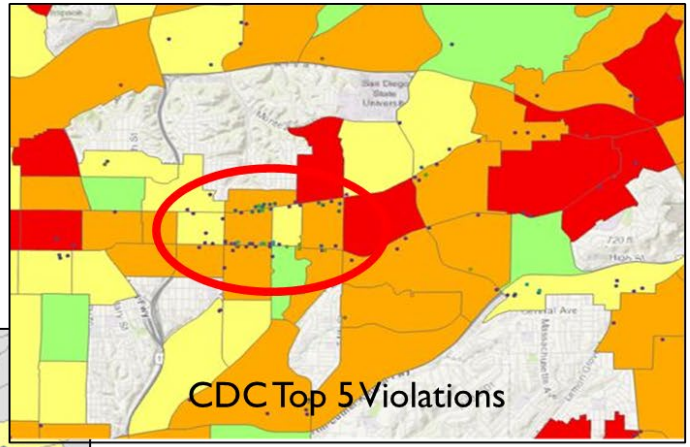


FOOD FACILITIES PREFERRED LANGUAGES—OVERLAY MAPPING



Low Income Communities


Underserved Communities


CDC Top 5 Violations

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3 IDENTIFIED SERVICES

FOOD FACILITIES

- Provide focused trainings and outreach utilizing preferred language or violation data, based on the final analysis of collected preferred languages from all food facilities.
- Translate additional outreach materials.
- Continue annual evaluation of data to identify gaps in services based on disparities, systemic racism/inequities.

NEXT STEPS—TIMELINE

FOOD FACILITIES

- Continue preferred language data collection during each Routine Inspection.
- Begin updating outreach materials in identified languages needed. (Spring/Summer 2022)
- Begin coordinating targeted distribution of updated outreach materials. (Summer/Fall 2022)
- Continue ongoing, yearly use of analysis to help identify any gaps in food safety training needs.

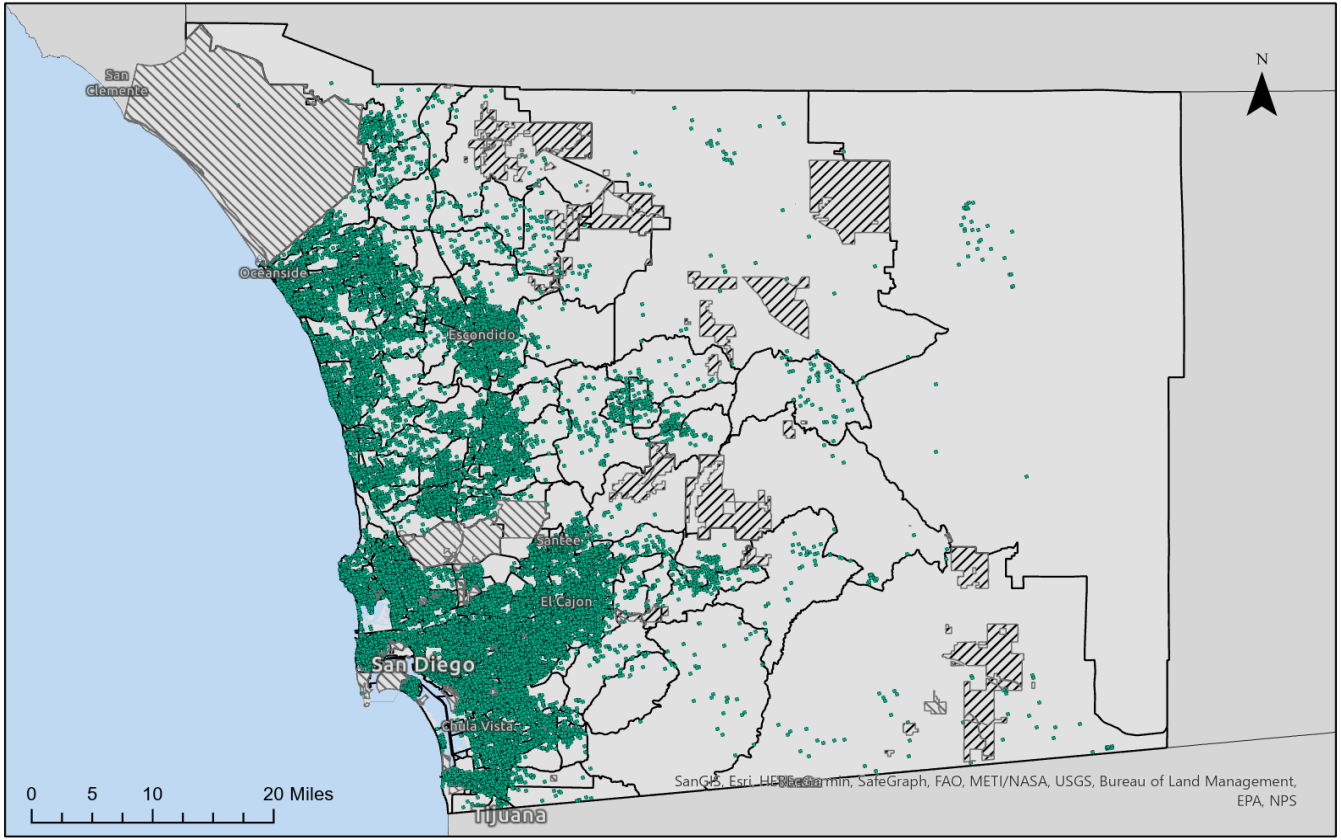
ABOUT

Vector Control Service Level Analysis:

Evaluate customer requests for service by census tracts and determine if there are differences in service levels for underserved communities

- Routine Vector Control Program (VCP) requests for service include mosquito and rat complaints and inspections
- Services are available upon request to any resident within San Diego County
- VCP endeavors to serve all parts of the County and responds to all requests/complaints equally
- Are there hidden barriers to services that prevent certain underserved populations from initiating or accepting services?

