Public Health Working Group

August 23, 2017

Rye Baerg
Active Transportation and Special Programs

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Welcome

- Name
- Agency or Organization
- Favorite place to walk or bike

2017 Working Group Outlook

- Summer/Fall 2017 – Listening Sessions
- Spring 2018 – Draft Public Health Framework
- Winter 2017/Spring 2018 – Local Input Process
- Spring 2019 – Official RTP/SCS Outreach

Regional Transportation Plan

- Integrated Land-Use and Transportation Plan
- Developed through "bottoms-up" process that respects city control
- Aims to meet state-adopted GHG reduction targets for 2020, 2035
- First RTP/SCS adopted April 2012
- 2016 RTP/SCS adopted April 2016

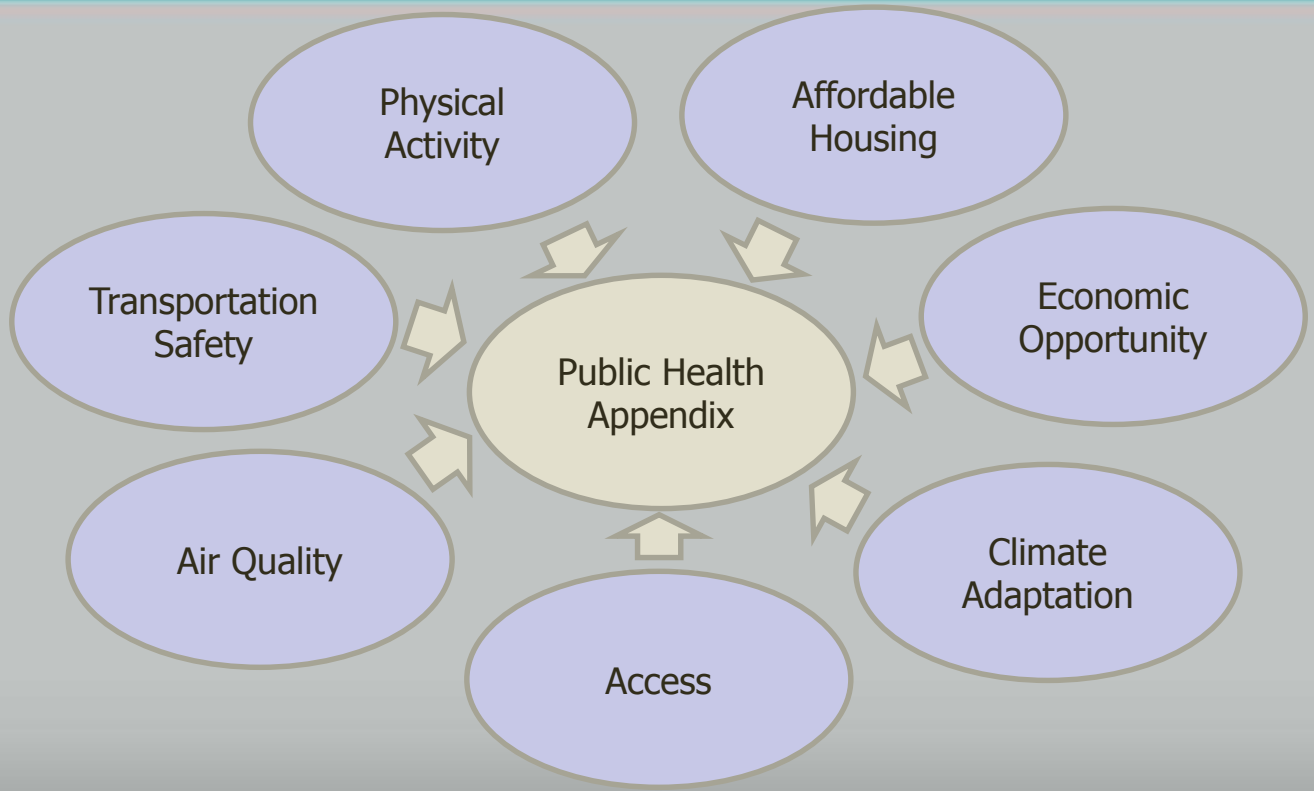
Public Health Framework

- Broad document summarizing Working Group Feedback
- Used for as a base for future outreach with regional stakeholders including sub-regions and county agencies
- Highlight focus areas for SCAG to begin early data collection and analysis

Listening Sessions

- Thematic review of focus areas in the plan
- Discussion of new possible analysis related to each area and identification of data needs
- Discussion of how the Health Analysis in the RTP/SCS can be improved as a planning tool for local jurisdictions and stakeholders

2016 RTP/SCS: Public Health Plan Analysis Focus Areas



http://scagrtpscs.net/Documents/2016/proposed/pf2016RTPSCS_PublicHealth032816.pdf

Listening Session Schedule

- March – Economy and Housing
- August – Climate and Air Quality
- Winter – Access and Physical Activity
- Spring – Health Equity and Environmental Justice
- Spring – Draft Framework

Performance Measures

TABLE 3 Performance Measures by Focus Area

Relevant Performance Measures		Public Health Focus Areas						
Metric	Data Source	Accessibility	Affordable Housing	Air Quality	Climate Adaptation	Economic Wellbeing	Physical Activity	Safety
Additional jobs supported by improving competitiveness	Regional Economic Model REMI					X		
Additional jobs supported by transportation investments	Regional Economic Model REMI					X		
Net contribution to Gross Regional Product	Regional Economic Model REMI					X		
Criteria pollutant and greenhouse gas emissions	Travel Demand Model/ARB EMFAC Model			X	X			
Share of growth in High Quality Transit Areas (HQTAs)	RTP/SCS socio-economic small area data	X	X					
Average distance for work and non-work trips	Travel Demand Model	X						
Percent of trips less than 3 miles	Travel Demand Model	X					X	
Work Trip Length Duration	Travel Demand Model	X						
Land Consumption	Scenario Planning Model				X			
Mode share of walking and bicycling	Travel Demand Model						X	

Air Quality

TABLE 6 Plan Performance - Air Quality*

Metric	Result of Plan	
	2040 Baseline	2040 Plan
Air pollution-related health incidences (annual)	270,328	234,363
Air pollution-related health costs (annual)	$4.5 Billion	$3.9 Billion
Share of New Growth within 500 Feet of Freeway	3.5%	4.4%
Criteria pollutant and greenhouse gas emissions	N/A	-8% in 2020 -19% in 2035 -21% in 2040

*Please see the Performance Measures Appendix for more information on data sources and methodology used to calculate these outcomes.

Climate Adaptation

TABLE 7 Plan Performance - Climate Adaptation*

Metric	Result of Plan	
	2040 Baseline	2040 Plan
Criteria pollutant and greenhouse gas emissions from 2005 levels	N/A	-8% in 2020 -19% in 2035 -21% in 2040
Building Water Use, cumulative (2012-2040) compared to Baseline	134 million Acre Feet	133 million Acre Feet
Land Consumption (Greenfield land consumed in square miles)	154	118

*Please see the Performance Measures Appendix for more information on data sources and methodology used to calculate these outcomes.

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2016 RTP/SCS
Air Quality Monitoring

Public Health Working Group
August 23, 2017

Rye Baerg, Senior Regional Planner
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Criteria Air Pollutants

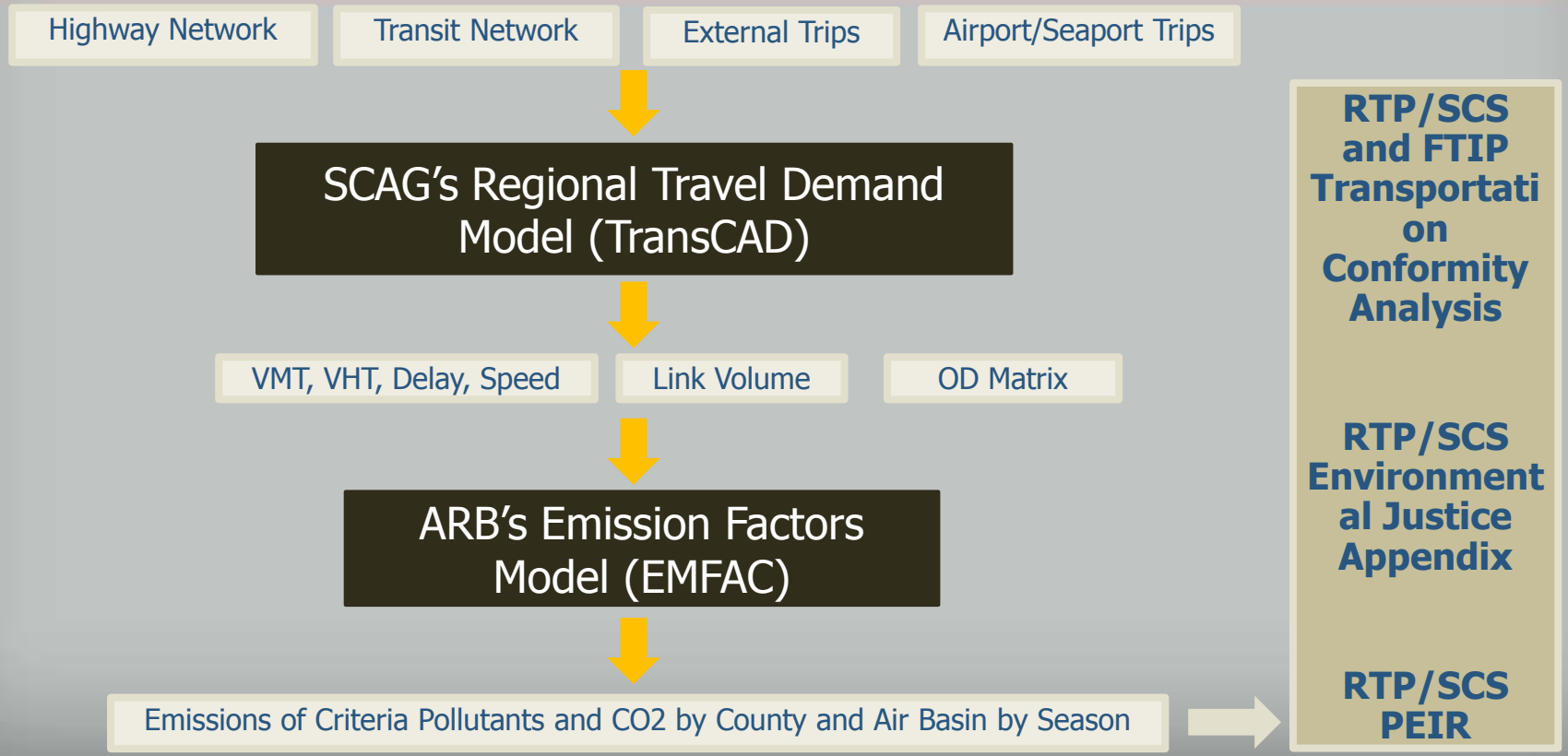
What Are Criteria Air Pollutants?

