

Climate Adaptation Working Group

June 24, 2021

2:00 pm – 4:00 pm

www.scag.ca.gov



Housekeeping

- Meeting length: approximately 2 hours
- Reminder to please mute your mics/phones
- Q&A at the end of each session
- Presentation materials will be shared with all participants following today's meeting

Agenda

SoCal Climate Adaptation Framework: New Resources & Tools

SB 379 Guidebook: Compliance Curriculum for Local Jurisdictions

FloodBRIDGE Flood Hazard Mapping

University of California, Irvine

Cooling the City: Regulating Outdoor Climate through the Built Environment

University of California, Los Angeles

Workshop Session: SCAG Environmental Equity Definition

Regional Planning Working Group Updates

Upcoming Events

Southern California Regional Climate Adaptation Framework

New Tools & Resources

Lorianne Esturas

SCAG Sustainability Department

June 24, 2021

www.scag.ca.gov



Climate Change Impacts in the SCAG Region



Extreme Heat



*Sea Level Rise/Coastal
Flooding and Erosion*



Severe Storms/Wind



Inland Flooding



Drought



Wildfire



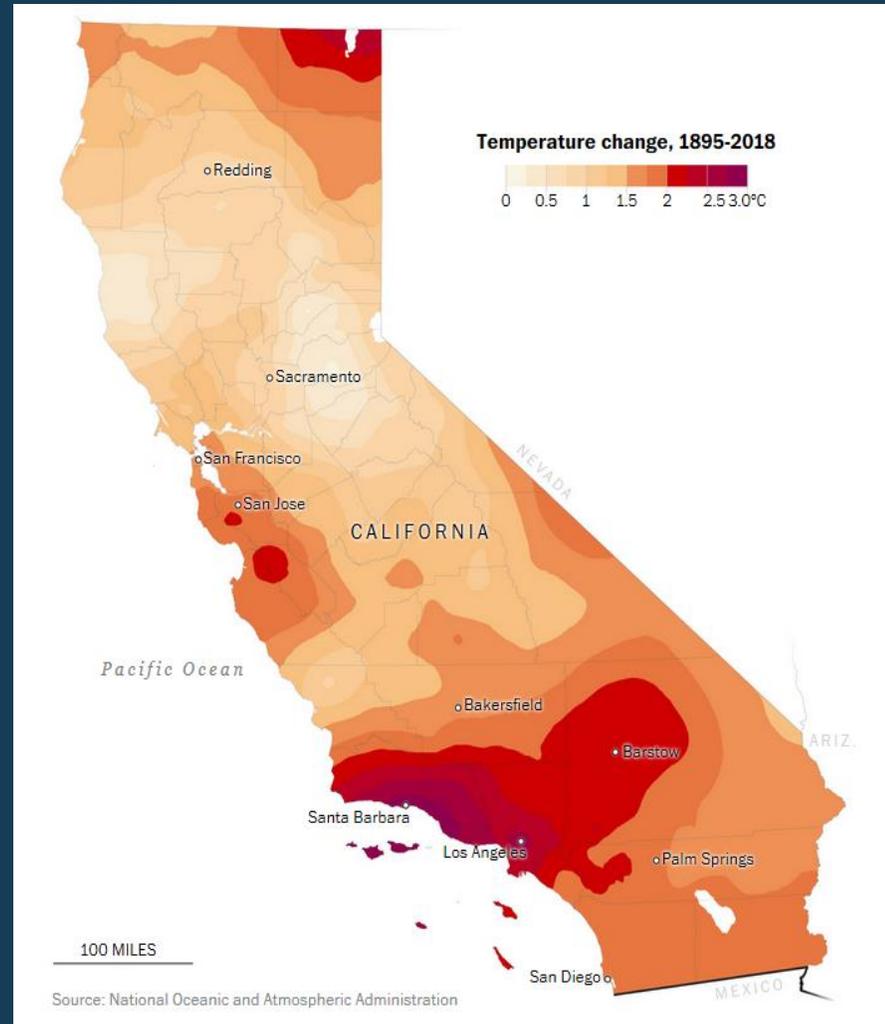
*Air Quality and Vector Borne
Diseases*



Landslides

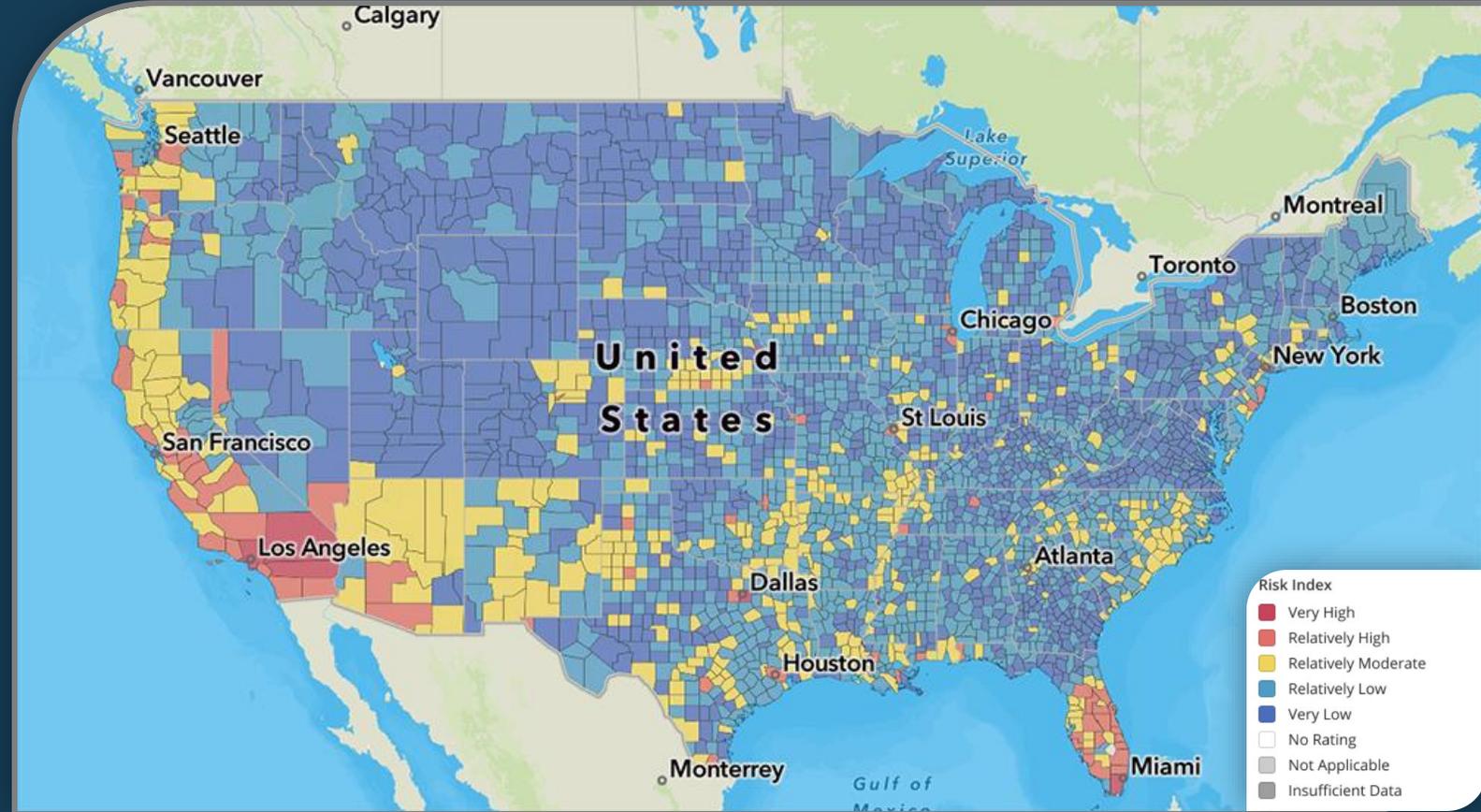


Pests and Ecological Hazards



FEMA National Risk Index

- In October 2020, FEMA identified Southern California as one of the most vulnerable areas in the U.S. due to natural hazards
- Los Angeles County is the most at-risk nationwide
- Riverside County and San Bernardino County are amongst the 10 highest at-risk counties in the U.S.



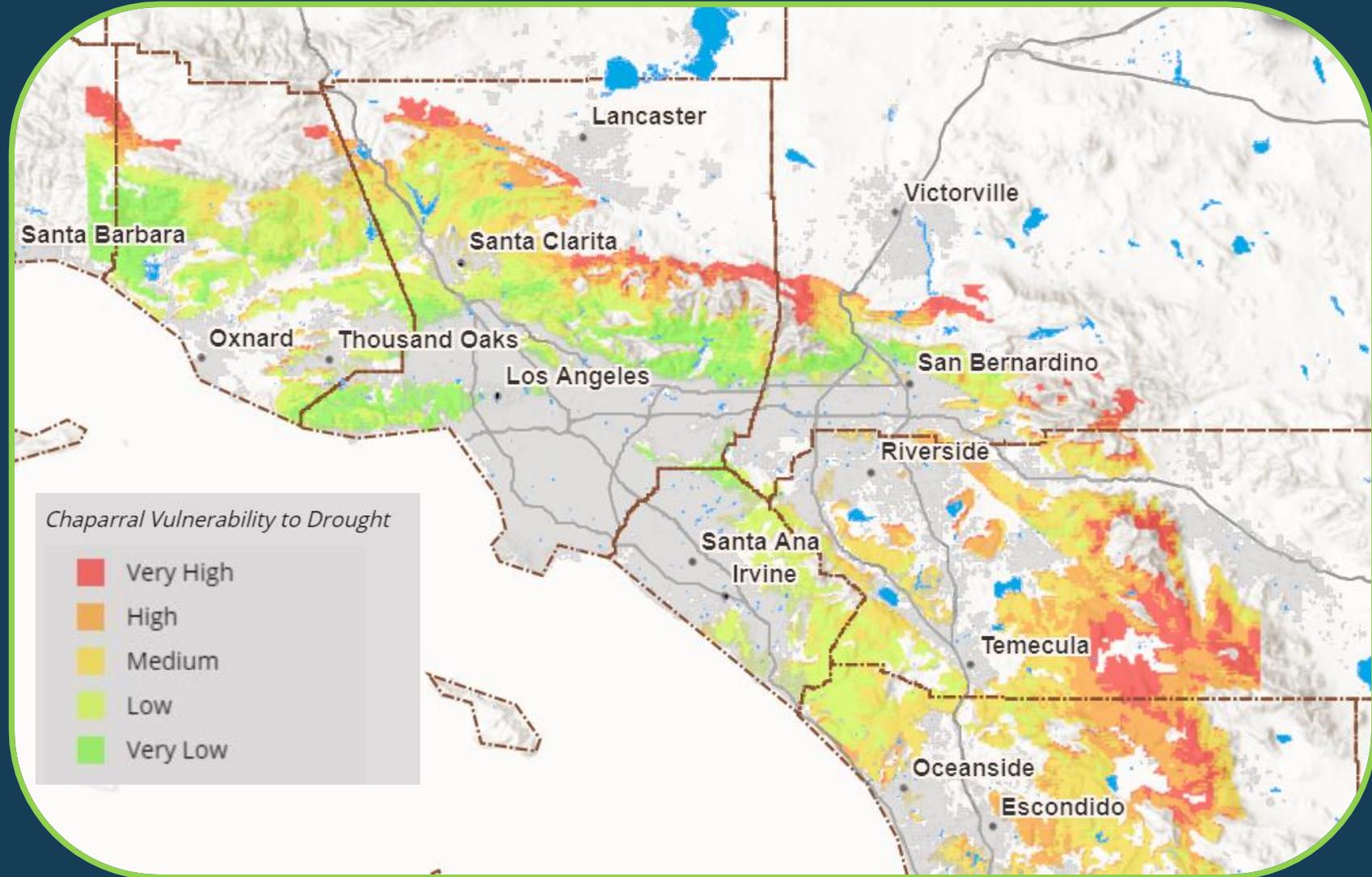
Southern California Climate Vulnerabilities - Drought



Chaparral



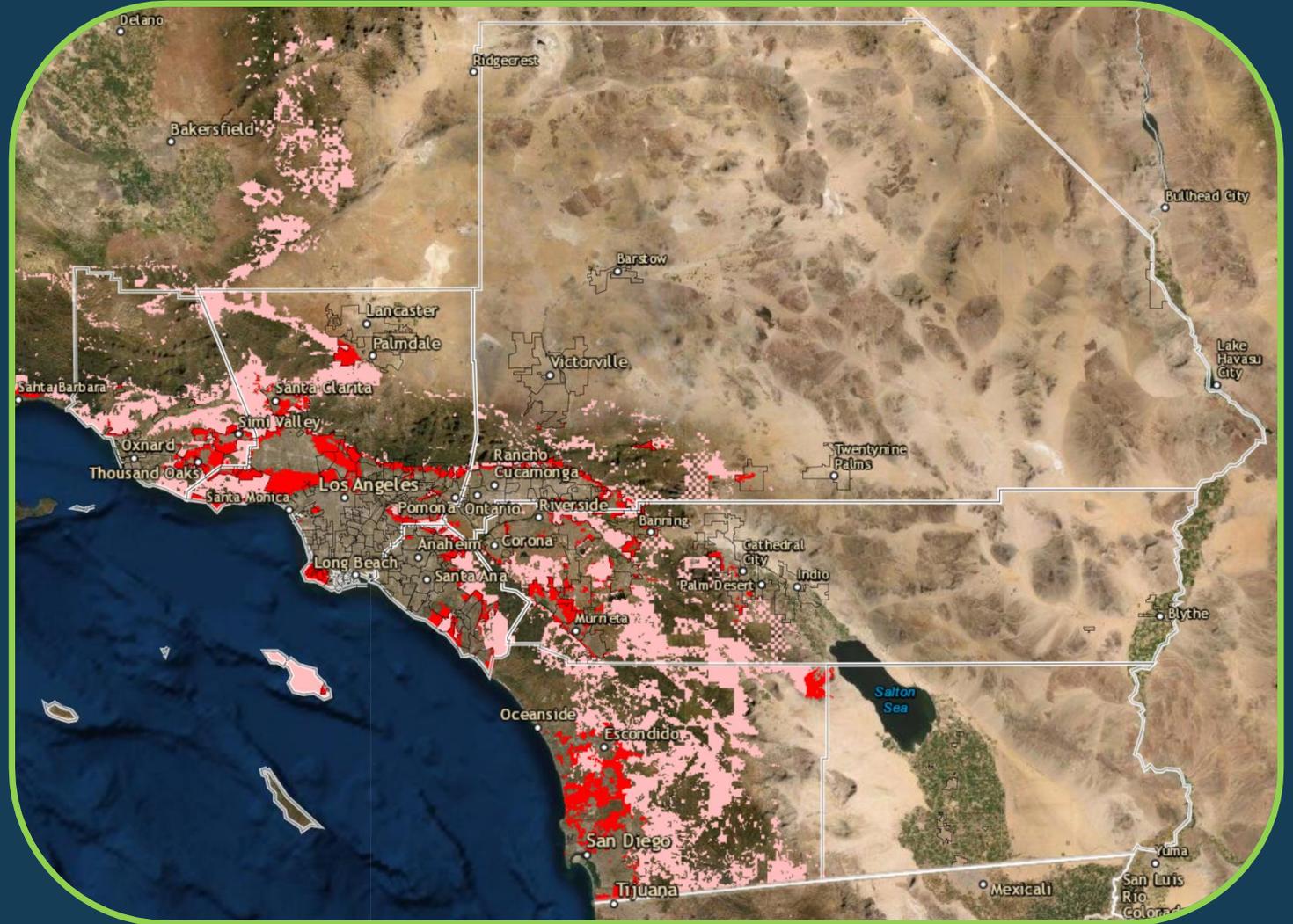
Chaparral in Drought Conditions



Population Growth in CalFire Wildfire Hazard Areas



- 1.8 million people in Southern California reside in fire hazard areas in 2016
- By 2045, this could increase to 2.2 million based on local growth estimations



SoCal Climate Adaptation Framework:

- 2-year effort (February 2019 – February 2021)
- SB 1 Adaptation Planning Grant
- SCAG, Cambridge Systematics, with ESA, Here LA, and Urban Economics

Includes:

- Tools and Resources for Local Planning
- Outreach and Communications Strategies
- Planning Guidance and Model Policy Language
- Climate Adaptation Metrics & Tools for Local and Regional Agencies
- Adaptation Infrastructure Finance and Funding Guidance

Stakeholder Outreach

Local Jurisdiction Practitioners

- Two focus groups with 8 different jurisdictions
- Online survey tool to seek input from all jurisdictions
- Interviews with jurisdictions for case study analysis



Broader Group of Stakeholders

- Interviews with 8 CBOs
- Quarterly Climate Adaptation Working Group Meetings
- Two Public “Toolbox Tuesday” Trainings on SCAG’s Climate Adaptation Framework & Tools
- Five Public Pop-Up Climate Talks Events



Elected Officials

- Subregional COG Presentations
- Presentation to SCAG’s Energy & Environment Policy Committee
- Presentation to SCAG’s Regional Council



Local Jurisdiction Practitioners

- Lack of dedicated staffing resources for climate planning
- Activities should cross departments
- High turnover and lack of champions or oversight is challenging
- Jurisdictions need more tools and datasets to track performance and would like to coordinate with counterparts