Requests for Service 2016-2020



Legend

- Census Tract
- Indian Reservations
- Military Reservations
- Request for Service

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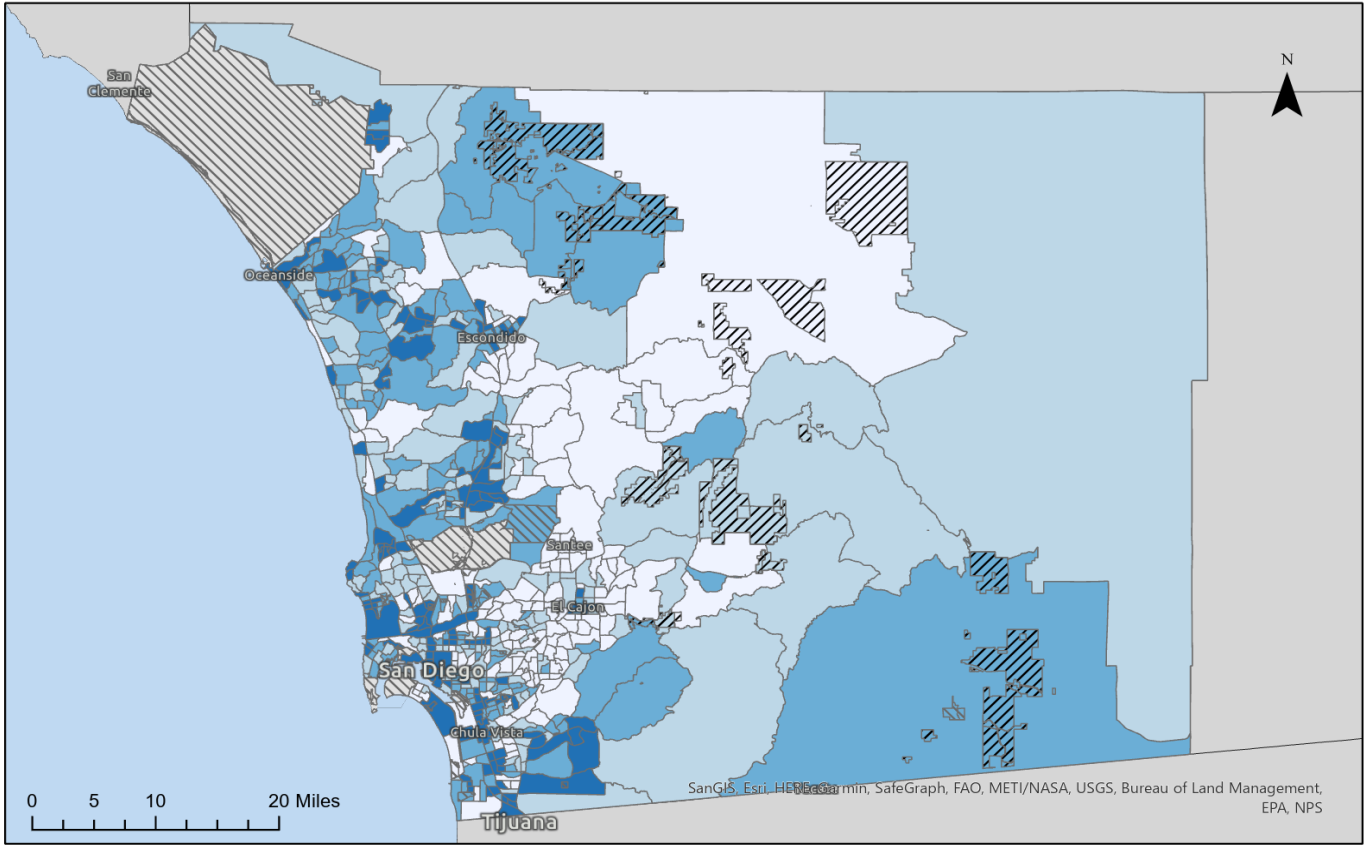
Requests for Service per Household 2016-2020



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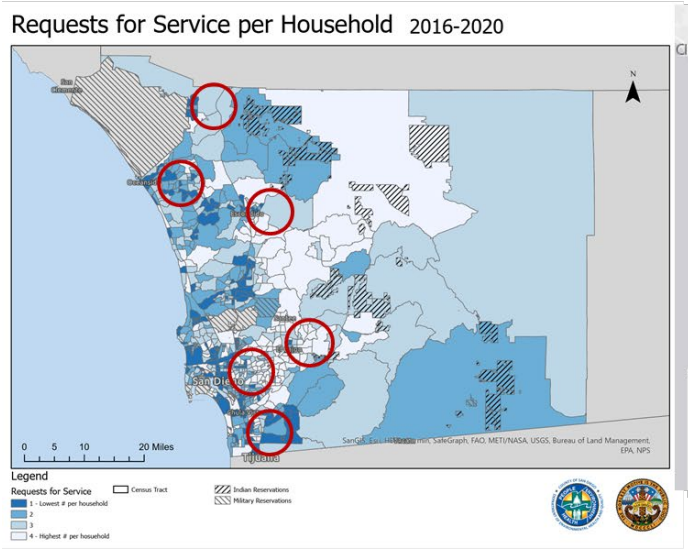

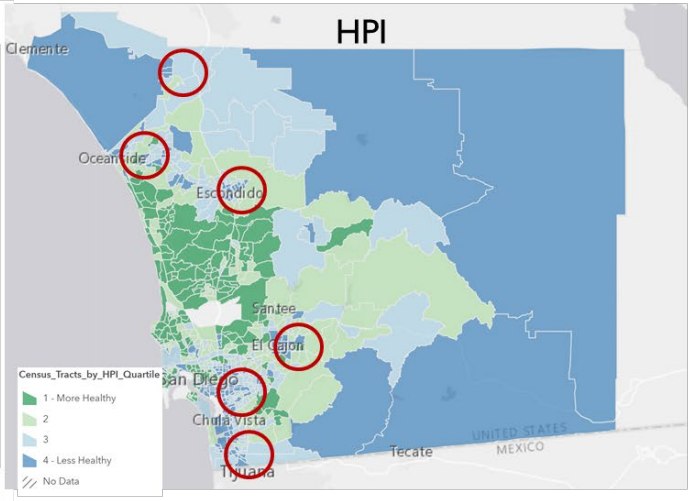

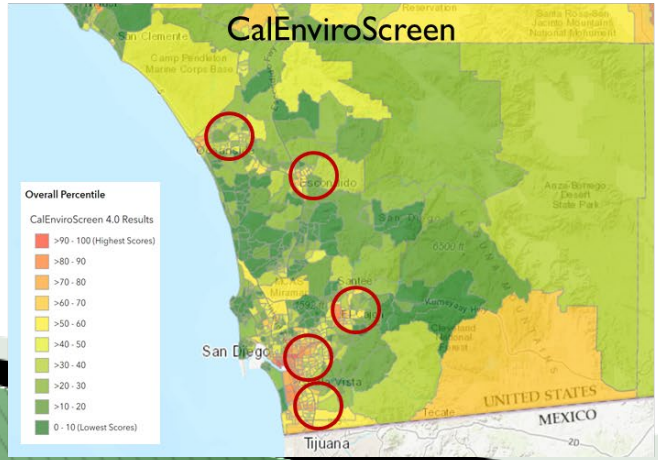

Circled areas show places where a comparatively low # of inspections per household seems to match up with a "less healthy" area

