

Assessing Community Vulnerability to Climate Change and Coastal Hazards

Hosted by
NOAA's National Centers for Coastal Ocean Science,
University of Southern California Sea Grant, and
The California Coastal Commission



CALIFORNIA
COASTAL
COMMISSION

Congressional Briefing

January 2021



Today's Speakers



Mark Osler - National Oceanic and Atmospheric Administration



**CALIFORNIA
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COMMISSION**

Chloe Fleming and Seann Regan - NOAA's National Centers for Coastal Ocean Science

Rita Kampalath - L.A. County's Chief Sustainability Office

Sabrina Bornstein - Buro Happold

Michelle Jespersen - California Coastal Commission

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Assessing community vulnerability: An integrated approach

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Climate driven impacts projections and costs



**Exposure
Sensitivity
Adaptive Capacity**



Social Structural Natural Resources





HOLLYWOOD





Los Angeles

Malibu

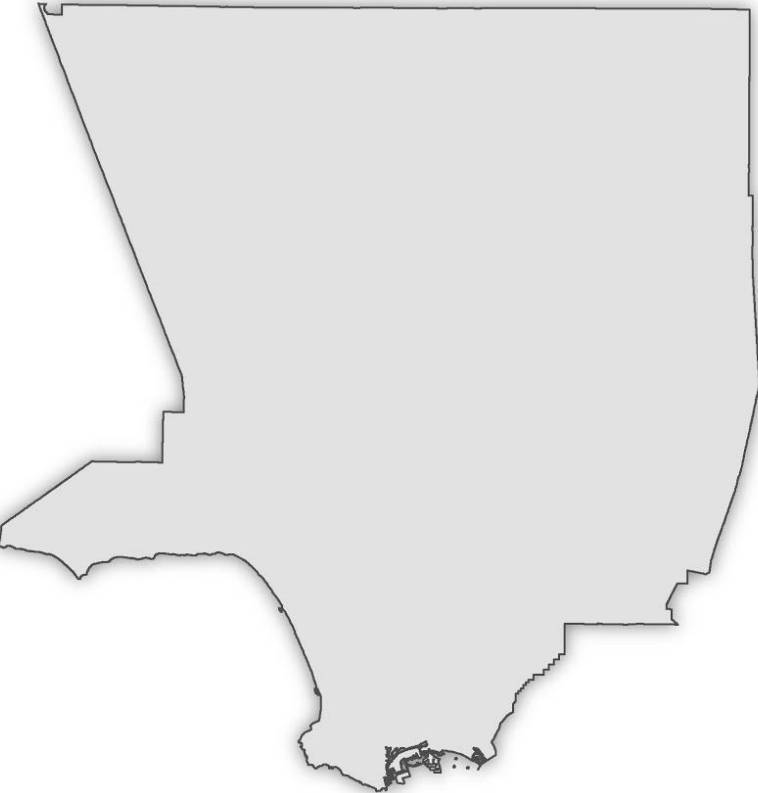
Santa Monica

Venice Beach

Long Beach



LA County



10-mile Coastal Band



Urban Areas



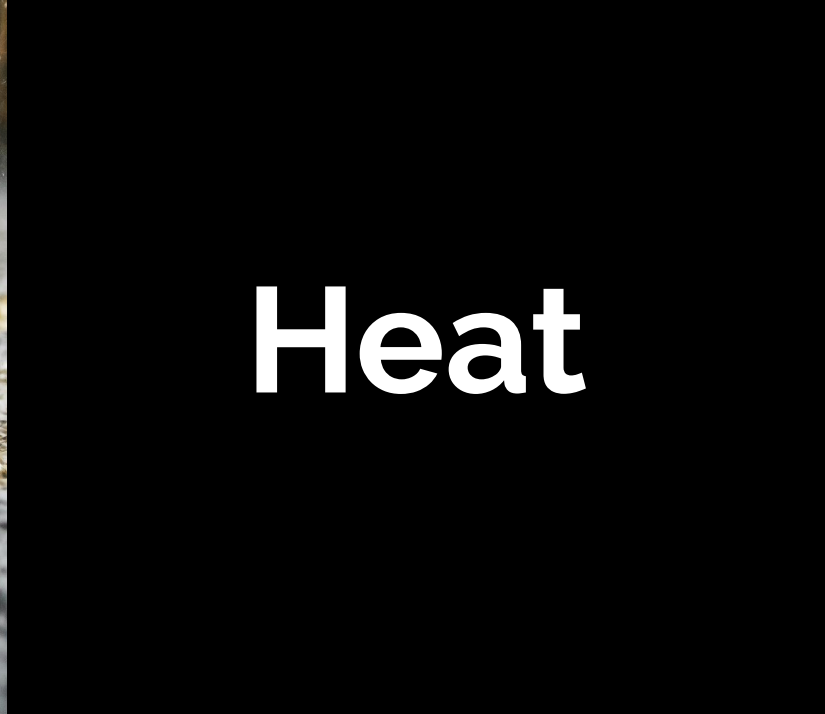




Wildfire



**Stormwater
Flooding**



Heat



**Coastal
Flooding**

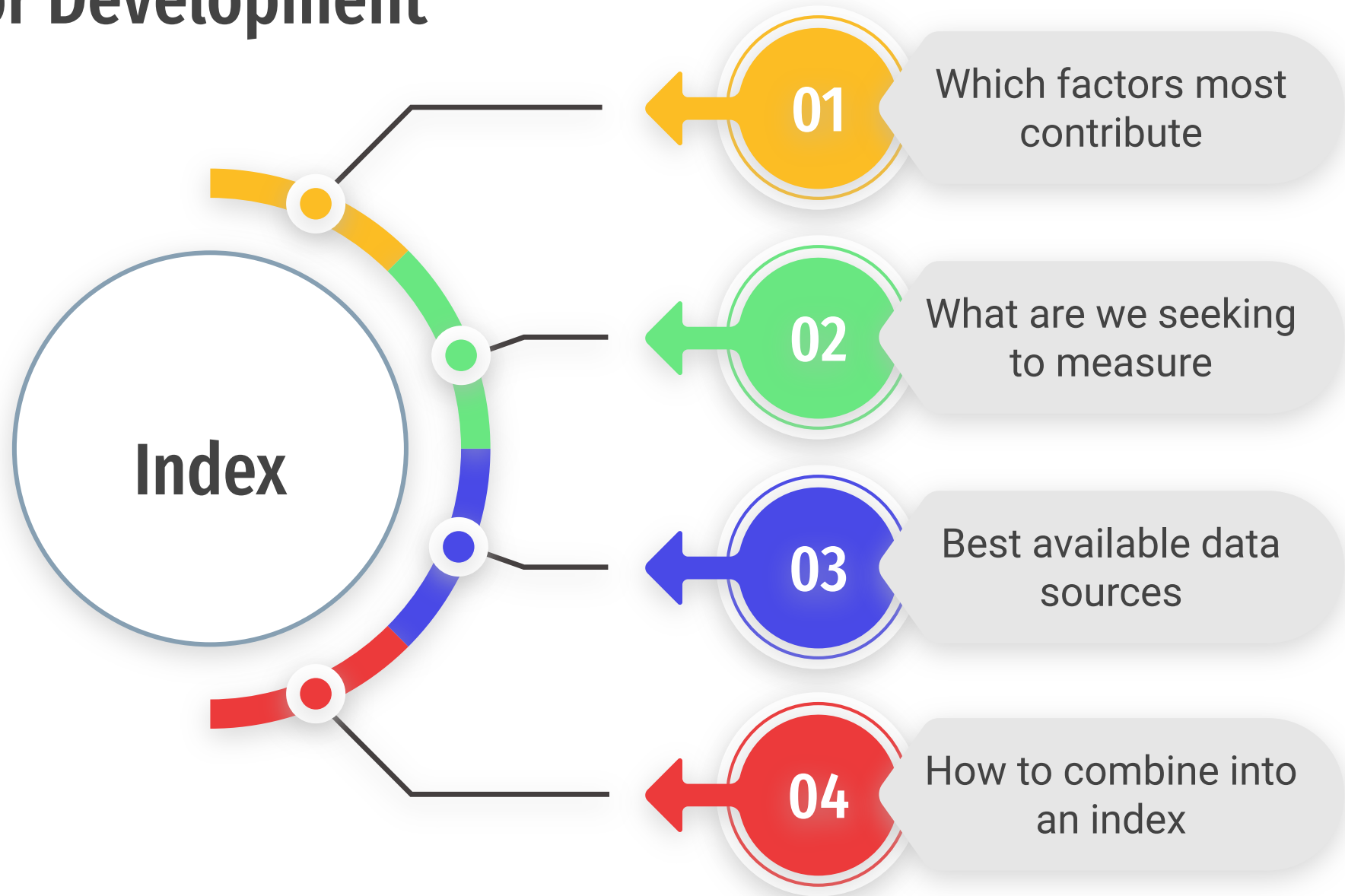


Erosion

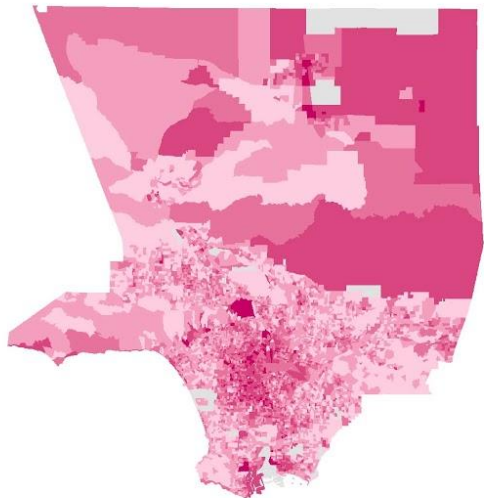


Drought

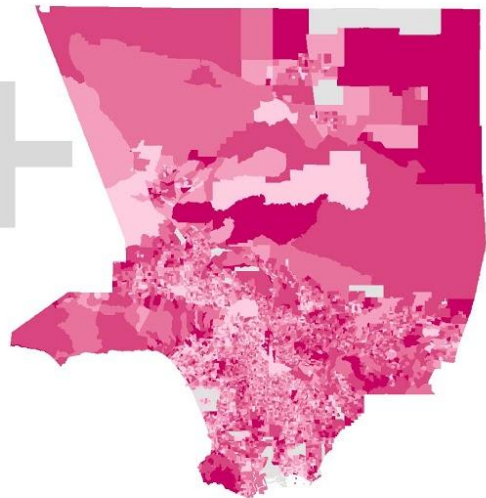