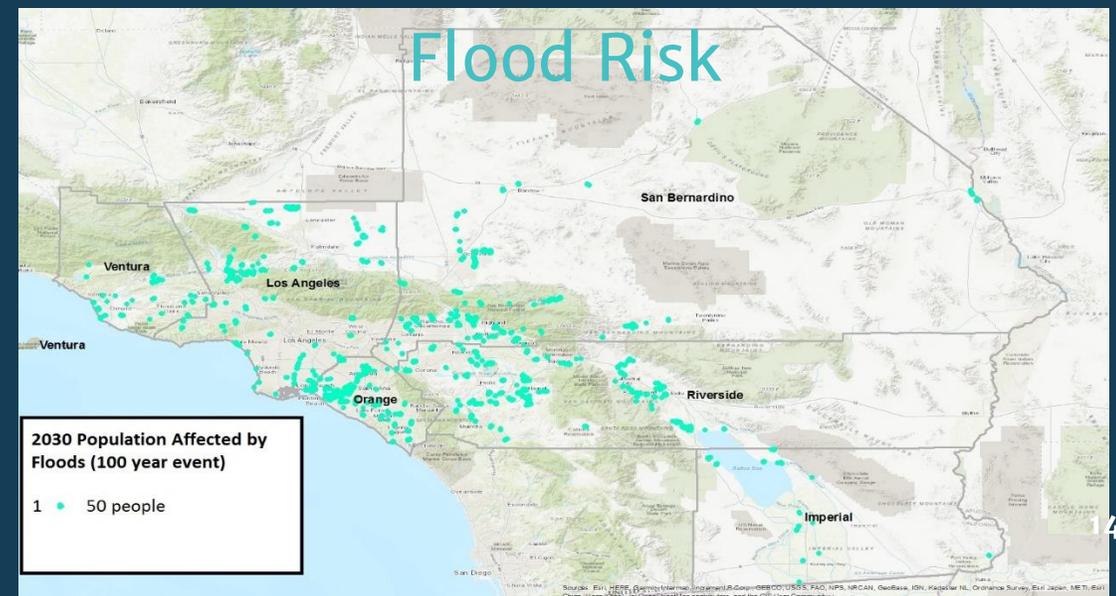
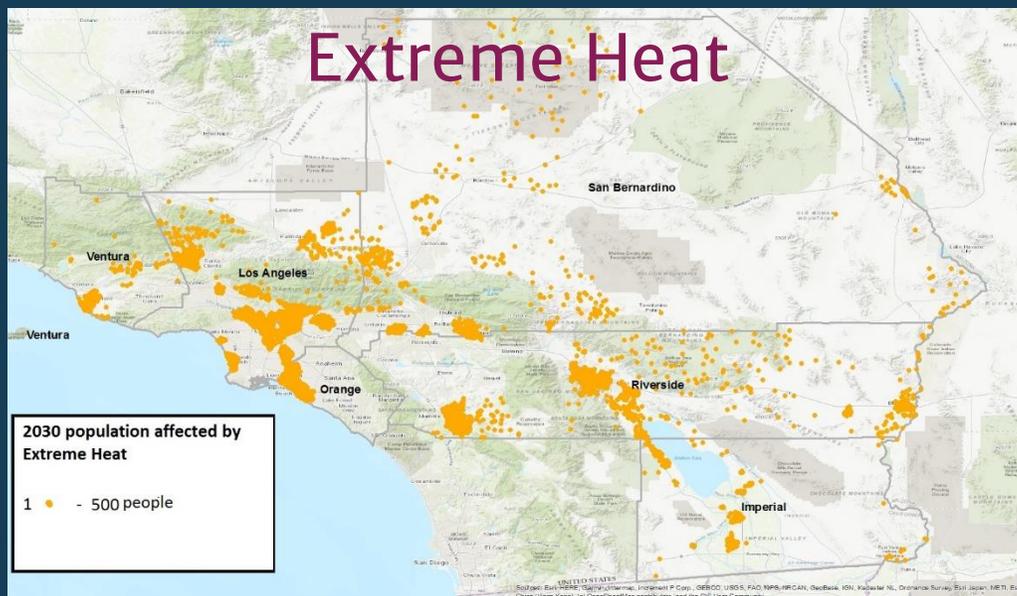
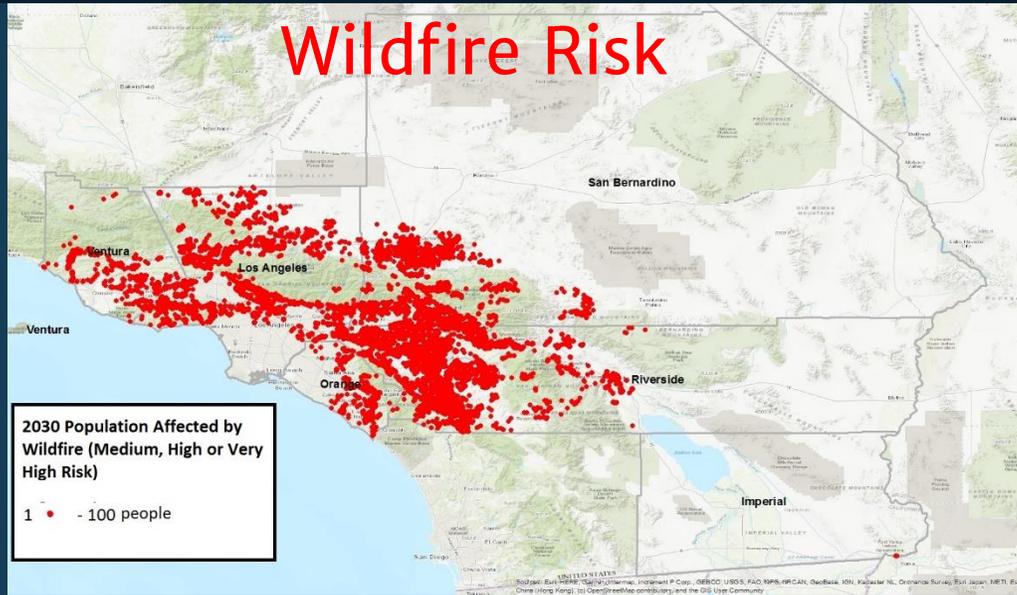
Broader Group of Stakeholders

- There is a general knowledge gap on climate change solutions
- Linkages of community impacts from climate change can be challenging to convey
- Maps of climate impacts are not the best means for conveying impacts; images and statistics on local quality of life are
- The language of climate change and adaptation may not be familiar to several audiences

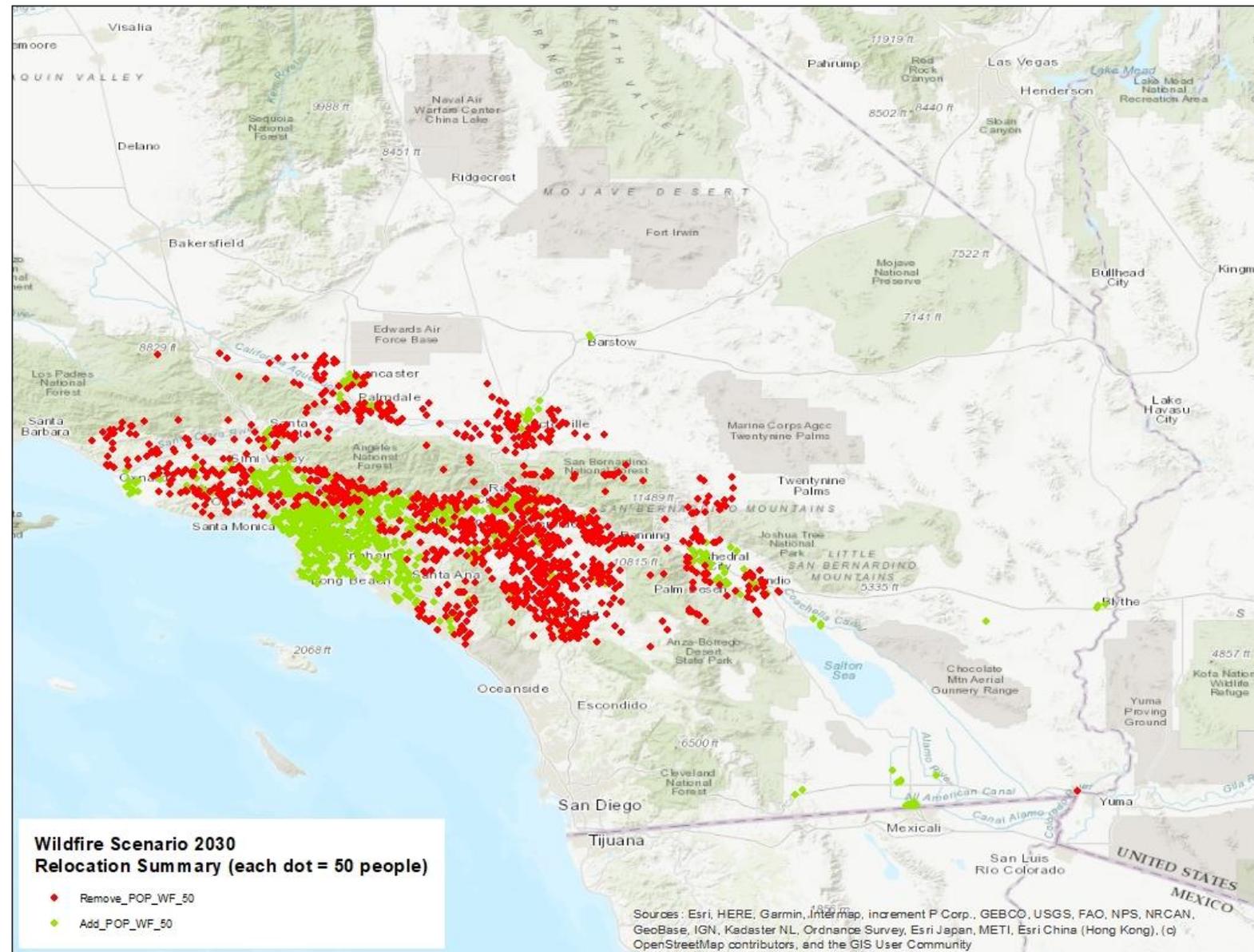
Elected Officials

- Health, socioeconomic, and racial equity considerations should be included in regional policymaking addressing climate hazards
- SCAG shall develop a regional resilience framework, a regional climate planning network, and partnerships to support jurisdictions' climate planning initiatives

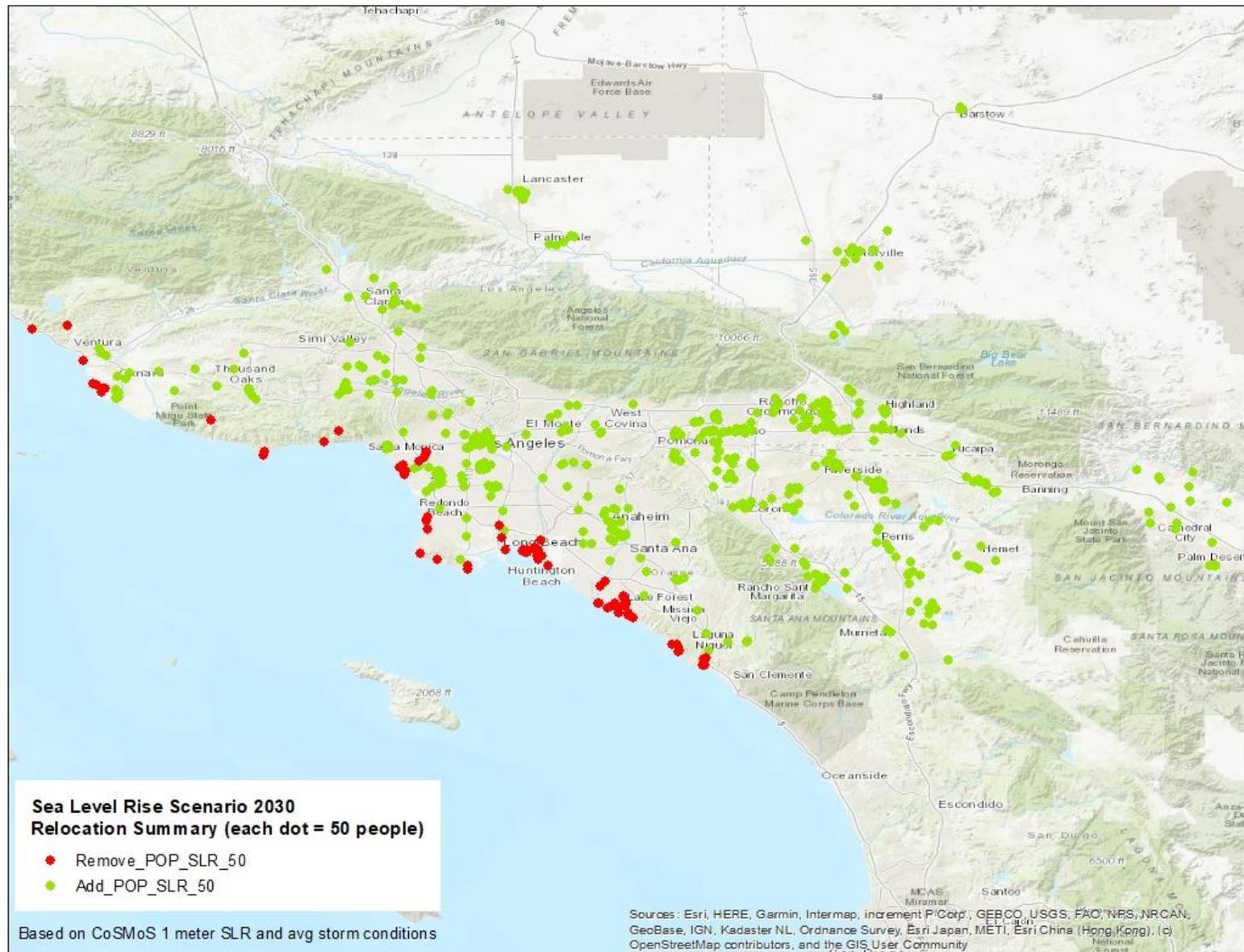
Widespread Impacts



Wildfire Scenario 2030 – “Business as Usual” Scenario



Sea Level Rise 2030 – “Business as Usual” Scenario



NEW RESOURCE: Housing Element Parcel Tool (HELPR) 2.0



SCAG HELPR 2.0 Housing Element Parcel Tool

Documentation   

Select a Jurisdiction

City or County (Unincorporated) is
Adelanto 

[Show Population and Housing Stats](#)

Filter Parcels

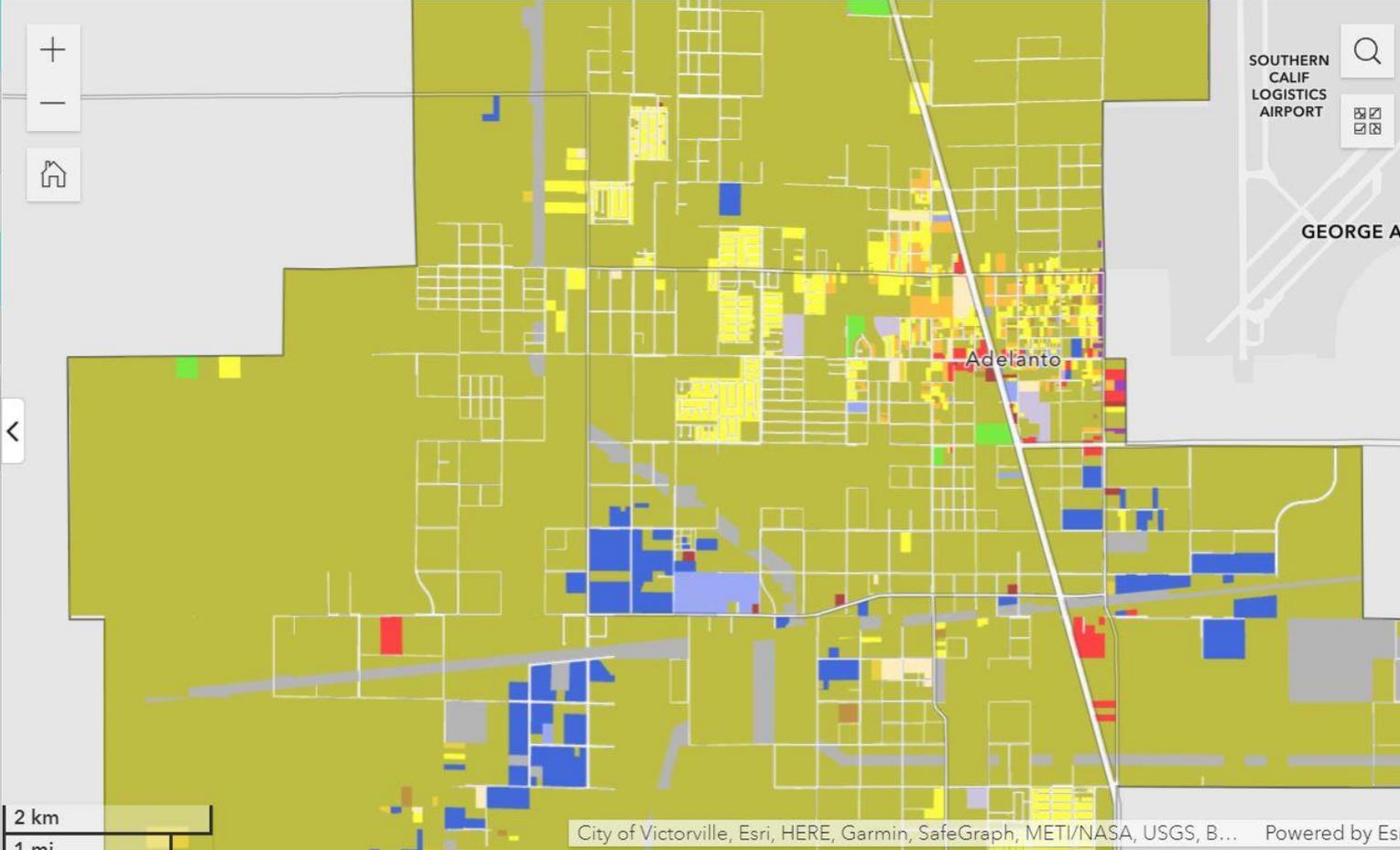
Standard Filters **ADU Filters**

-  Vacant parcels of appropriate size 
-  Lower valued commercial/retail 
-  Public-owned land 

Number of Selected Parcels
13,414

[Download Parcels \(CSV\)](#) [Download Parcels \(SHP\)](#)

[Download Land Use Layer File \(LYRX\)](#)



City of Victorville, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, B... Powered by Esri

<https://maps.scag.ca.gov/helpr/>

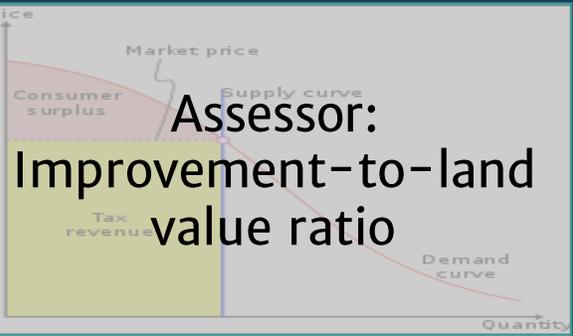
Selected Parcel Attributes in HELPR

Existing Land Use

Zoning Designation

General Plan Designation

Specific Plan Designation



Parcel size (acres)

Slope

Building footprint area

Brownfield/superfund designation

Priority growth/constraint area

Environmental justice/opportunity areas

Proximity to grocery/healthcare/open space

Selected Environmentally Sensitive Areas



High and Very High
Hazard Fire Risk Zones



Liquefaction
Susceptibility Zones



Alquist-Priolo
Earthquake Fault Zones



100 Year Floodplains



Active River Areas



Wetland Areas



Sea Level Rise Areas



Landslide Hazard Zones



Protected Areas



Wildlife Habitat,
Connectivity Areas, and
Missing Linkages



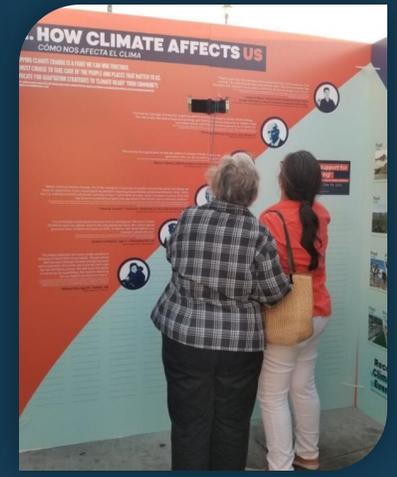
Natural Community &
Habitat Conservation
Plans Reserve Designs



Status and Locations of
Rare Plants and Animals

Climate Change Action Resolution – adopted January 7, 2021

- Regional Resilience Framework
- Climate Planning Network
- Regional Advanced Mitigation Program (RAMP)
- Accelerated Electrification
- Inclusive Economic Recovery Strategy
- Climate Adaptation & Mitigation Analysis and Strategies in the 2024 RTP/SCS
- Partnership Potential
 - *Climate Action Plans*
 - *Urban Greening*
 - *Safety elements*
 - *Hazard mitigation infrastructure financing*
 - *Urban heat mitigation*
 - *Wildlife corridor restoration & greenway connectivity*
 - *EV permitting*



Project Website



<https://scag.ca.gov/climate-change-regional-adaptation-framework>

The screenshot shows the SCAG website's navigation and content. At the top, there is a dark blue header with the SCAG logo on the left and utility icons for 'CONNECT SOCIAL', 'RHNA', 'TRANSLATE', and a search icon on the right. Below this is a teal navigation bar with links for 'ABOUT US', 'MEETINGS', 'OUR WORK', 'DATA & TOOLS', 'GET INVOLVED', and 'NEWS & EVENTS'. The main content area is white and features a left-hand sidebar under the heading 'OUR WORK'. The sidebar lists various categories with expand/collapse icons: Connect SoCal (+), Inclusion, Diversity, Equity & Awareness, Programs & Projects (-), Housing (+), Economy & Finance (+), Federal & State Compliance (+), Sustainability (-), Public Health (+), Sustainability Program (-), Climate Change (-), Regional Climate Adaptation Framework (selected), Climate & Economic Development Project, Adaptation, Mitigation, Climate Change & The Future of Southern California, Climate Change Resources, HQTA Pilot Project, Alternative Fuels & Vehicles (+), Open Space (+), and Green Region Initiative. The main content area displays the 'REGIONAL CLIMATE ADAPTATION FRAMEWORK' with a large image of a city skyline at sunset. Below the image is a paragraph explaining that SCAG developed the framework to assist local and regional jurisdictions in managing climate change impacts. To the right of the main text are five colored boxes: 'SOCAL APG RESOURCES' (pink), 'COMMUNICATION & OUTREACH TOOLKIT' (teal), 'LIBRARY OF MODEL POLICIES' (light green), and 'SB 379 GUIDEBOOK' (pink).