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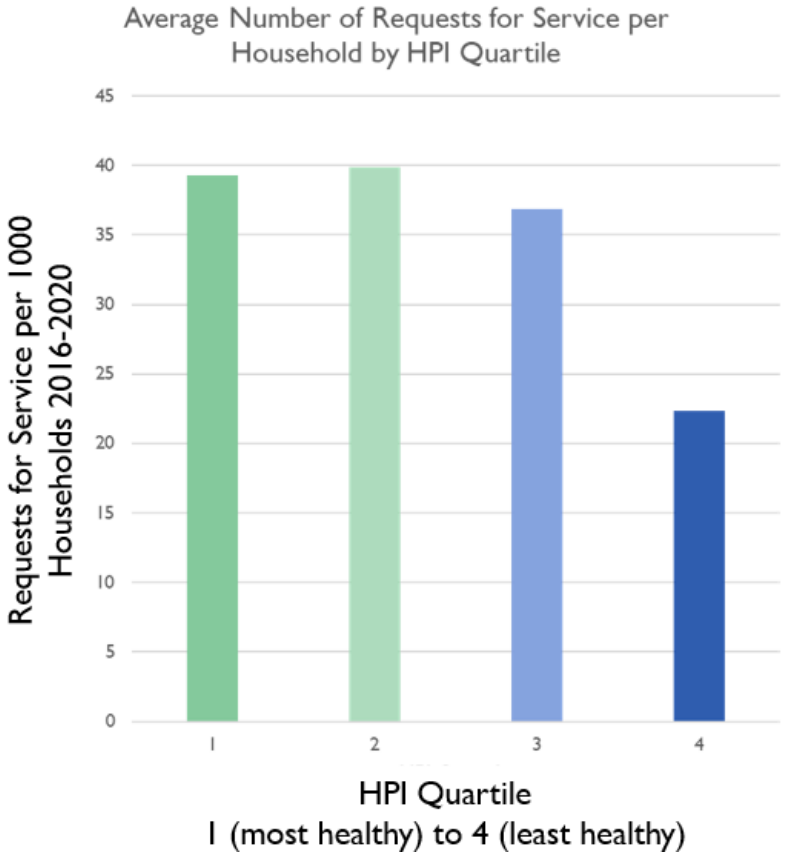
ANALYSIS – HEALTHY PLACES INDEX

Linear relationship is weak, but the "least healthy" areas do have fewer requests per service on average

Many components of these scores are unlikely to be related to Vector Control, so let's look for relevant components.



CORRELATION ANALYSIS

- Used a correlation matrix to look for associations between indicators and the number of requests per household
- Associations found:

Homeownership		Requests for Service	
Linguistic Isolation		Requests for Service	
% Population in Poverty		Requests for Service	
% Population that is White*		Requests for Service	

HOW TO USE THIS INFORMATION

- Use the maps to proactively seek out outreach opportunities in underserved areas
- Target outreach to demographics associated with lower #s of requests
  - Non-English speakers
  - Renters
  - Low income
- Guide future investigations

TRANSLATED MATERIALS

- Translating program materials into additional languages
  - Brochures
  - Website
  - Official Notices
  - Media Campaign
- Core Languages

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Any Questions?

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Health Equity Tools

March 23, 2022

Meredith Milet, MPH
Epidemiologist
Climate Change and Health Equity Section
California Department of Public Health

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Office of Health Equity

OFFICE OF HEALTH EQUITY

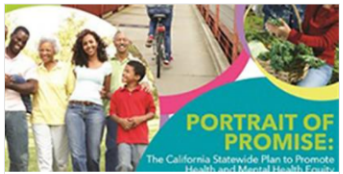
- COVID-19 Health Equity and Multilingual Resources
- About OHE
- Advisory Committee
- OHE Units
- Projects
- Health Equity Resources
- Contact Us
- Sign Up for OHE Updates

The Office of Health Equity (OHE) was established, as authorized by Section 131019.5 of the California Health and Safety Code (PDF). The OHE provides a key leadership role to reduce health and mental health disparities experienced by vulnerable communities in California.

A priority of this groundbreaking office is building of cross-sectoral partnerships. The work of OHE is informed in part, by their advisory committee and stakeholder meetings. The office works with community-based organizations and local governmental agencies to ensure that community perspectives and input help to shape a health equity lens in policies and strategic plans, recommendations, and implementation activities.

Portrait of Promise: The Statewide Plan to Promote Health and Mental Health Equity (PDF)

Portrait of Promise presents background and evidence on the root causes and consequences of health inequities in California. This report explores a broad range of socioeconomic forces that shape the health of entire communities, especially the vulnerable and underserved communities. Read the full updated report, February 2020 (PDF).



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Climate Change and Health Equity Section:
Embedding health and equity in California climate action

California Department of Public Health
Climate Change & Health Equity Section

Mission: Assure that **California's actions to prevent and prepare for climate change improve health equity**.

CCHES helps to implement California's climate change policies, contributing health equity guidance, research approaches, and tools, to **improve living conditions and health outcomes with and for people facing inequities**.

Strategies:

- **Embed health and equity into climate change programs and policies** so that implementation improves living conditions for communities facing inequities.
- **Guide State investment and resource distribution** to prioritize health equity.
- **Provide data, research, and tools** to reduce and prepare for the health effects of climate change
- **Increase the capacity of local and state health departments** to work on climate change and health equity
- **Engage with climate justice and health equity stakeholders** to increase their decision-making power.