- Criteria air pollutants are the six common air pollutants for which the U.S. Environmental Protection Agency (EPA) sets national ambient air quality standards as required by the Federal Clean Air Act.
- The six criteria air pollutants are: ground-level ozone, particulate matter (PM2.5 & PM10), carbon monoxide, lead, sulfur dioxide, and nitrogen dioxide

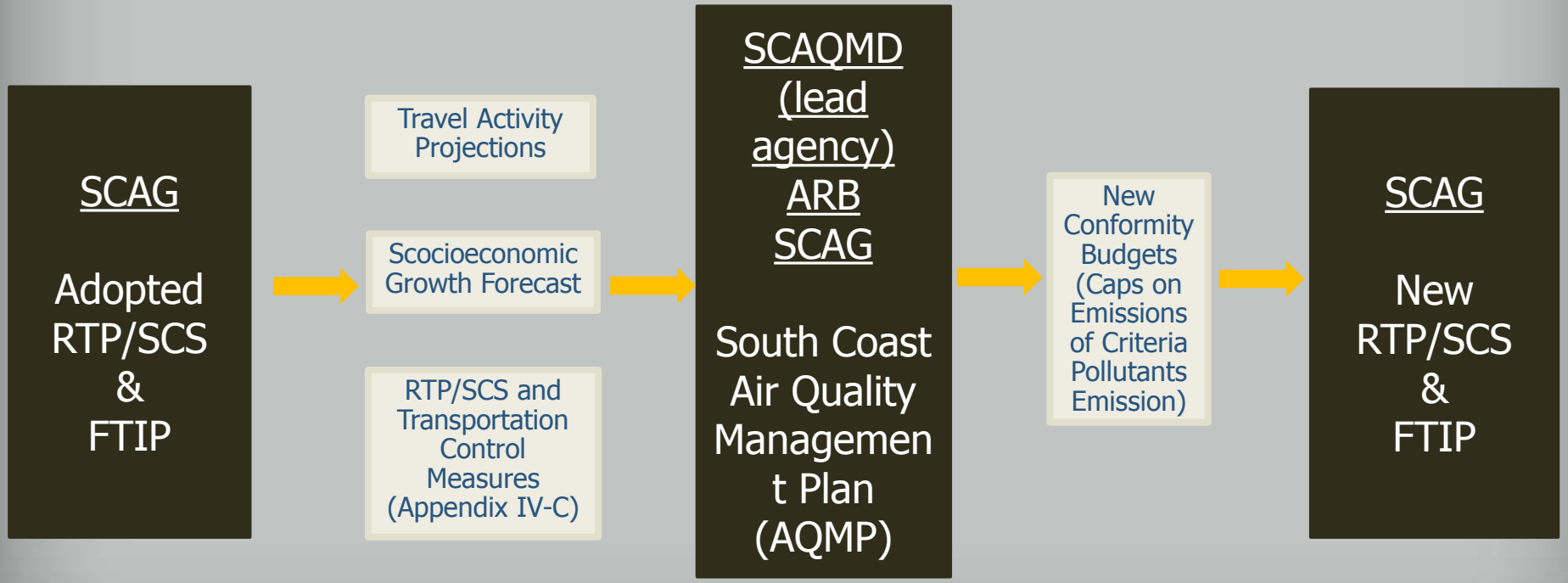
What Does SCAG Report On?

- RTP/SCS and FTIP Transportation Conformity Analysis: emissions by nonattainment or maintenance areas
- RTP/SCS EJ Analysis: TAZ level emissions
- RTP/SCS PEIR: Regional total emissions

Regional Emission Modeling/Analysis



Interagency Collaboration



2016 RTP/SCS Performance Monitoring

Public Health Working Group

August 23, 2017

Mike Gainor, Senior Regional Planner
Compliance & Performance Monitoring

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Performance-Based Planning

- MAP-21 (2012) established a legislative foundation for a national performance-based transportation planning program.
- The FAST Act (2015) continued the performance monitoring requirements outlined in MAP-21.
- State DOTs & MPOs are required to establish performance targets supportive of national transportation goals.
- Recently finalized federal rule-making established a set of national performance measures & guidelines for setting MAP-21 performance targets.

MAP-21 Performance Measures

MAP-21 established federal transportation performance measures within (7) planning areas:

1) National Highway System (NHS) Performance
2) Freight Movement
3) CMAQ Program
4) Highway Safety
5) Pavement & Bridge Condition
6) Transit Asset Management
7) Public Transportation Safety

RTP/SCS Performance Monitoring

- In addition to federal MAP-21 performance monitoring requirements, SCAG is developing a program to evaluate regional implementation of the 2016-2040 RTP/SCS.
- The 2016 RTP/SCS is expected to result in significant benefits to the SCAG region with respect to mobility, accessibility, air quality, economic growth, public health & community sustainability.
- The RTP/SCS employs various performance measures to monitor progress being made toward meeting identified regional goals.
- SCAG's on-going performance monitoring program also addresses federal air quality & Environmental Justice requirements & state greenhouse gas reduction mandates.

2016 RTP/SCS Goals

Align Plan investments & policies with improving regional economic development & competitiveness
Maximize mobility & accessibility for all people & goods in the region
Ensure travel safety & reliability for all people & goods in the region
Preserve & ensure a sustainable regional transportation system
Maximize the productivity of our transportation system
Protect the environment & health of our residents by improving air quality & encouraging active transportation, such as bicycling & walking
Actively encourage & create incentives for energy efficiency, where possible
Encourage land use & growth patterns that facilitate transit & non-motorized transportation
Maximize the security of the regional transportation system through improved system monitoring, rapid recovery planning, & coordination with other security agencies

RTP/SCS Performance Measures

The performance measures developed to support implementation of the 2016 RTP/SCS are organized around 8 general outcome categories reflective of the RTP/SCS goals:

1) **Location Efficiency**
2) **Mobility & Accessibility**
3) **System Reliability**
4) **System Productivity**
5) **Transportation System Sustainability**
6) **Environmental Quality**
7) **Resource Efficiency**
8) **Public Health & Safety**

Public Health Performance Measures

Public Health & Safety

- Collision rates by severity by mode
- Collision severity by mode (fatalities & serious injuries)
- Air pollution-related health measures
- Physical activity-related health measures
- Active transportation mode share (walking & biking)

Public Health Performance Measures

Environmental Quality

- Criteria pollutants emissions (CO, NOX, PM2.5, PM10, & VOC)
- Greenhouse gas (GHG) emissions

Location Efficiency

- Vehicle Miles Traveled (VMT) per capita

Environmental Justice

- Accessibility to parks & natural lands
- Emissions impact analysis
- Air quality impacts along freeways & highly traveled corridors
- Climate vulnerability

Public Health Performance Measures

In addition to SCAG's RTP/SCS performance measures, MAP-21 also includes performance metrics related to health & safety:

- On-road mobile source emissions (reductions due to CMAQ projects)
- Non-SOV mode share (bike, pedestrian, carpool, transit, telecommuting)
- Highway Safety (motor vehicle serious injuries & fatalities)
- Non-Motorized Safety (bicycle/pedestrian serious injuries & fatalities)
- Public Transit Safety*:
  - Transit system serious injuries & fatalities
  - Transit system safety incidents
  - Rate of transit service vehicle failure

*** Final federal rule-making for Public Transit Safety is still pending**

Thank You!

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Public Health Working Group

2016 RTP/SCS and Climate Change

8/23/2017

Javier Aguilar, GISP

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Background on Environmental Justice Fundamental Principles

- To **ensure the full and fair participation** by all potentially affected communities in the transportation decision-making process
- To **avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects**, on **minority populations** and **low-income populations**
- To **prevent the denial of, reduction in, or significant delay in the receipt of benefits** by minority and low-income populations

- U.S. Department of Transportation, An Overview of Transportation and Environmental Justice

Background on Environmental Justice

- Title VI of the Civil Rights Act of 1964
- Executive Order 12898 (1994)
- US Department of Transportation Order (1997)
- Federal Highway Administration Order (1998)
- Memorandum: Implementing Title VI Requirements in Metropolitan and Statewide Planning (1999)
- FTA Circular Title VI Guidelines (2007, 2011, 2012)
- FTA Circular 4703.1 on Environmental Justice (2012)
- SCAG's Environmental Justice Compliance Procedures (2000)
- SCAG's Public Participation Plan (2014)

Methodology/Analysis
Identifying EJ Population Groups

Minority:

- *A person who is African American, Hispanic or Latino, Asian American, American Indian, Alaskan Native, Native Hawaiian and Other Pacific Islander*

Low-Income:

- *A person whose median income is at or below the Department of Health and Human Services (HHS) poverty guidelines*

Other Groups:

- *Non-English speakers, Households without vehicles, Population without a high school degree or equivalent, Disabled individuals, Seniors, ages 65 and over, Young children, ages 4 and under*

Environmental Justice and Climate Vulnerability

- Climate change impacts everyone, but not all people equally.
- Racial and ethnic minority and lower income household tend to be more vulnerable because of fewer resources to cope with its effects
- Others in the higher risks population are young children, seniors, and the chronically ill.

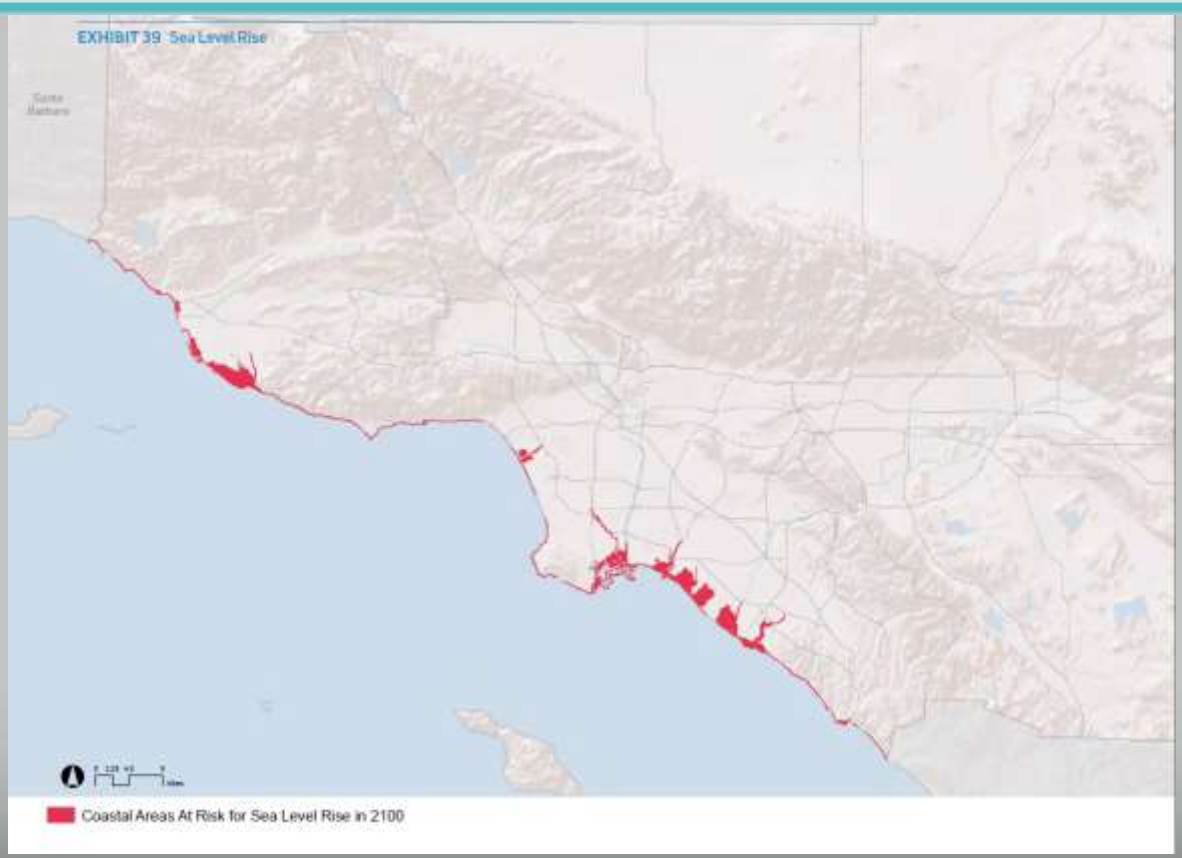
Climate Change Effect

- **Increases in ambient temperature/extreme heat conditions**
  - EJ populations have lower access than other population segments to common adaptation options including tree canopy (which provides shading and is correlated with a decreased urban heat island effect) and car ownership to access public cooling centers. The elderly, immigrant populations, and those in rural locations may have lower awareness of and access to cooling centers.
- **Increase in drought**
  - Reduced access to fresh fruit and vegetables, and even paying more for similar food products; and fewer job opportunities in sectors that employ significant proportions of low-income individuals including agriculture and tourism.