SB 379 Guidebook

Compliance Curriculum for Local Jurisdictions

Emily Rotman

SCAG Sustainability Department

June 24, 2021

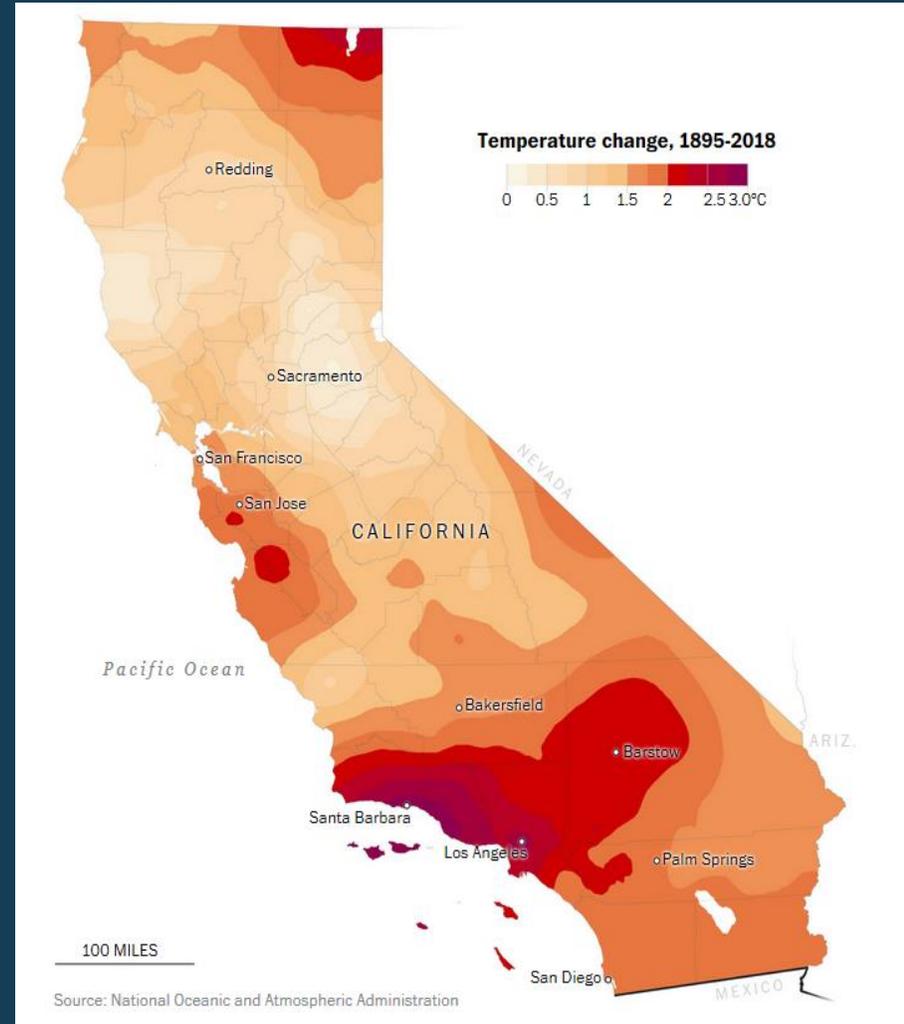
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What is SB 379?

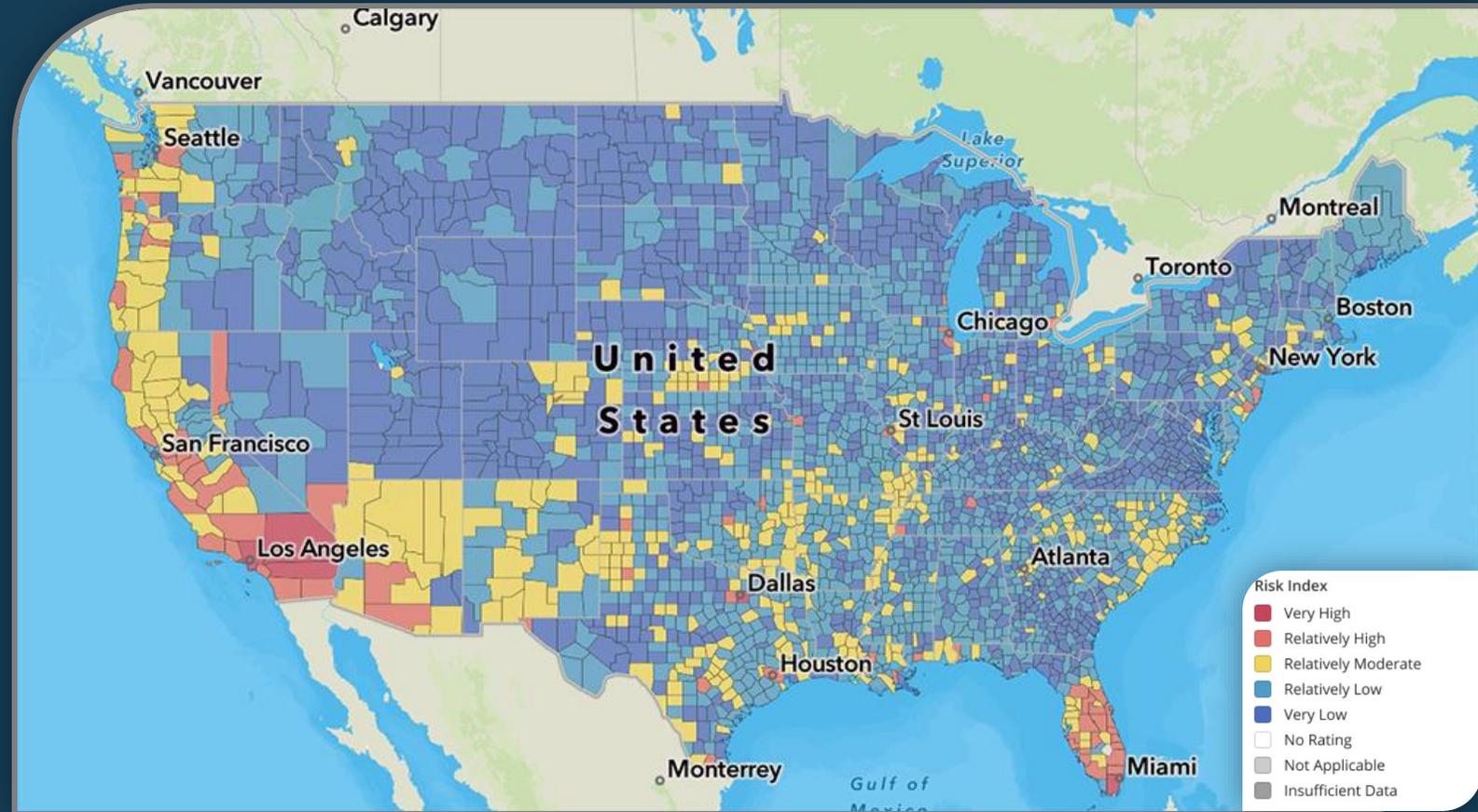
- Passed in 2015, builds upon AB 162 (flood) and SB 1241 (fire)
- Key legislation for implementation of State's climate adaptation goals under Safeguarding California
- Applies to all cities and counties in California
- Requires climate adaptation and resilience strategies to be incorporated into the general plan safety element by

January 1, 2022



Why do we need SB 379?

- Southern California is one of the most vulnerable areas in the U.S. due to natural hazards
- Communities are already feeling and will continue to experience the impacts of climate change
- Local governments play a critical role in adaptation planning and building climate resilience



Source: FEMA National Risk Index, Oct 2020

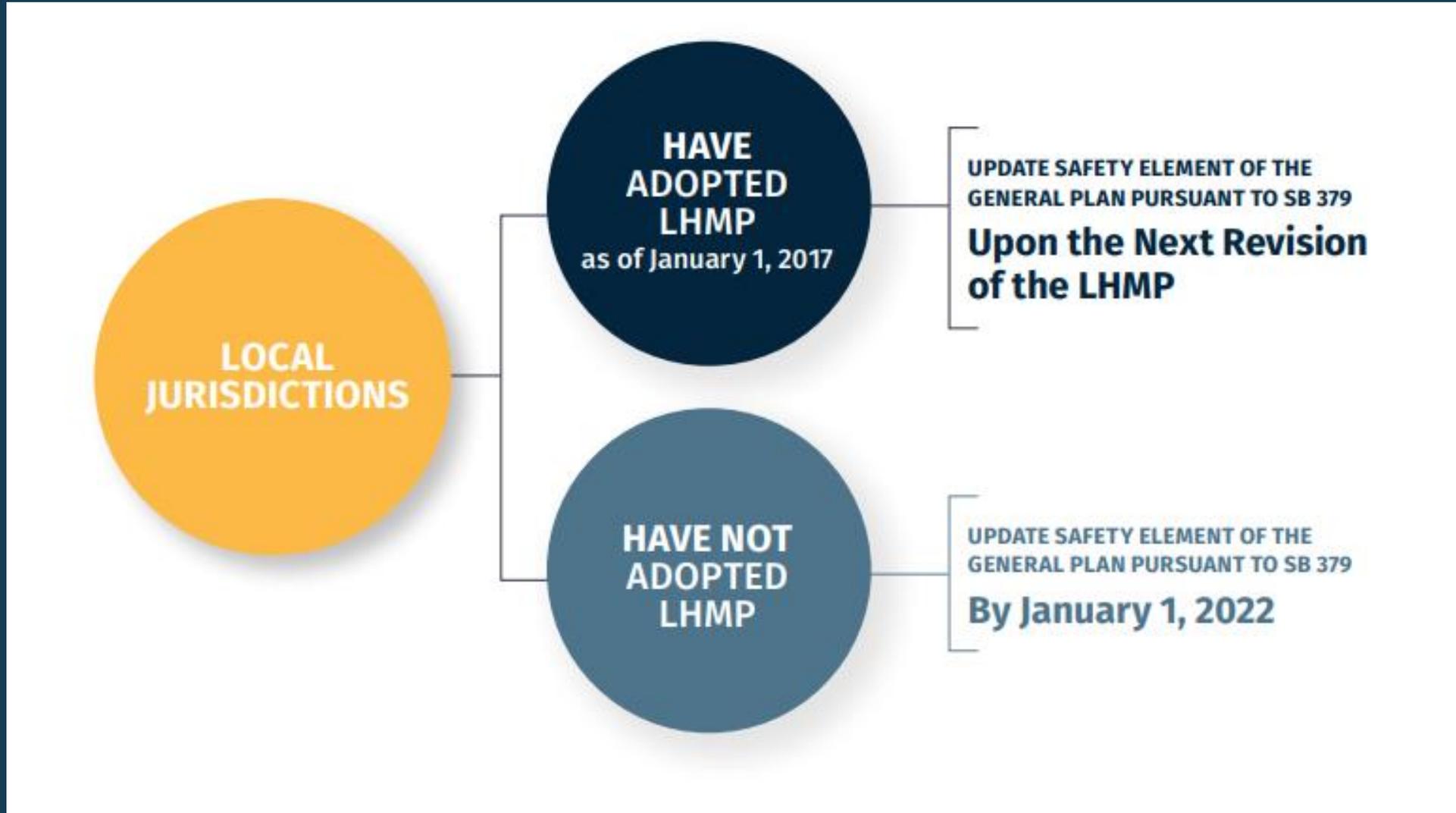
What are the statutory requirements of SB 379?

Three main components of SB 379:

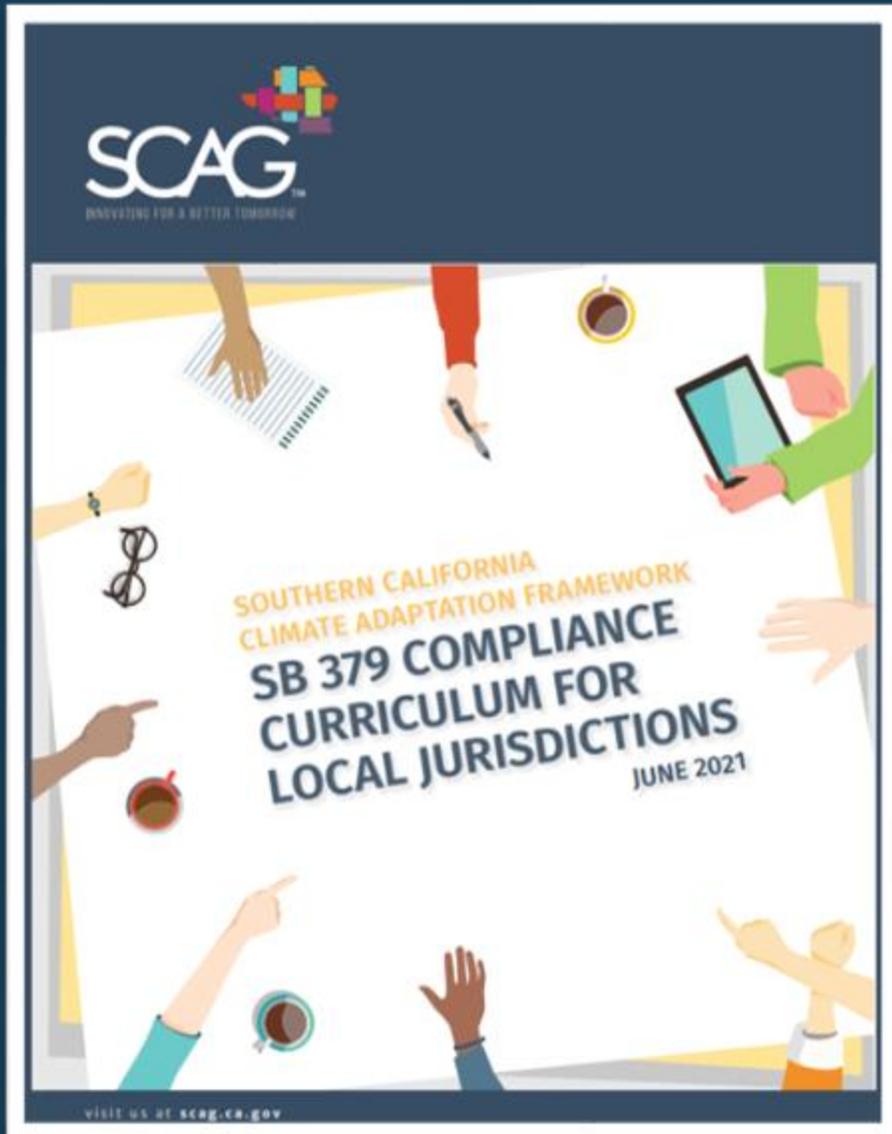
1. A **vulnerability assessment** that identifies the risks that climate change poses to the local jurisdiction and the geographic areas at risk from climate change impacts;
2. A **set of adaptation and resilience goals, policies, and objectives** based on the information in the vulnerability assessment for the protection of the community; and
3. A **set of feasible implementation measures** designed to carry out the identified goals, policies, and objectives.

An existing local hazard mitigation plan, climate adaptation plan, or other similar planning document that fulfills the requirements of SB 379 can be used to comply with the law by updating the safety element with a summary of, reference to, and/or attachment of the other compliant plan.

What is the timeline for SB 379 compliance?

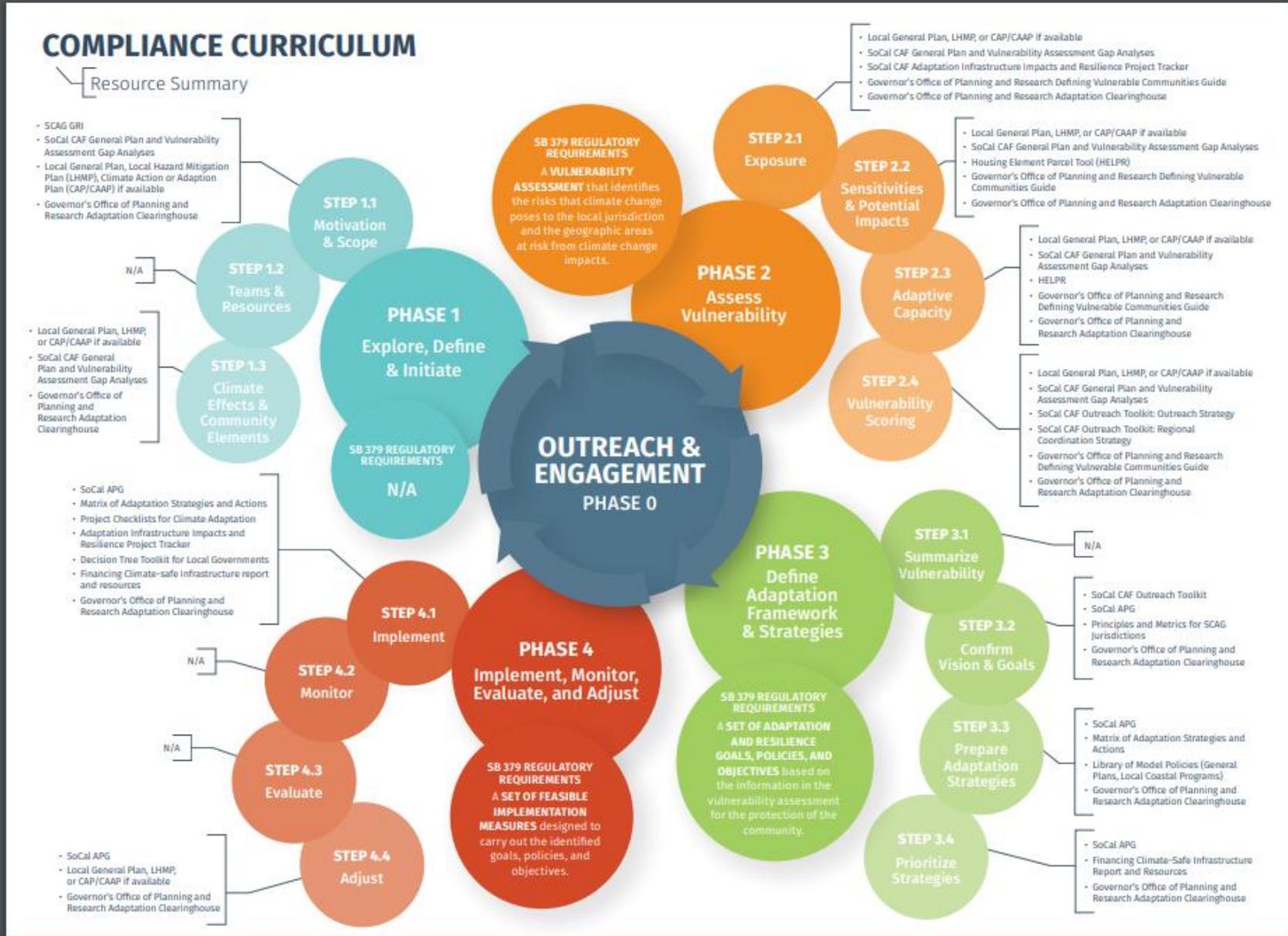


What is the SB 379 Guidebook?