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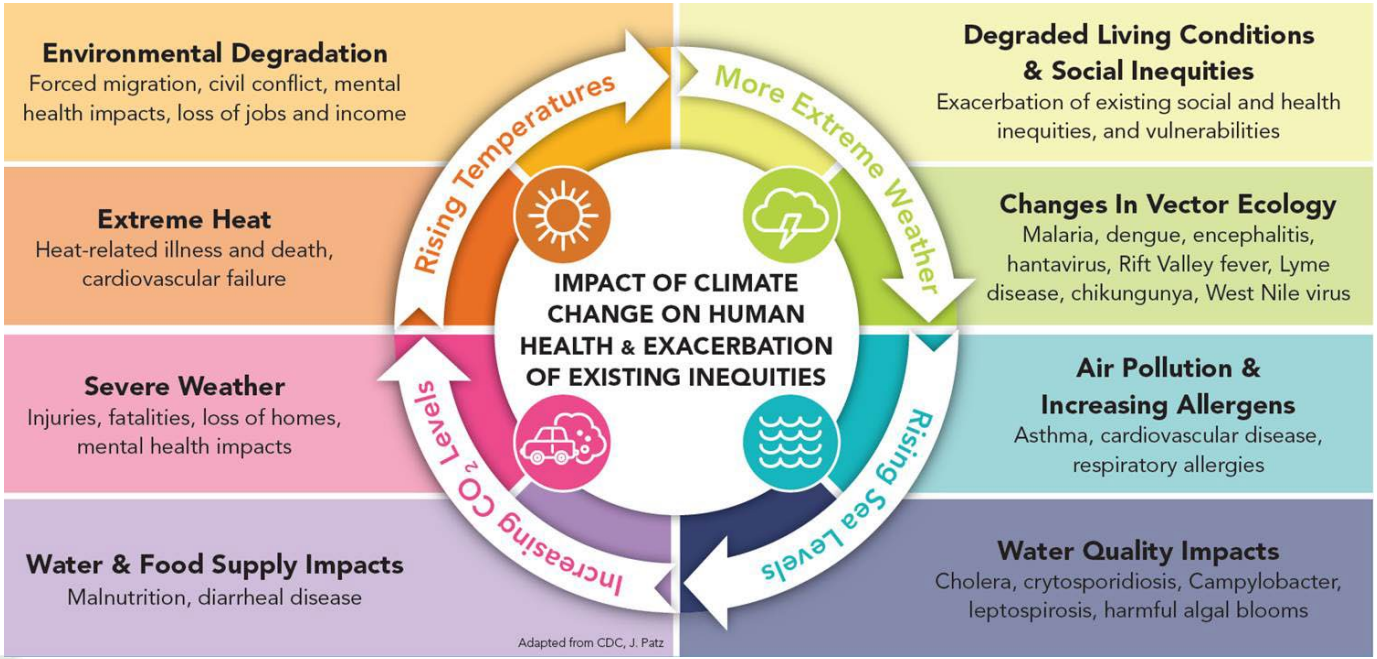
Climate Change Harms Human Health

People facing inequities are hurt first and worst



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Climate Change and Health Vulnerability Indicators for California (CCHVIs)

Environmental Exposures:

- Heat
- Air Quality
- Drought
- Wildfires
- Sea Level Rise

Adaptive Capacity:

- Air Conditioning Ownership
- Tree Canopy
- Impervious Surfaces
- Public Transit Access

Population Sensitivity:

- Children and Elderly
- Poverty
- Education
- Race and Ethnicity
- Outdoor Workers
- Vehicle Ownership
- Linguistic Isolation
- Disability
- Health Insurance
- Violent Crime Rate

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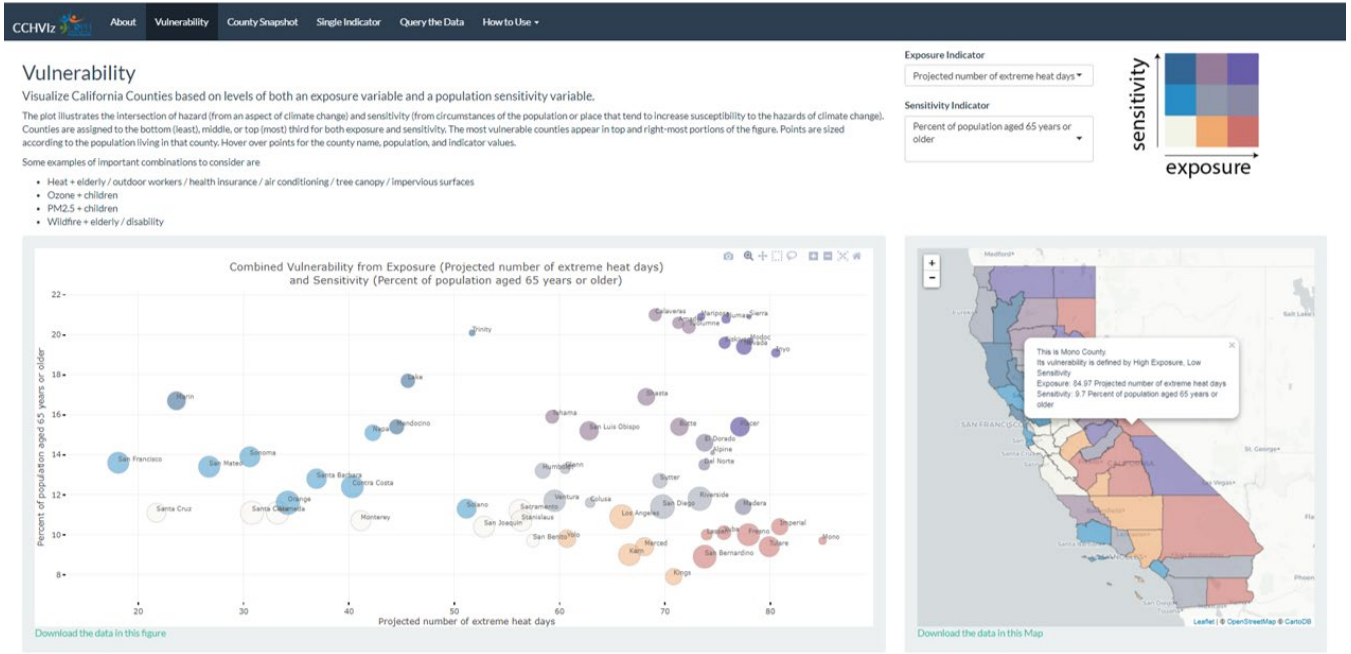
https://skylab.cdph.ca.gov/CCHVIz/



https://skylab.cdph.ca.gov/CCHVIz/

CCHVIz | Home | County Snapshot | Single Indicator | Vulnerability | Query the Data | Take Action

Welcome to the CCHVIz

CCHVIz is the interactive data visualization platform for the Climate Change & Health Vulnerability Indicators for California (CCHVIs).

It is produced by the Climate Change and Health Equity Section -- CalBRACE Project, part of the California Department of Public Health.