Climate Change Effect (Continued)

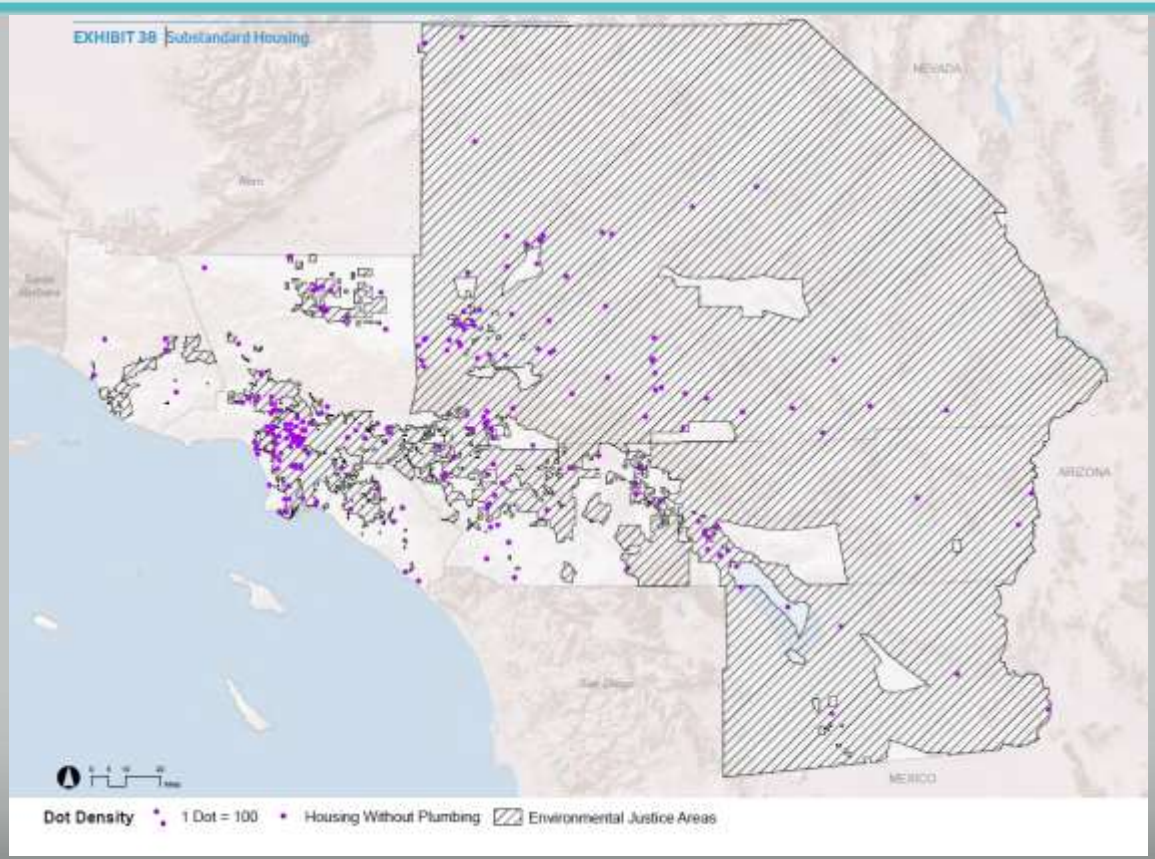
- **Increase frequency, intensity, and duration of extreme storms**
  - Flooding may cause serious health impacts and risks that include death and injury, contaminated drinking water, hazardous material spills, and increases in the populations of disease-carrying insects and rodents. Other negative impacts would include damage to critical infrastructure and community disruption/displacement. Indeed flooding may cause a range of detrimental physical, economic, and psychological effects for residents at risk, which are disproportionately minority and low income persons.

Sea Level Rise



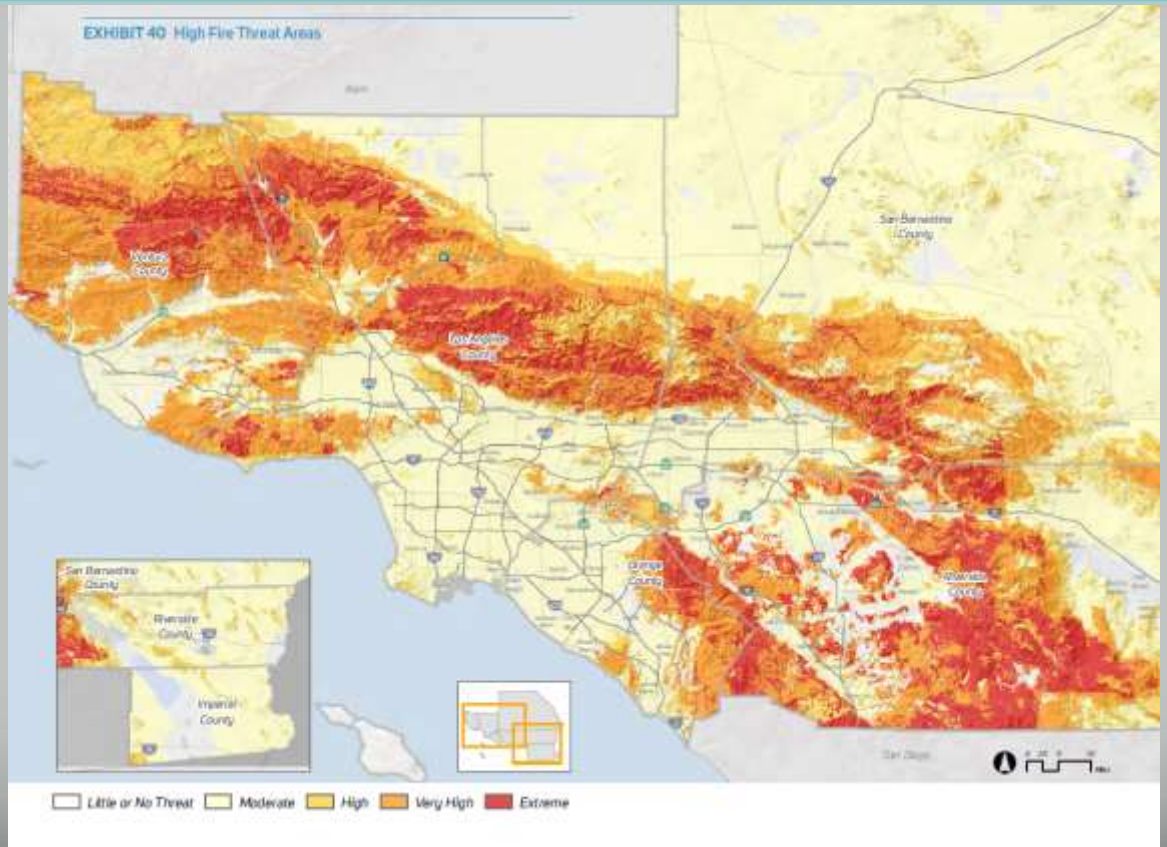
Projected coastal inundation areas in 2100, when the region's sea level is modeled to reach 55 feet. Exposure to coastal flooding may cause a range of detrimental physical, economic and psychological effects on the populations impacted. Many of the areas affected fall outside EJAs or other areas of concern, but about 50,000 people are anticipated to be impacted from EJAs, and 48,000 in SB 535 Disadvantaged Communities (DACs). In regard to Communities of Concern (CoCs), there will slightly more than 3,000 people affected from the Harbor Gateway and Wilmington areas.

Substandard Housing



In the SCAG region, 57,000 housing units fall in these criteria out of nearly 6.4 million (less than one percent). This number is relatively small when compared with all housing units in the region, 51,000 of these substandard housing units are in Environment Justice Areas (89.3 percent).

High Fire Threat Areas



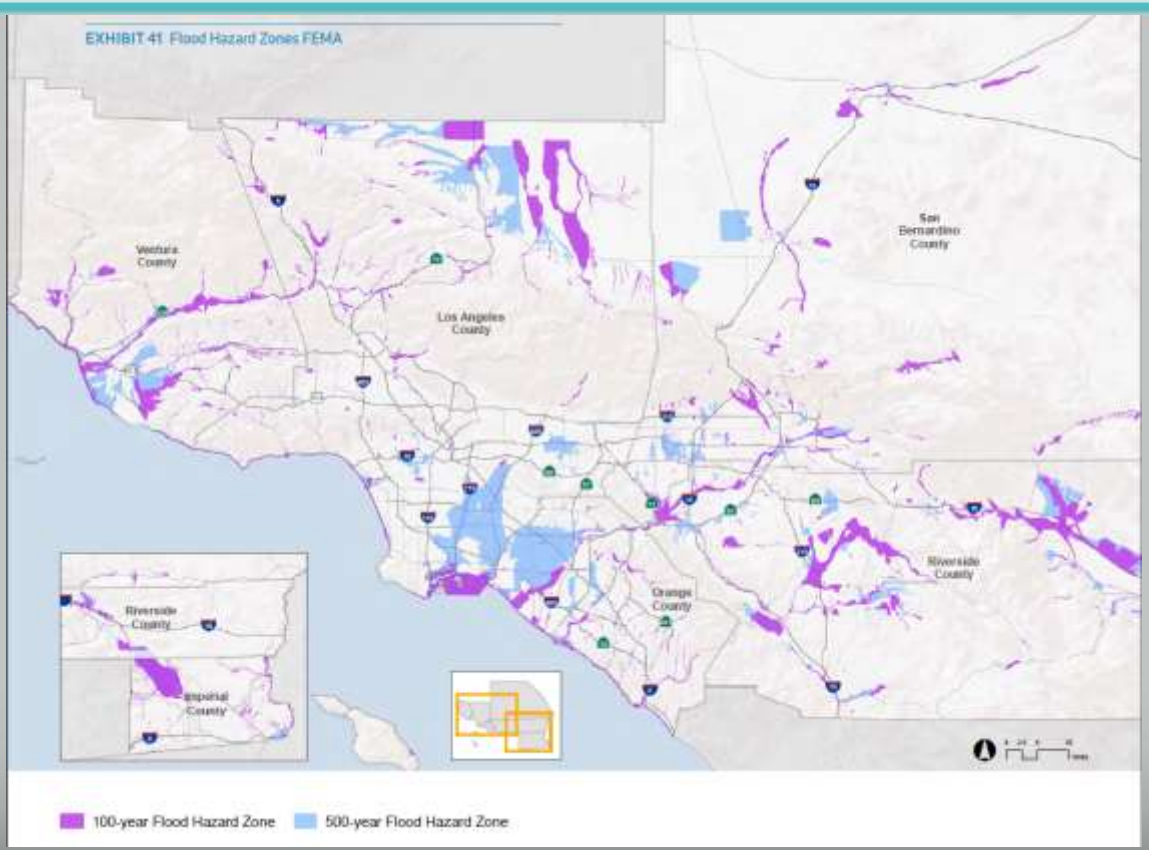
Large fires statewide are anticipated to increase from roughly 58 percent to 128 percent over the next several years, and the resulting burn areas will increase from 57 percent to 169 percent by 2085. As a result, air quality, water quality and perhaps food production and energy pricing will be affected. These extra costs are expected to more severely impact low-income communities.

Population in High Fire Threat Areas

TABLE 93 Population in High Threat Fire Areas

Population	High Risk Areas	Share of Population Living in High Risk Areas	Very High Risk Areas	Share of Population Living in Very High Risk Areas	Extreme Risk Areas	Share of Population Living in Extreme Risk Areas
Hispanic	90,888	24%	138,011	25%	40,715	29%
White	204,559	54%	309,058	56%	77,406	54%
Minority	175,848	46%	246,110	44%	65,406	46%
African American	16,355	4%	21,620	4%	6,193	4%
Native American	983	0%	2,379	0%	1,046	1%
Asian	55,418	15%	65,941	12%	13,057	9%
Other Race	12,204	3%	18,159	3%	4,395	3%
Age 0 to 4	20,903	5%	32,337	6%	8,658	6%
Seniors (65+)	48,566	13%	64,159	12%	17,304	12%
Disabled	31,531	8%	45,114	8%	12,452	9%
Total	380,407		555,168		142,812	
Households	**High Risk Areas**	**Share of Households in High Risk Areas**	**Very High Risk Areas**	**Share of Households in Very High Risk Areas**	**Extreme Risk Areas**	**Share of Households in Extreme Risk Areas**
Poverty 1	12,864	10%	18,233	10%	4,953	11%
Poverty 2	8,609	7%	12,223	7%	3,471	7%
Poverty 3	8,873	7%	12,830	7%	3,581	8%
Quintile 1	18,773	15%	27,569	15%	7,538	16%
Quintile 2	20,628	16%	30,599	17%	8,357	18%
Quintile 3	23,919	19%	34,674	19%	9,174	20%
Quintile 4	28,418	22%	41,364	23%	10,475	23%
Quintile 5	35,018	28%	49,613	27%	10,776	23%

Flood Hazard Zones FEMA



Minority communities are disproportionately affected minorities comprise 71 percent of the population living in 100-year Flood Hazard Zones, and 77 percent of the population of the population residing in a 500-year Flood Zones. This analysis also shows lower income households are disproportionately impacted. The poorest households, as well as the lowest quintile income households, have a larger concentration in flood hazard zones than in the greater region