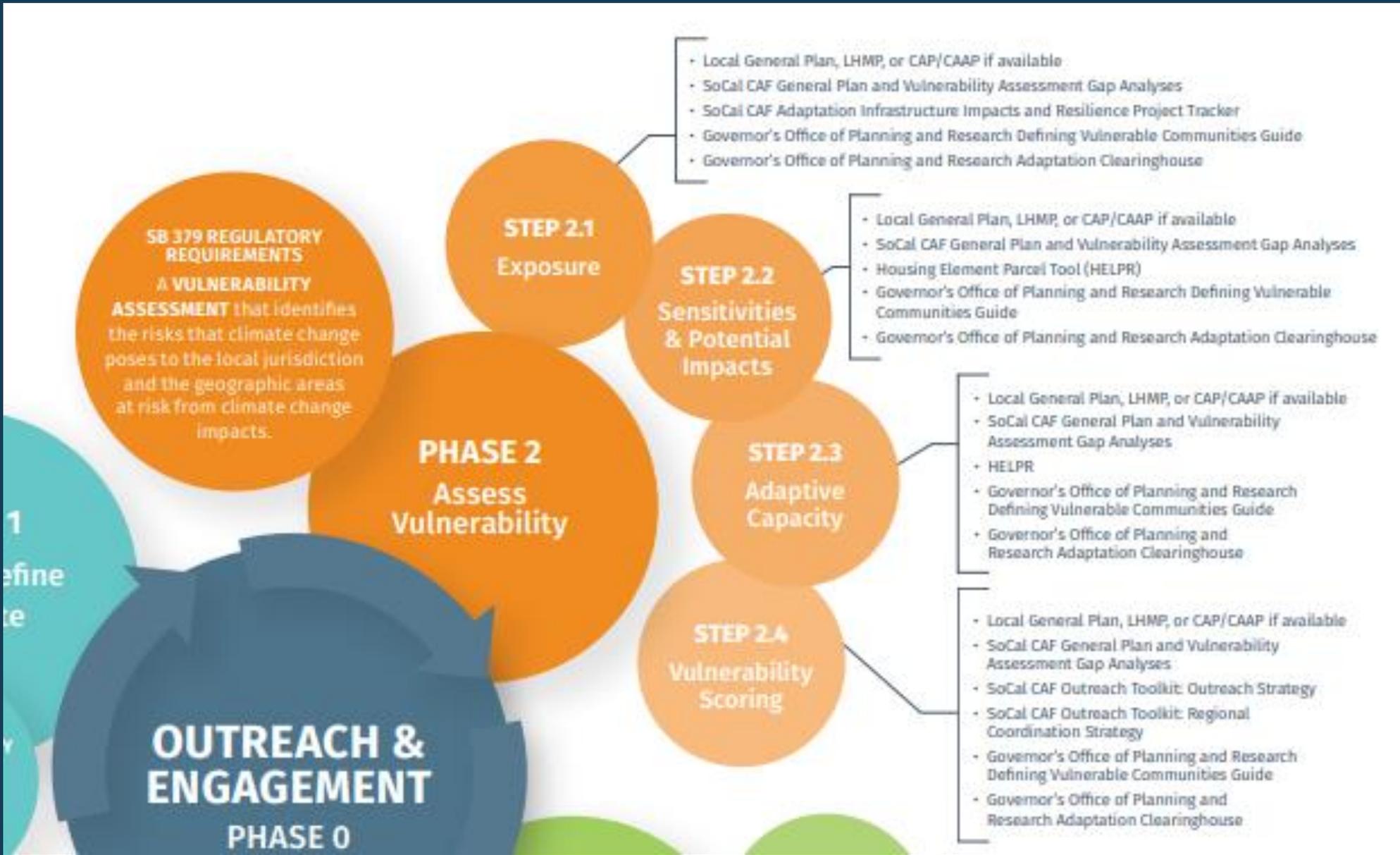


- New CAF resource that provides a "compliance curriculum" to meet the requirements of SB 379
- Links existing SCAG, CAF, and other available adaptation planning resources and tools to support local safety element updates
- Follows the SoCal APG 4 Phases of Adaptation Planning and step-by-step guidance for local jurisdictions
- Highlights case studies of SB 379-compliant safety elements, LHMPs, CAAPs, etc. across the SCAG region

How do you use the SB 379 Guidebook?



How do you use the SB 379 Guidebook?



Where to find the SB 379 Guidebook

<https://scag.ca.gov/climate-change-regional-adaptation-framework>

REGIONAL CLIMATE ADAPTATION FRAMEWORK



The Southern California Association of Governments (SCAG) developed the **Regional Climate Adaptation Framework** (Framework) to assist local and regional jurisdictions in managing the negative impacts of climate change. The Framework provides an overview of how the Southern California region can work together to plan and prepare for the impacts of sea level rise, extreme heat, increasingly frequent and damaging wildfires, and other climate-related issues. With the impacts of severe climate hazards and issues already being felt, adaptation planning is necessary to help individuals, communities, and natural systems cope with the unavoidable consequences of a changing climate. The Framework was developed over a 2-year period, beginning in February 2019 and ending in February 2021.

SCAG worked with local municipalities, advocacy groups, universities, and other stakeholders to assess the unique issues affecting the SCAG region, available planning tools and resources, scientific data, and messaging strategies. Many local jurisdictions do not have the resources to adequately assess their local hazards, develop effective adaptation plans, and participate in regional planning efforts – our framework provides jurisdictions with a roadmap to adaptation in an effort to help build a more resilient Southern California.

As part of the overall Framework, SCAG is sharing new tools for local jurisdictions – first, the Communication & Outreach Strategies and Templates [\[link\]](#) that can help jurisdictions and community based organizations engage with residents to understand better how climate related hazards are affecting community members. Second, SCAG developed the [\[link\]](#) Southern California Climate Adaptation Planning Guide as a resource for local planning that describes the range of climate change hazards the SCAG region is likely to face in the coming decades.

It also describes adaptation principles geared to the region, and outlines a general process of adaptation

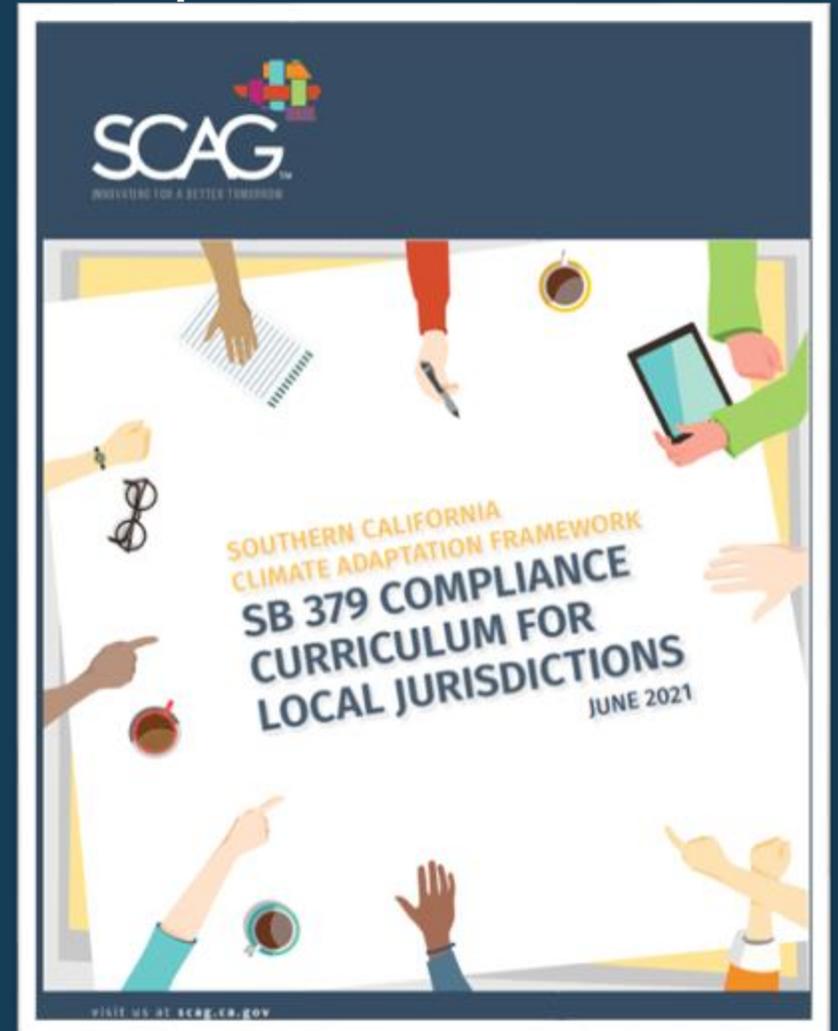


SOCAL APG RESOURCES

COMMUNICATION & OUTREACH TOOLKIT

LIBRARY OF MODEL POLICIES

SB 379 GUIDEBOOK



Want to learn more?



Upcoming Workshops

- SCAG Toolbox Tuesday Training
June 29, 2021 from 1-3pm
 - Register online at:
<https://scag.ca.gov/toolbox-tuesday>
- LARC Local Climate Adaptation Planning Workshop
June 30, 2021 from 9am-12pm
 - Register online at:
<https://www.laregionalcollaborative.com/events/2021/6/30/2021-forum-adaptation>

Technical Assistance

- SCAG Local Information Services Team (LIST)
 - 1-on-1 technical assistance on general plan safety element updates
- SCAG Regional Data Platform & HELPR Tool
 - Risk and vulnerability assessment data and mapping resources
- If interested, please reach out to adaptation@scag.ca.gov

Thank You!

Questions?

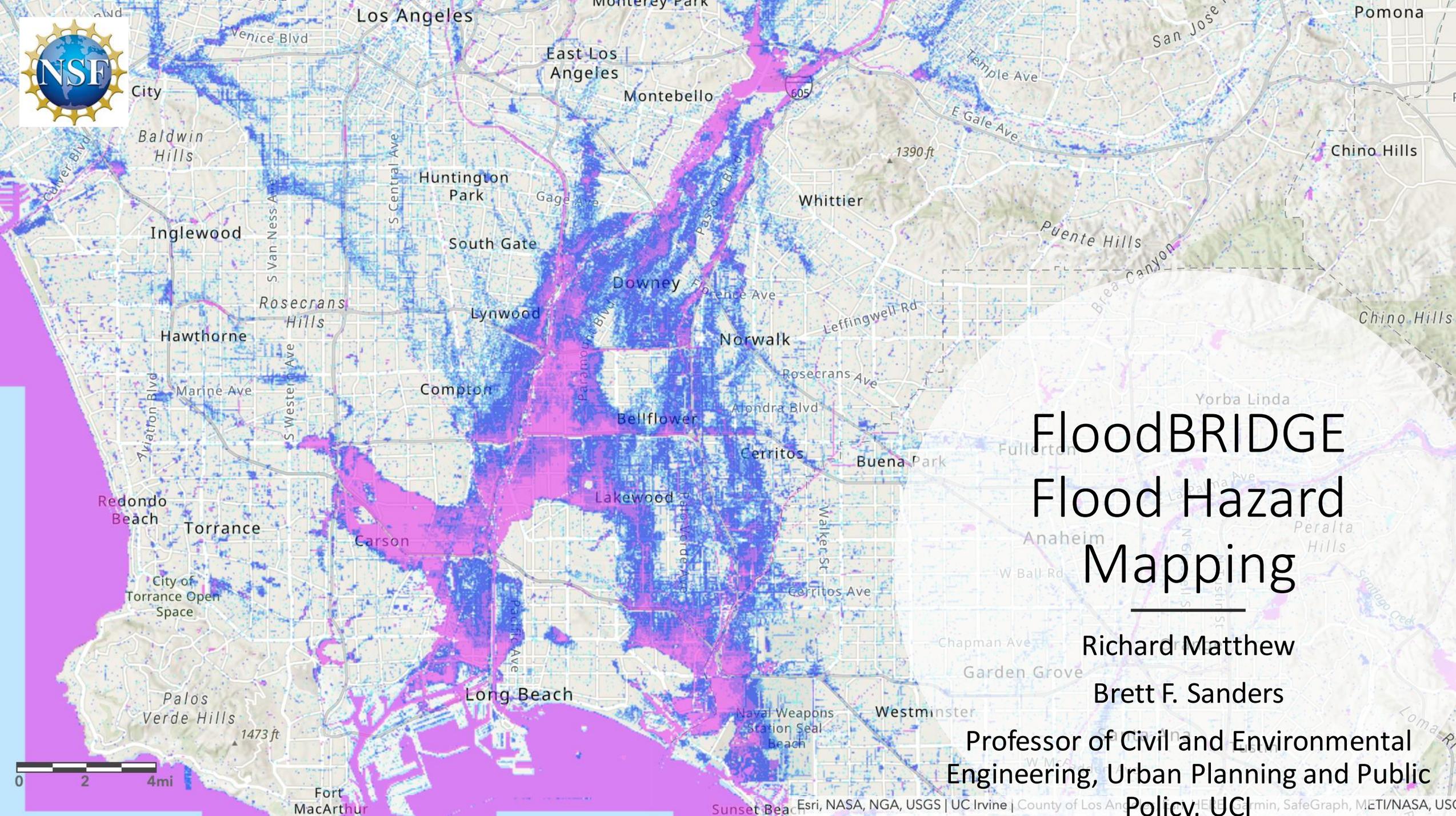
adaptation@scag.ca.gov

Lorianne Esturas, esturas@scag.ca.gov

Emily Rotman, rotman@scag.ca.gov

www.scag.ca.gov





FloodBRIDGE Flood Hazard Mapping

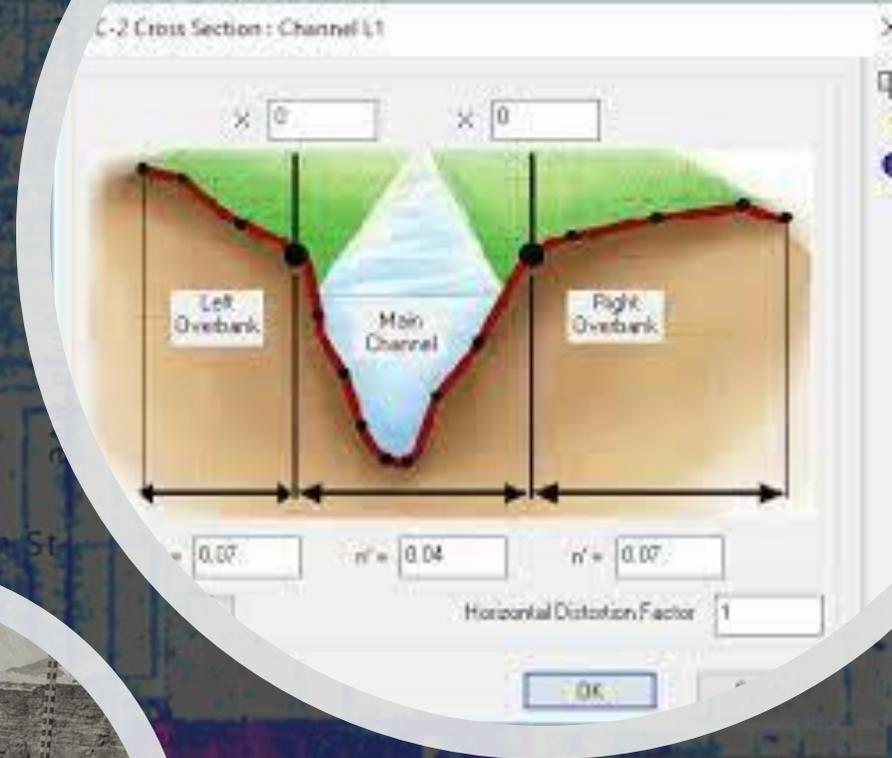
Richard Matthew

Brett F. Sanders

Professor of Civil and Environmental
Engineering, Urban Planning and Public
Policy, UCI

Evolution of Flood Hazard Modeling and Mapping

- Phase 1: Historical Floodplains
- Phase 2: Survey Transects and 1D Models
- Phase 3: 1D model results projected onto 2D topography
- Phase 4: 2D and 1D/2D modeling
 - HEC-RAS 2D, Tuflow
- **Phase 5: Local to Regional/Global Scales**
 - LISFLOOD-FP (First Street Foundation), PRIMo (UCI), TRITON (ORNL)
 - **Community-engaged model development to meet end-user needs for flood risk management**



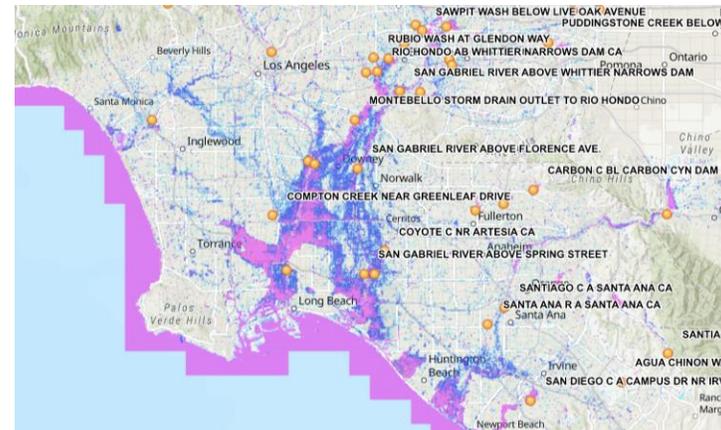
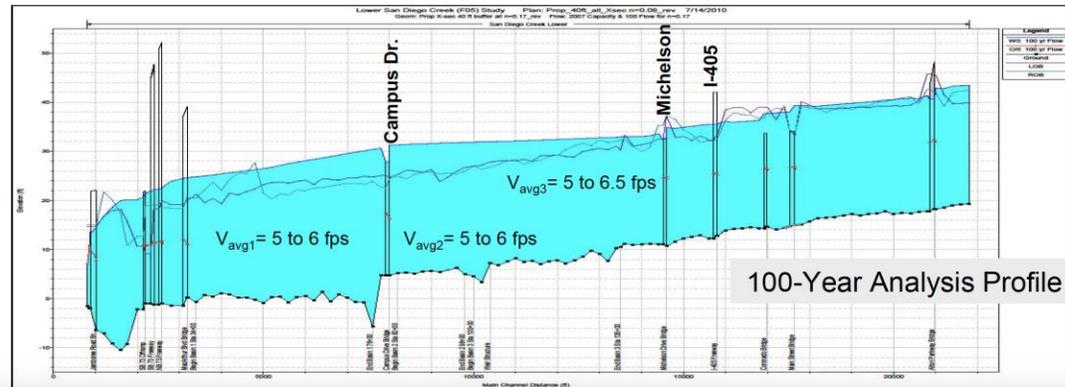
Transitioning from Local to Regional Modeling of Flood Hazards

Local (Reach) Models

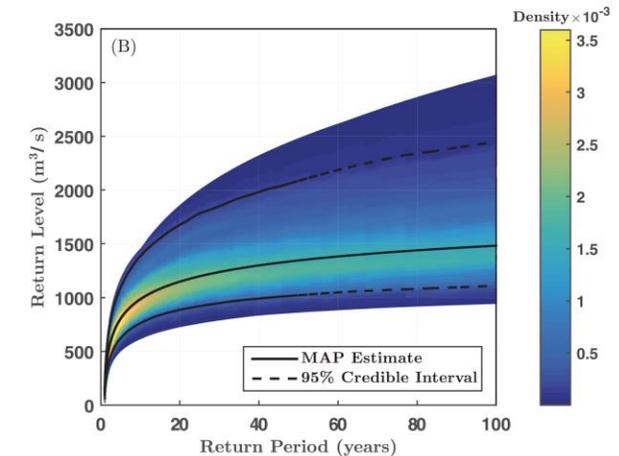
- **Hydrology:**
 - Reach-based design flows (Q), precipitation (P) and downstream water levels (H)
- **Hydraulics:**
 - Topographic data
 - Resistance data
 - **Detailed** stormwater infrastructure and flow barriers (levees/bridges)