Indicator Development



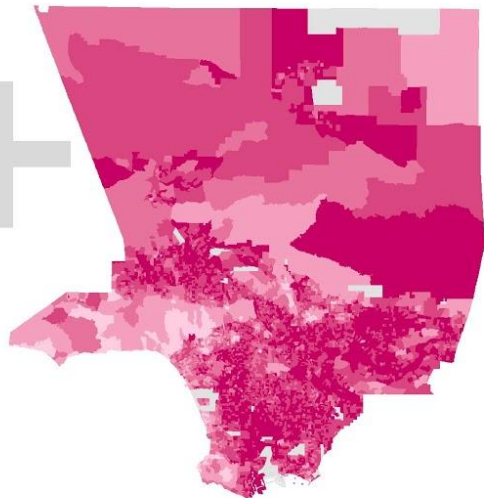
Factor 1



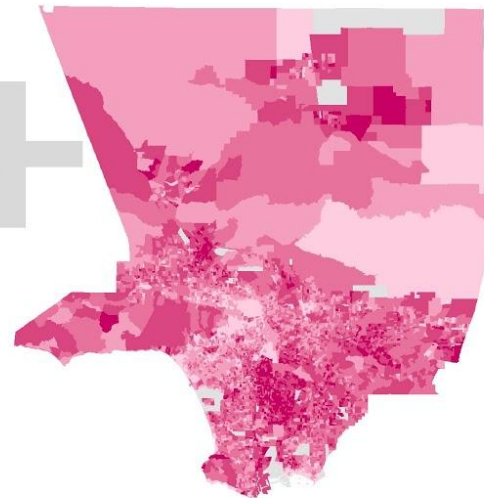
Factor 2



Factor 3



Factor 4

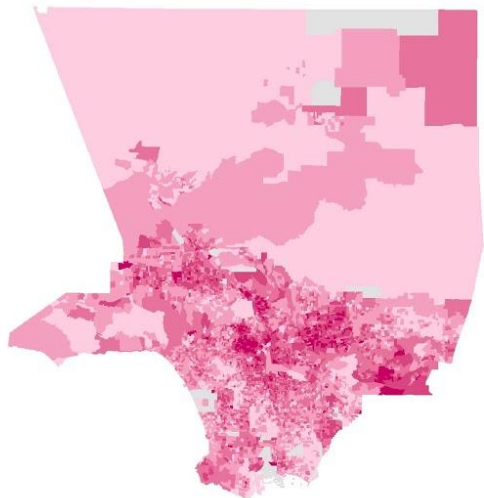


High

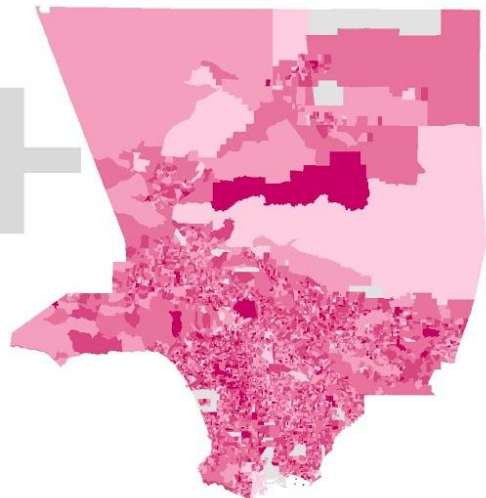


Low

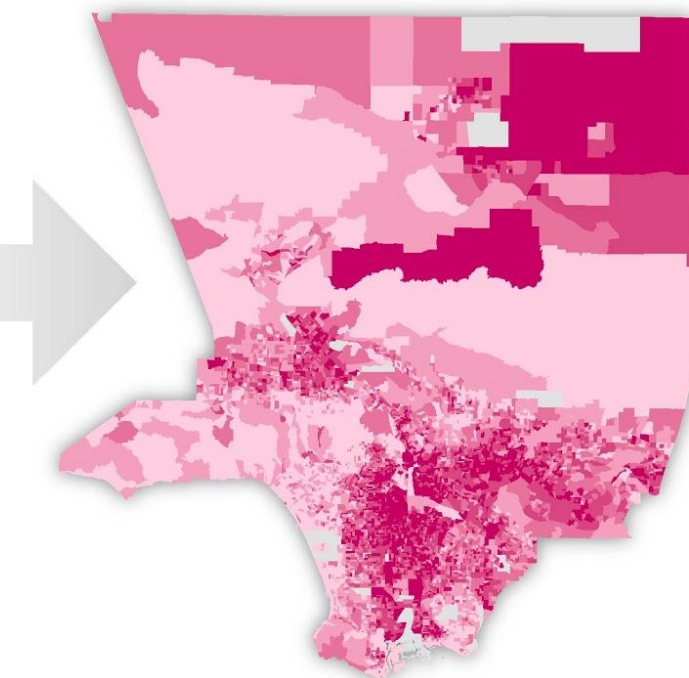
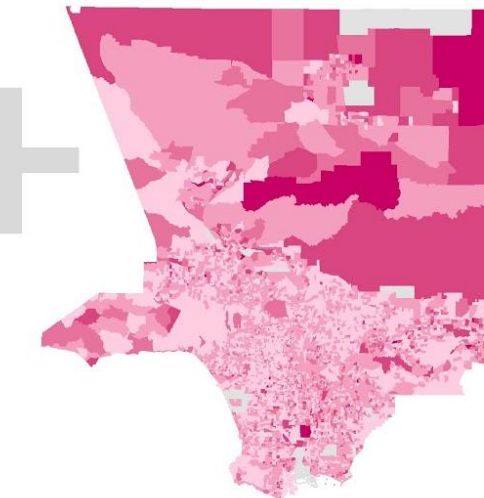
Factor 5



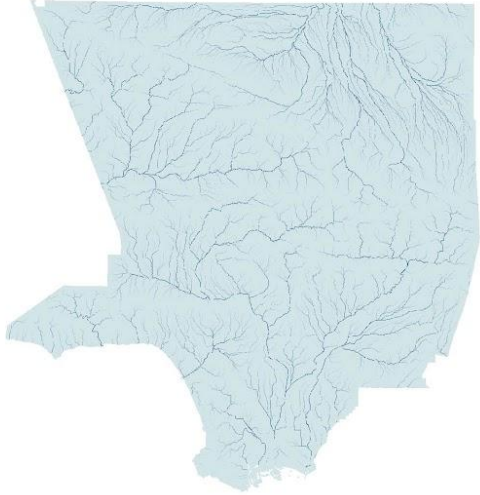
Factor 6



Factor 7



Flow Accumulation



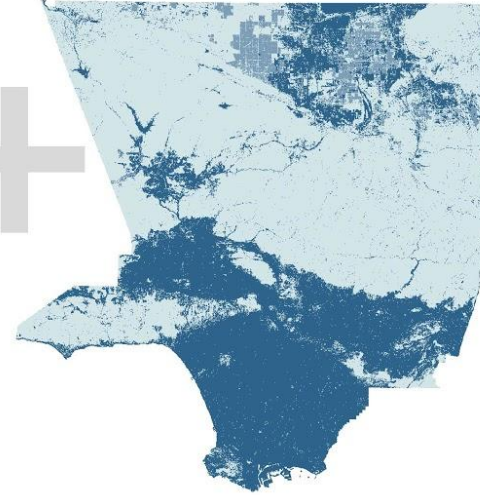
Distance from Drainage



Elevation



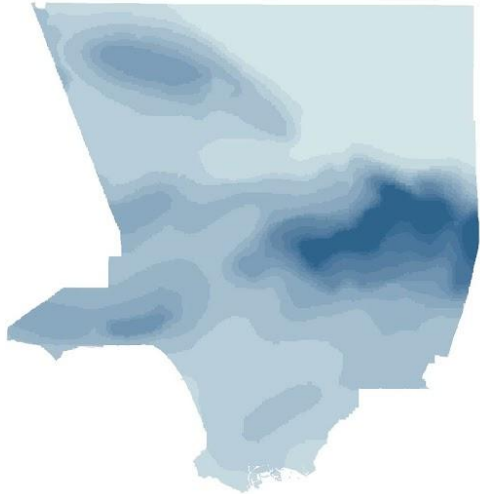
Land Use



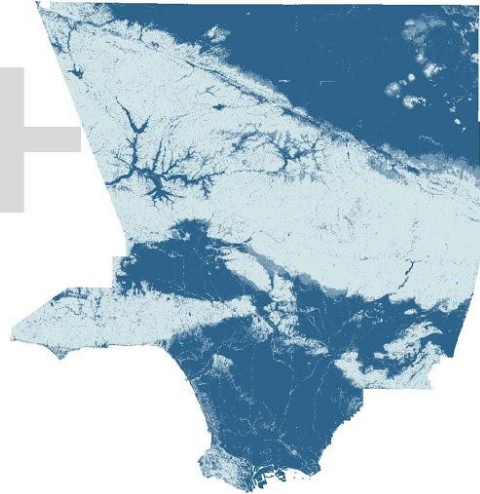
High

Low

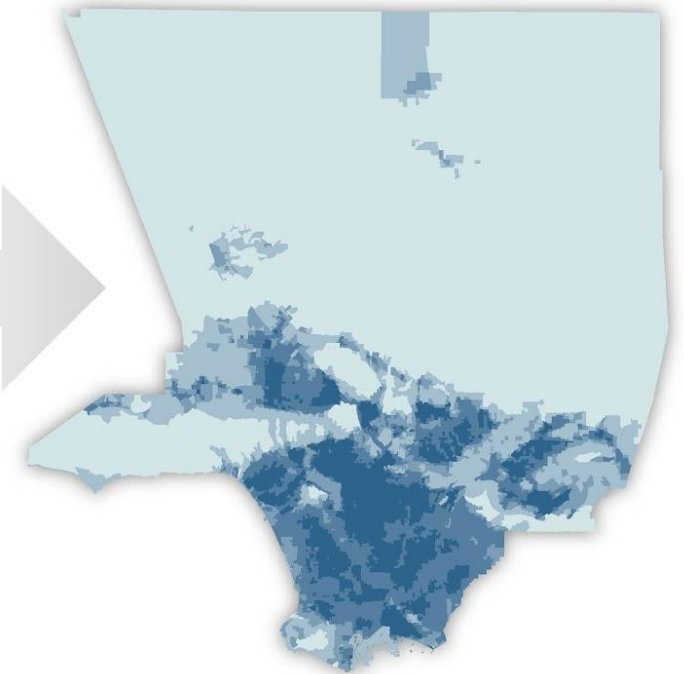
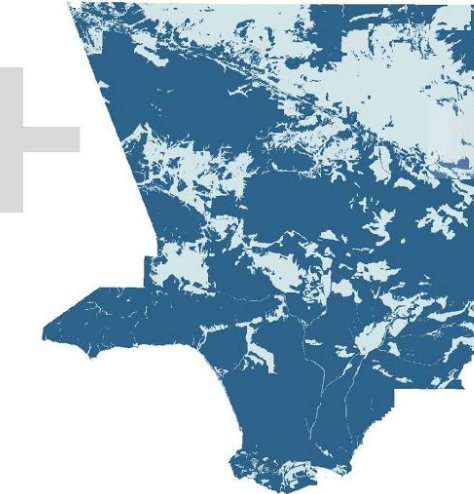
Rainfall Intensity



