



Integrating Equity and Adaptation into the Planning & Environmental Process

4/18/2023



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Housekeeping

1. Meeting length: 1.5 hour
2. This meeting is being recorded
3. All participant lines will be muted
4. At the end, there will be a Q&A session
5. If you have a question during the presentation, please type it into the chat box or press the "raise hand" function
6. We will log all questions and then voice a selection at the end of the presentation
7. A recording of this webinar and the PowerPoint slides will be available on the SCAG website. We will send a link to everyone who has registered after the event

Agenda

- About CAPCOA, CalEEMod, and the GHG Handbook
- Integrating Adaptation, Health & Equity
- Advice for jurisdictions
- Questions, Comments, Challenges





CalEEMod
California Emissions Estimator Model

SACRAMENTO METROPOLITAN



AIR QUALITY
MANAGEMENT DISTRICT

Integrating Equity and Adaptation into the Planning & Environmental Process

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Program Supervisor, CEQA & Land Use, Sac Metro Air District

April 18, 2023

About CAPCOA

- Mutual benefit non-profit corporation for the 35 California Air Districts
- Coordination of best practices and advocacy
- Planning, research, information



California Air Districts



SACRAMENTO METROPOLITAN



AIR QUALITY
MANAGEMENT DISTRICT

Air Districts and Land Use (Sac Metro)

CA Health & Safety Code § 40950:

- (e) In order to achieve and maintain air quality standards and protect public health, a metropolitan air quality improvement strategy is required to be implemented in order to provide the maximum achievable reduction in emissions from existing sources and to provide for the maximum feasible reduction or mitigation of emissions resulting from population growth, increased vehicle mileage, and other new sources of emissions.
- (f) In order to successfully achieve improvements in air quality throughout the region, there is a need for greater coordination between land use and transportation planning decisions and the achievement of air quality goals.

CA Health & Safety Code § 41015:

- This chapter does not constitute an infringement on the existing authority of local governments to plan or control land use, and nothing in this chapter provides or transfers new authority over such land use to the Sacramento district.

CEQA & Land Use Team Authority (Sac Metro)

OPR - Thresholds of Significance: Criteria for Defining Environmental Significance. Sept 1994

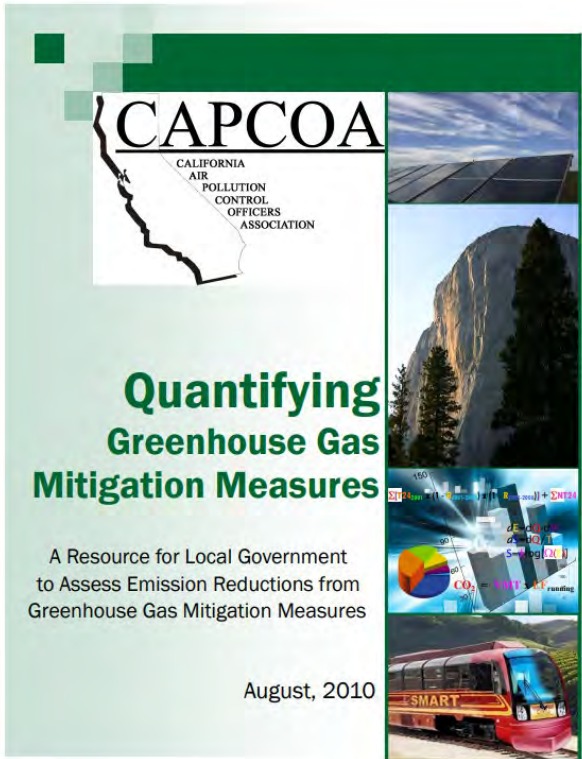
- "...harmonize the thresholds with those of other agencies to the extent possible, particularly the technical thresholds of regulatory agencies such as an air quality management district or water quality control board."

California Health & Safety Code §40961

- "...shall represent the citizens of the Sacramento district in influencing the decisions of other public and private agencies who's actions may have an adverse impact on air quality..."

Quantification needed for thresholds and mitigation

Used for air quality and GHG technical studies since 2010



Funding for 1st Major Update secured from SB 1 Adaptation Grant:

Development begins March 2020



Planning in a time of peril

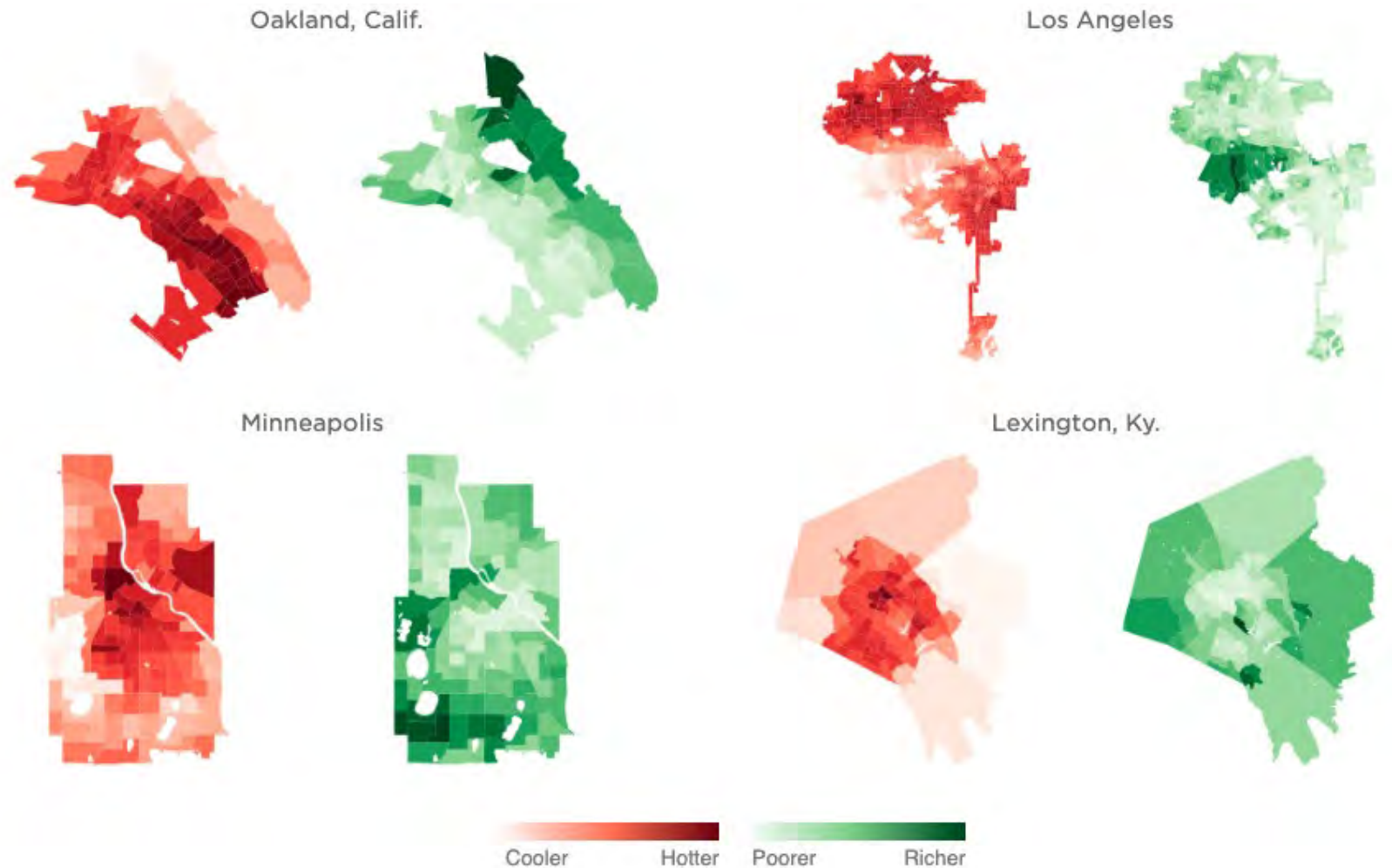
We are facing unprecedented, cascading crises:

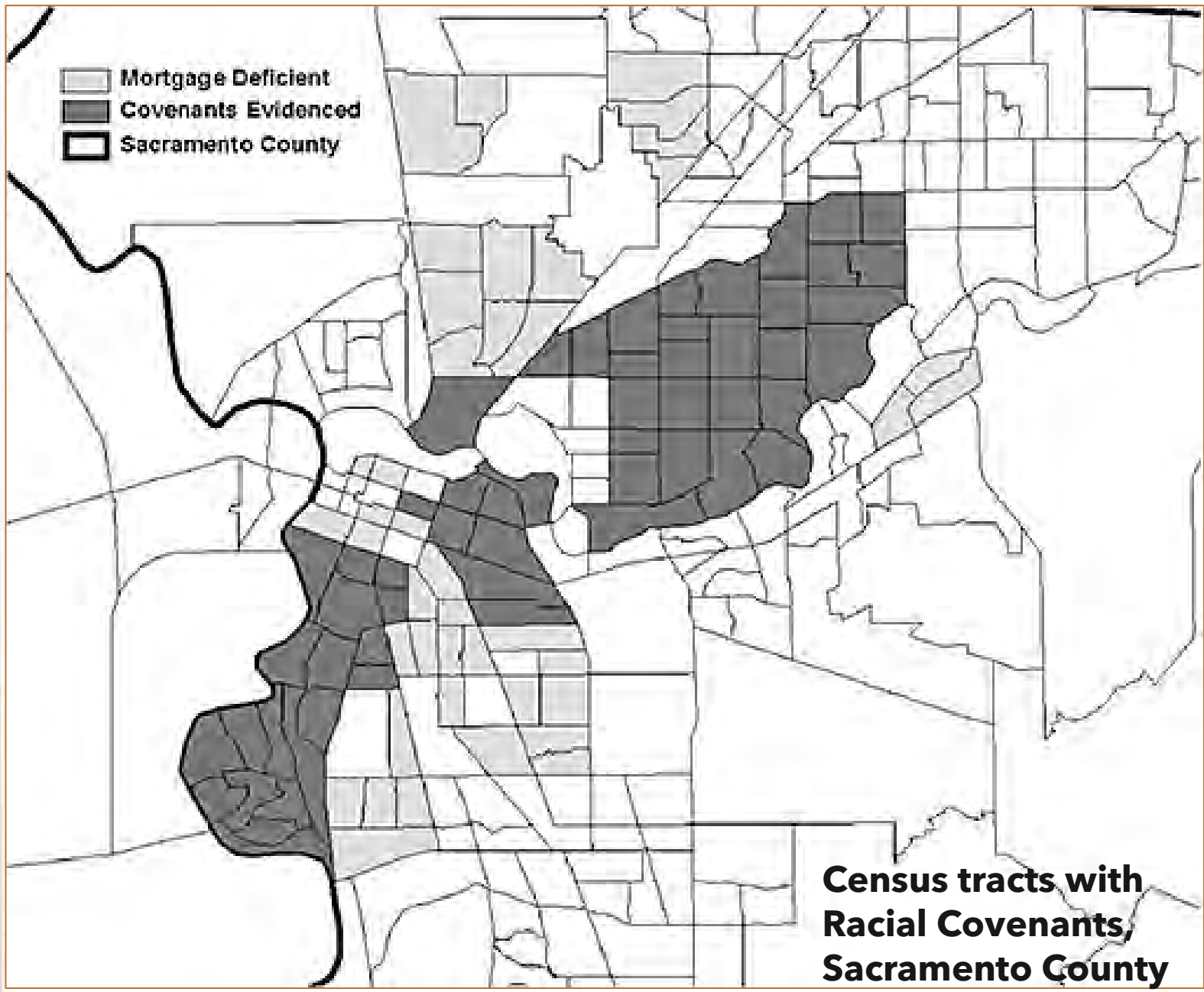
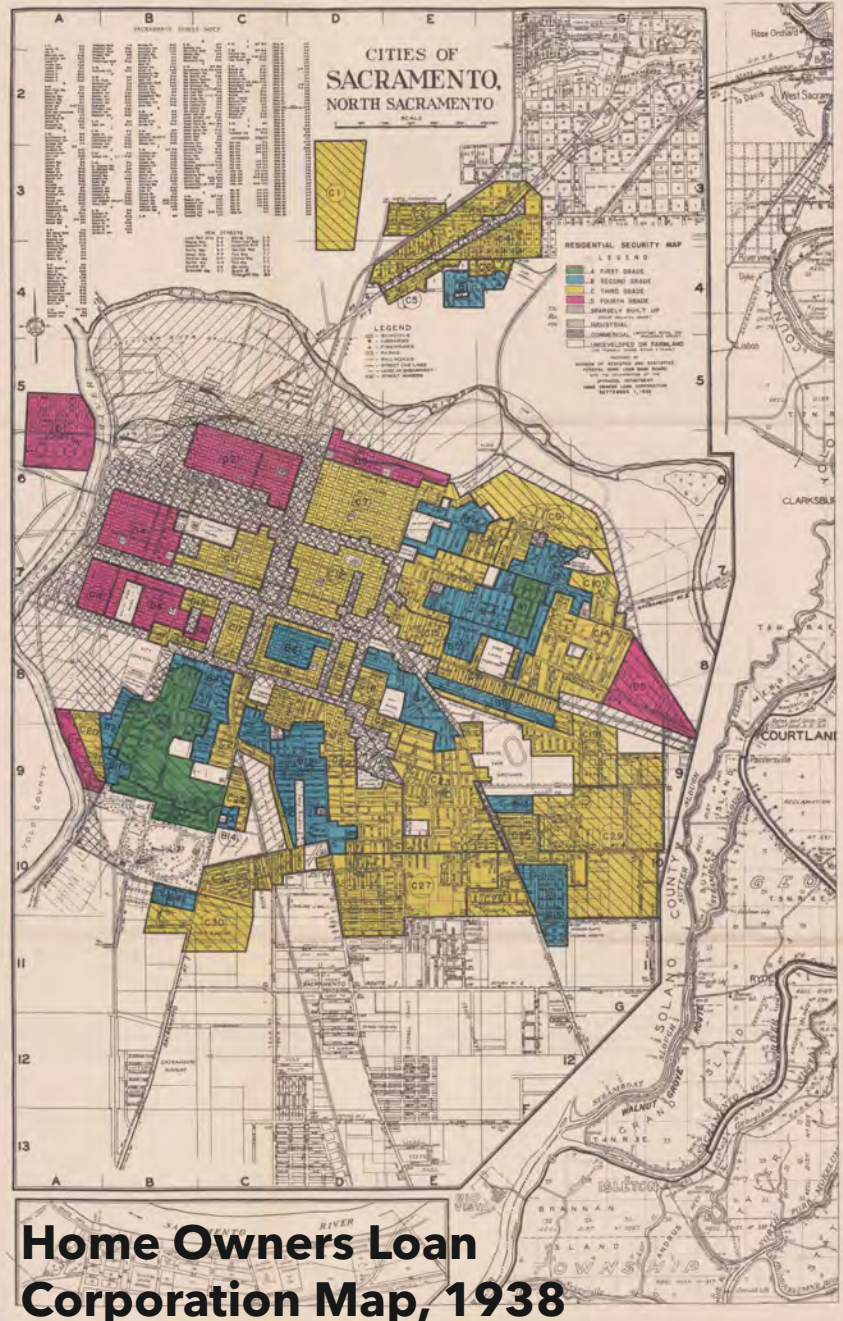
The rising seas of climate change against the rising tides of inequality, a pandemic of racism during a global pandemic, a housing crisis when truly safe places for homes are gradually diminishing