Regional Models

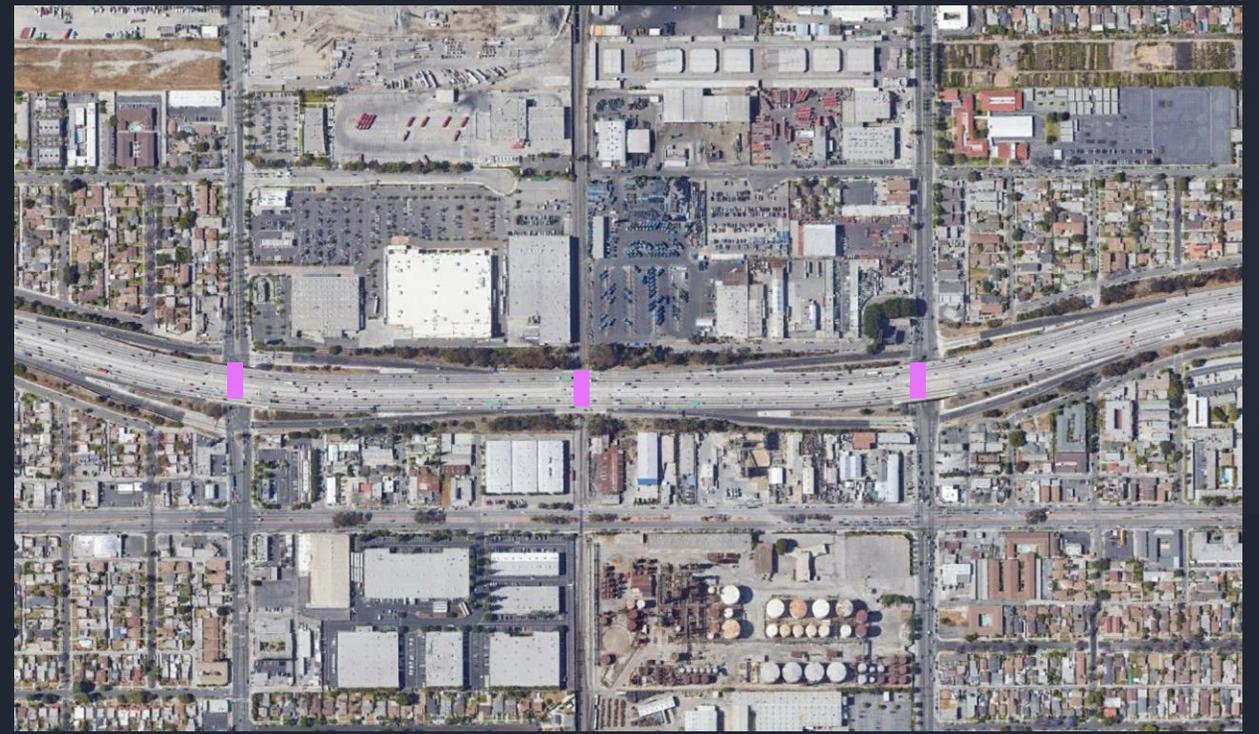
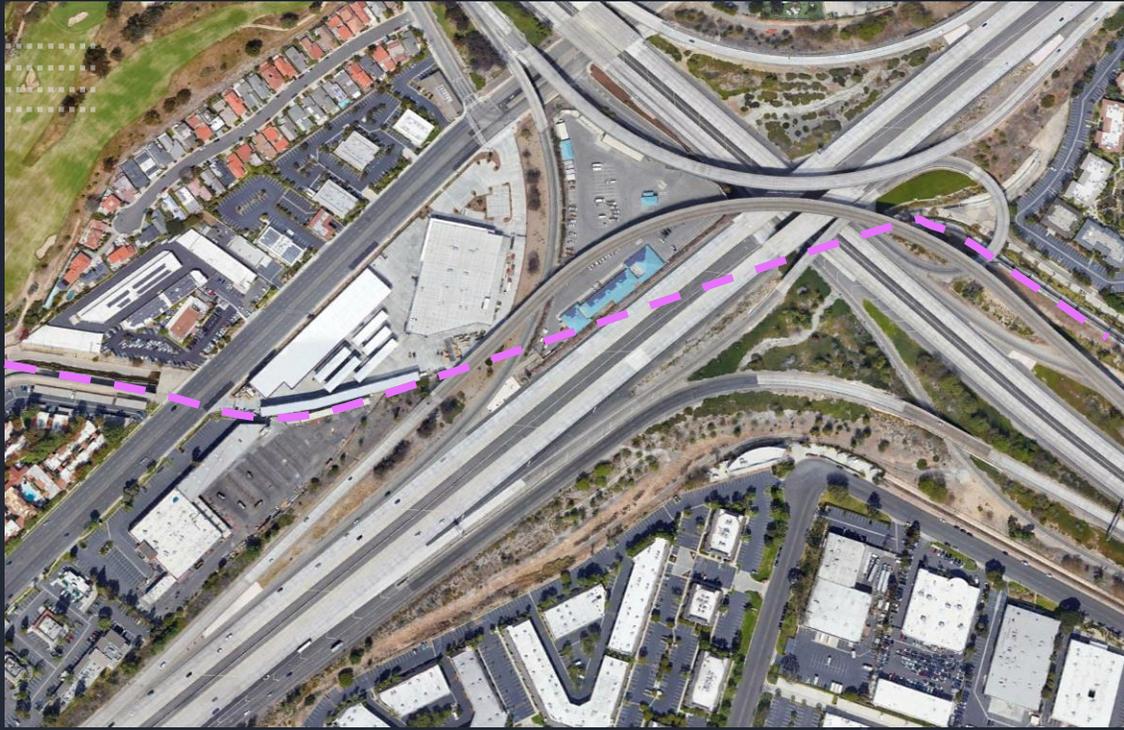
- **Hydrology:**
 - Regionally coordinated streamflow inputs (Q), precipitation (P), and boundary water levels ()
- **Hydraulics**
 - Topographic data
 - Resistance data
 - **Simplified** stormwater infrastructure and flow barriers



Uncertainty in Flood Magnitude



The regional modeling approach aligns with needs for regional coordination in the management of flood risks, and can serve to frame future local studies required to meet detailed design needs.



LA Metro PRIMo Model (Parallel Raster Inundation Model)

- Topographic data: 3 m resolution lidar data hydro-conditioned with road data and channel/pipe data.
 - 756 tiles with 1000x1000 cell grids (756 million cells)
 - Street inlets/small pipes neglected (for now: will be added later – there are 166,837 inlets in LA County)
- Resistance data: spatially distributed Manning n based on landcover
- Hydrodynamic flood solver (2D equations solved by finite volume method with 10x upscaling - PRIMo)
- Flooding Scenarios
 - 100-yr & 500-yr Precipitation: NOAA Atlas 14 (no infiltration)
 - 100-yr & 500-yr Streamflow: frequency analysis (HEC-SSP) of 51 USGS, LA County and OC County gages
 - 100-yr & 500-yr Storm tide: frequency analysis of NOAA tide gage at Los Angeles
 - Composite Flood Maps where $\text{Depth} = \max(\text{Precip}, \text{Streamflow}, \text{Storm Tide})$
- All model simulations on NCAR/Cheyenne Supercomputer

Sanders and Schubert,
Advances in Water Resources, 2019



FloodRISE

Resilient Infrastructure & Sustainable Environments



(1) Flood hazard modeling serves as a focal point for iterative stakeholder engagement with productive dialogue



(2) Input on model configuration, impact of proposed infrastructure, and “what if” failure scenarios. Reshaping power structures in flood management.

(3) Map Menu and Legends

Flood Force (1% Annual Chance)

Map Information

i Click me on map!

Flood Force

- Yellow: People Likely Stable (< 4.3 ft²/s)
- Light Green: People Toppled (4.3 - 8.1 ft²/s)
- Green: Cars Displaced (8.1 - 16.1 ft²/s)
- Blue: Structural Home Damage (16.1 - 27.0 ft²/s)
- Dark Blue: Homes Washed Away (> 27.0 ft²/s)

Flood Depths (1% Annual Chance)

Map Information

i Click me on map!

Flood Depths

- Cyan: Less than Ankle (< 0.4 ft)
- Light Blue: Ankle - Knee (0.4 - 1.5 ft)
- Blue: Knee - Waist (1.5 - 3.3 ft)
- Purple: Waist - Head (3.3 - 5.5 ft)
- Pink: Above Head (> 5.5 ft)

(4) Fine resolution matters

Maps of flooding are more intuitive, and people appreciate digital versions with pan/zoom functionality.

Viewing maps increases awareness about flood hazards.

Viewing maps reduces differences in perceptions of flooding.

Feedback helps modelers (experts) improve accuracy.

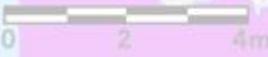


DEMO

FloodBRIDGE Flood Hazard Mapping

Brett F. Sanders

Professor of Civil and Environmental
Engineering, Urban Planning and Public
Policy, UCI



The Neighborhood Disadvantage Index

Visualizing the socio-economic resilience of neighborhoods to flooding hazards

DEMO

FloodBRIDGE (UC Irvine - Riverside - San Diego, U. Miami, U. Alabama, U. Texas Rio Grande Valley)

| April 7, 2021

Quantifying the human impacts of flooding has disproportionately focused on property damage, thereby missing impacts for disadvantaged communities. Here we present a more contextually precise index at the Census Block Group scale, which allows us to present a new disadvantage analyses to flooding across the Los Angeles / Orange County metropolitan area.

Cooling the City

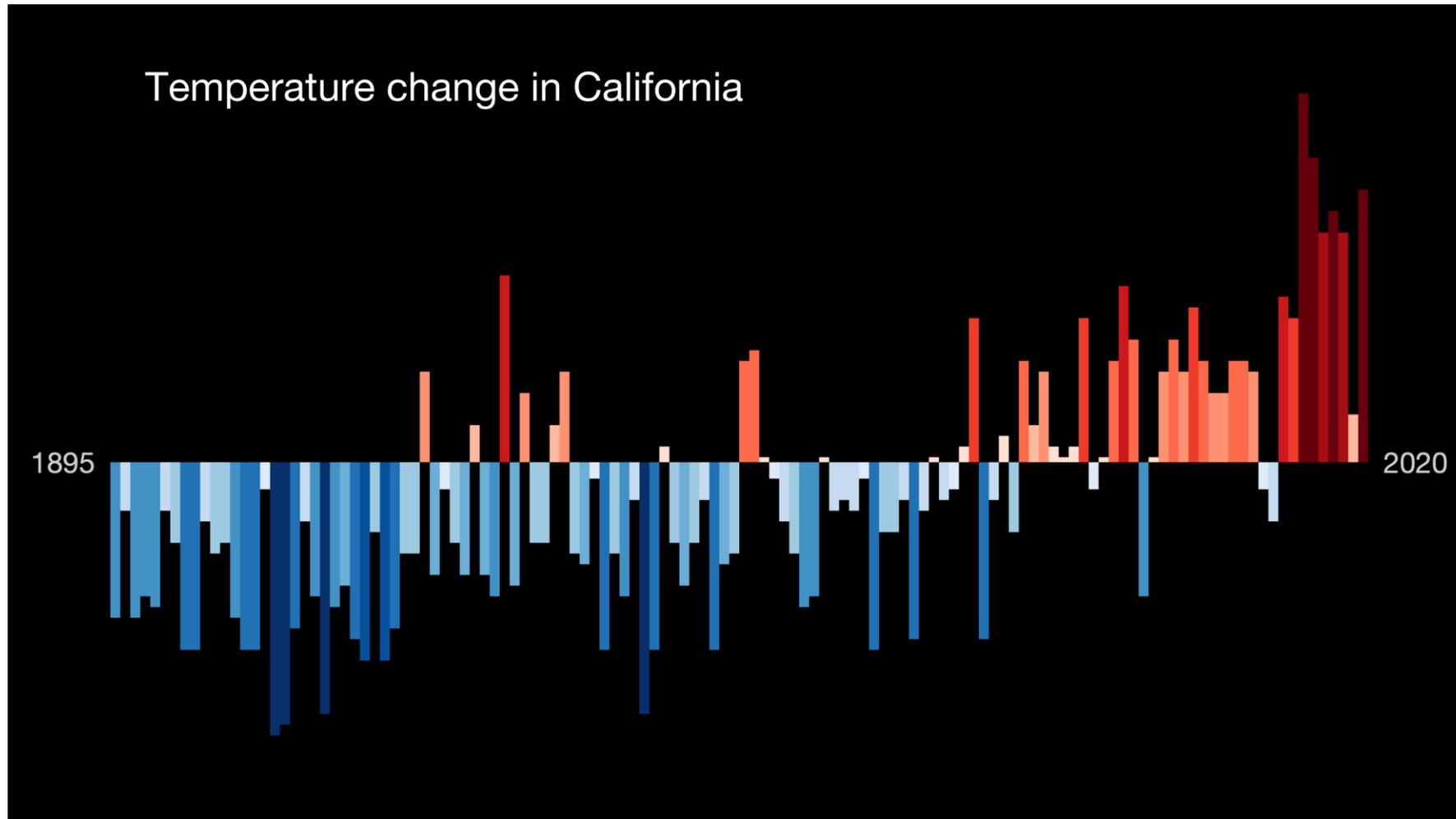
Regulating Outdoor Climate through the Built Environment

V. Kelly Turner

Assistant Professor of Urban Planning and Geography
Associate Director of Urban Environment Research, Luskin Center for Innovation
UCLA Luskin School of Public Affairs

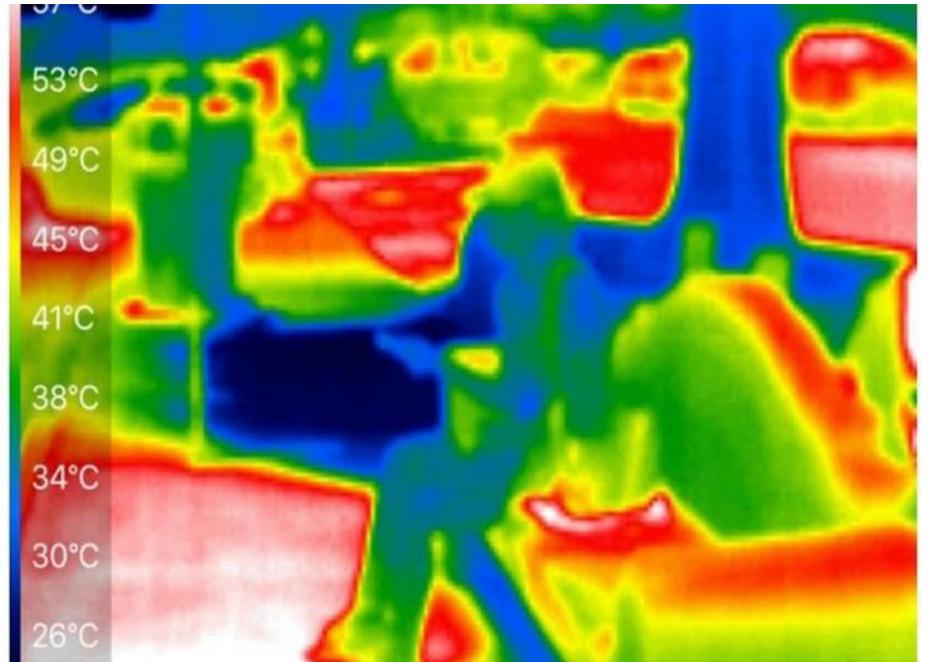
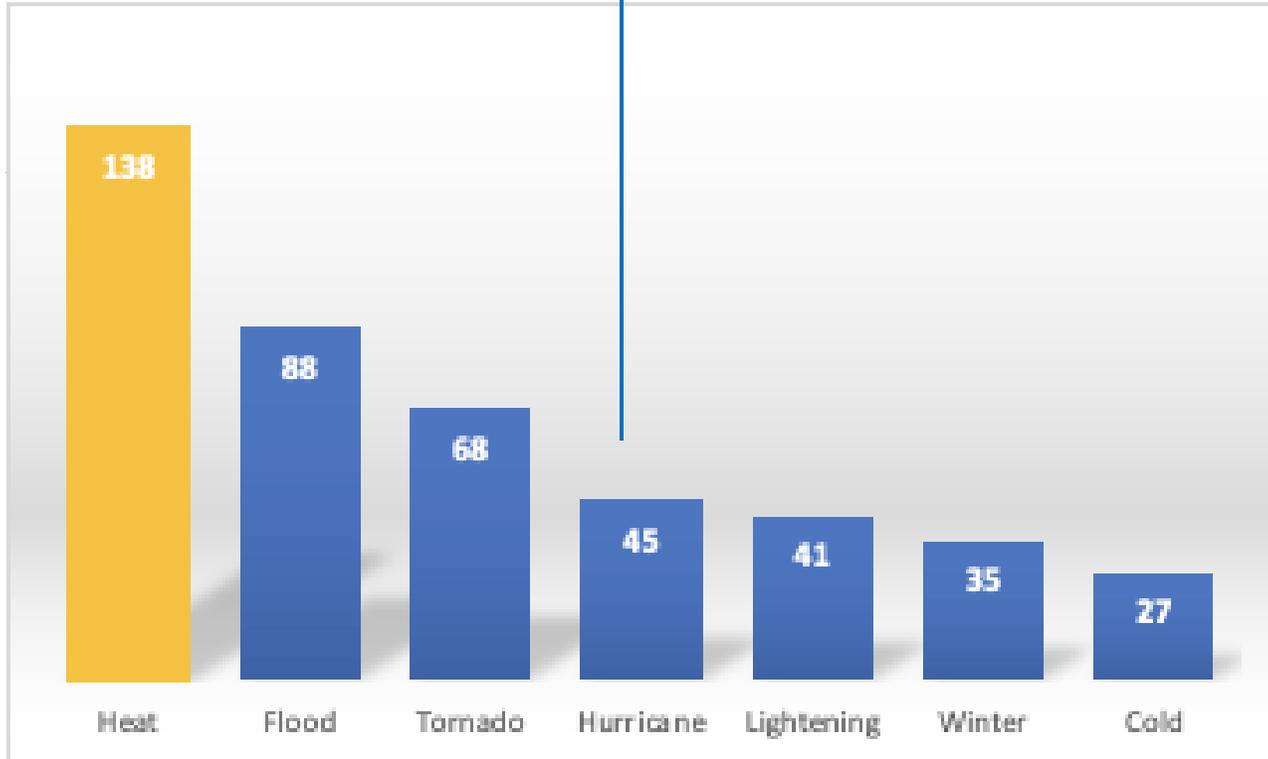
Presentation to SCAG Climate Adaptation Working Group
June 24, 2021

Cities are hot and getting hotter



Source: Ed Hawkins, #Showyourstripes

“Silent Killer”



“Shade is an Equity Issue” - Garcetti

Watts:

10% Tree Cover

3.2C Above Average

Redlining Grade D



Bel Air:

35% Tree Cover

8.3C Below Average

Redlining Grade A



Which is true?

Los Angeles Times



CALIFORNIA

L.A. takes climate change fight to the streets by pouring cooler pavement



Cool pavement is 10F cooler than asphalt

Juan Reyes, left, and Devin Vestal apply a cool pavement material to a parking lot in downtown Los Angeles. City officials hope the pavement will help cool the city and mitigate the effects of climate change. (Irfan Khan / Los Angeles Times)

By TONY BARBOZA | STAFF WRITER

APRIL 25, 2019 | 10 AM

CORONAVIRUS AND PANDEMIC >

Cases statewide »

CITYLAB

The Problem With 'Cool Pavements': They Make People Hot

A tool to help solve the problem of urban heat islands could have an unwelcome side effect, new research in L.A. finds.