Slope



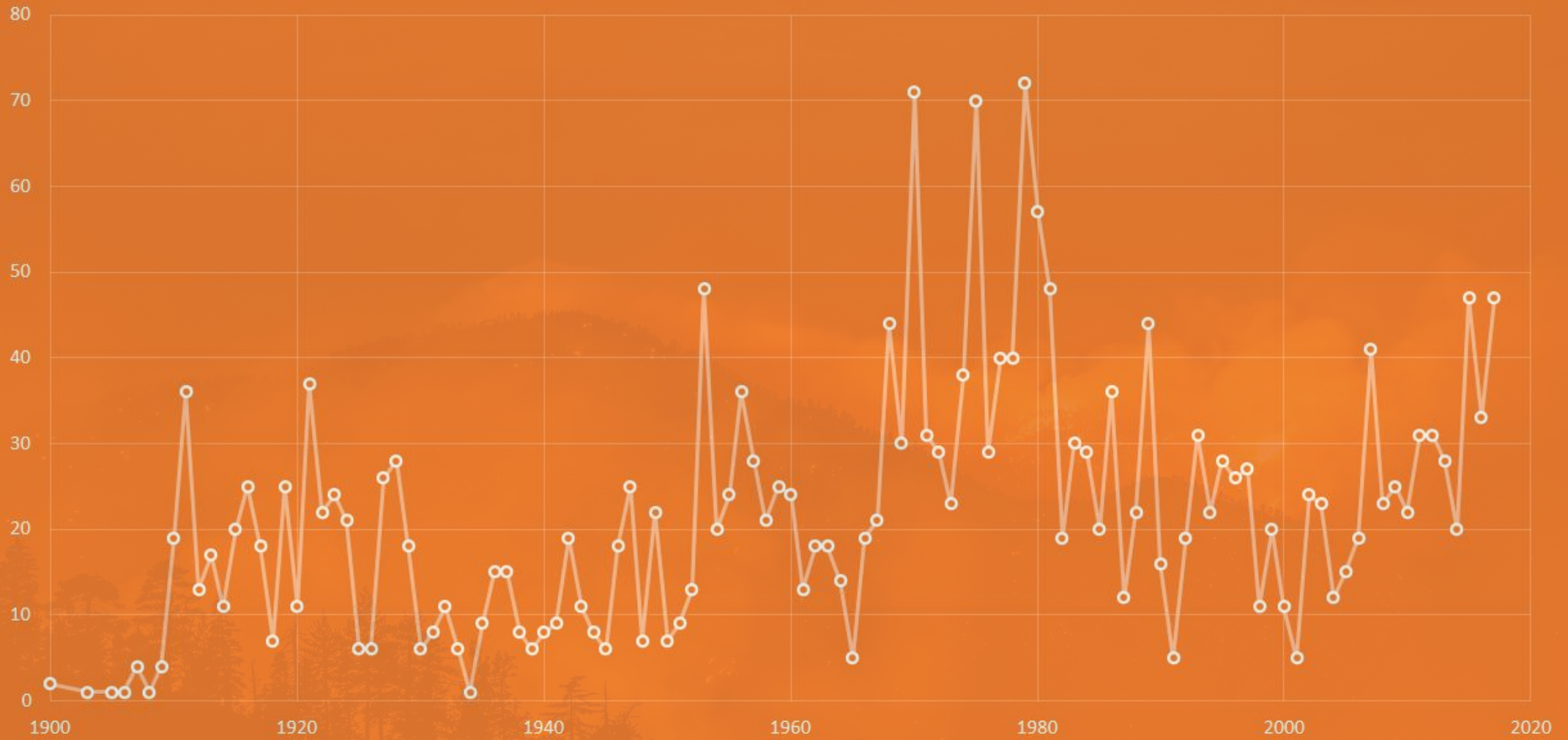
Hydrologic Soil Group

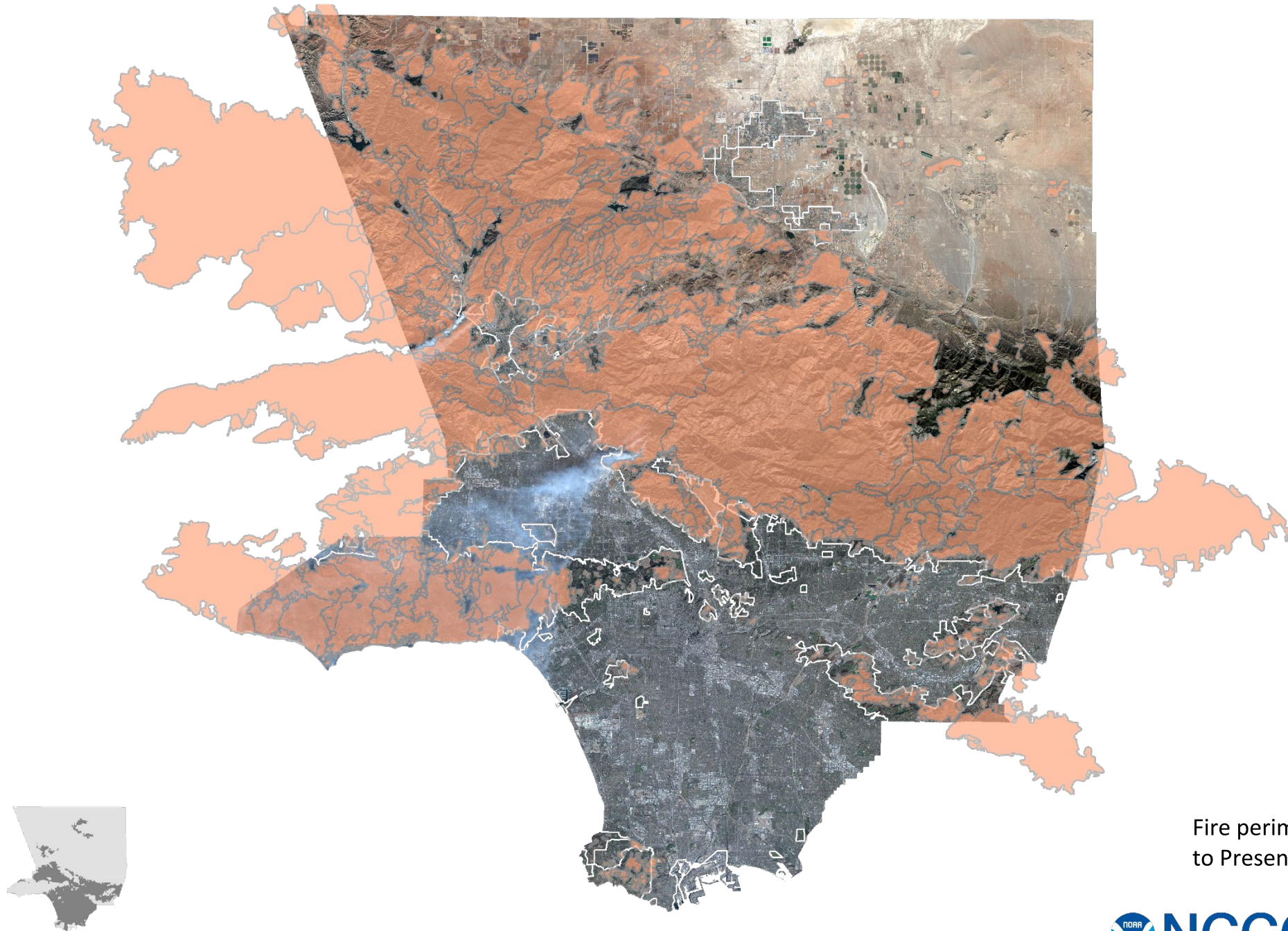


A dramatic night scene of a wildfire. The sky is dark, and the fire is a bright, intense orange and yellow, with thick smoke rising from it. The foreground shows the silhouettes of evergreen trees against the glowing fire. The text "Wildfire Risk" is overlaid in the center in a bold, white, sans-serif font.