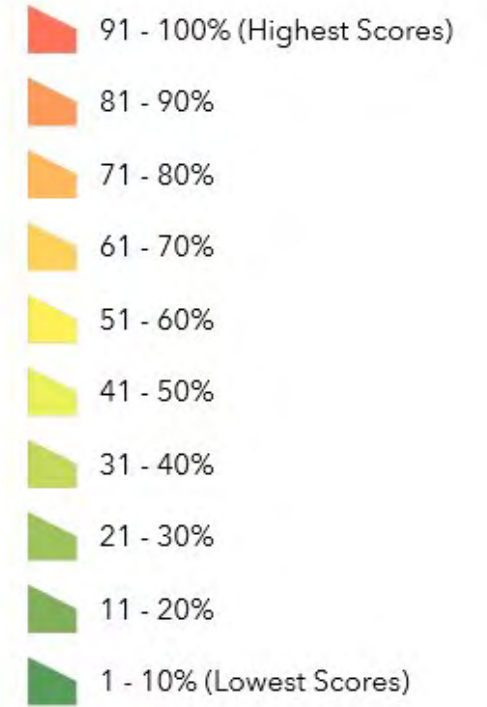
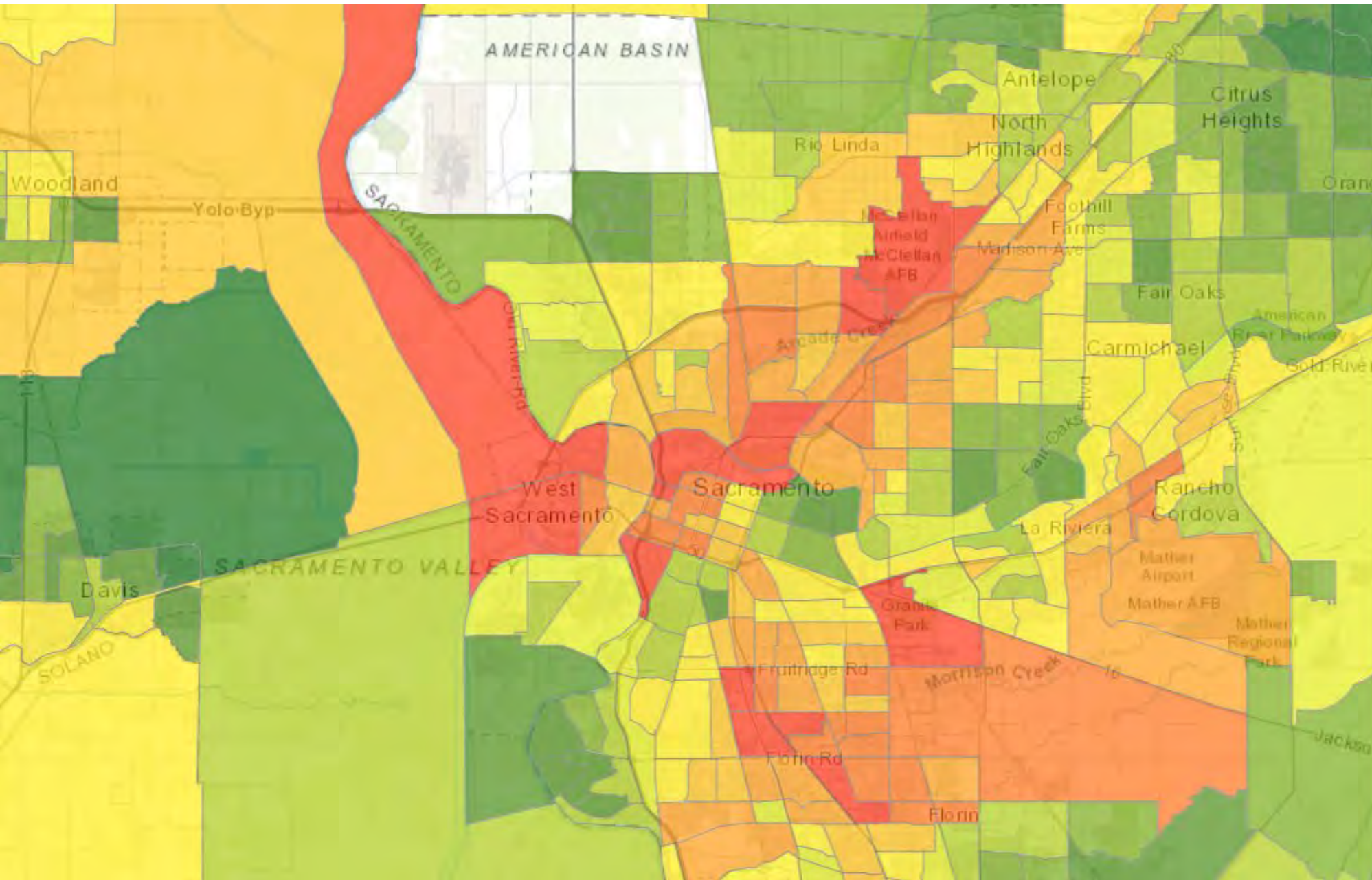
The mistakes of the past collide with the problems of the future

Our least-resourced people and neighborhoods will face, on top of existing challenges, growing impacts from climate change:

- Extreme heat
- Deteriorating air quality
- Greater storms & flooding
- Sea-level rise
- Wildfires





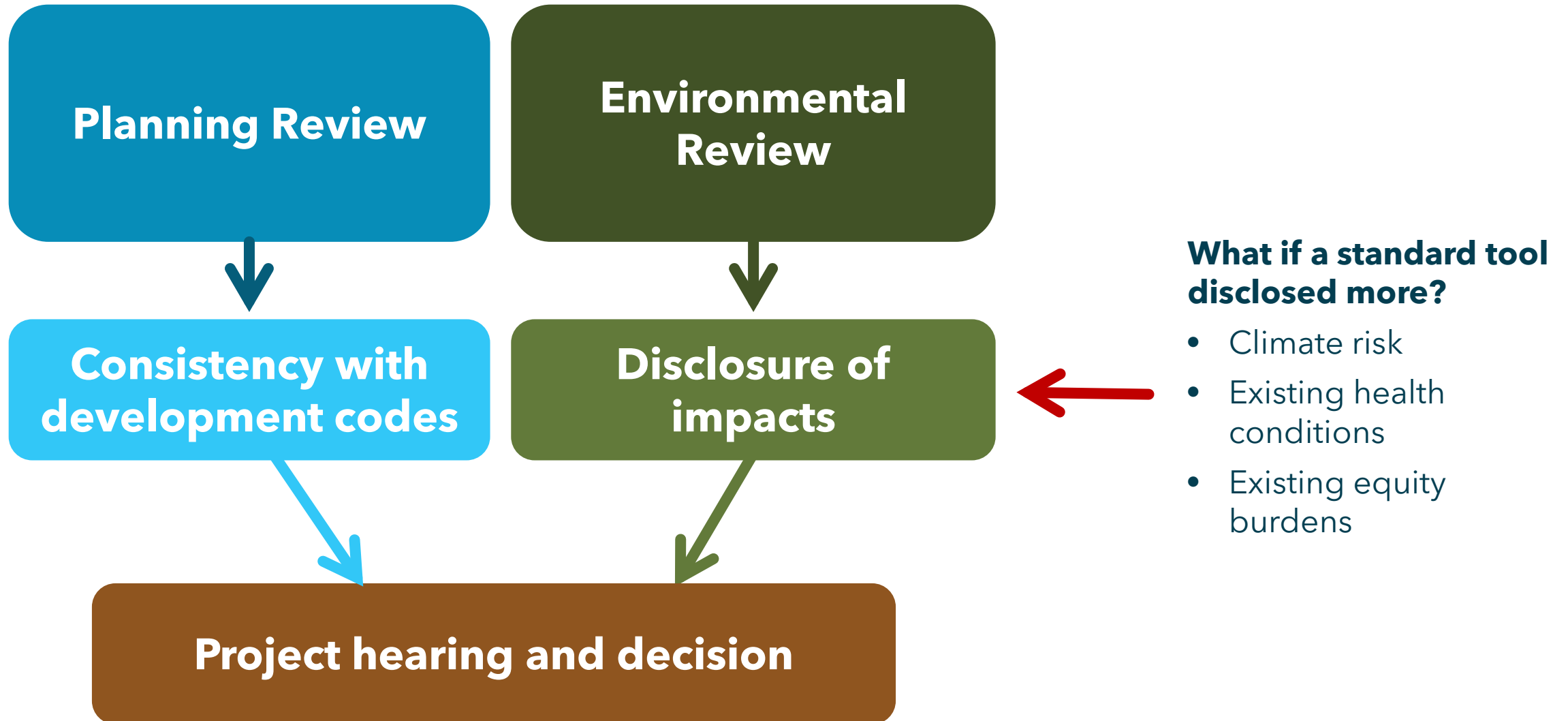


High Pollution, Low Population



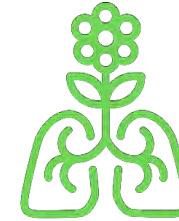
**CalEnviroScreen
Map, Sacramento**

The California project entitlement process



What is the California Emissions Estimator Model?