Population and Household in Flood Hazard Areas

TABLE 94 Population and Households in Flood Hazard Areas in 2012

Population	100-Year Flood Hazard Zone	Share of Population Living in 100-Year Zone	500-Year Flood Hazard Zone	Share of Population Living in 500-Year Zone
Hispanic	8,789	53%	1,432,725	54%
White	4,873	29%	605,179	23%
Minority	11,868	71%	2,056,870	77%
African American	745	4%	186,160	7%
Native American	38	0%	7,645	0%
Asian & PI	1,928	12%	375,515	14%
Other Race	367	2%	54,826	2%
Age 0 to 4	1,017	6%	194,267	7%
Seniors (65+)	2,157	13%	277,342	10%
Disabled	1,711	10%	250,991	9%
Total	16,741		2,662,049	
Households	**100-Year Flood Hazard Zone**	**Share of Households Living in 100-Year Zone**	**500-Year Flood Hazard Zone**	**Share of Households Living in 500-Year Zone**
Poverty 1	796	15%	102,562	13%
Poverty 2	486	9%	70,342	9%
Poverty 3	463	9%	69,198	9%
Quinitile 1	1,134	21%	147,287	19%
Quinitile 2	1,097	20%	164,490	21%
Quinitile 3	1,054	20%	165,538	21%
Quinitile 4	1,038	19%	160,903	21%
Quinitile 5	1,070	20%	136,972	18%

Impacts of Potential Adaptation Polices on EJ Populations

TABLE 95 Impacts of Potential Adaptation Policies on EJ Populations

Climate Adaptation Policy	Source	Potential Impact on EJ Populations		
		Spatial	Financial	Health
Select materials/designs to improve road resiliency to high temperatures, and to reduce heat retention	State of California	New/reconstructed roads may run through vulnerable communities (-) investment could be prioritized for most vulnerable areas (+)	Higher cost treatments could divert funds from transit, other measures (-); could save costs in long term by avoiding need for reconstruction (+)	Noise impacts; air pollution impacts during construction and use (-). Reduce heat island impacts (+).
Fortify roadways vulnerable to storm surge and sea-level rise	City of Chula Vista; State of California	Roads may run through vulnerable communities (-); Could protect such communities, e.g. during evacuations (+)	Higher cost treatments could divert funds from transit, other measures (-); could save costs in long term by avoiding need for reconstruction (+)	Noise impacts; air pollution impacts during construction and use (-); Could improve safety (+)
Increasing shade trees	Western Riverside Council of Governments (WRCOG); City of Chula Vista	Investment could be prioritized for most vulnerable areas (+)	Funding greater availability of shade trees could divert funds from other measures (-); Shading can reduce cooling costs (+); Increased greening may increase gentrification/housing cost pressures (-)	Visual impacts (+); Reduction in ambient temperatures (+); Reduction in stress (+)
New sea level rise & land development codes	City of Chula Vista	EJ populations communities near the Port of LA are particularly susceptible to sea level rise (-)	Costs to comply with new codes could make (new) housing developments less affordable (-); could save costs in long term by avoiding need for maintenance/ reconstruction (+)	Could improve safety (+); could result in higher quality housing (+)
Reducing vehicle miles traveled (VMT) through taxes and fees, congestion pricing	WRCOG, City of San Diego, City of Toronto Public Health	EJ populations may have longer distances and commute time between home and work due to reduced housing purchasing power (-)	Increased costs may disproportionately affect EJ households (-);EJ populations may have less flexibility in changing times they travel to avoid charges (-), or incur additional travel costs by taking longer routes to avoid tolls (-);Could increase attraction of low-cost modes for EJ populations (+)	Increased personal exposure to heat and PM (-) but decreased regional exposure (+) would likely improve health conditions (e.g. cardiovascular, weight, Type II diabetes, respiratory) if mode switch to bike or walk (+)
Increasing availability of cooling centers	City of San Francisco, City of Toronto Public Health	Potential unforeseen barriers (e.g. walkability) to accessing cooling centers, even if proximity increases (-)	Funding greater availability of cooling centers could divert funds from other measures (-); Could reduce high-cost emergency response visits (+)	Disease spread (-); Surge in use could create stressful environment (-); Could contribute to social capital (+); Avoidance of heat-related illnesses (+)
Prioritizing projects that protect key evacuation routes and modes	State of California	EJ populations may not have access to key routes and modes (-); Could improve infrastructure in EJ areas (+)	Costs of improvements could divert funds from other measures (-)	Noise and air pollution impacts during construction (-); Improved evacuation travel times, improved emergency response times (+)

The 2016 RTP/SCS and Climate Change

- The 2016 RTP/SCS helps reduce the impacts of climate change on the region, by reaching the region's reduction targets under SB 375.

- The 2016 RTP/SCS anticipates a large share of growth to occur in small-lot single-family and multifamily housing that is targeted for infill locations within high quality transit areas.

- The RTP/SCS also reduces future development in areas that contain high quality plant and animal habitats, including parklands, natural lands, farmland and other natural resource areas.

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SCAG Public Health Working Group

Air Quality, Health, & Infill Development

August 23, 2017

Brian Moore, PhD.
California Air Resources Board
California Environmental Protection Agency
Air Resources Board

Outline

- Impacts of air pollution on health
- Current air quality
- Health impacts of air pollution
- Air pollution, land use, and transportation
- Recent and current ARB research
- Future of health related air pollution research

How does air pollution impact health?

- Simple question, complex answer

Which pollutant?

Carbon Monoxide

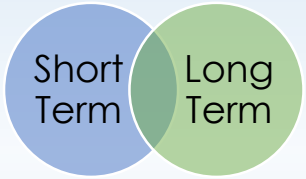
Ozone

Particulate Matter

Nitrogen Dioxide

Sulfur Dioxide

What exposure?



What population?

Age

Pre-existing Disease

Socio-economic Status

Which health outcome?

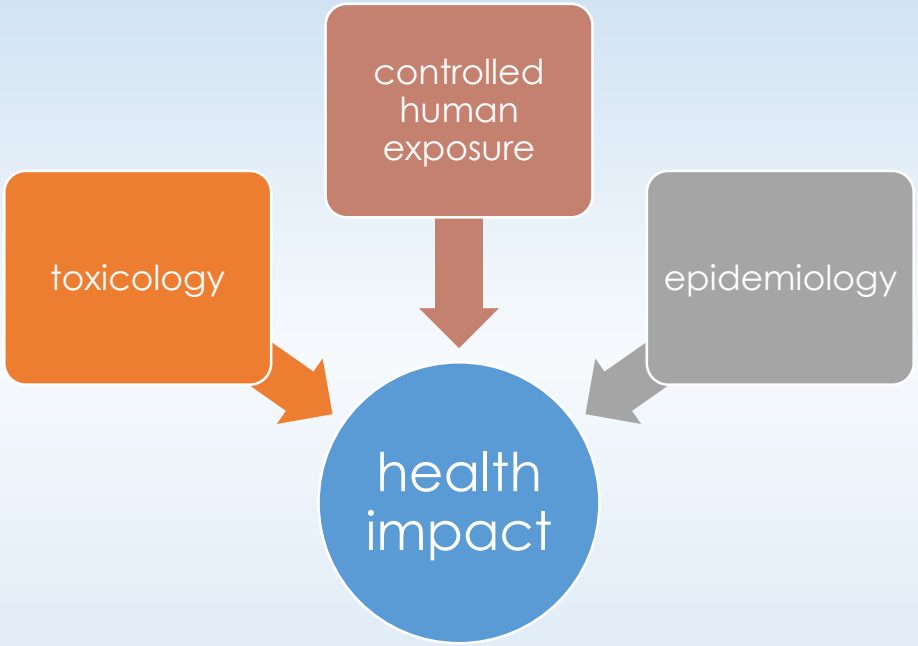
Premature Mortality

Hospitalizations

Disease Onset

Heart & Lung Function

Evaluating health impacts



Health impacts of air pollution

Particulate Matter

- Premature mortality
- Heart & lung-related ED visits & hospitalizations
- Asthma symptoms & risk of asthma development
- Lung function growth reduction
- Risk of low birth weight & infant mortality

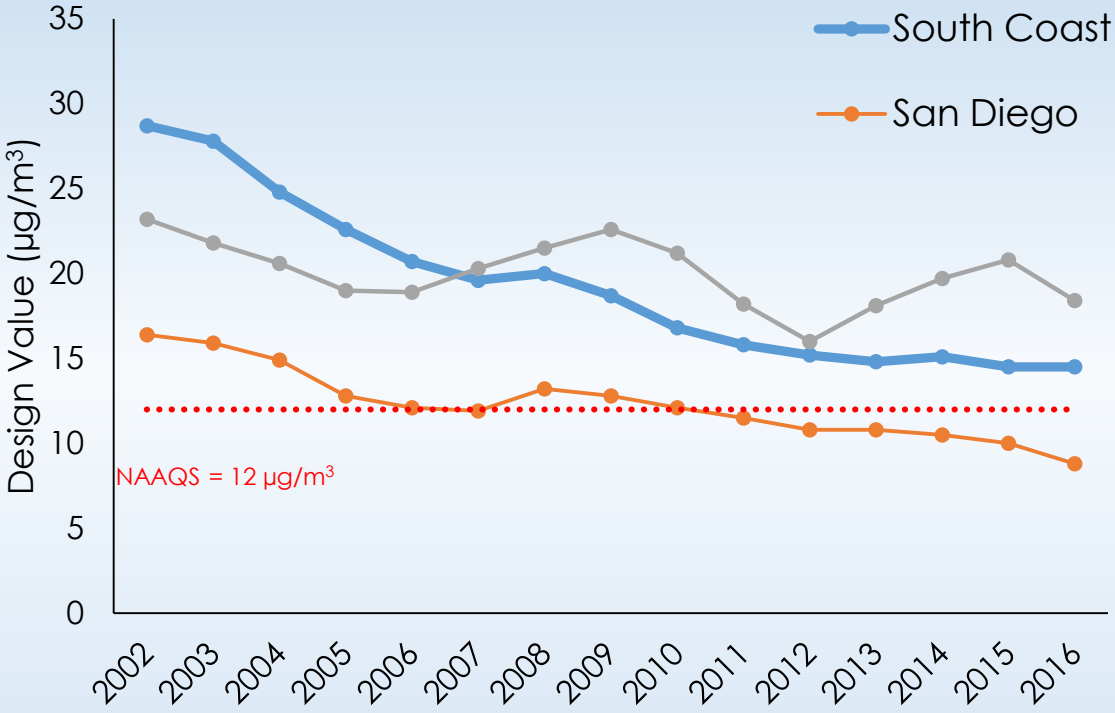
Ozone

- Respiratory-related ED visits & hospitalizations
- Decreased lung function
- Symptoms & onset of asthma
- Increased risk of respiratory & all-cause mortality

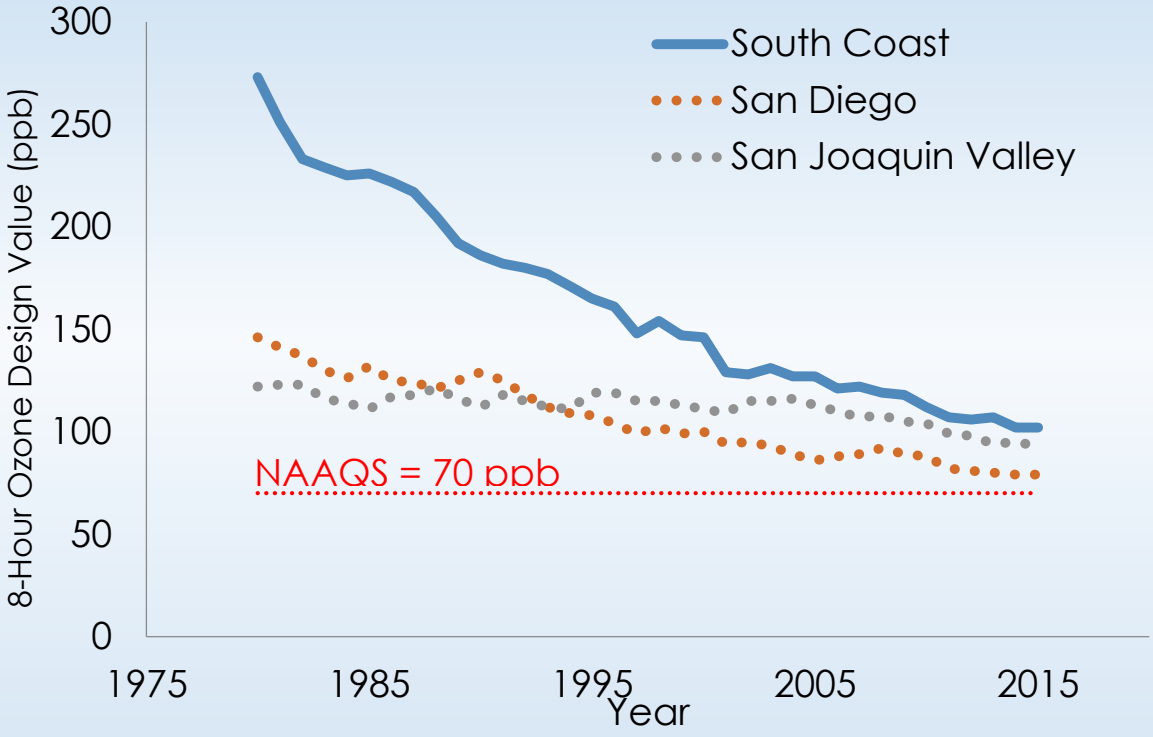
Toxics

- Increased cancer risk

PM2.5 trends in California



Ozone trends in California



Cleaner air can reduce premature mortality

Particulate Matter 2.5

Area	Standard (μg/m^3)	Premature Deaths* Avoided
Los Angeles-South Coast Air Basin	15	386 (301 – 73)
	12	2135 (1670 – 2608)
	5.8	4121 (3238 – 5012)