Sam Bloch

3 October 2019, 11:07 GMT-7



Workers apply CoolSeal to a street in Pacoima in June. Los Angeles Bureau of Street Services

Cool pavement is 7F hotter than asphalt

We need a much more nuanced conversation about urban heat!

Cooling the City - Avoiding Panaceas

Questions:

1. What type of problem is urban heat?
2. How can cities adapt to a hotter future?

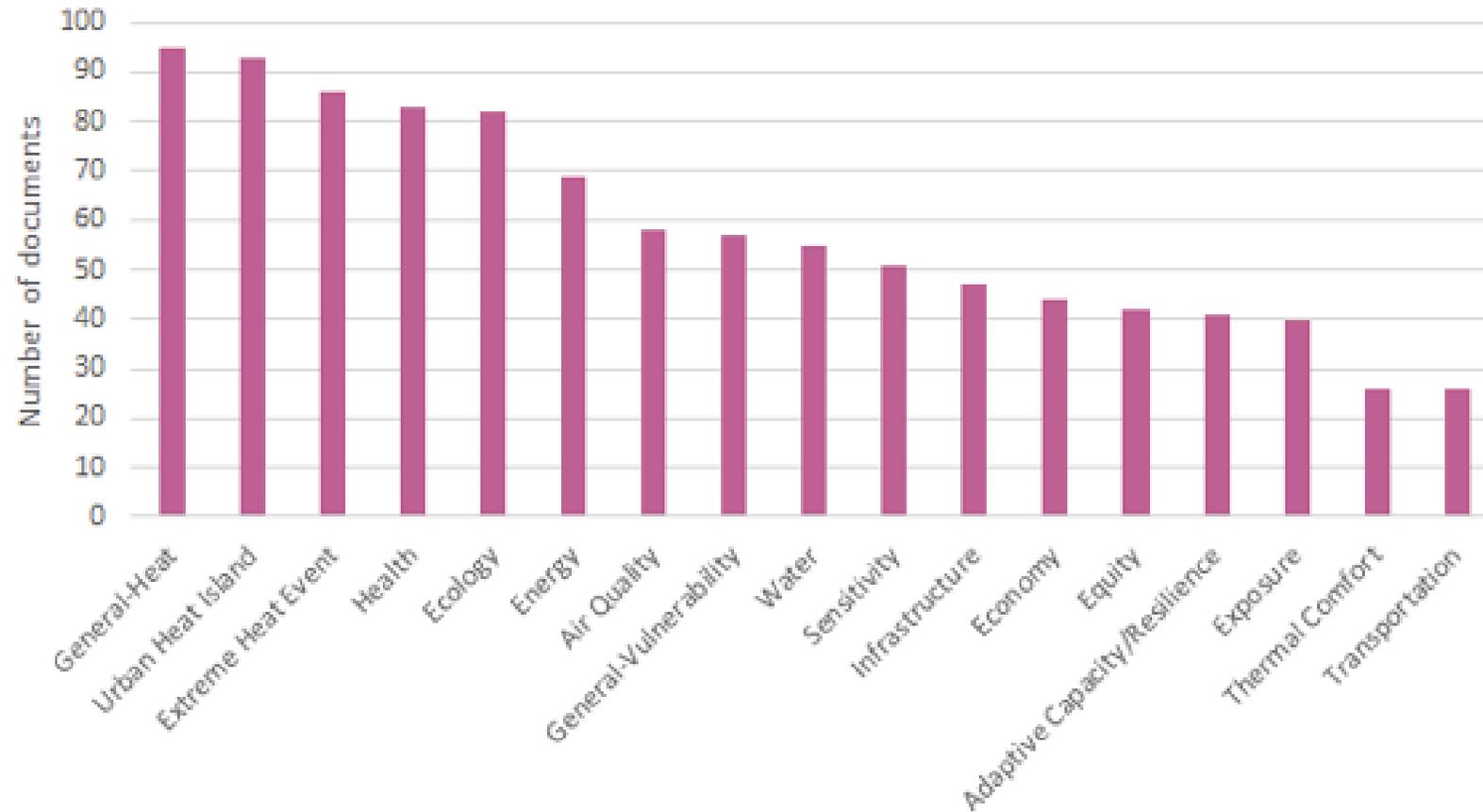
Answers:

1. Urban heat is multiple problems: extreme heat events, urban heat island, human heat burden, equity
2. No one adaptation strategy can solve all of them

Policy Panaceas (Ostrom)

Environmental policies that are likely to fail due to incorrect assumptions of similarity in context or conditions

What type of problem is urban heat?



Number of municipal planning document (n=175, 2006 - 2020) from the top 50 most populous cities that mention each type of urban heat problem

We can't control the weather...

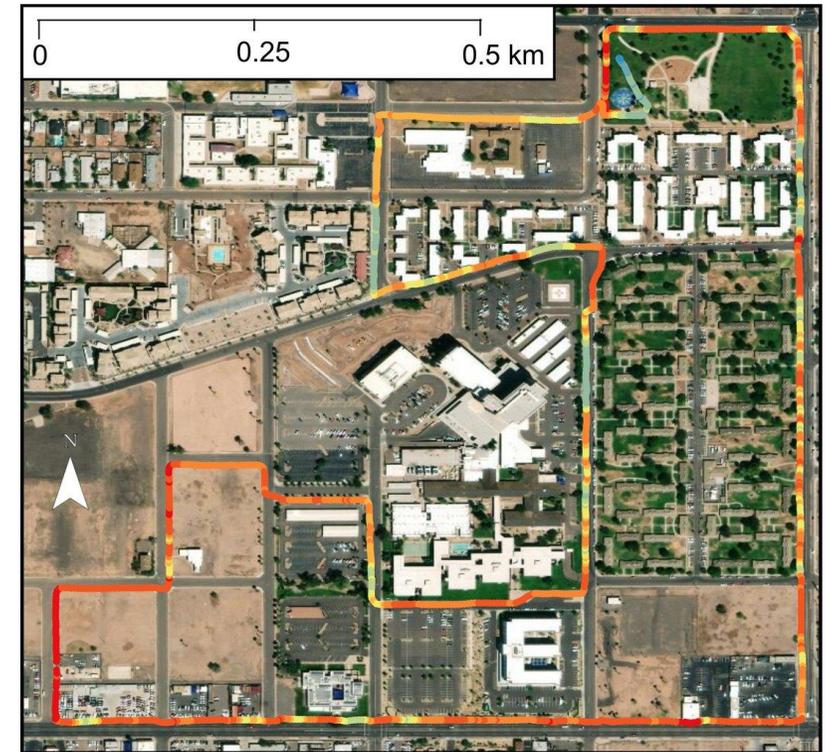
Extreme Heat Events

(aka. heat waves) High heat weather anomalies

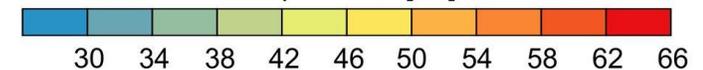


Cool Pop Up Events?

Cool Routes App?



Mean Radiant Temperature [°C]



Cities are hotter because of how we build them, and they could be cooler if we build them differently

Regional Urban Heat Island

Cities are hotter than proximate undeveloped areas



Low Albedo



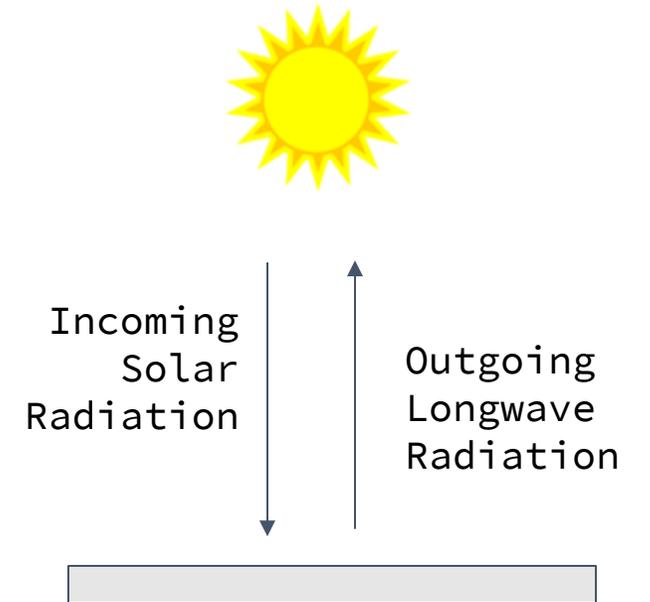
Hot Surface



High Albedo



Cool Surface



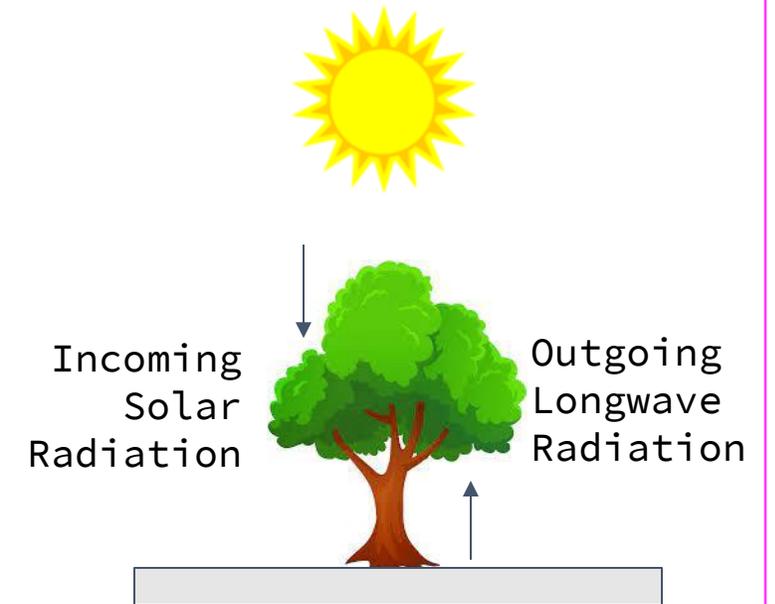
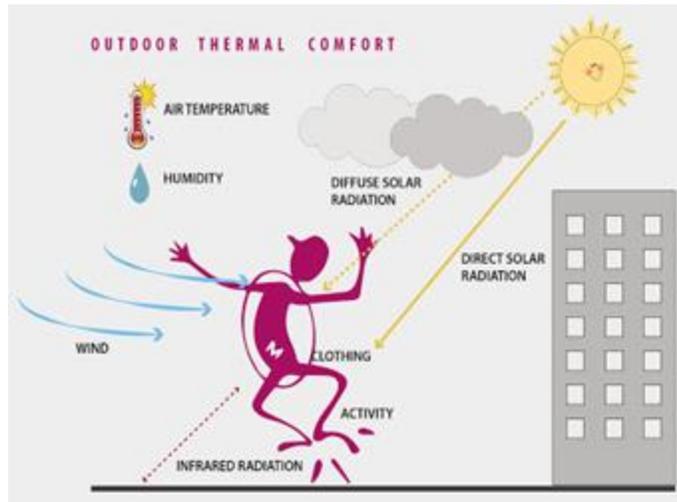
Albedo

Moderates how much incoming solar radiation is radiated back as outgoing longwave radiation

Cities are hotter because of how we build them, and they could be cooler if we build them differently

Human Thermal Comfort

Micro conditions influence the human experience of heat



Mean Radiant Temperatures

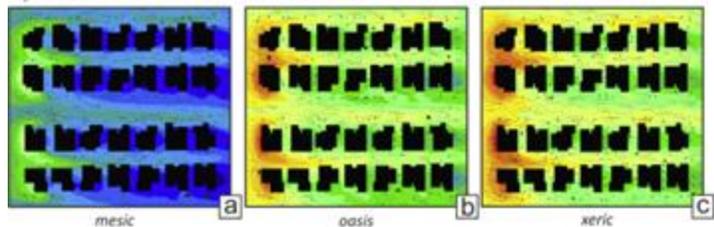
Net thermal exchange between a body and the objects that surround it.

Cities are hotter because of how we build them, and they could be cooler if we build them differently

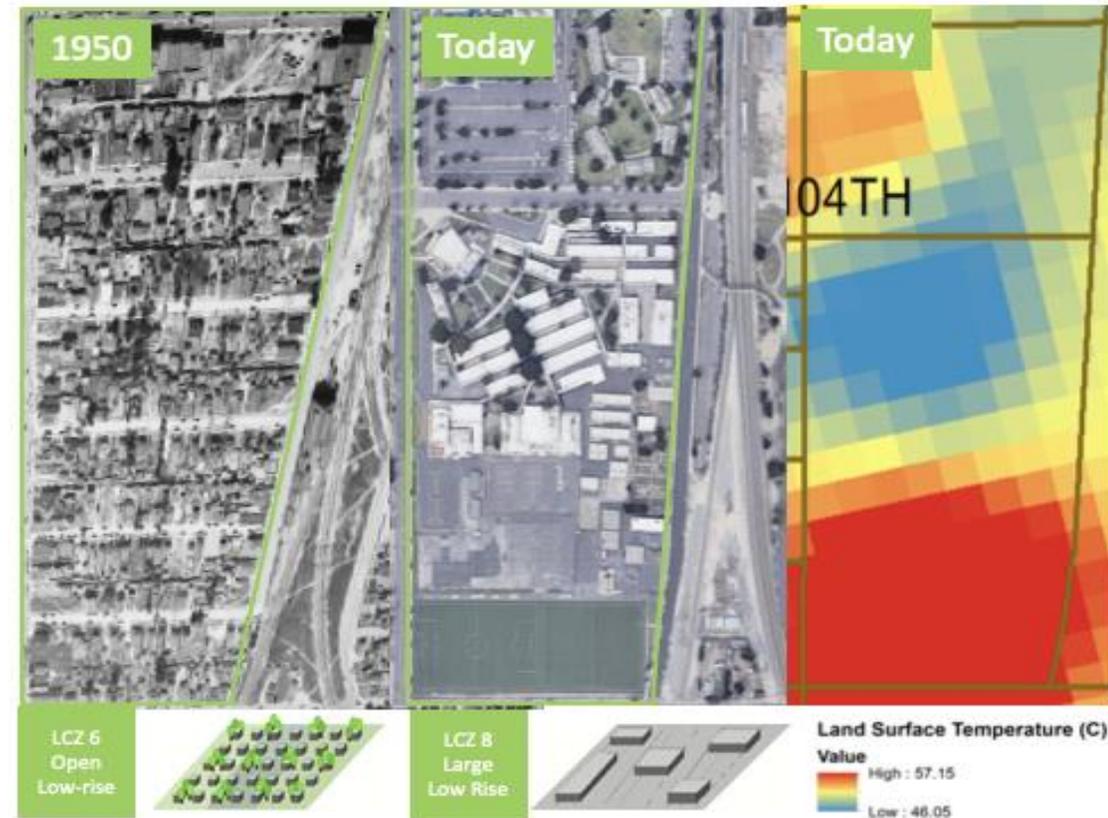
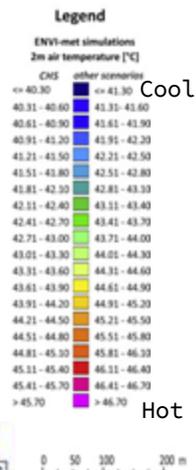
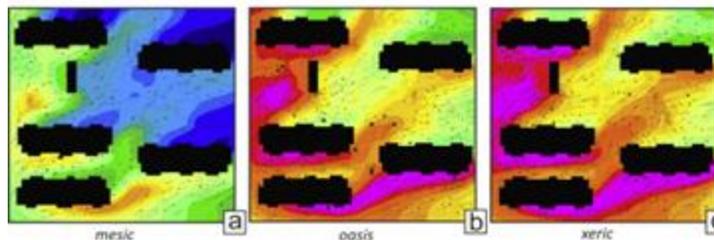
Local Climate Zones (Stewart & Oke)

Neighborhood climate conditions determined by the shape, size, configuration of materials

Open Lowrise Scenario (OLS)



Open Midrise Scenario (OMS)

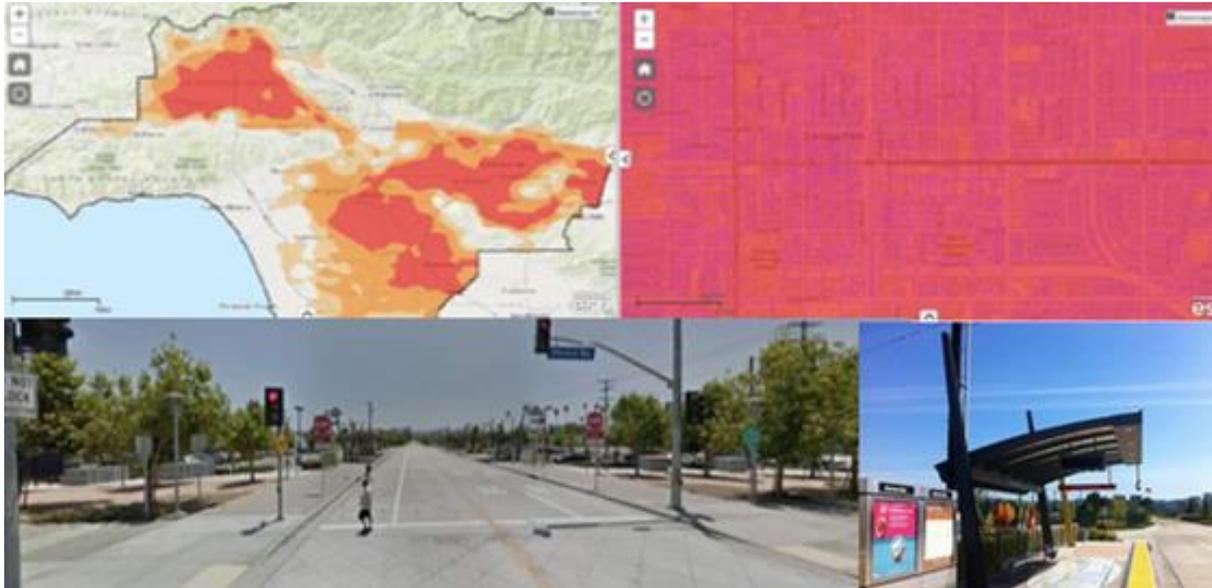


Watts, Los Angeles change in local climate zone (Turner, unpublished data, SGC/TCC)

We must be clear
about which urban
heat problem we
intend to solve.

Ambiguity in translating urban climate science to action will lead to panaceas

“The Urban Heat Island Effect in Los Angeles County and Zooming in on the Project Area. Source: Trust for Public Land Climate-Smart Cities Decision Support Tool.”