Wildfire Risk

COUNT OF FIRES IN LA COUNTY



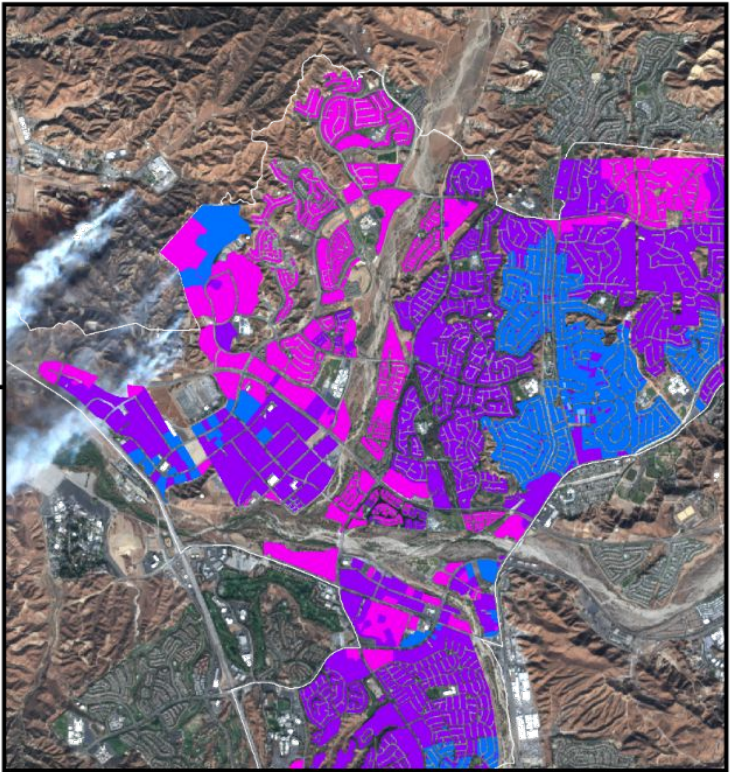
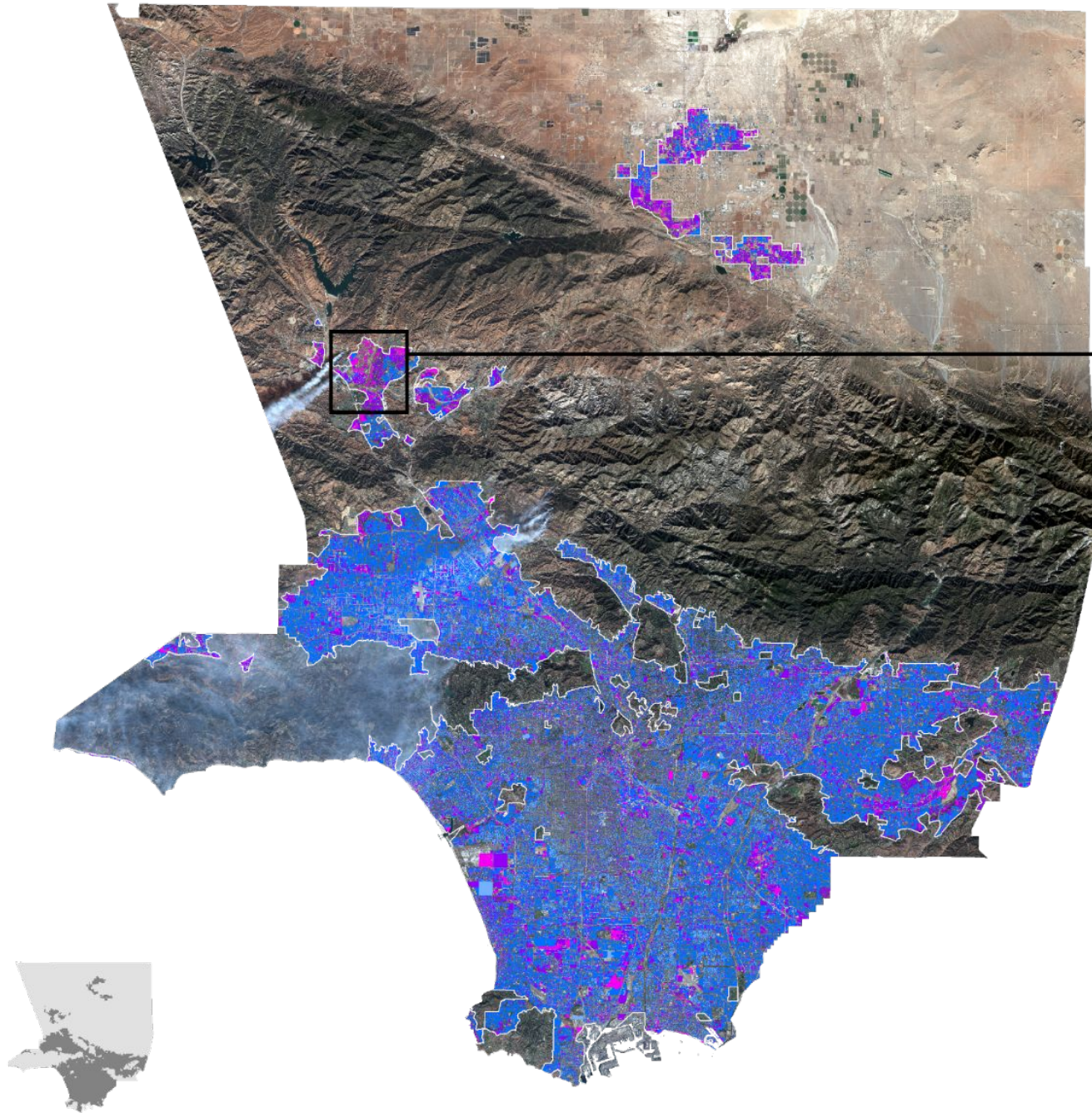