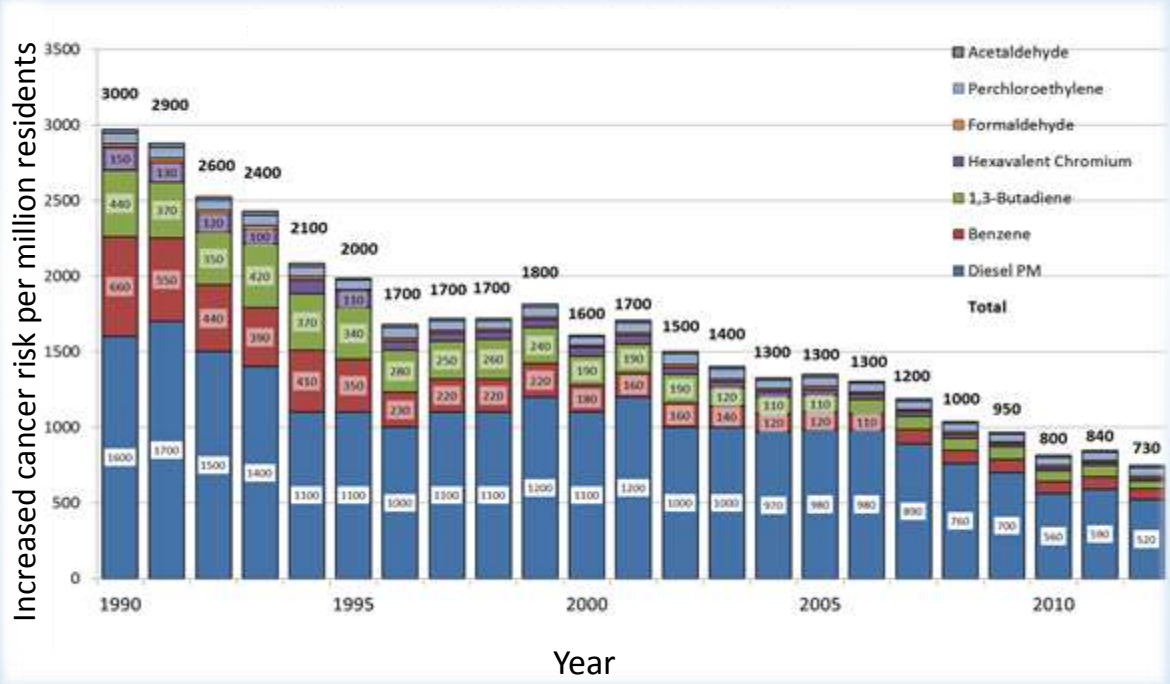
Ozone

Area	Standard (ppm)	Premature Deaths Avoided
Los Angeles-South Coast Air Basin	70	319 (166 - 471)
	65	365 (190 - 539)
	60	411 (214 - 607)

*cardiopulmonary-related deaths

Cleaner air reduces cancer risk

Cumulative cancer rates for toxic air contaminants



Propper et al. (2015) Environ. Sci. Technol. 49, 11329−11339

Human exposure to air pollution

Ambient

Near-roadway

Commute

Indoor

What about near-roadway exposure?

Background

- Exhaust and non-combustion materials
- Speciation and composition of emissions
- Concentrations highly spatially variable
- No viable monitoring network

Research findings

- Markers of NRAP linked to health
  - Distance to roads
  - Traffic density
  - NO2 and EC
- UFP: Few epidemiologic studies

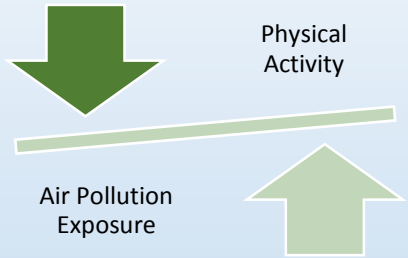
Active transport and health

Background

- Bicycling & walking for transport can reduce VMT and emissions
- Additional physical activity can also improve health
- What about increased AP exposure during active transport?
- Is "substitution" an issue?

Research findings

- "Walkable" neighborhoods associated with decreased VMT
- Benefits may outweigh impacts of increased air pollution exposure
- Substitution may not be a big issue
- Realizing mode shift is challenging



Air pollution exposure during commute

Background

- Public transit can reduce VMT and emissions
- Bicycling and walking to and from stops can have health benefits
- Exposure can be highly variable

Research findings

- Vehicle exhaust can enter from outside
- Self pollution can be an issue
- Higher levels can be seen with public and active transport
- Commute can significantly contribute to total exposure

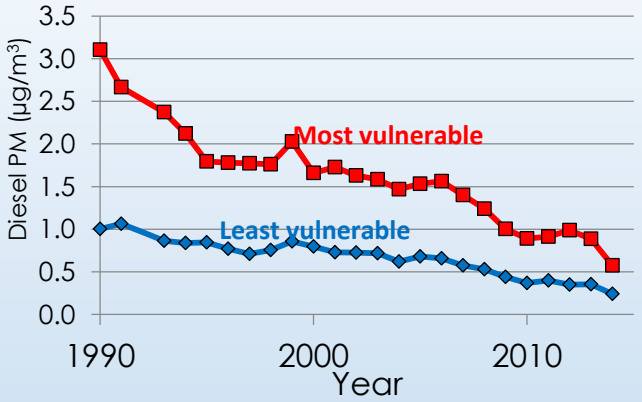
Environmental justice

Background

- EJ communities bear disproportionate burden of health impacts
- Stationary hazards and large emitters located in EJ communities
- Are all communities equally benefitting from air pollution reductions?

Research findings

- EJ communities more vulnerable to air pollution health impacts
- Air pollution can modify health impacts of stress
- DPM higher in EJ communities at same distance from road
- Pollutants going down everywhere with greatest reductions at EJ monitors
- Continue to address freight movement



Indoor exposure

Background

- Composed of toxic gases and particles
- Short-term and long-term respiratory effects
- 90% of time indoors
- Indoor pollutants have greater chance of being inhaled

Research findings

- Exposures are highly variable
- Ambient air pollution can penetrate indoors
- Properly maintained AC units and kitchen ventilation reduce exposure
- High efficiency filtration systems effective at removing particles

ARB research

Recent Projects

- Ultrafine exposure during bicycling near roadway
- Asthma disparities & susceptibility in California
- Air pollution & cardiovascular disease in California teachers

Current Projects

- Ultrafine modeling study
- Women's cardiovascular risk from PM exposure
- Cardiovascular effects of multipollutant exposure to PM & ozone
- Benefits of high efficiency filtration to children with asthma
- Sustainable communities research
  - ITHIM, commuter studies, Google collaboration
- Noise associated with near-roadway exposure
- Brake and tire wear projects

ARB research link: https://www.arb.ca.gov/research/research.htm

Land Use & transportation guidance

Technical Advisory: Near Roadway Mitigation Strategies

- Information on strategies to reduce exposure to traffic emissions near high-volume roadways
- Technical supplement to ARB's Air Quality & Land Use Handbook
- Link to Technical Advisory
- https://www.arb.ca.gov/ch/rd_technical_advisory_final.PDF

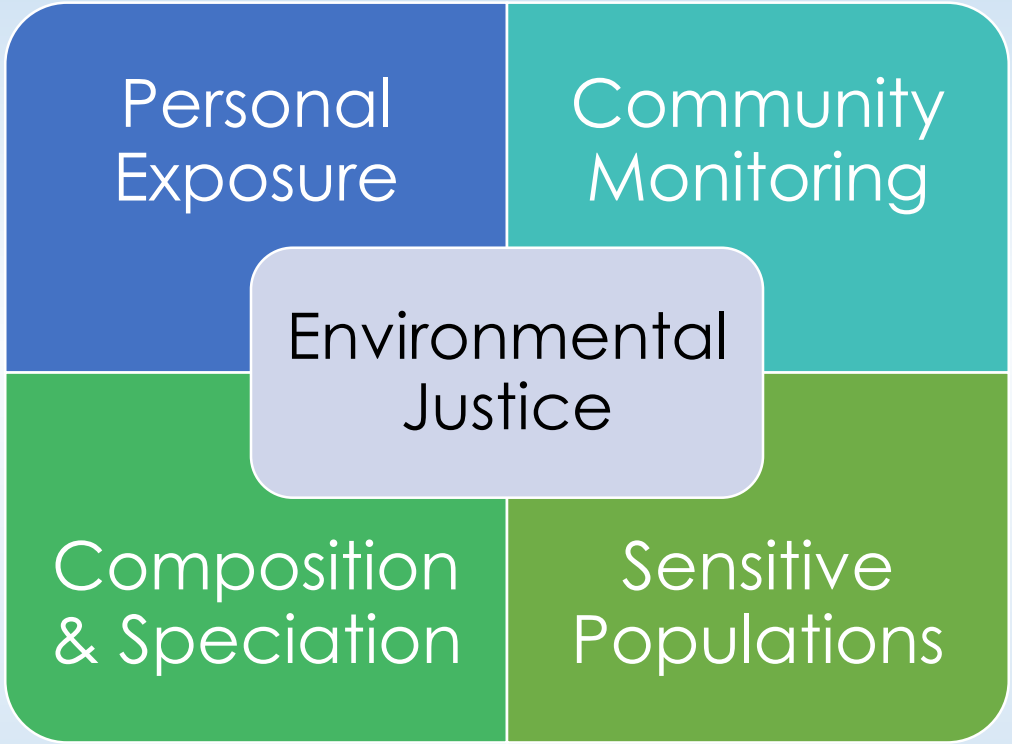
Literature Review: Physical Activity, Health & the Built Environment

- White paper on the health benefits of physical activity & air pollution exposure while walking & biking
- Link to the white paper
- https://www.arb.ca.gov/research/vprp/physical_activity_and_health_final_161216.pdf

Air Quality & Land Use Handbook

- Reference guide for reducing air pollution impacts in new developments
- Link to the Handbook
- https://www.arb.ca.gov/ch/landuse.htm

Future of health-related research



Thank you!

Brian Moore, PhD.