- A CEQA Tool
 - Disclose Impacts (GHG and air pollution)
 - Mitigation measures to reduce both
- A Resilience Tool
 - Cal-Adapt derived climate hazards
 - Location- and project-based climate adaptation measures
- A Health & Equity Tool
 - CalEnviroScreen and Healthy Places Index
 - Relevant measures to address existing challenges
- An Outreach Tool
 - Process measures to amplify marginalized voices and increase accountability



+ 274 measures overall

+86 quantified GHG reduction measures

+99 climate adaptation measures

+51 health & equity measures

+ Co-benefit quantification

+ Climate vulnerability worksheet

+ Underlying data tables

Limitations of the Tool

- **Data Limitations**

- Census tract level
- May not include all facts on the ground

- **Input & Measure Limitations**

- California is big and diverse
- Custom inputs and measures may be needed

- **Analysis Limitations**

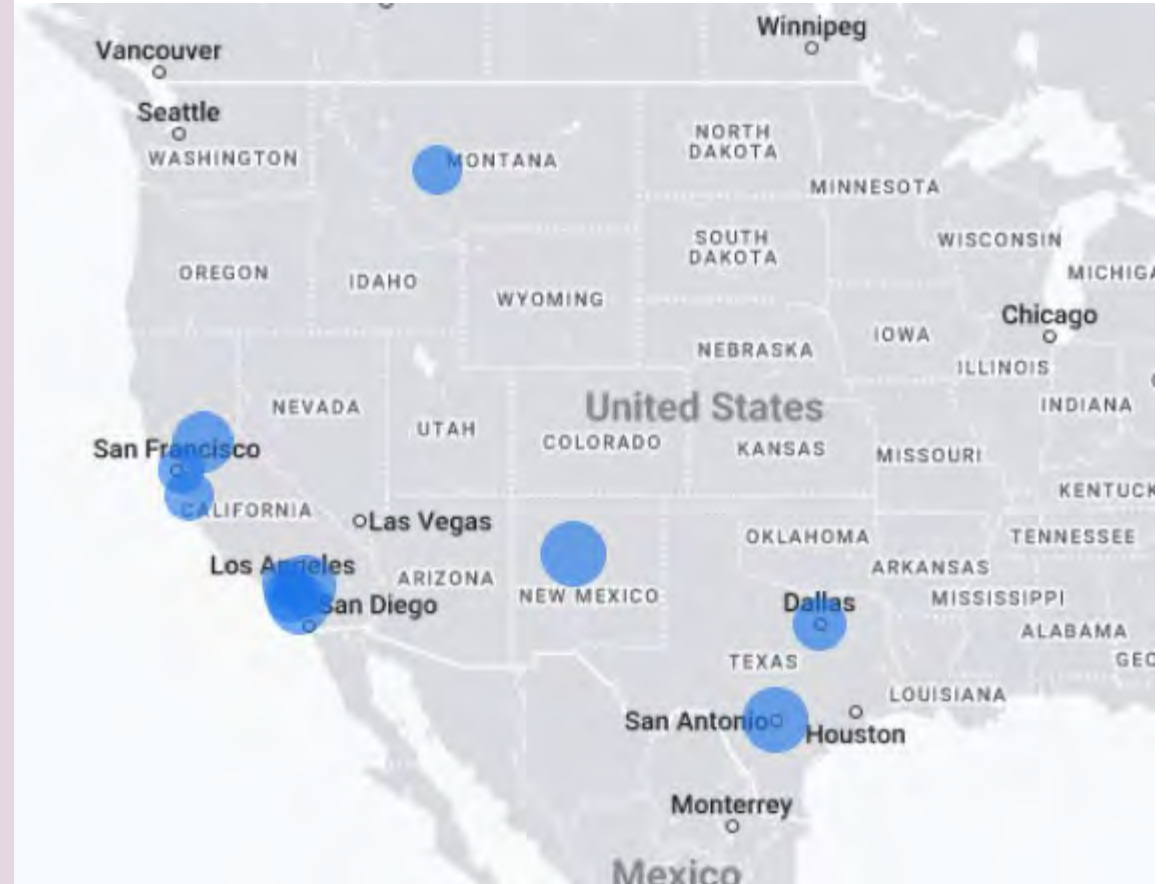
- Relevant measures may not reflect community priorities

CalEEMod is a
tool to aid
discussions and
decisions

CalEEMod
is not a
replacement for
people

Your consultant may not know your jurisdiction or California tools

- Location of CalEEMod users
at 2:02pm on April 7, 2023





Cal-Adapt provides a way to explore peer-reviewed data that portrays how climate change might affect California at the state and local levels.

We make this data available through downloads, visualizations, and the Cal-Adapt API for your research, outreach, and adaptation planning needs.

Understanding
climate risks across
California

Cal-Adapt downscales climate projections from global climate models to the local level in California, allowing users to see future impacts of extreme heat, wildfire, drought, precipitation, etc., at a 3.7-mile grid resolution. We embed Cal-Adapt into CalEEMod to provide this information as part of planning.

SCAG Demo

Administrative 2 Climate 3 Health & Equity Basemap

location and can be viewed on the map. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100. If your project is located just outside a grid cell with reported climate risks, you may want to manually consider the hazard later in the Climate Risk Inputs module.

Extreme Heat ⓘ 38.65 days/year ✓

Precipitation ⓘ 7.5 days above 20mm ○

Sea Level Rise ⓘ 0 m ○

Using model: CNRM-CM5

Wildfire ⓘ 35.63 ha ○

Using model: CNRM-CM5

Climate Measures ⓘ

Basemap

- Streets
- Light
- Dark
- Satellite

300m

mapbox

Legend

High Low

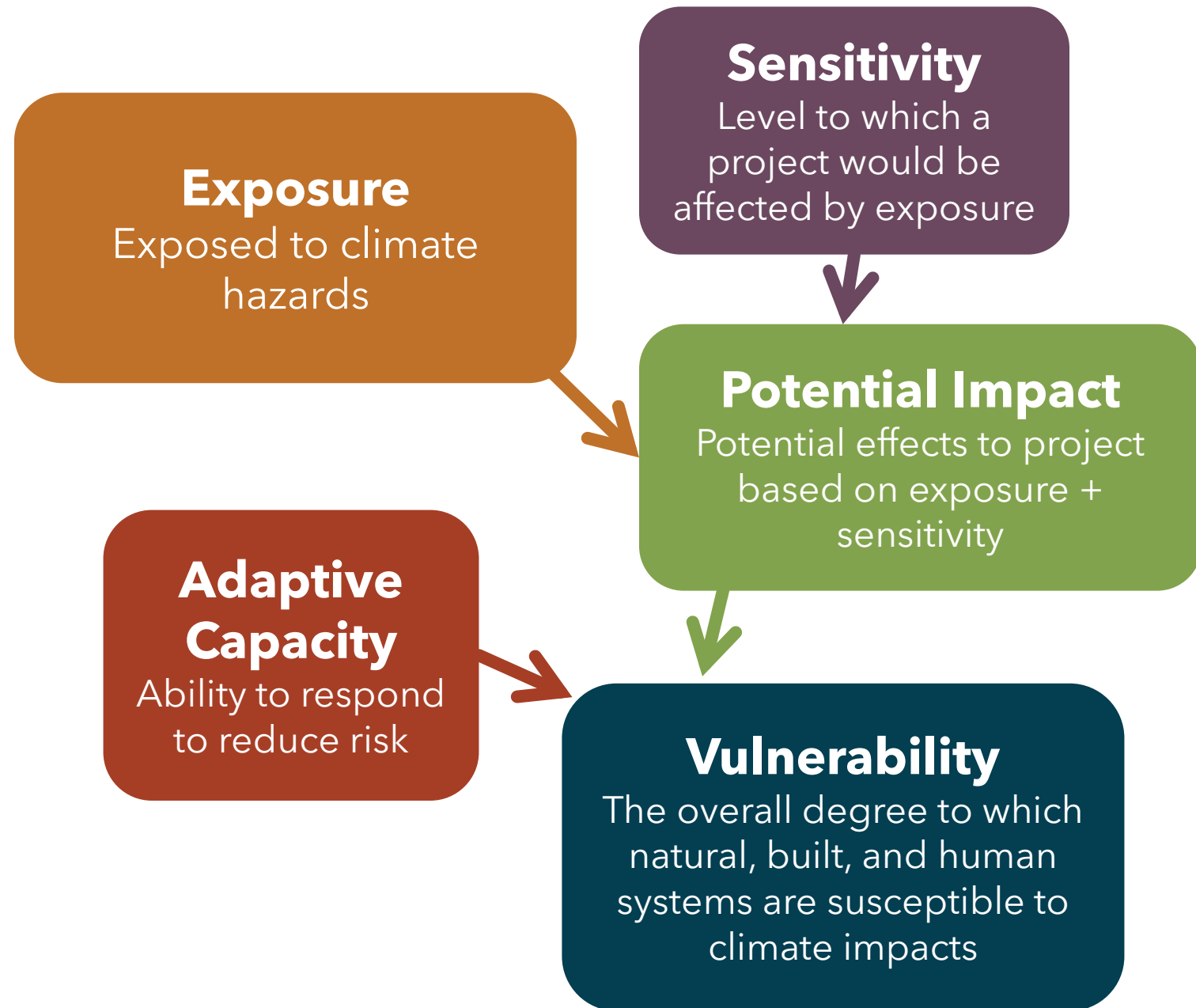
© Mapbox © OpenStreetMap Improve this map

Extreme Heat in Big Bear Mid-century:

38.65 days/year

Courtesy of CalAdapt

But climate risk information alone is insufficient. Each individual project has its own combination of exposure, sensitivity, and adaptive capacity, which in combination determine its overall vulnerability.