Urban Cooling Strategies for Los Angeles Neighborhoods Serviced by the Orange Line, SB1 Adaptation Planning Grant, Dept. of Public Works, City of LA (Top Left)

“Trees...reduce the urban heat island effect by providing shade.”
(Greening DC Streets 2014, p. 17)



Cool pavement seal on protected bike lane in LA (Source: Great Streets)

Does cool pavement work? UHI, yes

Cool Pavement vs. Asphalt Streets

time	Surface Temperature	Mean Radiant Temperature	Air Temperature
11:30	-5.1	4.2	0.2
12:30	-5.9	4.2	-0.2
13:30	-5.9	3	0.1
14:30	-6	2.2	-0.1
15:30	-5.7	2.3	-0.5
16:30	-5.3	1.2	-0.5
17:30	-3.9	0.2	0
18:30	-4		
19:30			
20:00	-1.6	-0.9	-0.2

Cool Pavement vs. Concrete Sidewalks

time	Surface temperature	Mean Radiant Temperature	Air Temperature
11:30	0.4	1.5	0.2
12:30	0.3	1.8	-0.1
13:30	0.4	0.9	0
14:30	0.2	0.6	-0.1
15:30	0.2	0.6	-0.3
16:30	0	-0.1	-0.2
17:30	-0.2	0	-0.1
18:30	-1.4		
19:30			
20:00	0.3	-0.2	-0.1

Difference between cool pavement and asphalt (left) and cool pavement and concrete (right) in degrees Celcius in Sun Valley (Source: Middel et al. 2020 ERL)

Does cool pavement work? Thermal Comfort, it depends

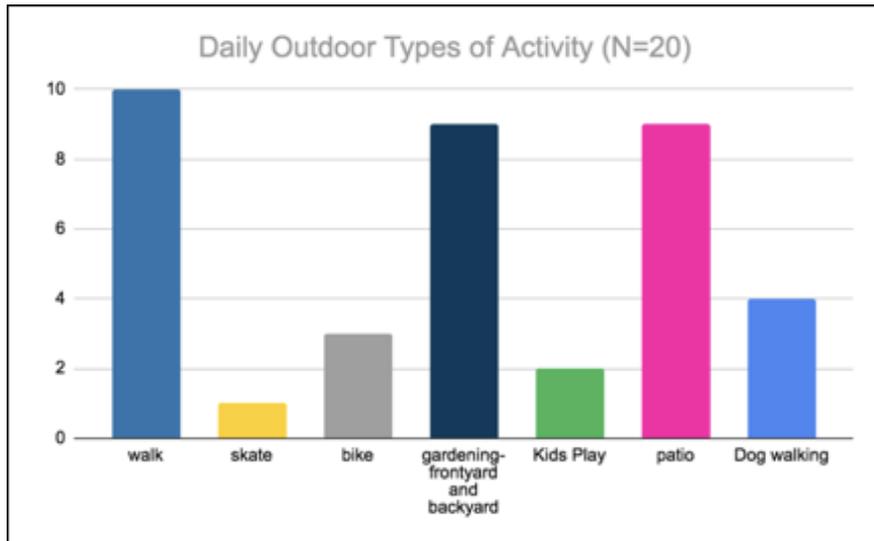
HOT PAWS ON PAVEMENT

Air Temperature	Asphalt Temperature
77°	125°
86°	135°
87°	143°

Pet Safety Tips

- Try to avoid prolonged exposure to hot asphalt, sand or similar surfaces which can burn your pet's paws.
- Walk your pet on the grass if possible.
- Avoid strenuous exercise on extremely hot days. Take walks in the early mornings or evenings, when the sun's heat is less intense.

Put the back of your hand on the pavement, and if you can't keep it there for five seconds, it's too hot for your dog's paws.



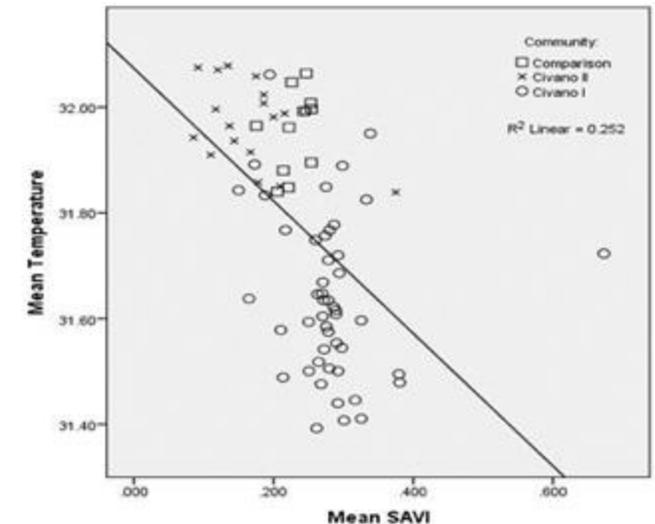
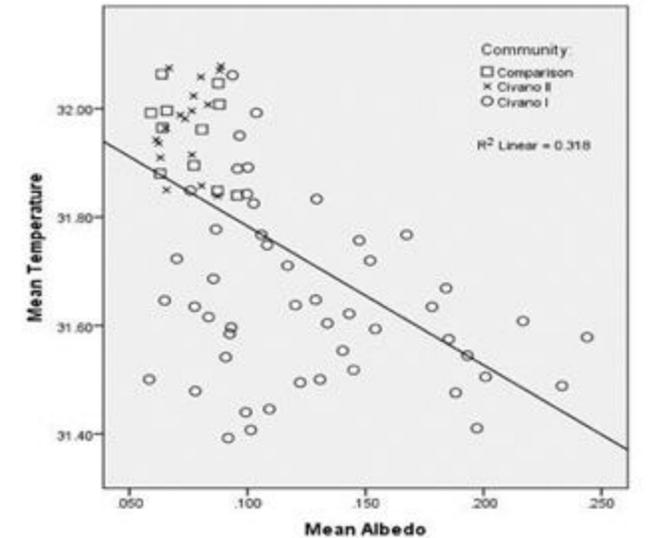
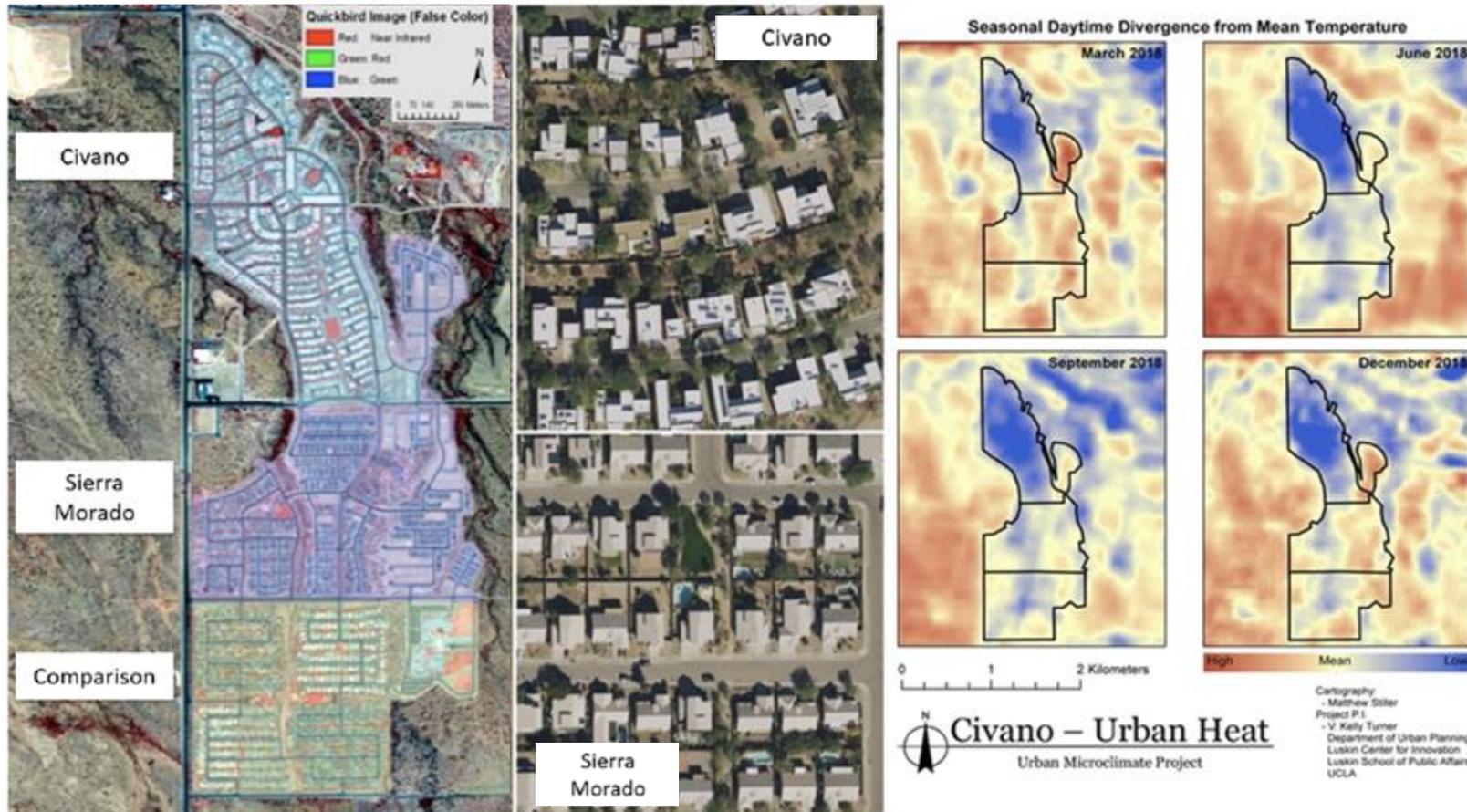
*“It feels less hot. Now, me and my family come out on weekends, and lay blankets out on the front yard and **spend the time outside**. I would describe my experience as fairly good.....*

*.....Since the application of the cool pavements, a lot of **people from other neighborhoods walk in our neighborhood.**”*

*““Because of the **reflection**, now it is less of a reason to spend time outside. I would like to see more **trees and shade** in the neighborhood. I don't like the Cool Pavements. **If it were meant to cool, it has not worked.**”*

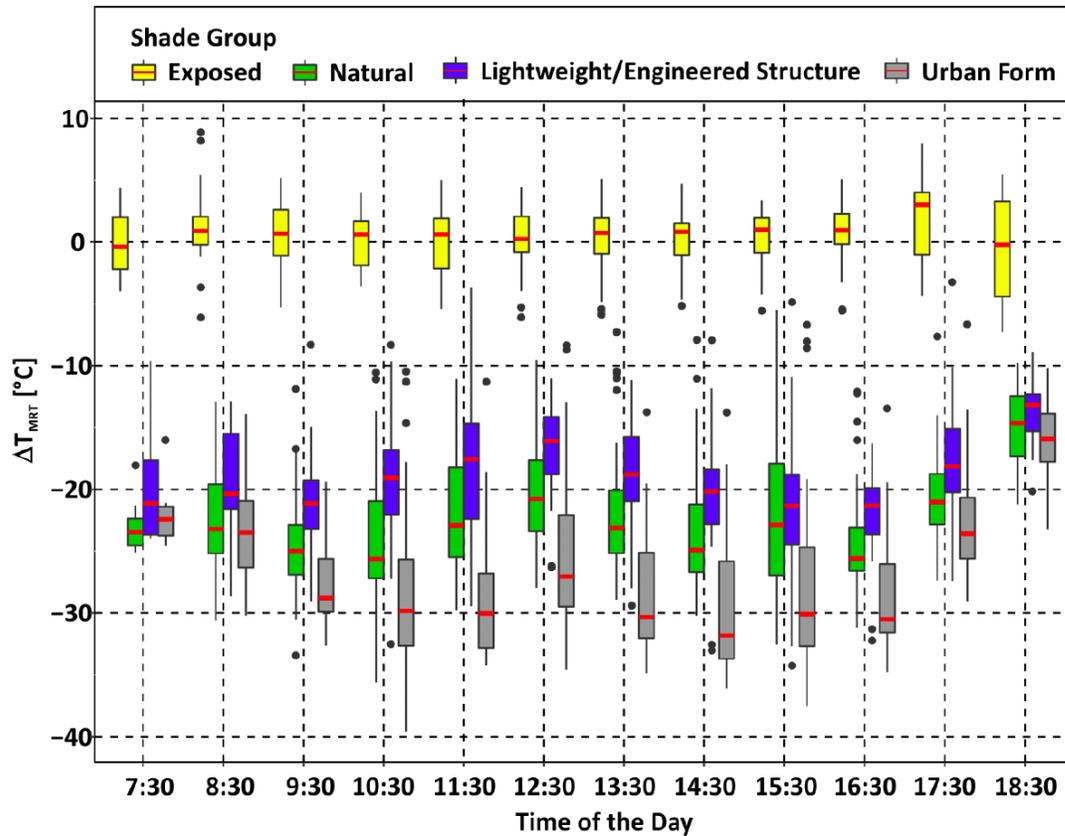
Source: Pilot questionnaire of Sun Valley residents (Zaidi 2020)

Cool materials > vegetation address urban heat island (LST)

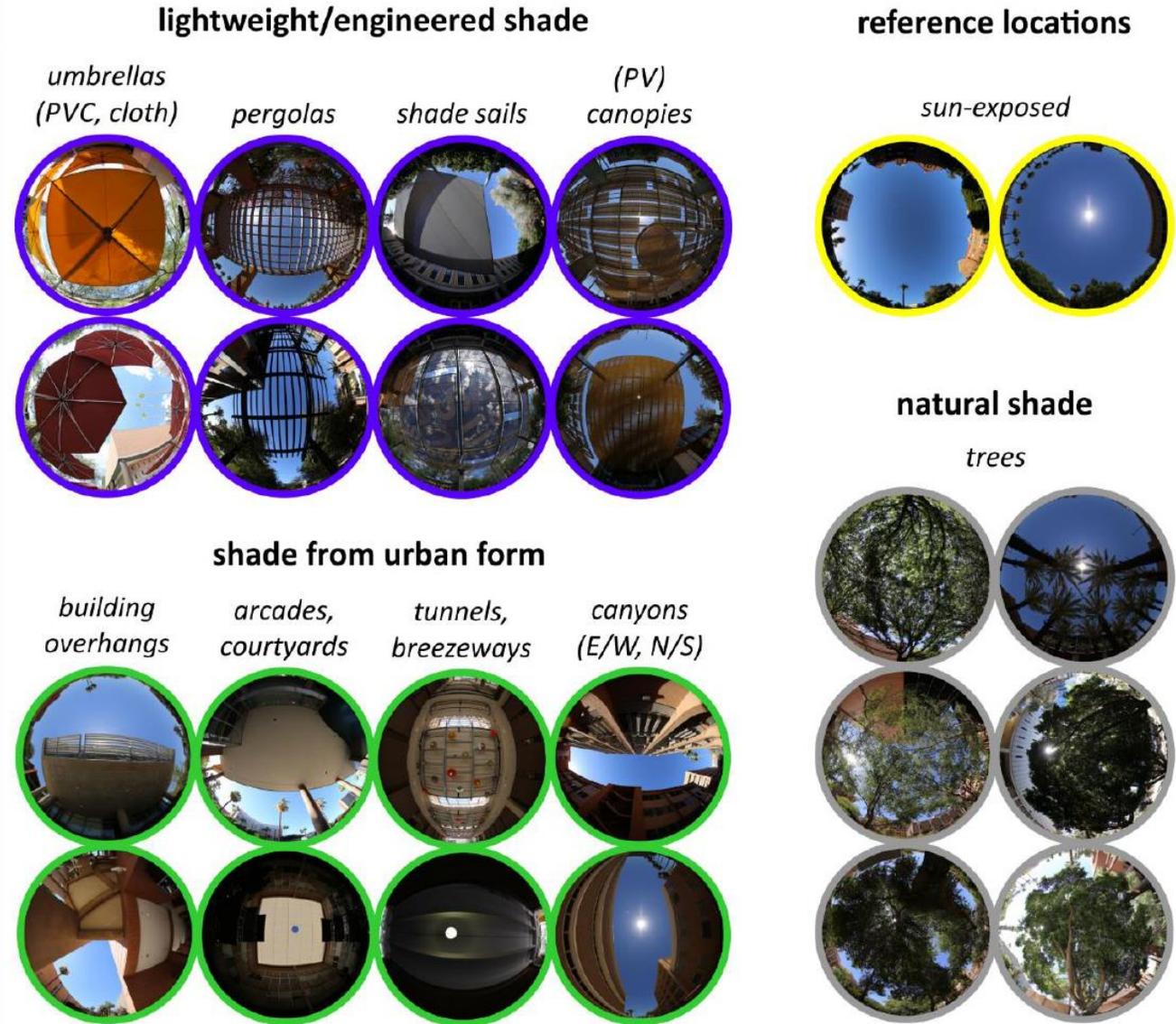


Source: Turner & Galletti (2014) Professional Geographer, and (2015) CNU Public Square

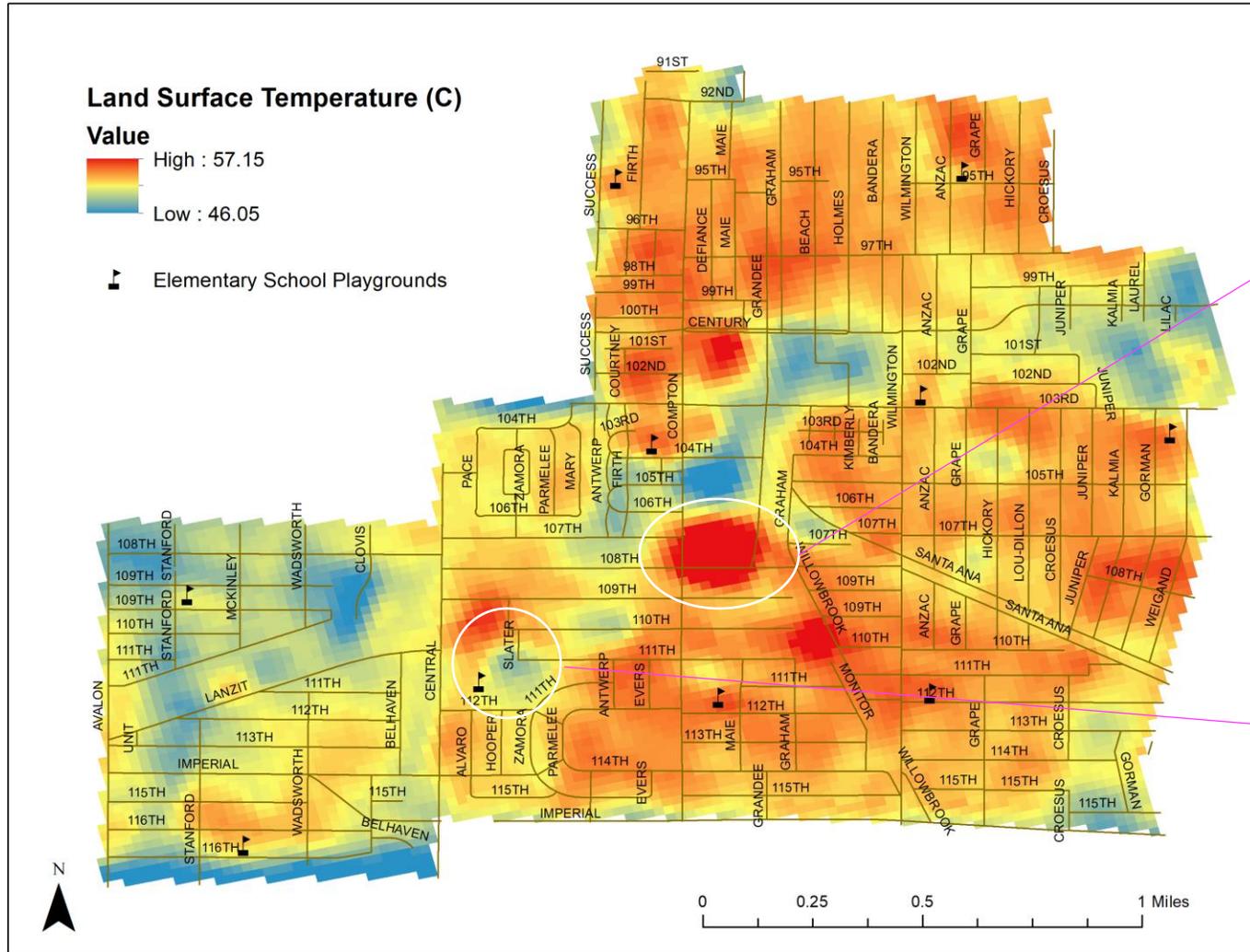
Buildings > trees > lightweight structures to cool people (MRT)



Source: Middel et al. 2021. BAMS



Accepting trade-offs for most vulnerable



Regulate urban heat “pollution” ...