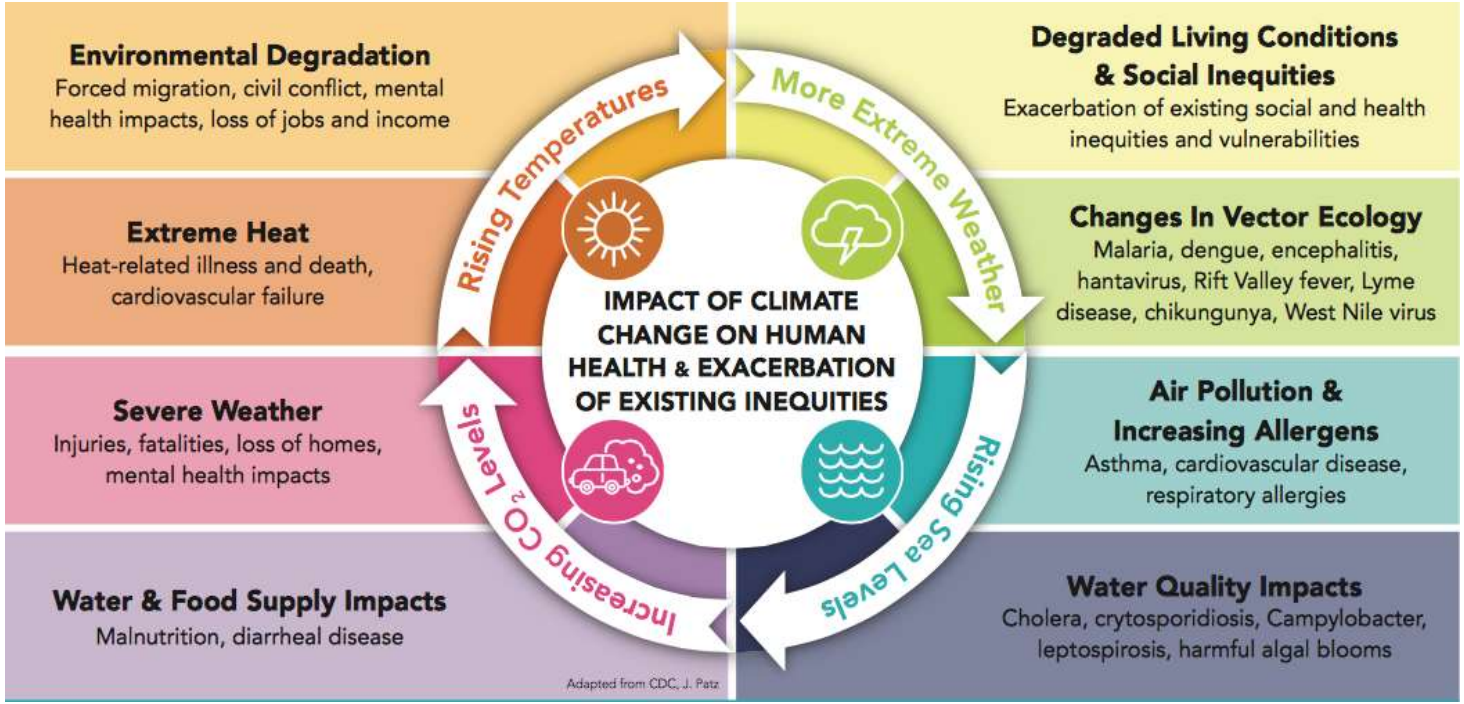
- Air Pollution Specialist
- Research Division
- 916-322-8280
- Brian.Moore@arb.ca.gov

Climate Change and Health: Resources from the CDPH Climate Change and Health Equity Program

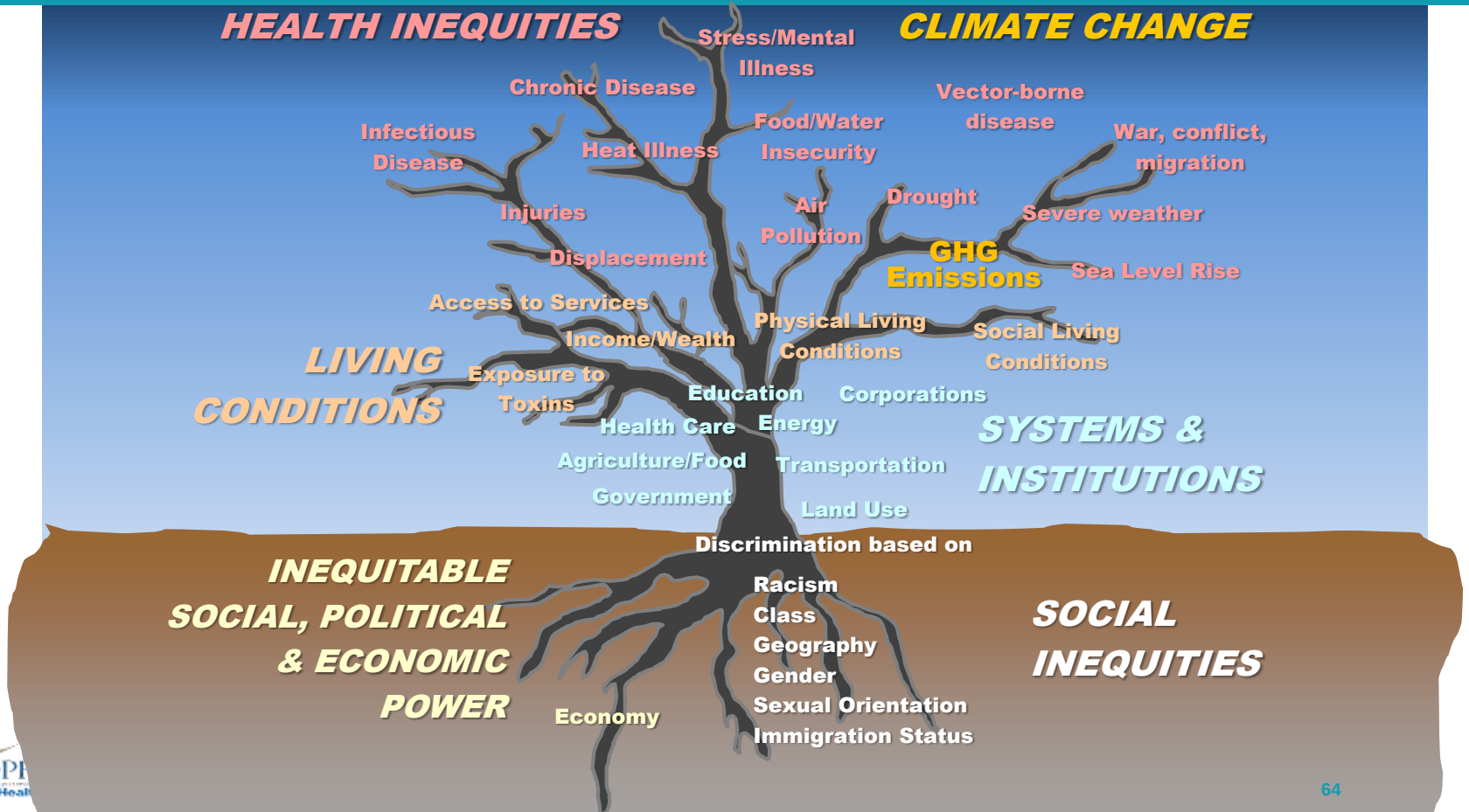
Southern California Association of Governments
Public Health Working Group Meeting
August 23, 2017

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

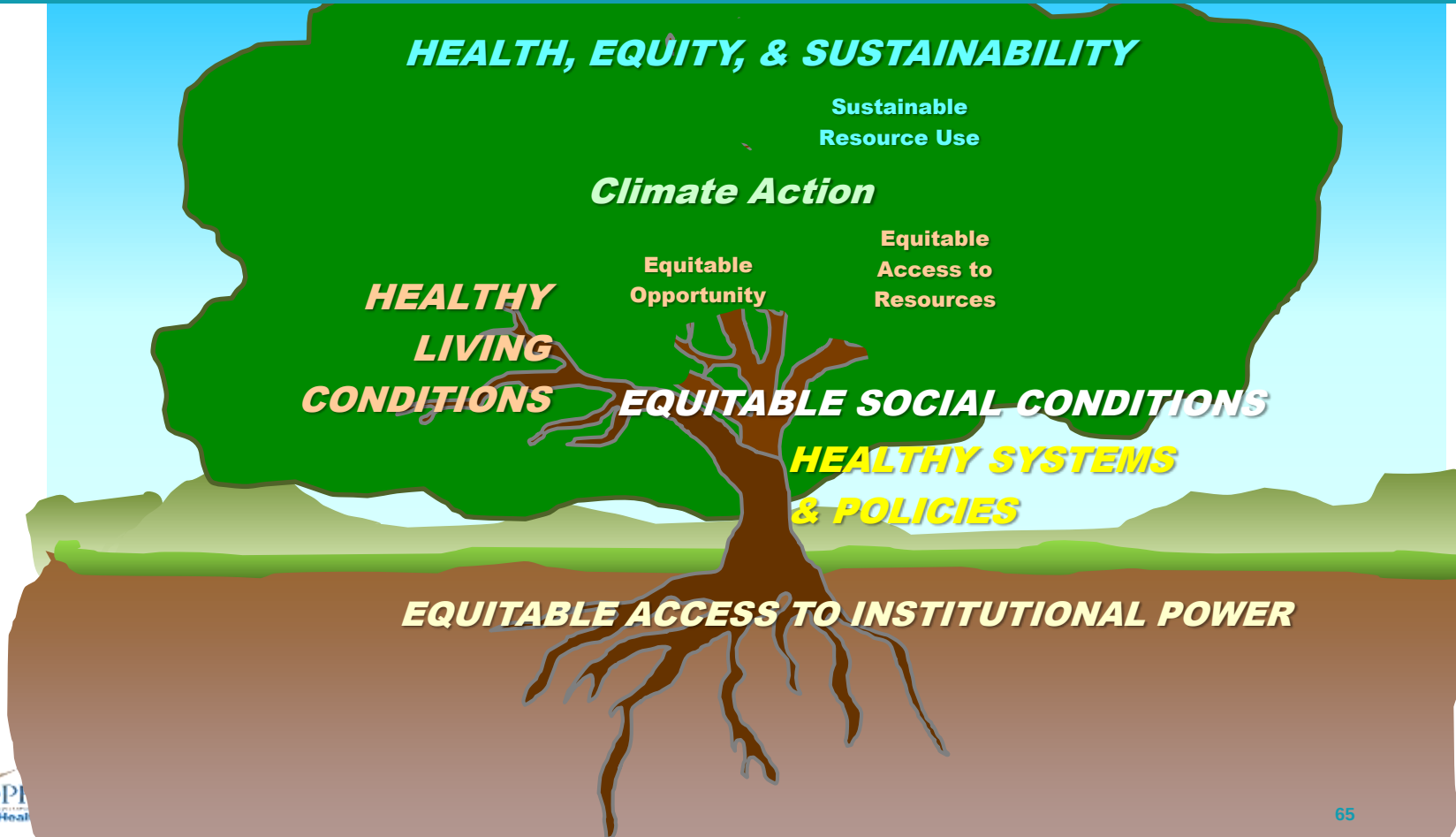
Human Health Impacts of Climate Change



Climate Change & Health Inequities Share Root Causes



Fair and Healthy Climate Resilience



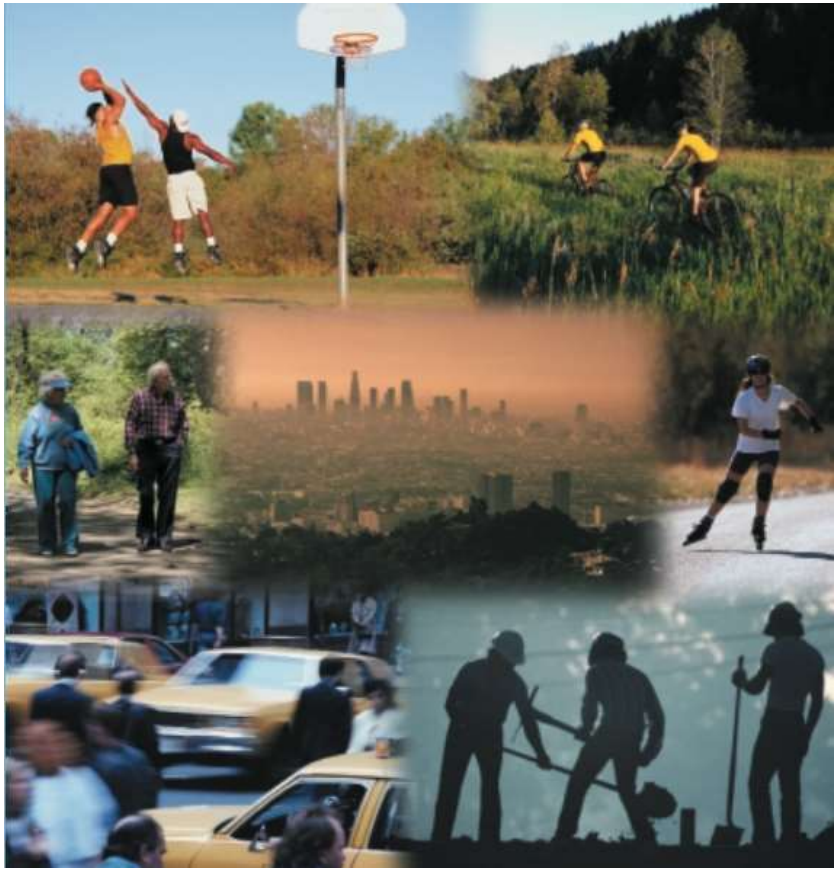
Climate Change & Health Inequities

- Climate change will impact all people, but **the most vulnerable suffer the most**
- Climate change **magnifies existing health inequities**
- Climate change is a threat multiplier, amplifying existing risks.