Select Your County: Contra Costa

County Snapshot

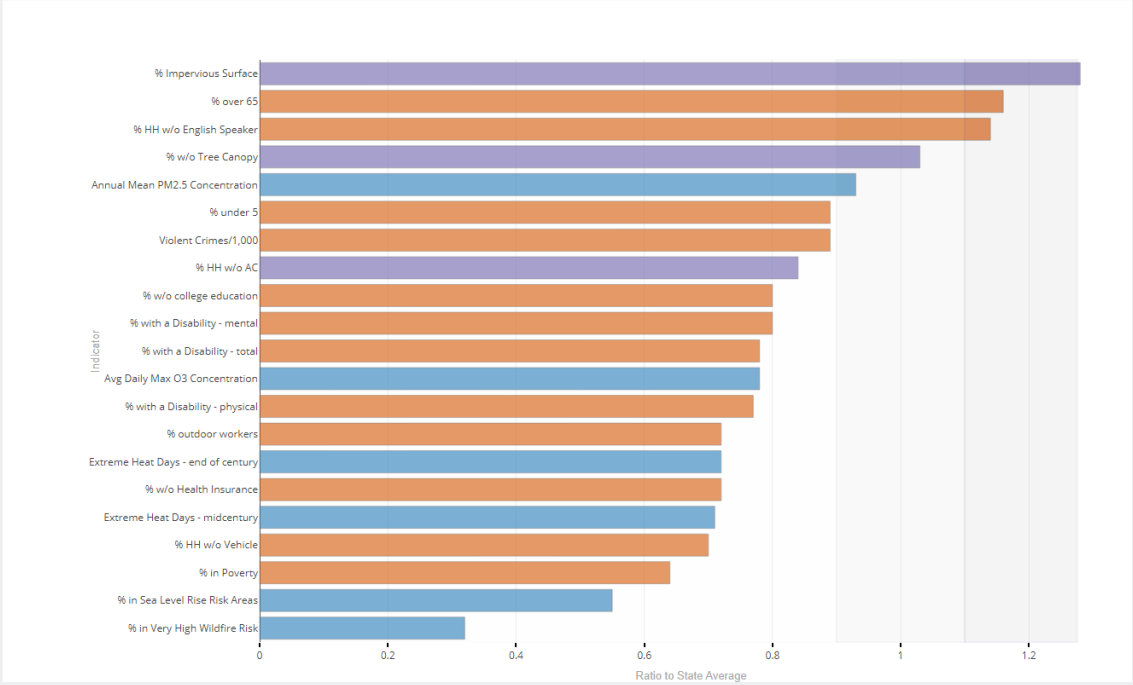
This plot shows how the selected county compares to the state average for each indicator.

Using a simple ratio of the county's value to the California average value for each indicator, you can see where this particular county experiences greater climate and health risks than other parts of the state. You can also identify which factors represent areas to focus adaptation efforts and which represent areas of strength.

Contra Costa County

Download County Health Profile

County compared to the state average



Download the data in this figure

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https://skylab.cdph.ca.gov/CCHVIz/

Contra Costa County

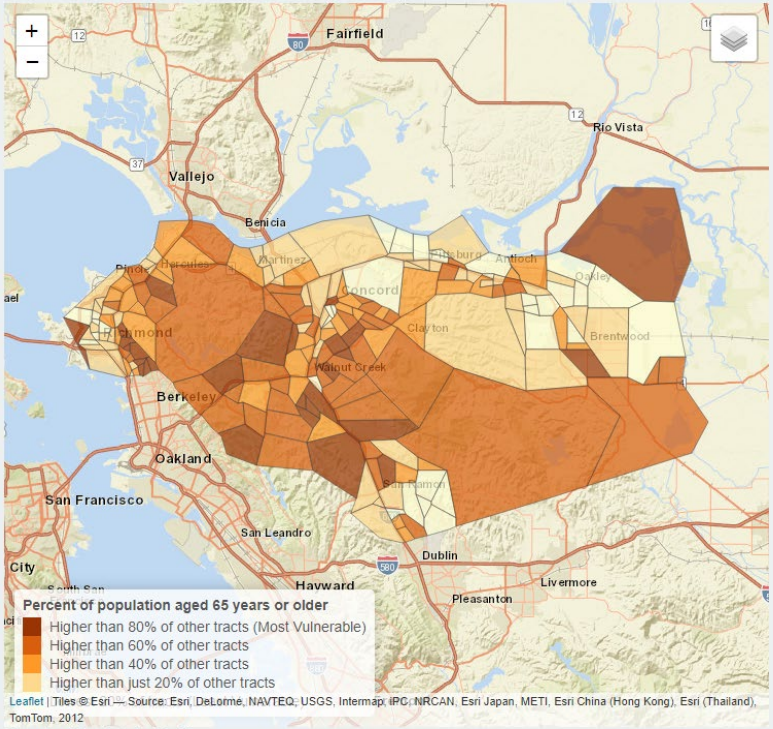
Select an Indicator: Percent of population aged 65 years or older

Strata: none

People ag
health im

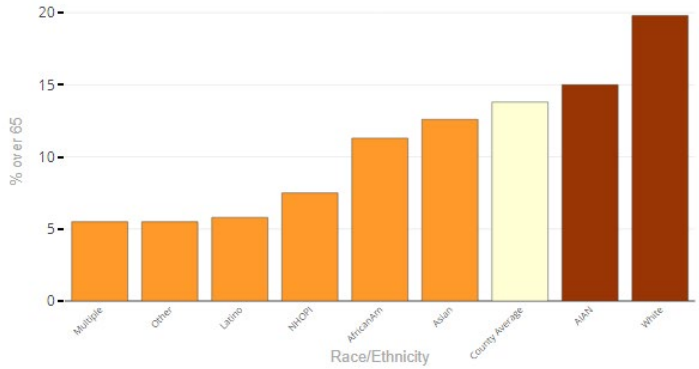
Download the N

County Map



Download the data in this Map

Differences by race



Download the data in this figure

Most vulnerable places in the county

Show 5 entries

Search:

	Place	value
1	Lafayette/Martinez South/Moraga/Orinda/Pleasant Hill/Rheem Valley/Rossmoor Leisure World/Walnut Creek Southwest	24.77
2	Clayton/Concord South/Walnut Creek Central and East	19.32
3	El Cerrito/El Sobrante/Kensington/Richmond North/Richmond Southeast/Wildcat Canyon	17.32
4	Crockett/Hercules/Martinez West/Pinole/Port Costa/Richmond Northeast/Rodeo	15.08
5	Avon/Clyde/Concord Central/Pittsburg Southwest	13.51

Showing 1 to 5 of 11 entries

Previous 1 2 3 Next

https://skylab.cdph.ca.gov/CCHVIz/

Vulnerability

Visualize California Counties based on levels of both an exposure variable and a population sensitivity variable.

The plot illustrates the intersection of hazard (from an aspect of climate change) and sensitivity (from circumstances of the population or place that tend to increase susceptibility to the hazards of climate change). Counties are assigned to the bottom (least), middle, or top (most) third for both exposure and sensitivity. The most vulnerable counties appear in top and right-most portions of the figure. Points are sized according to the population living in that county. Hover over points for the county name, population, and indicator values.