Climate vulnerability score & hazard prioritization

The **climate vulnerability score** combines the degree to which the project would be affected by a climate impact with its ability to adapt to that impact.

This allows the project to prioritize impacts and select mitigation measures.

5	5	4	3	2	
4	4	3	2	1	
3	3	2	2	1	
2	2	2	1	1	
1	1	1	1	1	
	Low	Low-Med	Med	Med-High	High

Potential Impacts

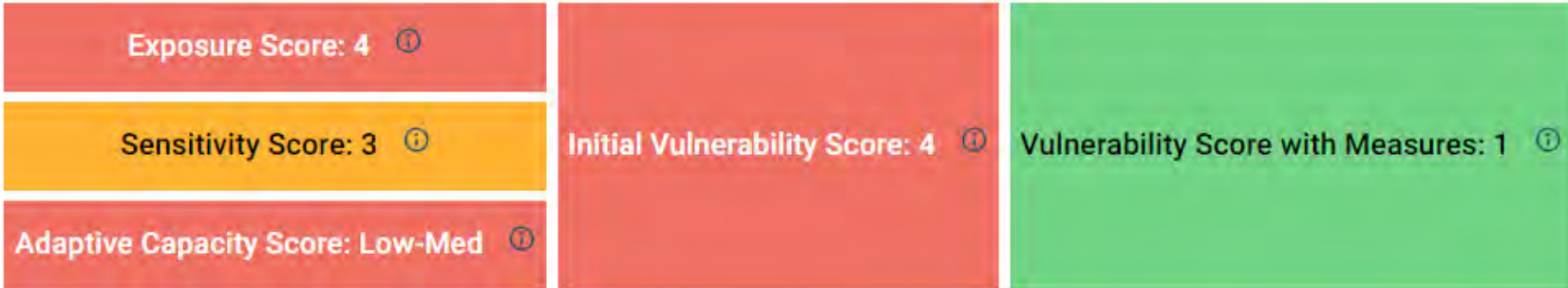
Adaptive Capacity

Project Location (County): Sacramento

Climate Risk

- Extreme Precipitation
- Flooding
- Temperature and Extreme Heat
- Wildfire

Vulnerability Score ⓘ



Climate Risk Reduction Measures

Top Performing User-Selected Measures for Flooding ⓘ

- MH-1** Strengthen Energy Infrastructure
- EP-5** Upgrade Wastewater Systems
- EP-1** Incorporate Runoff Projections in Hydrologic Designs

Flooding Risk-Reducing Measures ⓘ

You have selected



of 28 available strategies
[Additional strategies](#)

Your Selected Flooding Risk Reduction Measures Have the Following Co-Benefits

- Enhanced Energy Security
- Improved Air Quality
- Improved Ecosystem Health
- Improved Public Health
- Social Equity
- Water Conservation

Incorporating Health & Equity



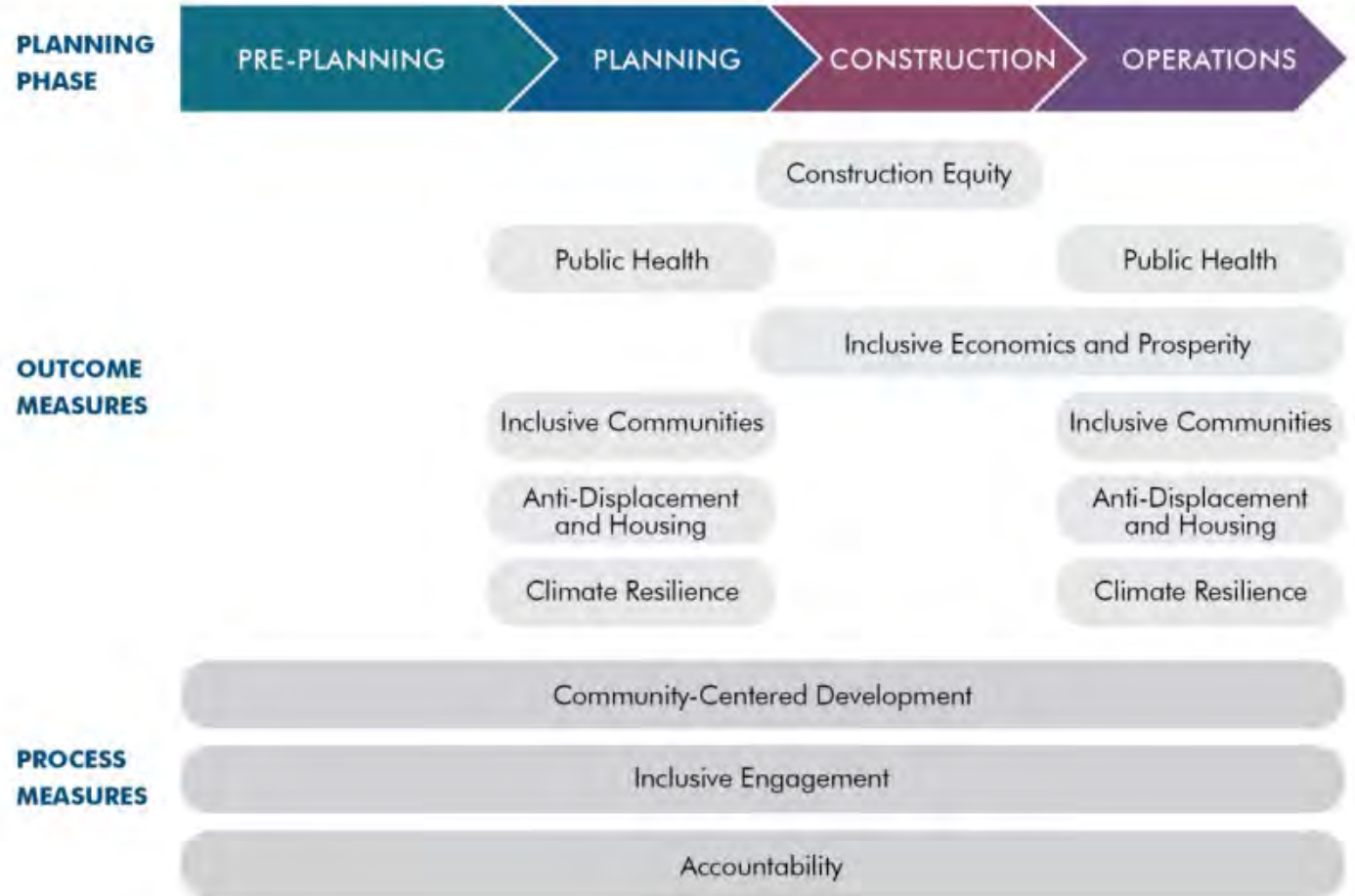
Equity

“Efforts to ensure that all people have full and equal access to opportunities that enable them to lead healthy lives”
(CA Health and Safety Code 131019.5)

Racial Equity

“When race can no longer be used to predict life outcomes and outcomes for all groups are improved” (Government Alliance on Race and Equity 2015)

Equity as an outcome and a process





Exposure Burdens

- Ozone
- PM 2.5
- Diesel PM
- Traffic
- Pesticides
- Drinking water contaminants
- Toxic releases from facilities
- Solid waste sites and facilities
- Cleanup sites
- Groundwater threats
- Impaired water bodies
- Hazardous waste generators and facilities

Population Characteristics

- Asthma
- Cardiovascular disease
- Low birth-weight infants
- Poverty
- Educational attainment
- Unemployment
- Linguistic Isolation
- Housing burdened low-income households