Reducing Climate Change While Improving Health

Photo: CDC, NHTSA

Chronic Disease and Climate Change



EPA

Tools for Assessing Climate Change and Health Vulnerability

Website:
https://www.cdph.ca.gov/Programs/OHE/Pages/CalBRACE.aspx

Resources:

1. Climate Change and Health Vulnerability Indicators for California

2. Climate Change and Health Profile Reports

Climate Change and Health Vulnerability Indicators for California

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

Climate Change and Health Vulnerability Indicators for California

ENVIRONMENTAL EXPOSURES

Magnitude, frequency, and duration of environmental or climate-related factors that directly affect human health

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

Climate Change and Health Vulnerability Indicators for California

POPULATION SENSITIVITY

Physiological and socio-economic factors which directly or indirectly affect the degree to which a population is impacted by climate change

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

Climate Change and Health Vulnerability Indicators for California

ADAPTIVE CAPACITY

Responses and adjustments to the impacts of climate change, including the capacity to moderate damages, take advantage of opportunities, and cope with consequences.

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

Climate Change and Health Vulnerability Indicators for California

ENVIRONMENTAL EXPOSURES

Magnitude, frequency, and duration of environmental or climate-related factors that directly affect human health

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ADAPTIVE CAPACITY

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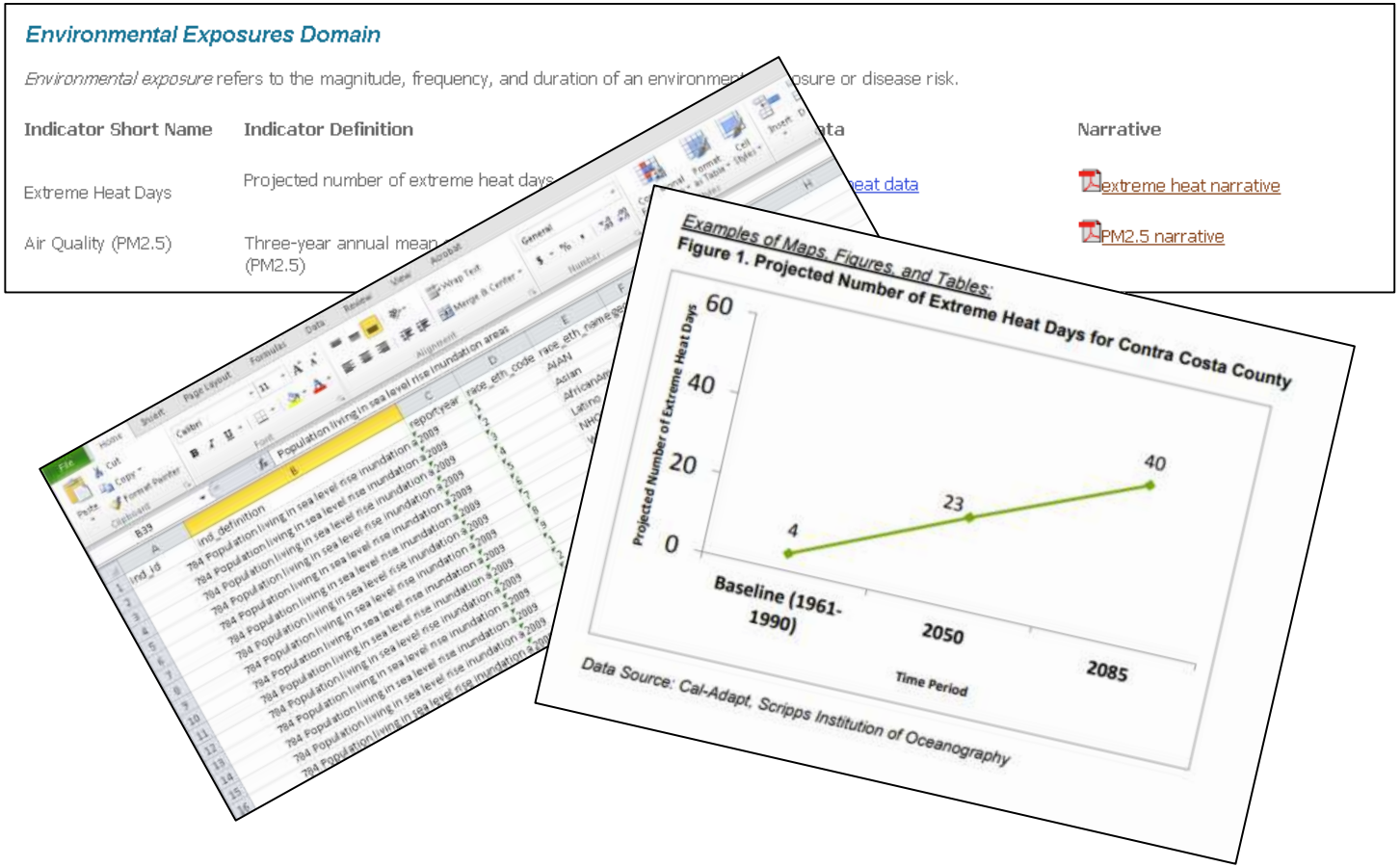
CDPH California Department of Public Health

Climate Change and Health Vulnerability Indicators

- Geographic Levels: State, Climate Region, County, Census Tract (for most indicators)
- Some indicators can be stratified by race/ethnicity
- Data sources are publicly available
- Accompanying narratives explain data sources, how to use the data, and their relevance to climate and health

Climate Change and Health Vulnerability Indicators



Climate Change and Health Profile Reports

Climate Change and Health Profile Report
San Luis Obispo County

CDPH California Department of PublicHealth

UCDAVIS UNIVERSITY OF CALIFORNIA

February 2017

CDPH California Department of PublicHealth

Climate Change and Health Profile Reports

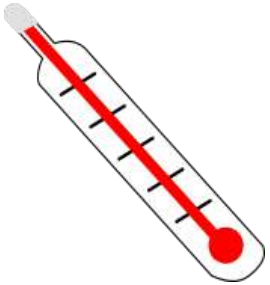
Content:

- Background on climate change
- Climate projections for the county and region
- Overview of the health impacts of climate change
- Description of most vulnerable populations
- Data on health, inequities, and vulnerable populations in the county
- Strategies and action steps

Climate Projections: South Coast Region

↑5-10 °F

July temp (2100)



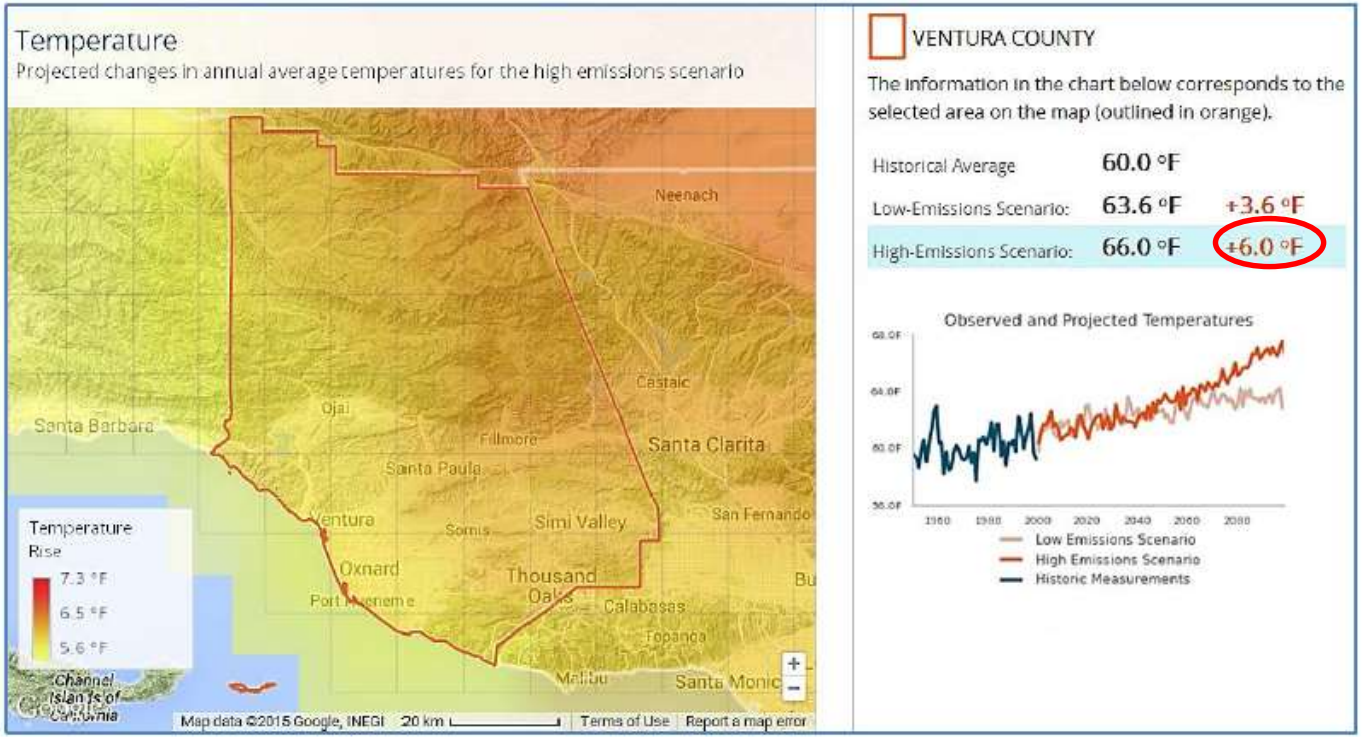
↓ 3-10 inches

Annual rainfall in low areas (2100)

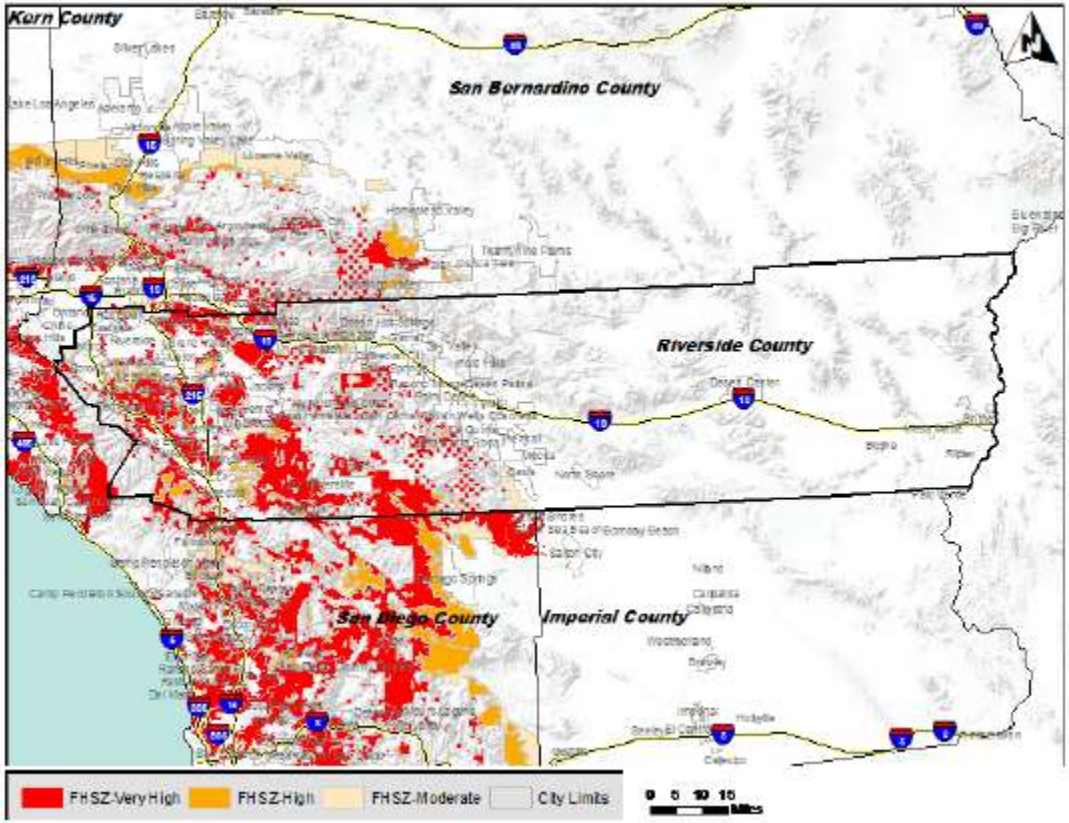
↑12-14/yr

Heat waves (2100)