Some examples of important combinations to consider are

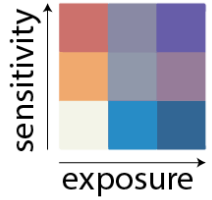
- Heat + elderly / outdoor workers / health insurance / air conditioning / tree canopy / impervious surfaces
- Ozone + children
- PM2.5 + children
- Wildfire + elderly / disability

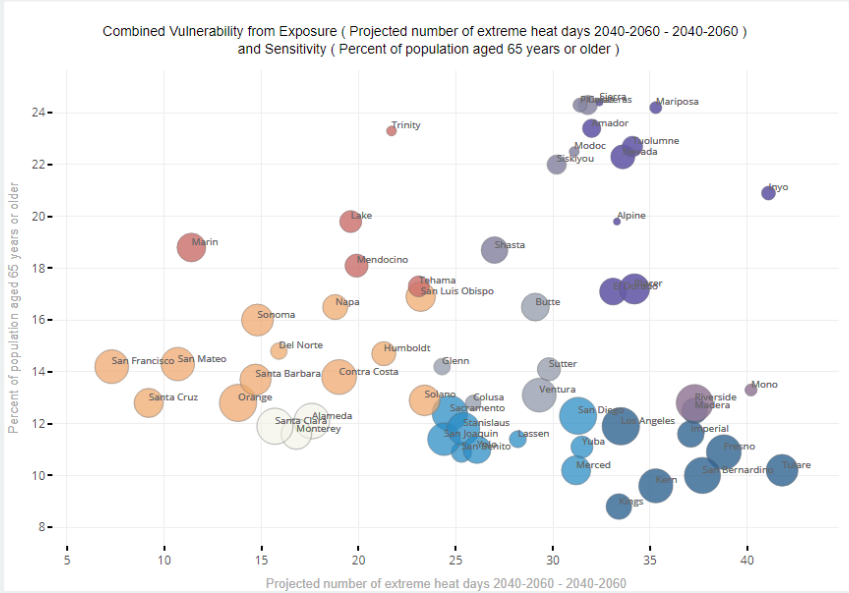
Exposure Indicator

Projected number of extreme heat days 2040-2060

Sensitivity Indicator

Percent of population aged 65 years or older





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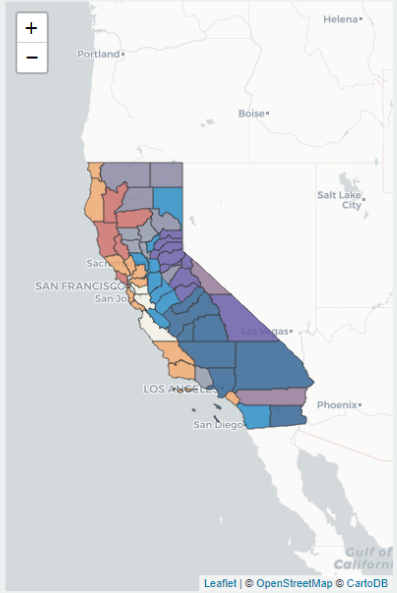

Download the data in this Map

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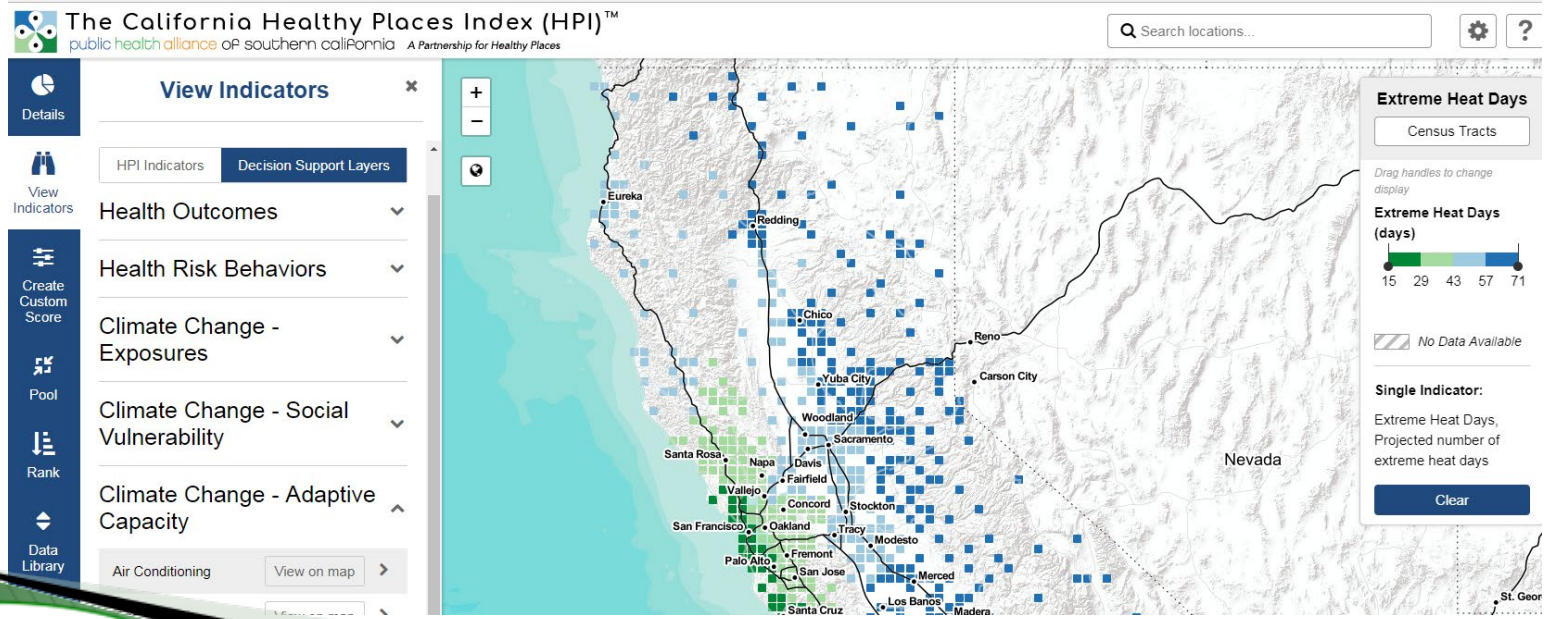
California Healthy Places Index