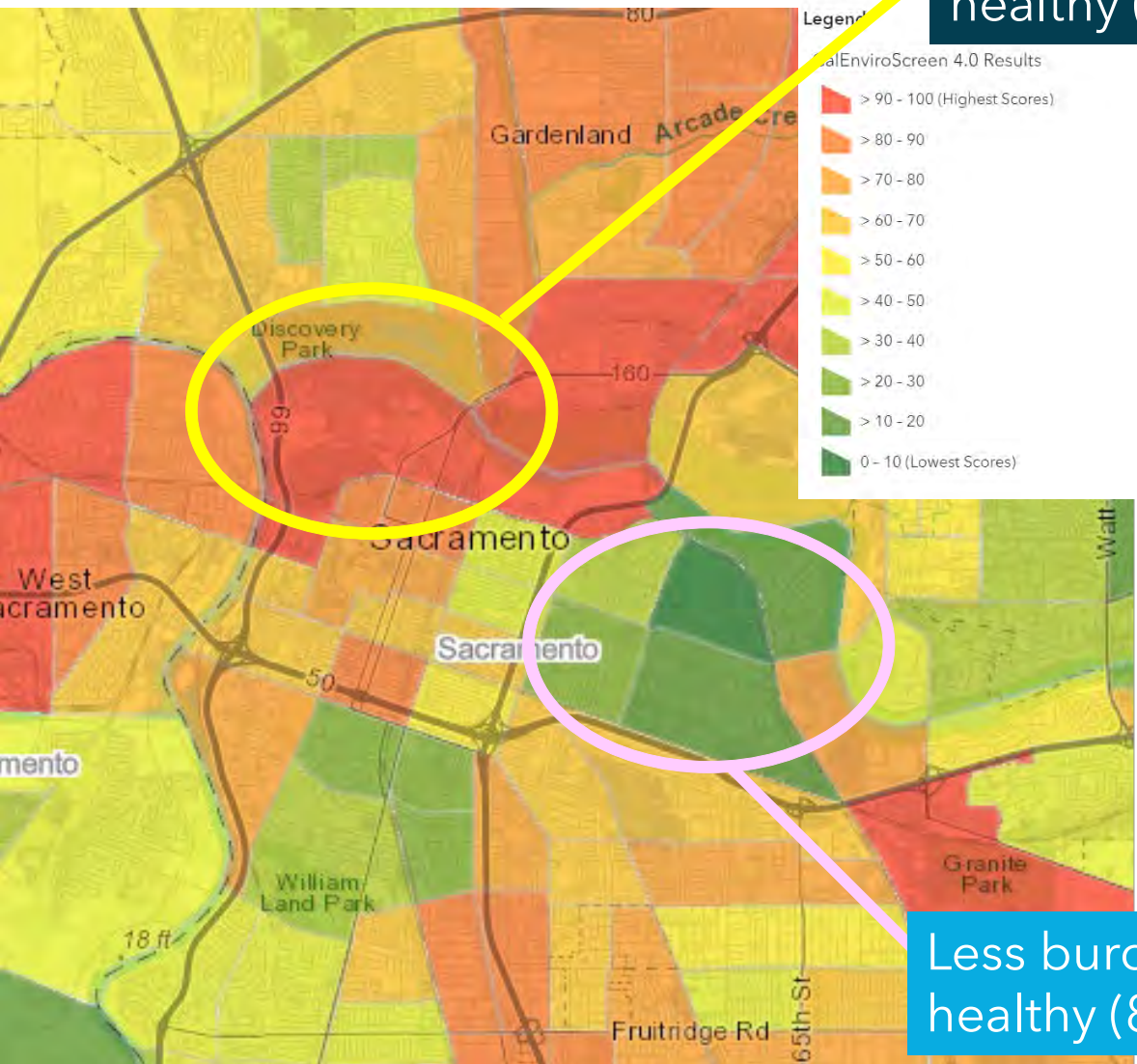
Evaluates the relationship between 23 social drivers of health and life expectancy at birth. Examples include:

- Percentage of registered voters
- Percentage of occupied housing units occupied by property owners
- Percentage of workers (16 and older) commuting by walking, cycling, or transit (excluding work from home)
- Percentage of adults aged 18-64 years currently insured

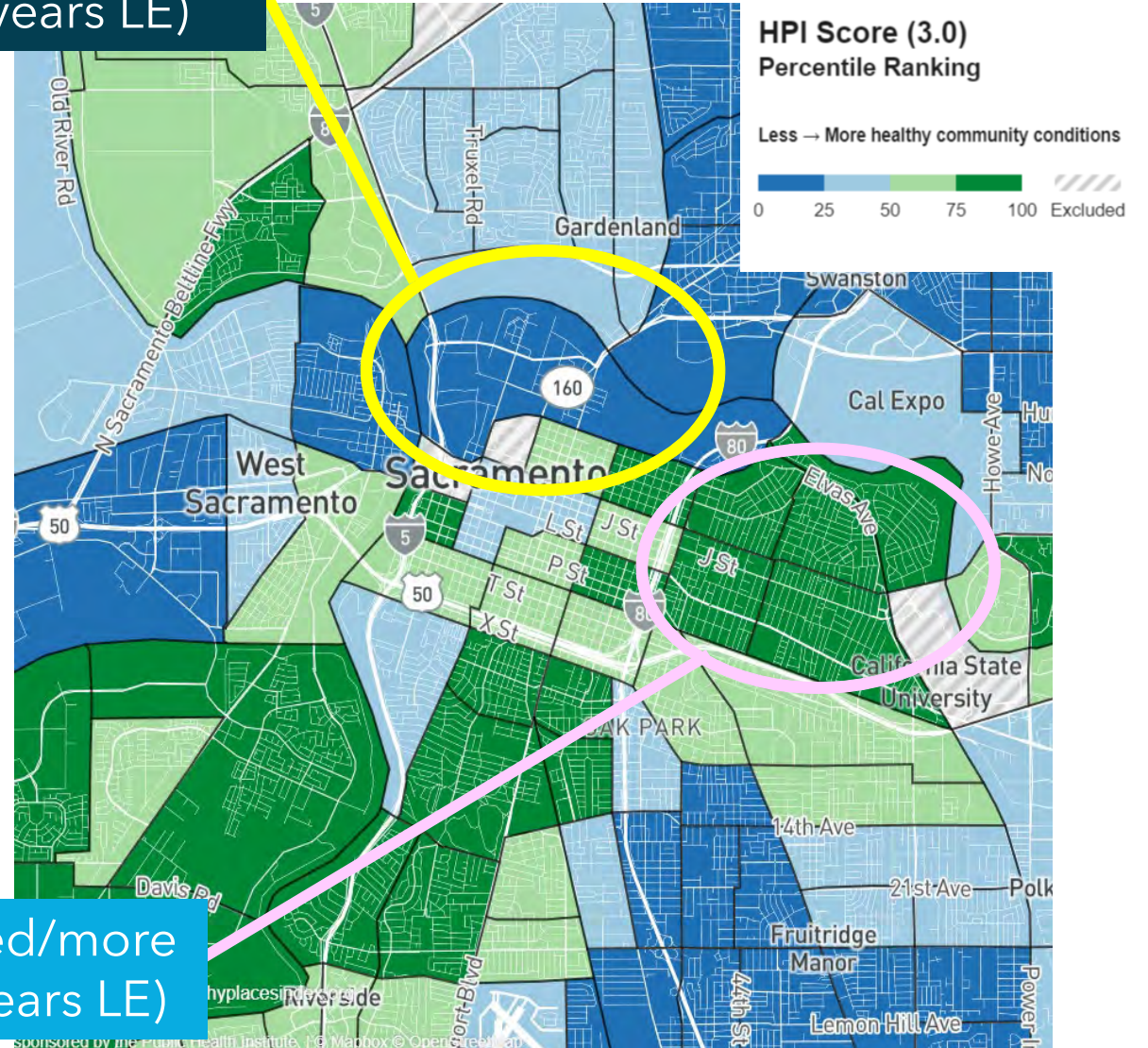
CalEnviroScreen

Healthy Places Index

More burdened/less healthy (62 years LE)



Less burdened/more healthy (82 years LE)



sponsored by the Public Health Institute. © Mapbox © OpenStreetMap

CES 4.0 Indicator Scores

Exposure Burdens

Exposure Indicators	Score
AQ-Ozone	47
AQ-PM	39
AQ-DPM	86
Drinking Water	17
Lead Risk Housing	82
Pesticides	54
Toxic Releases	32
Traffic	85

Effect Indicators	Score
CleanUp Sites	100
Groundwater	98
Haz Waste Facilities/Generators	99
Impaired Water Bodies	98
Solid Waste	92