Projected Annual Average Temperature
Ventura County, 2099



Fire Hazard Severity Zones (FHSZ), Riverside County, 2007



Vulnerabilities in Imperial County
Populations Most at Risk

41%

of low-income residents have **unreliable access** to sufficient, affordable, nutritious **food.**

42%

of adults have **multiple chronic conditions**

32%

of households are estimated to **lack air conditioning**

6,366

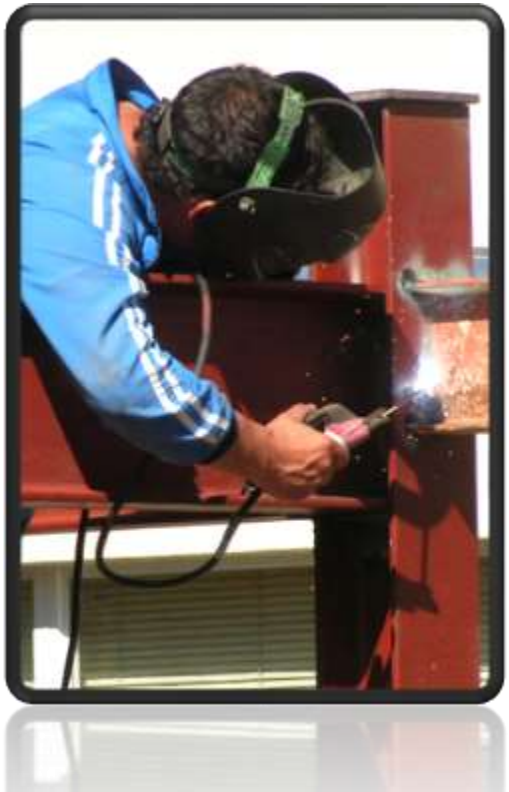
residents are **outdoor workers**

21%

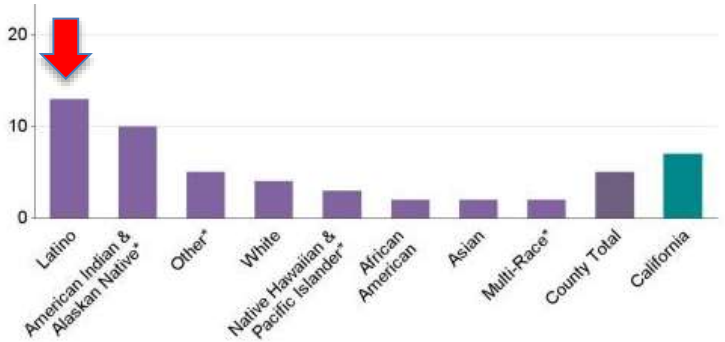
of households are without English proficiency

Source:
CalBRACE Vulnerability Assessment Report, CDPH; CalBRACE Climate Change and Health Profile Report, CDPH

Vulnerabilities in Alameda County
Outdoor Workers



Population Working Outdoor Jobs, by Race/Ethnicity Groups, Alameda County, CA 2006-2010



Source: American Community Survey (ACS), 2006-2010

*Unreliable Data (Relative Standard Error > 30%)

31, 568 individuals are outdoor workers

Vulnerabilities in Alameda County
Violent Crimes

Table X. Areas With Highest Number of Violent Crimes per 1,000 Residents, Alameda County, California, 2006-2010

City/Town	Crimes Per 1,000 Residents	Total Population
Oakland	15	409723
Emeryville	13	10207
Berkeley	5	102700
Alameda County	7	1510271
California	4	37,615,047

Source: Uniform Crime Reports from the Federal Bureau of Investigation, 2010

Additional Resources

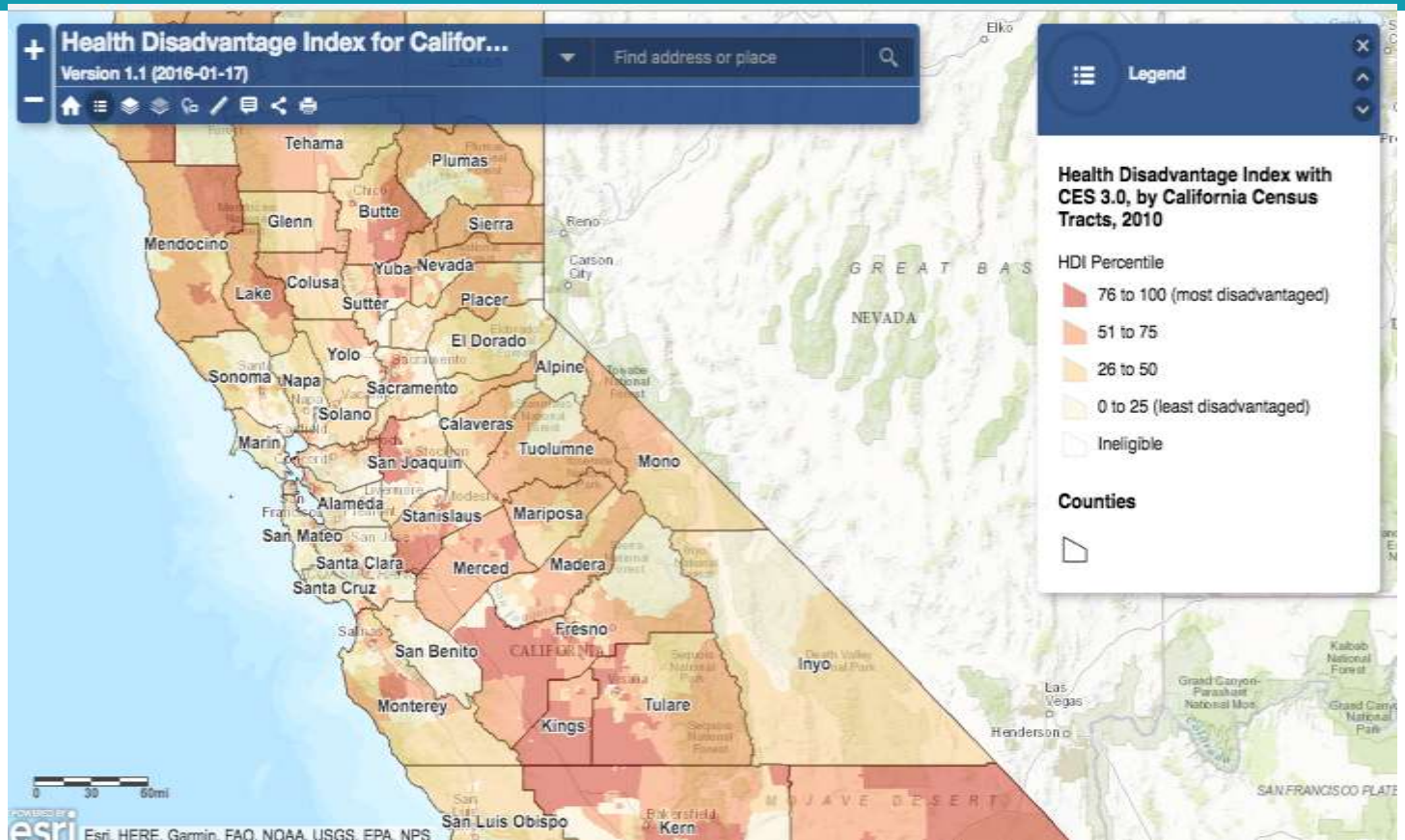
- California Environmental Health Tracking Program (cehtp.org)

- Healthy Communities Data and Indicators Project https://tinyurl.com/ycefqdcj

Coming Soon:

- California Heat Assessment Tool (CHAT) 427mt.com

Health Disadvantage Index
http://phasocal.org/ca-hdi/



Thank you!

meredith.milet@cdph.ca.gov

CalBRACE program website, including links to the indicators and reports:

https://www.cdph.ca.gov/Programs/OHE/Pages/CalBRACE.aspx

Group discussion

VENTURA COUNTY

PUBLIC HEALTH

A Department of Ventura County Health Care Agency

VENTURA COUNTY
PUBLIC HEALTH
A Department of Ventura County Health Care Agency

August 23, 2017

THE INTERSECTION OF FOOD INSECURITY AND FOOD WASTE

Waste Not Ventura County

Dr. Robert Levin, M.D.
VCPH Health Officer
WIC Director

Katie Rowe, R.D
VCPH

How Big is the Problem?

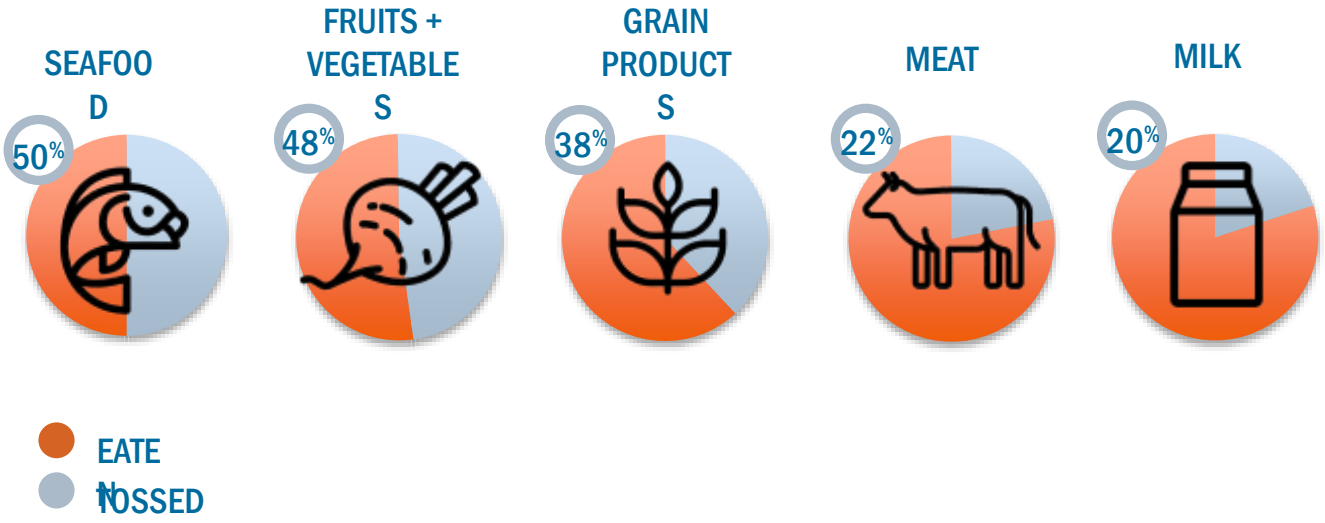
FORTY PERCENT

OF FOOD IN AMERICA IS WASTED.

VENTURA COUNTY PUBLIC HEALTH

Food Waste = Wasted Resources

Here's the difference between food eaten and food tossed.



Food Waste Impact on the Environment

14% of **WASTE STREAMS** is food waste

METHANE - 20x stronger greenhouse gas than CO_2

VENTURA COUNTY PUBLIC HEALTH

California Legislature: Driving the Movement to Reduce Waste

AB 1826

SOLID WASTE: ORGANIC WASTE

- Decomposting organic waste major source of GHGs
- Business must recycle 75% of their organic waste by 2020
- Redirects resources to composting/digestive ops, save landfill space, reduce emissions

SB 1383

SUPER POLLUTANT REDUCTION ACT

- 40% reduction in methane levels by 2030
- ~20% reduction of edible food waste
- Most aggressive law to tackle SLCPs in the country

Food Insecurity:
Through a Food Waste Lens

VENTURA COUNTY
PUBLIC HEALTH

Building Partnerships and Leveraging Resources

WE KNOW THE ISSUES

WE KNOW HOW TO SOLVE THEM

- build a food recovery system
- establish a network of food rescue organizations
- build a distribution network to end hunger

WORKING TOGETHER, WE CAN DO THIS!

Announcements

South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

Save-the-Date

SCAQMD Marine Port Committee Meeting on the
San Pedro Bay Ports Draft Clean Air Action Plan Update

1:00 PM on August 31, 2017
Long Beach Hilton
701 West Ocean Boulevard, Long Beach, CA 90831

The meeting agenda will be distributed one week before the meeting.
For further information, contact Ana Ponce at
(aponce@aqmd.gov, or 909-396-3008)?

FORWARD NOTICE | UNSUBSCRIBE FROM LIST | UPDATE ACCOUNT | VIEW TEXT VERSION
SCAQMD | 21865 Copley Drive | Diamond Bar, CA 91765 | 1.800.CUT.SMOG

Thank You!