Cool Communities Act

- Regulate production of heat
- Set standards for building materials
- Tie land use law to heat
- Enforce environmental justice mandate



Thermal color image of Kristy Sandoval's "Beat the Heat" mural at Fernangeles Elementary School in Pacoima, in Los Angeles. The mural uses solar reflective paint to lower the temperature of the wall from over 100 degrees F to as low as 86 degrees F. Purple indicates cooler temperatures whereas red/yellow signals hotter temperatures, such as the asphalt, which registered 136 degrees F. (Photo by Ariane Middel, ASU)

UCLA Sandpit: Heat Resilient Los Angeles

How can we *design heat resilience* into the city?



Who is exposed to heat **where** and **when**?

**required



How and **why** do communities experience heat?



What land is legally available for interventions?



Can we move **beyond shade** for cooling?



David Eisenman
Professor
DGSOM/FSPH
Center for Healthy
Climate Solutions
Heat-Health



Cara Horowitz
Co-Exec. Dir.,
Emmett Institute
School of Law
Climate law



Sungtaek Ju
Professor
School of
Engineering
Heat/Mass Transfer



Travis Longcore
Assoc Adj Prof
IOES
Spatial analysis,
sustainable cities



Juan Matute
Deputy Director
Institute of
Transportation Studies
Transit and
transportation



Gregory Pierce
Associate Director
Luskin Center
Policy and Equity



Aaswath Raman
Assistant Professor
School of Engineering
Materials, Heat



Kirsten Schwarz
Associate Professor
Luskin/FSPH
Urban Ecology



Kelly Turner
Assistant Professor,
Assoc. Dir. Luskin
Center, Public Affairs
Built Environment



Walker Wells
Lecturer
Urban Planning
Sustainability and
Resilience

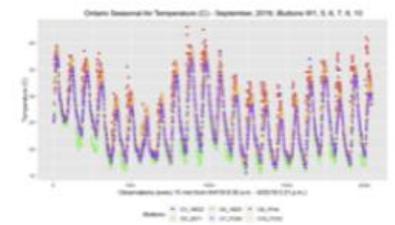
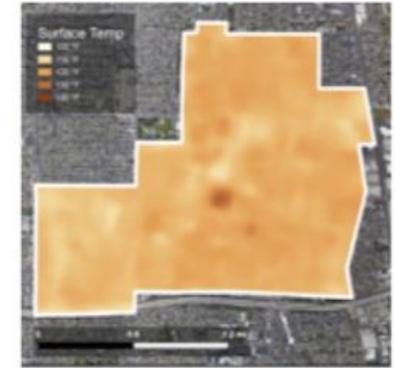
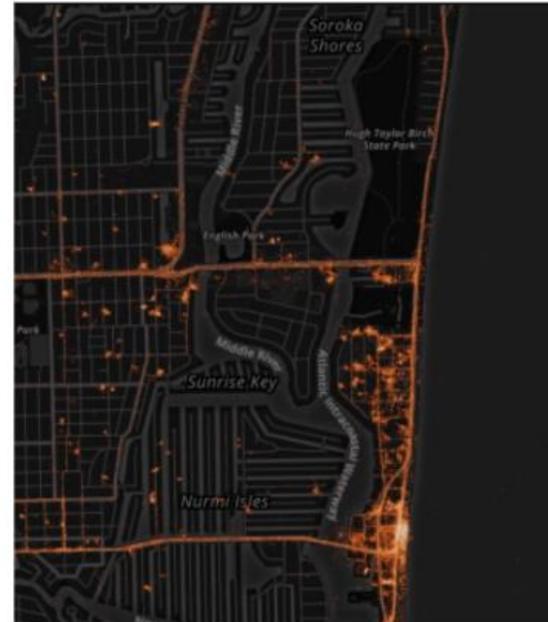
UCLA Sustainable LA Grand Challenge: Sandpit 2020

Hea

Research Plan

Identify Hot Spots of High Heat Exposure/Vulnerability Data

Use cell phone mobility data with existing thermal and heat health outcome data to determine **who** feels heat, **where** and **when**



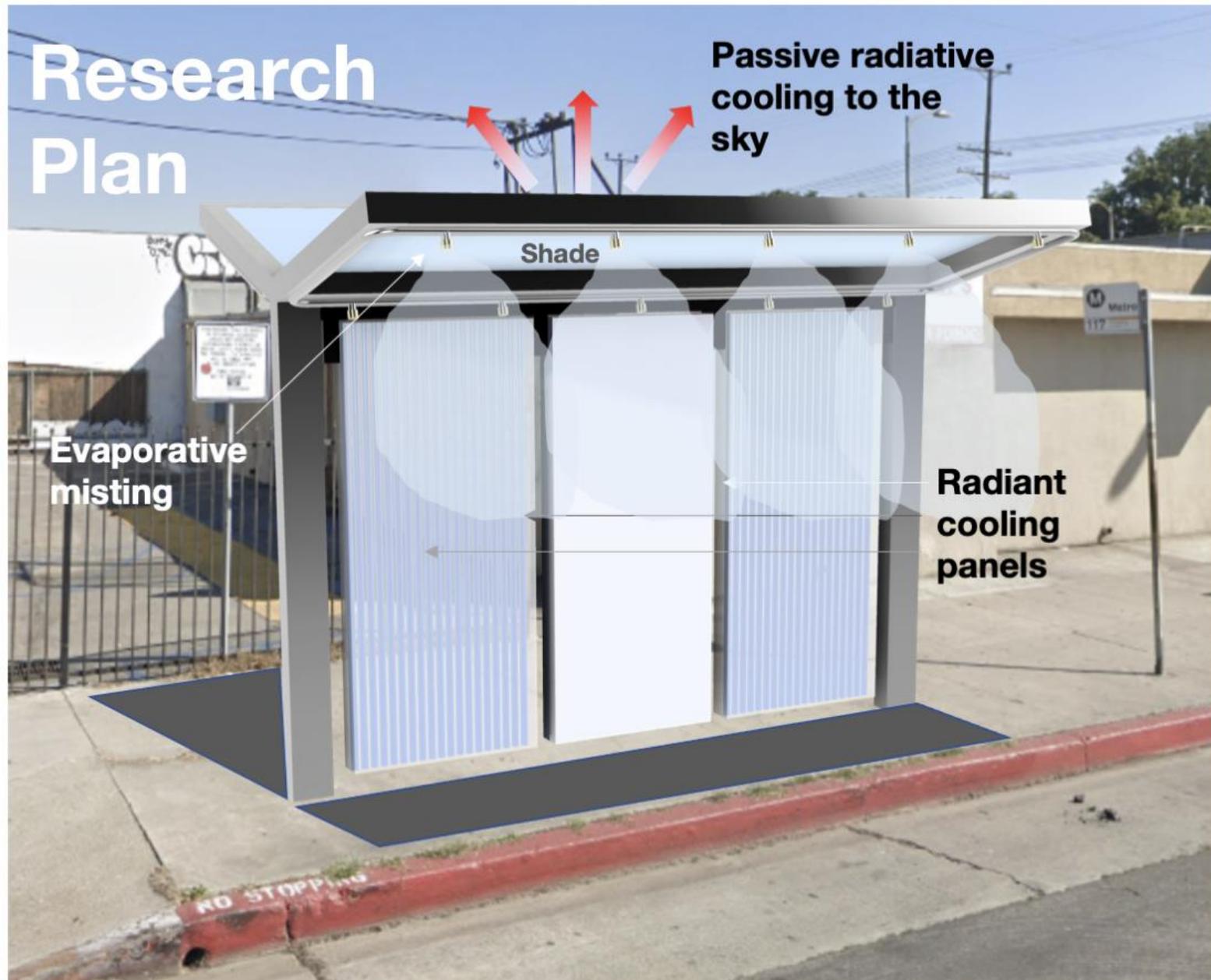
Research Plan

Understand Community Heat Experience

We will work with community partners co-PIs have known for years, to understand **how** people **use** and **value** different cooling interventions.



Research Plan



Beyond Shade: Cooling Structures

Informed by community engagement as well as our team's expertise in passive cooling technologies, we will design, build and pilot a **portfolio of low cost passive cooling structure approaches** that deliver **thermal comfort** outdoors.



Research Plan

Identify Legal and Policy Levers that Do and Can Enable Cooling Interventions

We will both identify land usable for cooling interventions and recommend land use levers to decision-makers.

Thank You! (vktturner@ucla.edu)



Ariane Middel, Yujia Zhang, Florian Schneider (Arizona State), Matthew Stiller (U. Colorado), Nicole Cano, Emma M. French, Jonathan Ocon, Morgan Rogers, Falak Zaidi (UCLA), Lizy Dastin (Santa Monica CC), Amped Kitchens, InDecline, Erik Skotness

Luskin Center for Innovation, Strategic Growth Council Climate Change Research Grant, Pacoima Beautiful/Strategic Partners, Transformative Climate Communities

SCAG's Environmental Equity Definition

Feedback Exchange with the Climate Adaptation Working Group

Emily Rotman

SCAG Sustainability Department

June 24, 2021

www.scag.ca.gov



Presentation Overview

> Land Acknowledgement

> Background on SCAG's Equity Work

> Background on SCAG's Environmental Equity Definition

> Feedback and Discussion

> Next Steps

Land Acknowledgment



Image source: Native Land Digital

Resources to learn more:

- Native Land Digital (<https://native-land.ca/>)
- "Mapping Indigenous LA", UCLA (<https://mila.ss.ucla.edu/>)
- Gabrielino-Tongva Indian Tribe (<https://gabrielinotribe.org/>)
- Kizh Nation (<https://gabrielenoindians.org/>)
- Friends of Puvungna (<https://www.instagram.com/protectpuvungna/?hl=en>)
- Fernandño Tataviam Band of Mission Indians (<https://www.tataviam-nsn.us/>)
- Wishtoyo Chumash Foundation (<https://www.wishtoyo.org/chumash-village-1>)
- LandBack Movement (<https://landback.org/>)

Background: SCAG's Equity Work Major Milestones



Background: SCAG's Equity Framework and Early Action Plan

GOALS



Shift Organizational Culture

Focus SCAG's internal work and practices on inclusion, diversity, equity, and awareness.



Center Racial Equity in Regional Planning & Policy

Bring equity into SCAG's regional planning functions.



Encourage Racial Equity in Local Planning Practices

Promote racial equity in efforts involving local elected officials and planning professionals.



Activate & Amplify

Communicate broadly SCAG's commitment to racial equity and join with others in different fields and sectors to amplify impact.

STRATEGIES



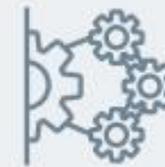
Listen & Learn

Develop a shared understanding of our history of discrimination and the structural barriers that continue to perpetuate the inequities experienced today.



Engage & Co-Power

Create an environment where everyone is included, able to share their experiences, and equipped to talk about racial equity and inequities.



Integrate & Institutionalize

Focus on systems change to improve racial equity. Center racial equity in all aspects of work. This involves internal and external systems change. Advancing Racial Equity in Southern California.

Background: SCAG's Equity Definition



"As central to SCAG's work, racial equity describes the actions, policies, and practices that eliminate bias and barriers that have historically and systemically marginalized communities of color, to ensure all people can be healthy, prosperous, and participate fully in civic life."

Background: SCAG's Environmental Equity Definition Objectives



Build upon and operationalize SCAG's equity work

Build a shared understanding of environmental equity for SCAG and its stakeholders

Emphasize environmental equity as a priority in SCAG's work

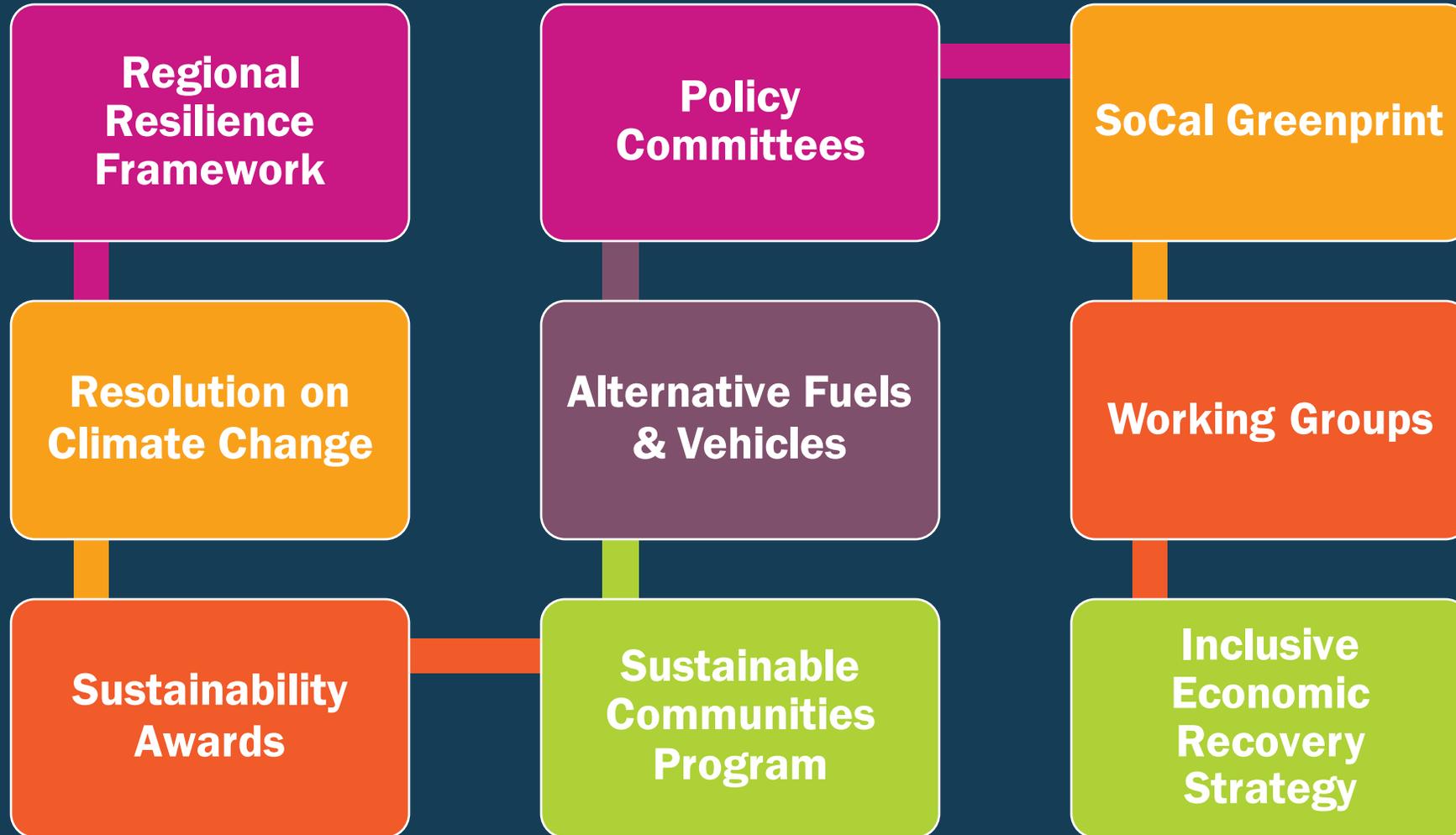
Provide a model process for other SCAG topic-specific equity definitions

Background: SCAG's Environmental Equity Definition Research



- Researched and compiled existing definitions of environmental equity, climate equity, environmental justice across academic institutions, community organizations, government agencies
 - *Charles Lee, Des Moines Area MPO, Greenaction, Greenlining Institute, Mobilize Green, NAACP, SBCTA, SCAG, UC Berkeley, UCLA Luskin, University of Washington, USEPA*
- Pulled key concepts from existing work
 - *Impacts of historical injustice and disinvestment*
 - *Need to address and remediate root causes*
 - *Distinction between equality and equity*
 - *Disproportionate and unequal impacts*
 - *Vulnerable populations contribute least to environmental degradation and crises, but feel the impacts "first and worst"*
 - *Not just redistributing environmental harms, but abolishing them*

Environmental Equity Definition: Example Potential Applications



"Environmental equity addresses the actions, policies, and practices that abolish the systemic inequities, marginalization, disinvestment, and exclusion from decision-making processes that have directly resulted in vulnerable people bearing disproportionate and adverse impacts from natural hazards and human activity, so that all people can enjoy access to the physical and social benefits of our natural and built systems."

Environmental Equity Definition: Feedback Received

- > Differentiate between environmental justice and environmental equity
- > Be intentional about what populations the definition refers to
- > Important to acknowledge impact of both natural and human activities
- > Framing the definition as a practice (actionable) vs. an explanation (informative)
- > Relate to SCAG's equity and resilience definitions
- > Consider a broad view of historical harms and systemic issues

Feedback: Guiding Questions



Is the definition distinct from environmental justice? Does the definition go a step beyond?



Is there something critical missing from the definition? Is there something in the definition that you feel shouldn't be included?



How do you see the definition potentially impacting or being implemented in your work?



We would love to hear any general impressions and feedback you have. Please feel free to unmute yourself or drop your comments into the chat.

"Environmental equity addresses the actions, policies, and practices that abolish the systemic inequities, marginalization, disinvestment, and exclusion from decision-making processes that have directly resulted in vulnerable people bearing disproportionate and adverse impacts from natural hazards and human activity, so that all people can enjoy access to the physical and social benefits of our natural and built systems."

Next Steps



Thank You!

Emily Rotman

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213-630-1440

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2020-2021

Sustainable Communities Program

CALL FOR APPLICATIONS



Call for Applications #4: Civic Engagement, Equity & Environmental Justice



INNOVATING FOR A BETTER TOMORROW

WWW.SCAG.CA.GOV

SCP Overview



Since 2005, the Southern California Association of Governments (SCAG) has provided resources and direct technical assistance to local jurisdictions via the Sustainable Communities Program (SCP).

The 2020/21 SCP provided local jurisdictions with three opportunities to access funding and resources to meet the needs of their communities, address recovery and resiliency strategies considering COVID-19, and support regional goals.

SCAG will release a fourth Call for Applications for programs and projects centered on **Civic Engagement, Equity & Environmental Justice** in Fall 2021.

SCP Call 4 Goals + Objectives

Goals

- Center and prioritize racial and social equity
- Address the pervasive and deep inequities experienced in historically disinvested communities
- Include a wide range of eligible activities
- Support the development of plans to close the gap of racial inequities
- Support the goals in SCAG's Equity Early Action Plan, Connect SoCal, SCAG's Public Participation Plan

Objectives

- Focus support in SCAG's Communities of Concern and SB 535 Disadvantaged Communities
- Support local planning efforts focused on eliminating barriers to civic engagement
- Build community capacity, trust, and sustainable relationships with stakeholders
- Prioritize community identified and implemented projects

Eligible Project Types

- Civic Engagement and Racial Equity
 - Arts, Culture and Design
 - Safety and Community
 - Local Campaigns and Organizing
 - Parks, Green, Open and Public Space
 - Climate Action and Resilience
 - Community Healing and Repair

- Equity and Environmental Justice
 - AB 617 Implementation
 - Resilient Communities
 - SB1000 EJ Elements/Policies
 - Connect Communities

SCP Call 4 Timeline*



*subject to change upon feedback

Listening Sessions

Tuesday, July 13th
11:30am – 1:00pm

Thursday, July 15th
5:00pm – 6:30pm

Interested? Please RSVP!

Have questions? Please contact Anita Au, Senior Regional Planner

au@scag.ca.gov

(213) 236-1874

SCAG Regional Planning Working Groups

Climate Adaptation & Sustainable Communities Update

Lorianne Esturas

SCAG Sustainability Department

June 24, 2021

www.scag.ca.gov



Upcoming Events

SCAG Toolbox Tuesday

CAF Tools Part II

June 29, 2021

1:00 pm – 3:00 pm

LARC Public Forum

Local Climate Adaptation in LA County

June 30, 2021

9:00 am – 12:00 pm

SCAG

Energy & Environment Committee

July 1, 2021

9:30 am – 11:30 am

Questions?

adaptation@scag.ca.gov

www.scag.ca.gov