Fire perimeters 1900s
to Present



NCCOS

NATIONAL CENTERS FOR
COASTAL OCEAN SCIENCE

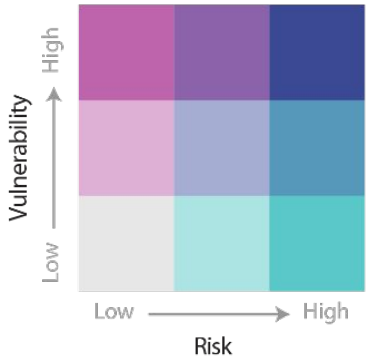


- 1900 - 1950
- 1951 - 1980
- 1981 - 2000
- 2001 - 2015

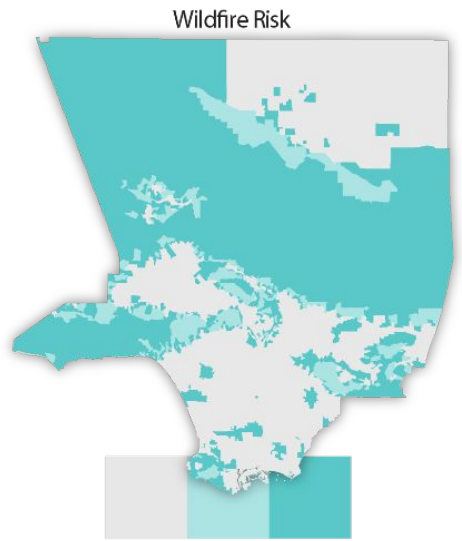
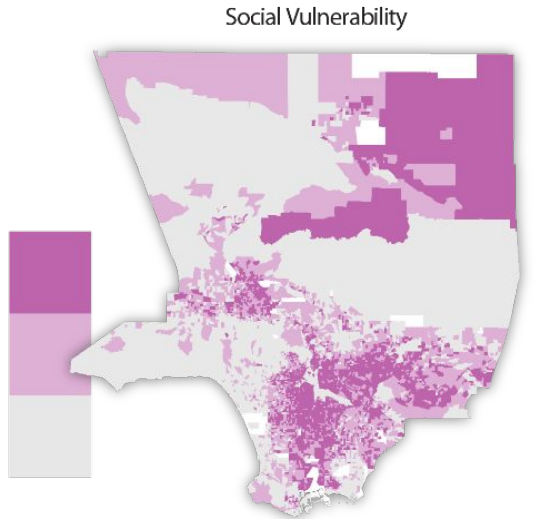
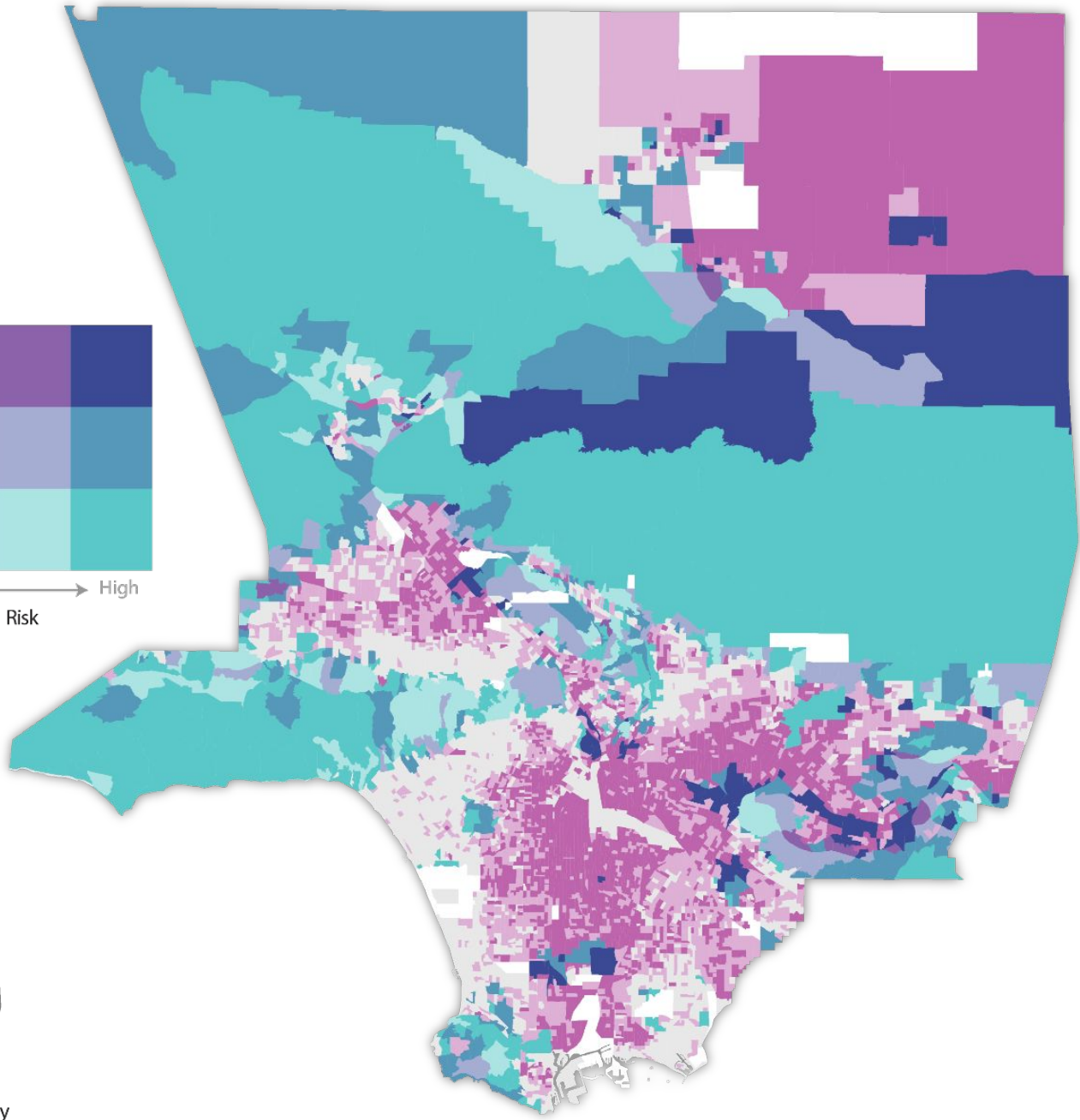
Bivariate Mapping Legend