http://map.healthyplacesindex.org/



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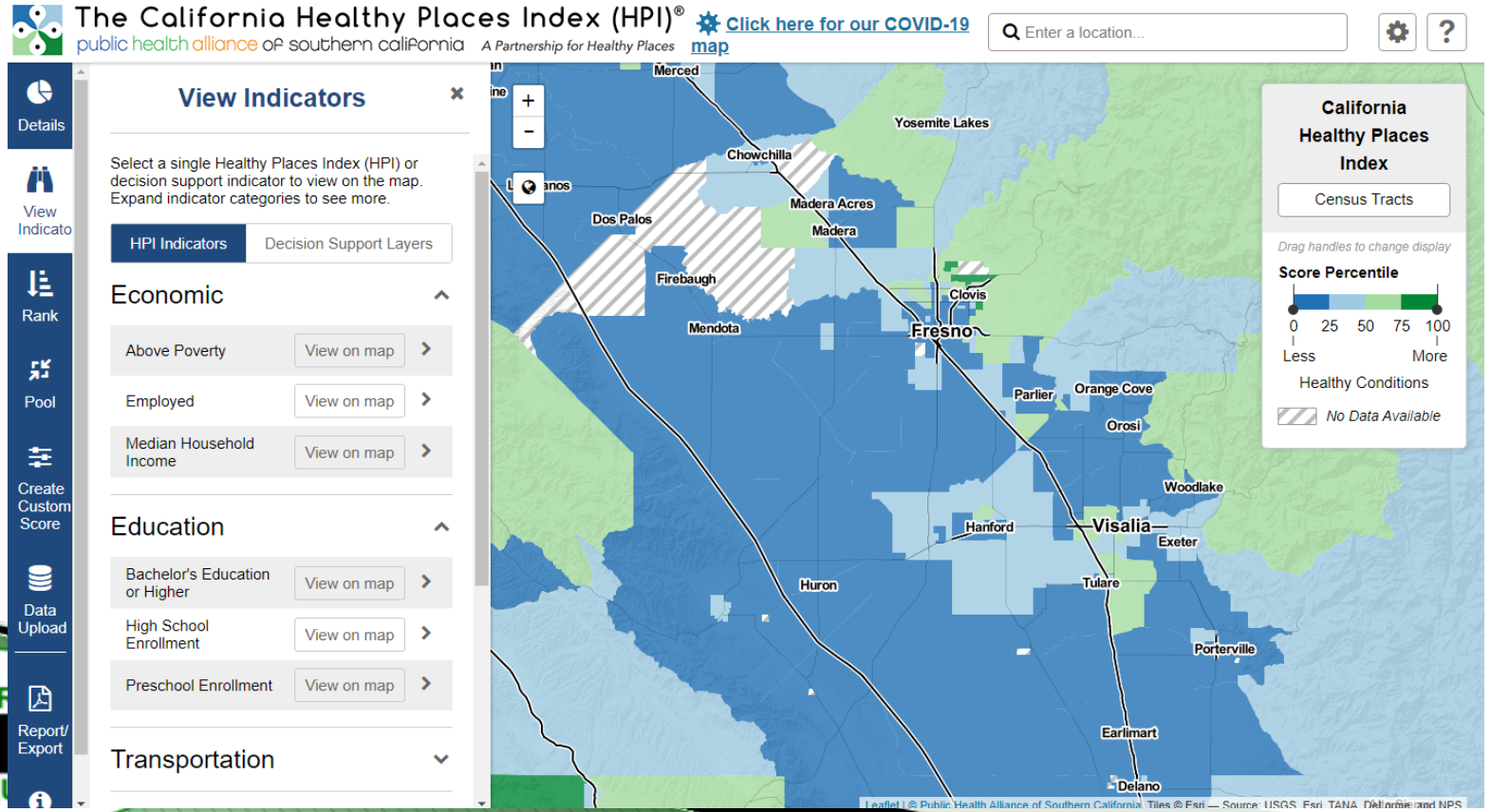
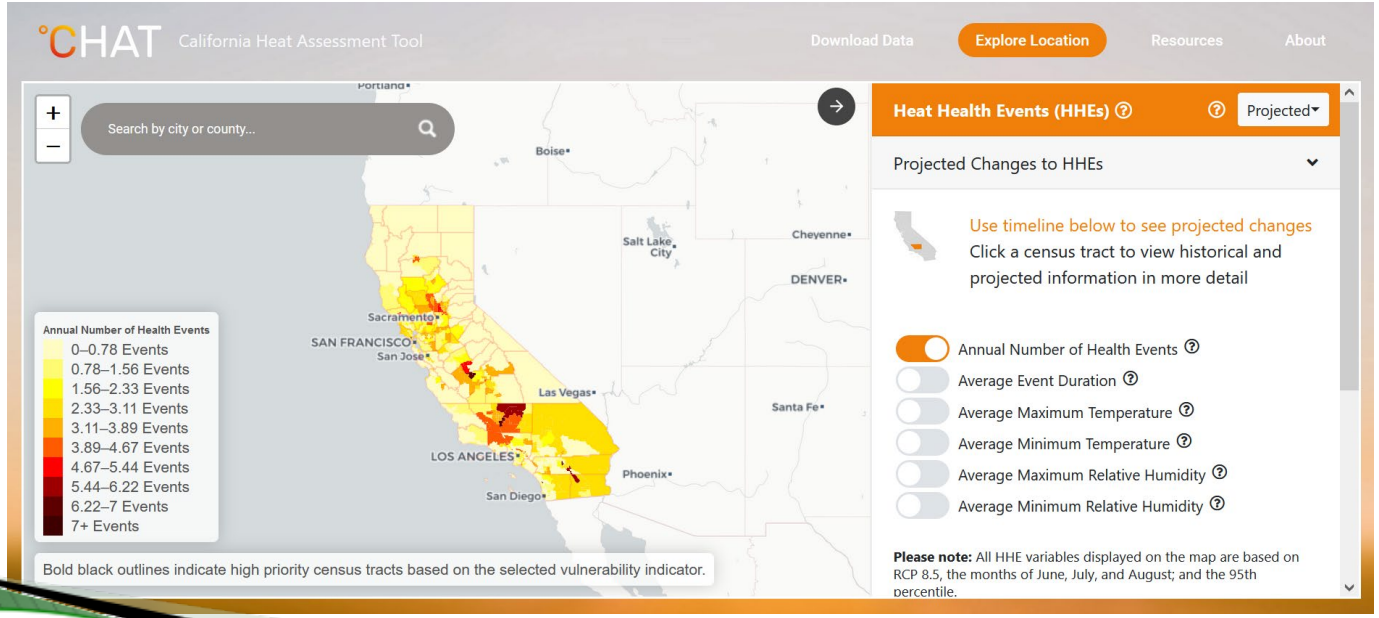
http://map.healthyplacesindex.org/