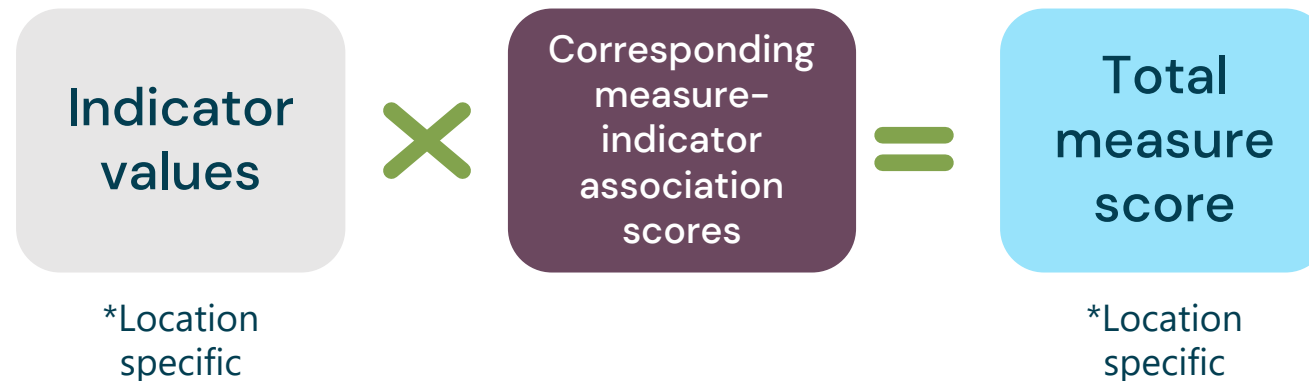
Population Characteristics

Sensitive Population	Score
Asthma	98
Cardio-vascular	76
Low Birth Weights	100
Socioeconomic Factor Indicators	Score
Education	64
Housing	56
Linguistic	8
Poverty	99
Unemployment	100

Using CalEEMod to identify measures to improve health & equity

CalEEMod recommends relevant mitigation measures that can address existing health, environmental, and equity conditions in the project location based on:

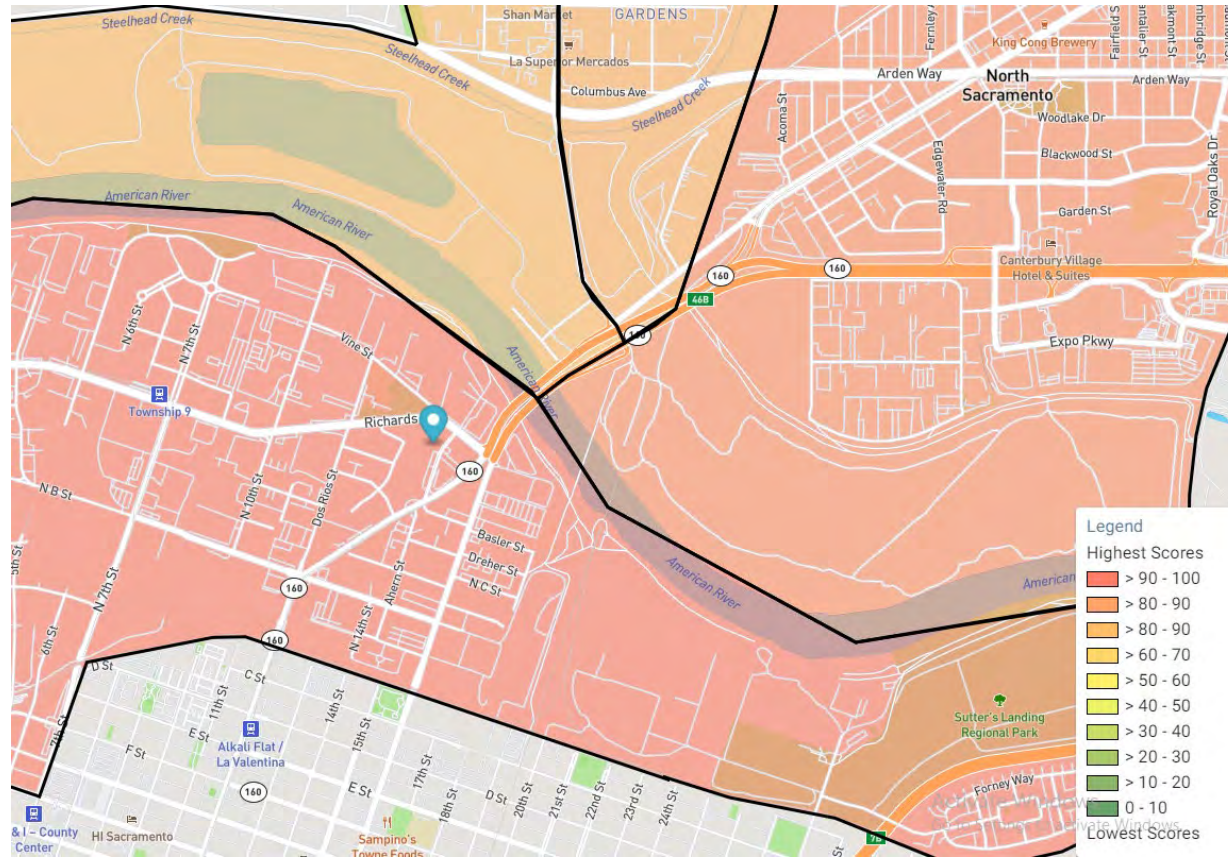
- Project land use subtype(s)
- Values for individual CES 4.0 indicators for the project census tract
- Measure-indicator association scores (range of 0 to 3) for each measure for each CES indicator



This operation is carried out for all mitigation measures that are relevant to the project scale and land use subtype(s), generating a location-specific score for each measure.

Adding community context to emission reduction selection

Residential & Retail Project



Top 5 Relevant Measures

- T-3 Provide Transit-Oriented Development
- T-4 Integrate Affordable and Below Market Rate Housing
- T-1 Increase Residential Density
- C-1-A Use Electric or Hybrid Powered Equipment
- T-12 Price Workplace Parking

Additional Measures

- T-6 Implement Commute Trip Reduction Program (Mandatory Implementation and Monitoring)
- MH-27 Provide Greater Affordable Housing Options
- MH-3 Coordinate Redundant Transportation Access

Demonstratic

Health & Equity

Climate Risk

Health and Equity Metrics

CalEnviroScreen 4.0 Score



As defined by CalEnviroScreen, the overall CalEnviroScreen score is calculated by multiplying the pollution burden and population characteristics scores.

Healthy Places Index Score



Represents the composite score of all HPI indicators.

Overall CES and HPI scores relevant to the project census tract.

A User Selected Measures for Health and Equity

Top Performing User-Selected Measures for Health and Equity ⓘ

- PH-3 Highly Rated Air Filtration
- PH-1 Establish Vegetative Barriers to Reduce Pollution Exposure
- IC-1 Invests in Local Arts and Culture to Affirm Community Identity

Show More

B Measures for Health and Equity



A. Three user-selected measures with highest efficacy score to address health and equity indicators.

B. Number of user-selected health and equity measures.

Your Selected Health and Equity Measures Have The Following Co-Benefits

- Improved Air Quality
- Improved Public Health
- Social Equity
- Improved Ecosystem Health
- Enhanced Pedestrian or Traffic Safety

Potential co-benefits achieved by user-selected measures.


Health and Equity Evaluation Scorecard

- Home
- Map
- Inputs**
- Results
- Report

Project Characteristics

- Land Use
- Climate Risk
- Measures
 - Climate Risk Reduction
 - Health and Equity

Process

Community-Centered Development (CCD) 

Add custom measures

Number	Measure Title	Score
CCD-1	Consult Pre-existing Community Knowledge/Priorities	N/A
Measure Description The project will consult existing neighborhood/community plans or studies to understand community priorities, recognize the work that has already been done, avoid en fatigue, and address community concerns and needs that have already been identified.		
Measure Scoring		
<ul style="list-style-type: none">• N/A - Not applicable to the project.• 0 - Applicable to project, but not included or not implemented in a manner that satisfies scoring criteria.• 1 - Reviews governing plans (design guidelines, specific plans, general plans, etc.).• 2 - Reviews plans (community-led needs assessments, health needs assessments, asset mapping, etc.) that go beyond baseline requirements.• 3 - Consults with jurisdictional planner on community needs and plans.• 4 - Holds discussions with community groups to determine representativeness of plan(s).• 5 - Community leads discussion on different plans and their details, goals, and vision; project incorporates community priorities based on conversation and community input.		
CCD-2	Conduct a Stakeholder Analysis and Develop a Community-Centered Outreach Plan	N/A
CCD-3	Conduct a Community Needs Assessment	N/A
CCD-4	Conduct Community Asset Mapping	N/A
CCD-5	Establish a Community Benefits Agreement	N/A

Detailed implementation discussed in CAPCOA Handbook

Measure Description

Key Question

Applicability

Scale & Timing

Dimensions of Equity

Implementation Considerations

Examples

Related Measures

CCD-1. Consult Pre-Existing Community Knowledge/Priorities

As a first step, before embarking on more extensive community outreach, the project should consult existing neighborhood and community plans or studies, such as community needs assessments, community asset mapping, and neighborhood plans. By recognizing and understanding the work that has already been done, project proponents have a greater opportunity to address community concerns and needs that have already been identified. Proponents also demonstrate respect for the existing wisdom and lived experiences of the community. Additionally, consulting existing knowledge helps avoid engagement fatigue for already-burdened communities. If existing knowledge is outdated, not accessible, or not aligned with community priorities, conduct a community needs assessment to identify specific community needs.