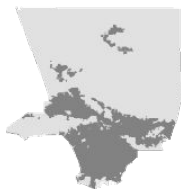
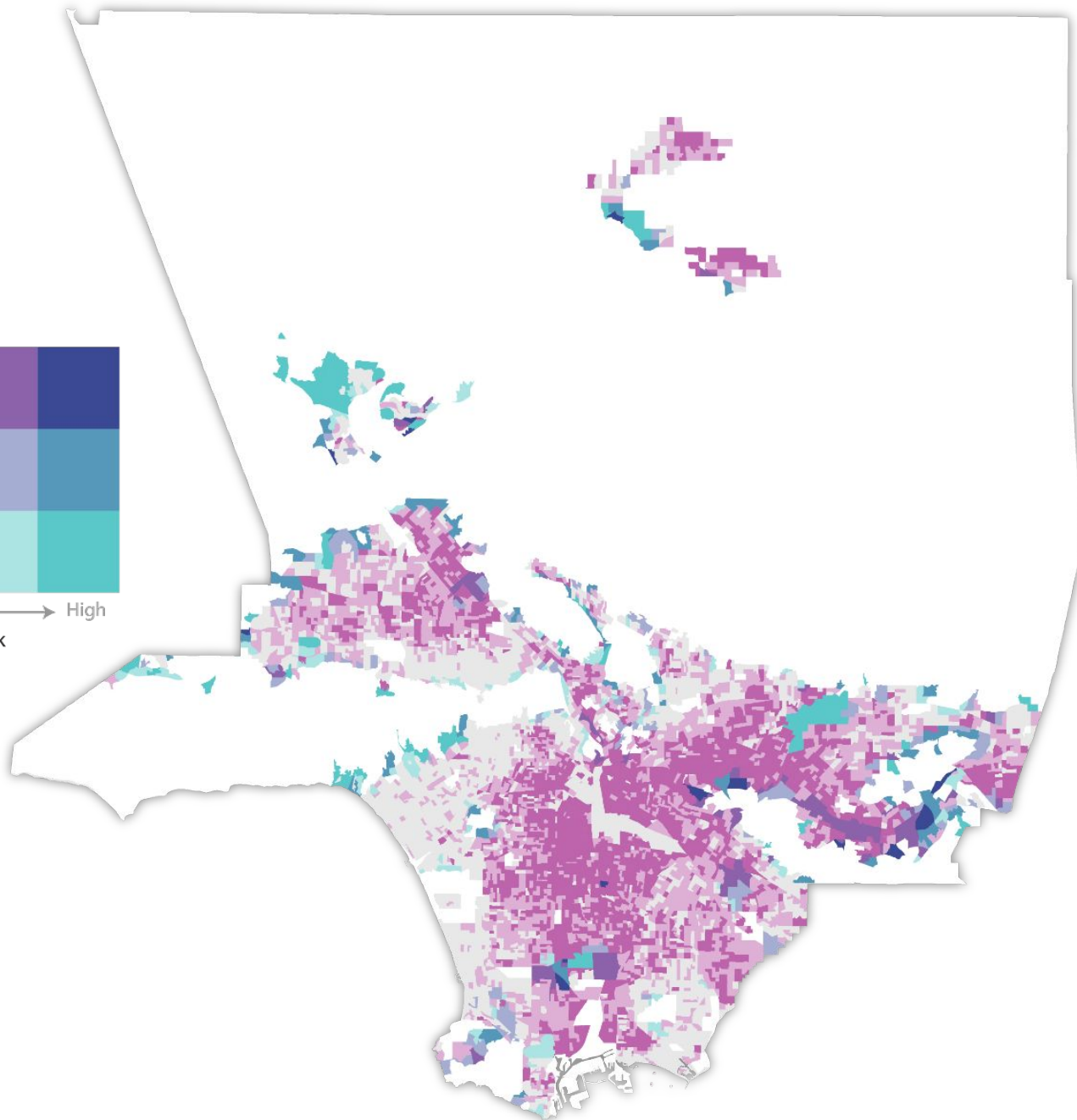
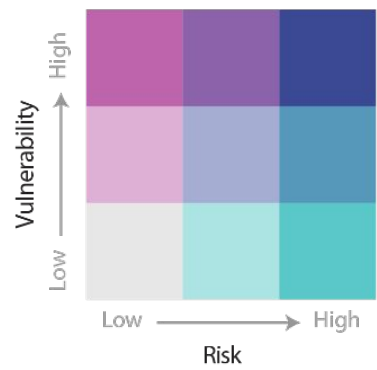
Areas that are **darkest** are areas where both **vulnerability** and **risk** are high





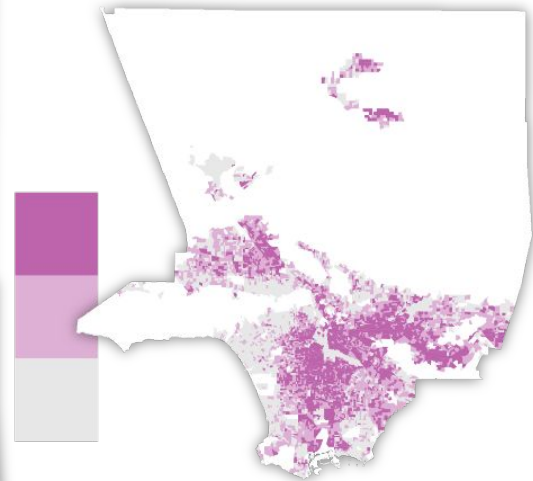
Los Angeles County



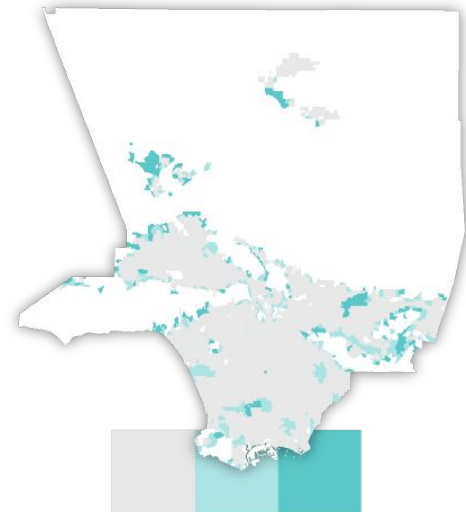


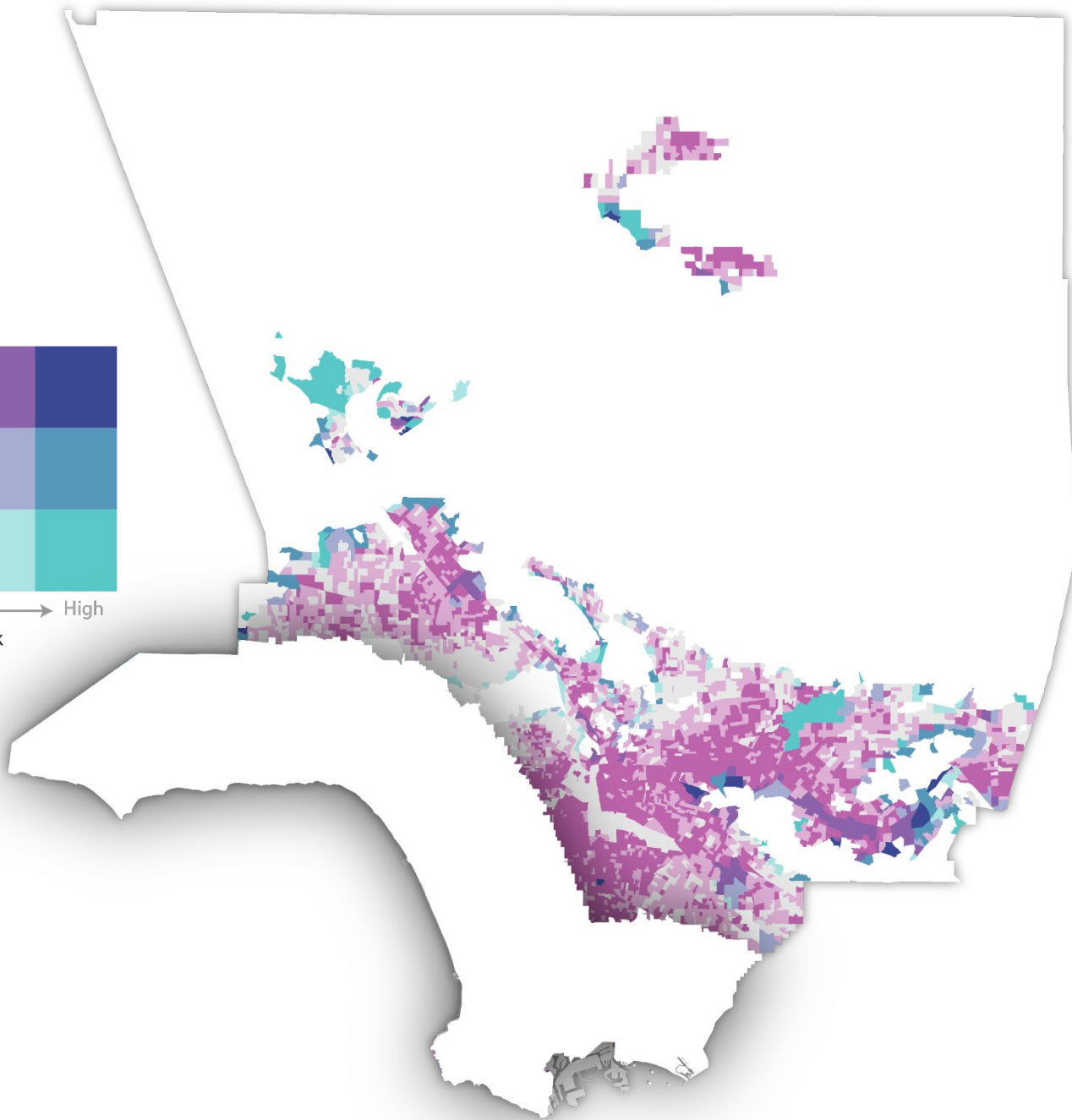
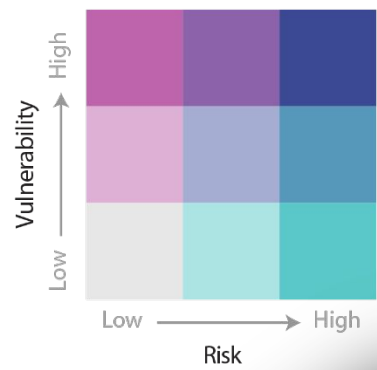
Urbanized Areas