California Heat Assessment Tool (CHAT)

https://www.cal-heat.org/



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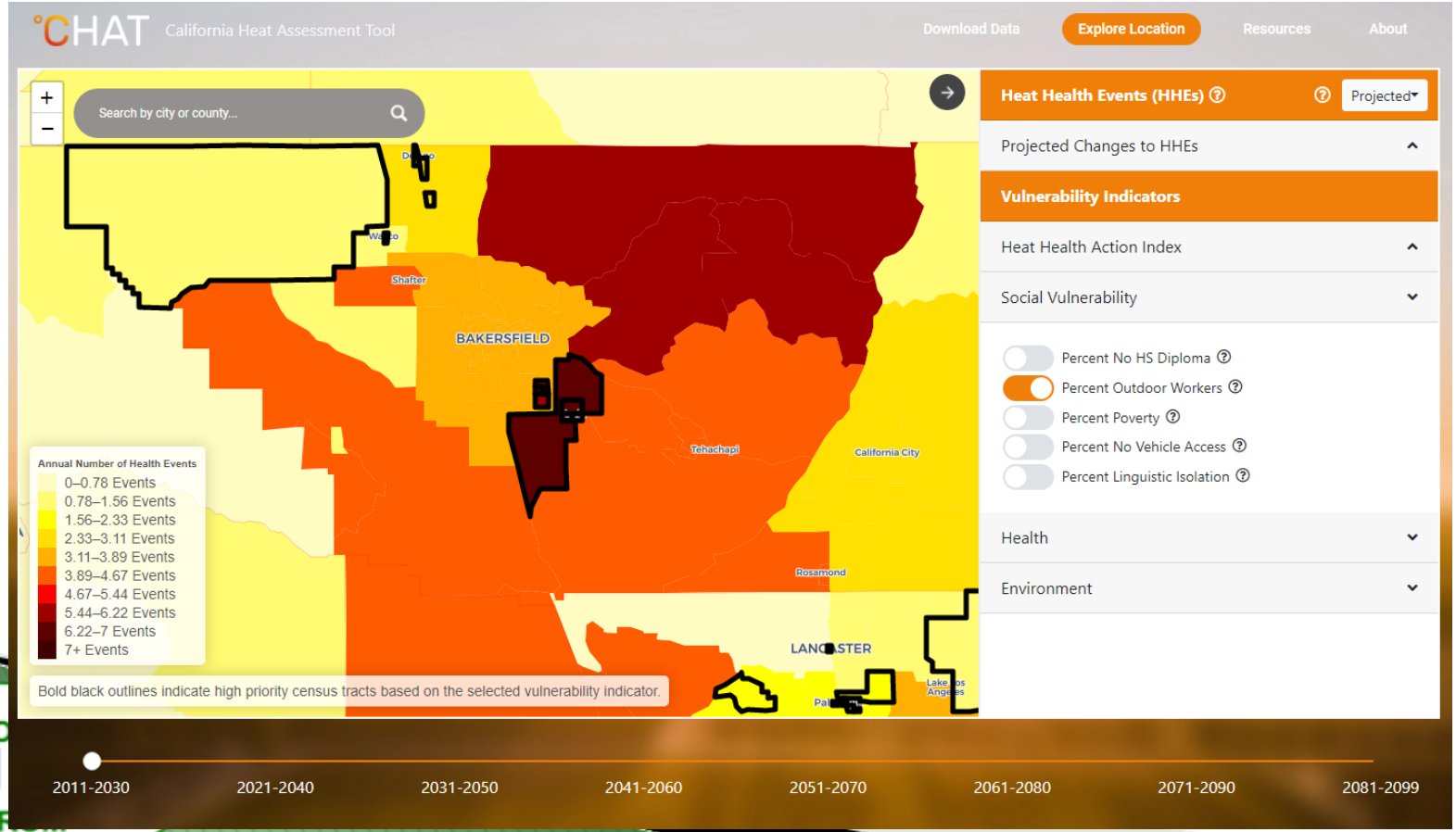


California Equitable Recovery Initiative (CERI)

Equity Grant Program:

- CDC funding to California focused on COVID-19 health disparities
- CDPH providing grants to local health departments
- **Purpose**: To address COVID-19 and advance health equity through strategies, interventions, and services that consider systemic barriers that have put certain groups at higher risk.

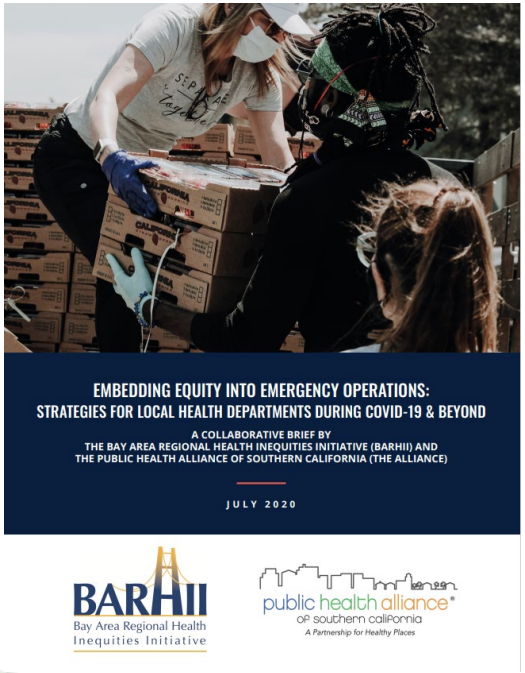
Activities:

- Build infrastructure and organizational capacity – establish core staffing and embed equity into internal policies and practices.
- Includes hiring equity liaisons/equity leads
- Should lead to more points of engagement for equity planning and resources for a variety of local agencies

COVID-19 Health Equity Liaisons can connect with local Environmental Health to meet the needs of populations facing inequities

Equityteam@cdph.ca.gov

BARHII Guide for Embedding Equity Into Emergency Operations



- Strategies for integrating equity into emergency planning and disaster response
- Case studies from local health departments
- Policy and process recommendations
- https://www.barhii.org/embeddingequityinemergencyoperation

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CDPH's Guides for Engaging Communities for Health Equity and Environmental Justice

- New guide and Toolkit developed by CDPH Environmental Health Investigations Branch (EHIB)
- Example practices and strategies for community assessment, partnerships, community-based research, communications
- Toolkit includes templates, field guides, etc.

AskEHIB@cdph.ca.gov

Thank you!
Any Questions?

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http://bit.ly/cchep

Panel Q & A