Key Question: Is the project in alignment with existing plans accepted by the community?

Applicability

Applicable to all projects. Projects in greenfields or smaller jurisdictions may need to rely on general, regional, or state planning efforts.

Scale and Timing

- Scale: Neighborhood/City and Project/Site
- Timing: Planning

Dimensions of Equity

Because a given community's priorities can range widely, this measure has the potential to impact all dimensions of equity, depending on project context.

Implementation Considerations

Project proponents should prioritize community-led and community-generated plans and documents. Examples of these can range from a local school class project on proposals for a nearby vacant lot, a business improvement district visioning their main corridor, a

Category	Number of Applicable Measures	Total Points Earned by Applicable Measures	Max Possible Points	Weighted Score
Community-Centered Development	5	14	25	8
Inclusive Engagement	6	19	30	9
Accountability	5	15	25	9
Construction Equity	6	17	30	8
Public Health and Air Quality	4	10	20	7
Inclusive Economics & Prosperity	4	3	20	2
Inclusive Communities	7	13	35	5
Total	37	91	185	48

Evaluation report showing number of scored measures, points earned, maximum possible points, and weighted scores.

A



Weighted Score	Tier Level
0-40	Acorn
40-50	Sprout
50-60	Seedling
60-80	Sapling
80+	Heritage Oak

B



A. Spider chart displaying weighted category scores.
B. Equity tier awarded to the project based on the total weighted score.

Advice for Local Jurisdictions

Share priority areas with your environmental consultants

Measure Index

APPENDIX E



Food Justice and Access

Chapter 3

S-3. Require Edible Food Recovery Program Partnerships with Food Generators

N-3. Implement Management Practices to Improve the Health and Function of Natural and Working Lands

N-5. Establish a Local Farmer's Market

N-6. Establish Community Gardens

Chapter 4

MH-13. Support Local Food Systems

MH-18. Maintain Soil Health

MH-41. Expand Urban Greening/Agriculture

Chapter 5

PH-5. Provide Equitable Food Access and Food Justice

IC-5. Designated Space for Community-Based Organizations, Disadvantaged Businesses, and Community Assets

IC-6. Create Non-Standard Commercial or Retail Spaces

IC-8. Enhanced Access to Community Resources

CR-1. Adapt and Re-use Vacant Lots for Green Infrastructure

CalEEMod California Emissions Estimator Model[®]

Search Measures ⓘ

Advanced Search Show Selected

Search

Quantifiable Application Scale Implementation Phase

Reduction Sector Pollutants Reduced Locational Context

Transportation measures only

Reduction Subsector Cobenefits Achieved Climate Hazards Addressed

Transportation and energy measures only Climate risk reduction measures only

CES Exposure Indicators Addressed Appendix E Indicators Food justice and access

+ Add land use filter

Clear All **SEARCH**

Select All

CR-1 Adapt and Re-use Vacant Lots for Green Infrastructure

IC-5 Designated Space for Community-Based Organizations, Disadvantaged Businesses, and Community Assets

IC-6 Create Non-Standard Commercial or Retail Spaces

IC-8 Enhanced Access to Community Resources

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	20.2	annual days of extreme heat
Extreme Precipitation	6.00	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	0.00	annual hectares burned

Advice for Local Jurisdictions

Ask for relevant reports from Adaptation and Health and Equity Module

Advice for Local Jurisdictions

Know the indicators of your project area and address existing burdens in:

- Design
- Conditions of Approval
- Mitigation Measures



Key Indicators: While all communities can benefit from these measures, communities with sensitive populations and socioeconomic challenges would especially benefit. Relevant CalEnviroScreen indicators include: Asthma, Cardiovascular Disease, Low Birth Weight Infants, Poverty, Linguistic Isolation, Housing Burden, and Educational Attainment. Relevant Healthy Places Index indicators include: Above Poverty, Housing Habitability, Asthma Emergency Room Admissions, Coronary Heart Disease, Chronic Obstructive Pulmonary Disease, Heart Attack Emergency Room Admissions, Children, and Elderly.

Advice for Local Jurisdictions

Incorporate equitable
practices into your
outreach and
engagement processes



Public Comments

October 22, 2019

Advice for Local Jurisdictions

Incorporate equitable
practices into your
construction practices



Advice for Local Jurisdictions

Don't neglect
implementation
and operations



Advice for Local Jurisdictions

Don't neglect
implementation
and operations

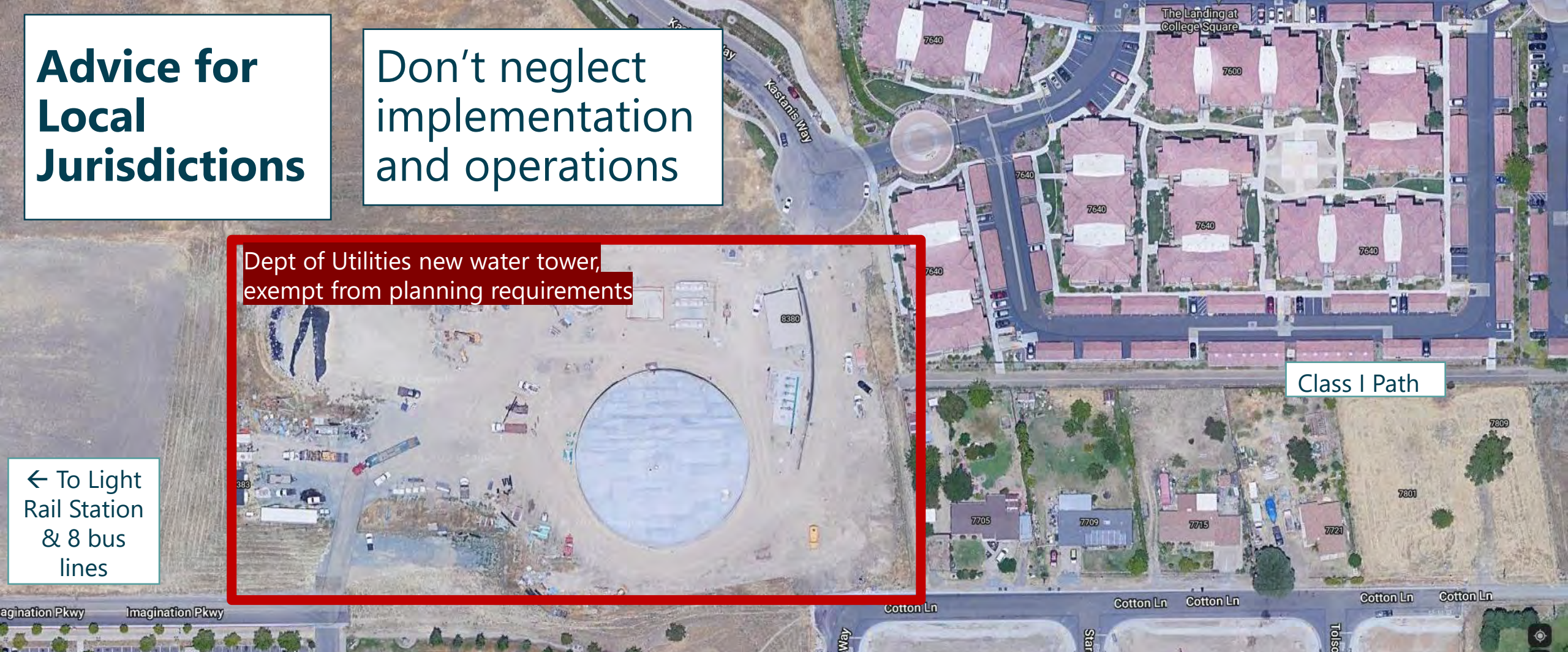


Advice for Local Jurisdictions

Don't neglect implementation and operations

Dept of Utilities new water tower, exempt from planning requirements

← To Light Rail Station & 8 bus lines





CalEEMod

California Emissions Estimator Model

www.caleemod.com

Tell us how we did!

Take a quick 2-minute survey to help us improve future Toolbox Tuesdays!



SCAN ME