Social Vulnerability

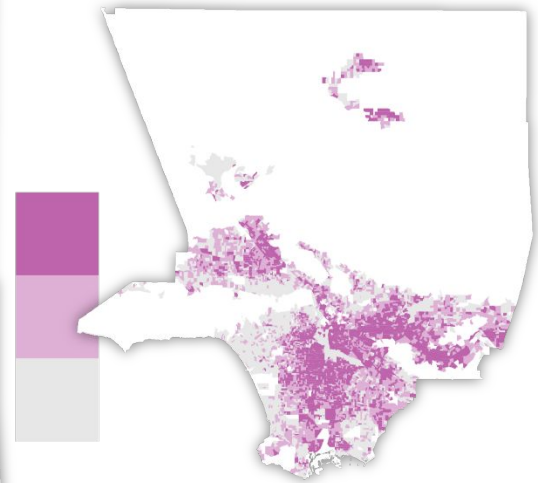


Wildfire Risk

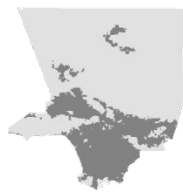
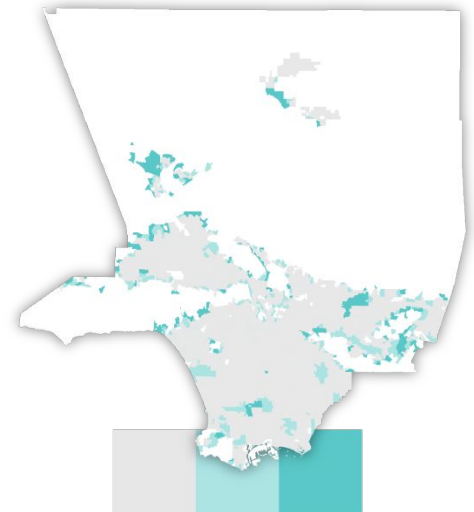




Social Vulnerability



Wildfire Risk

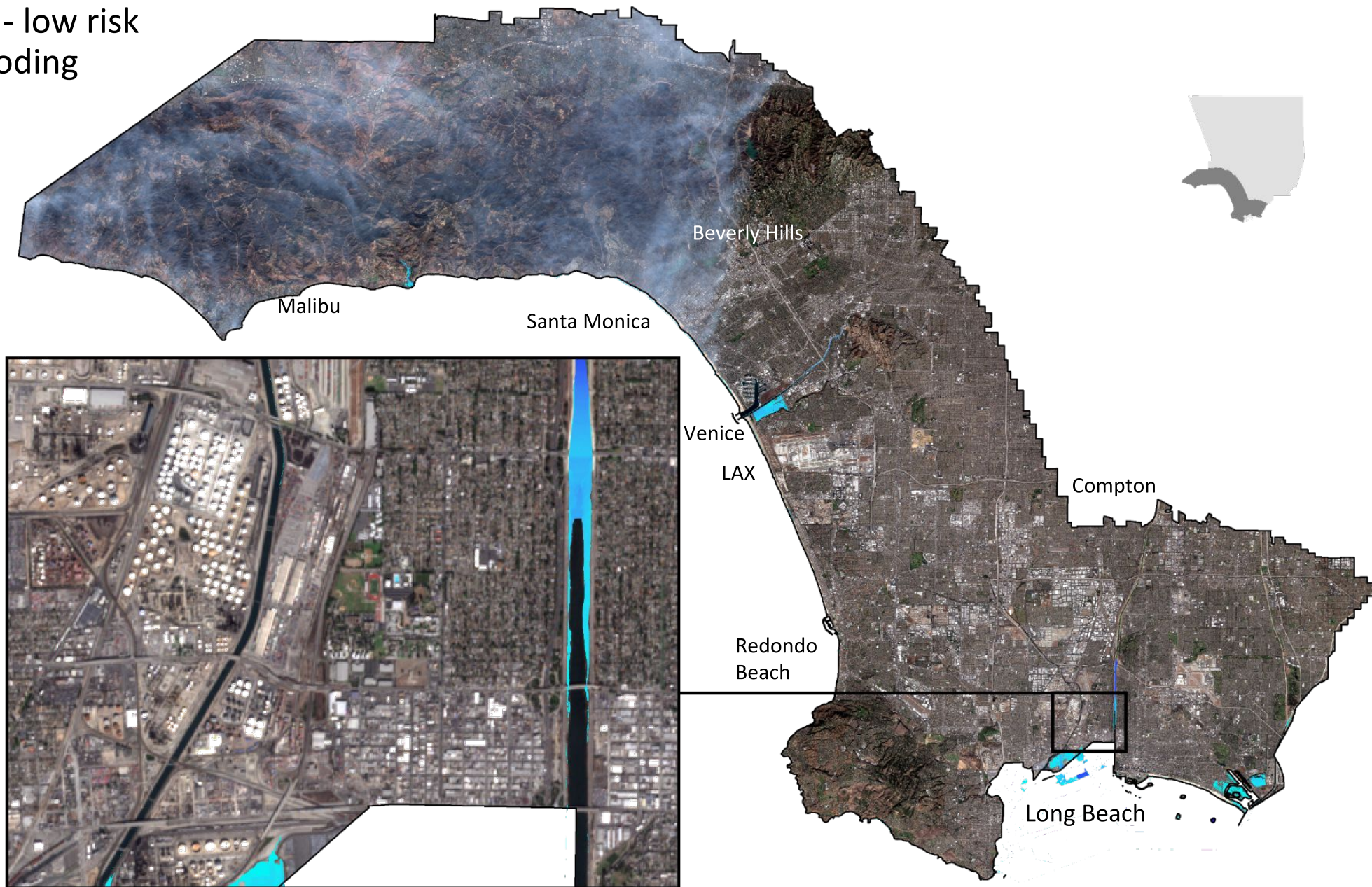


Urbanized Areas



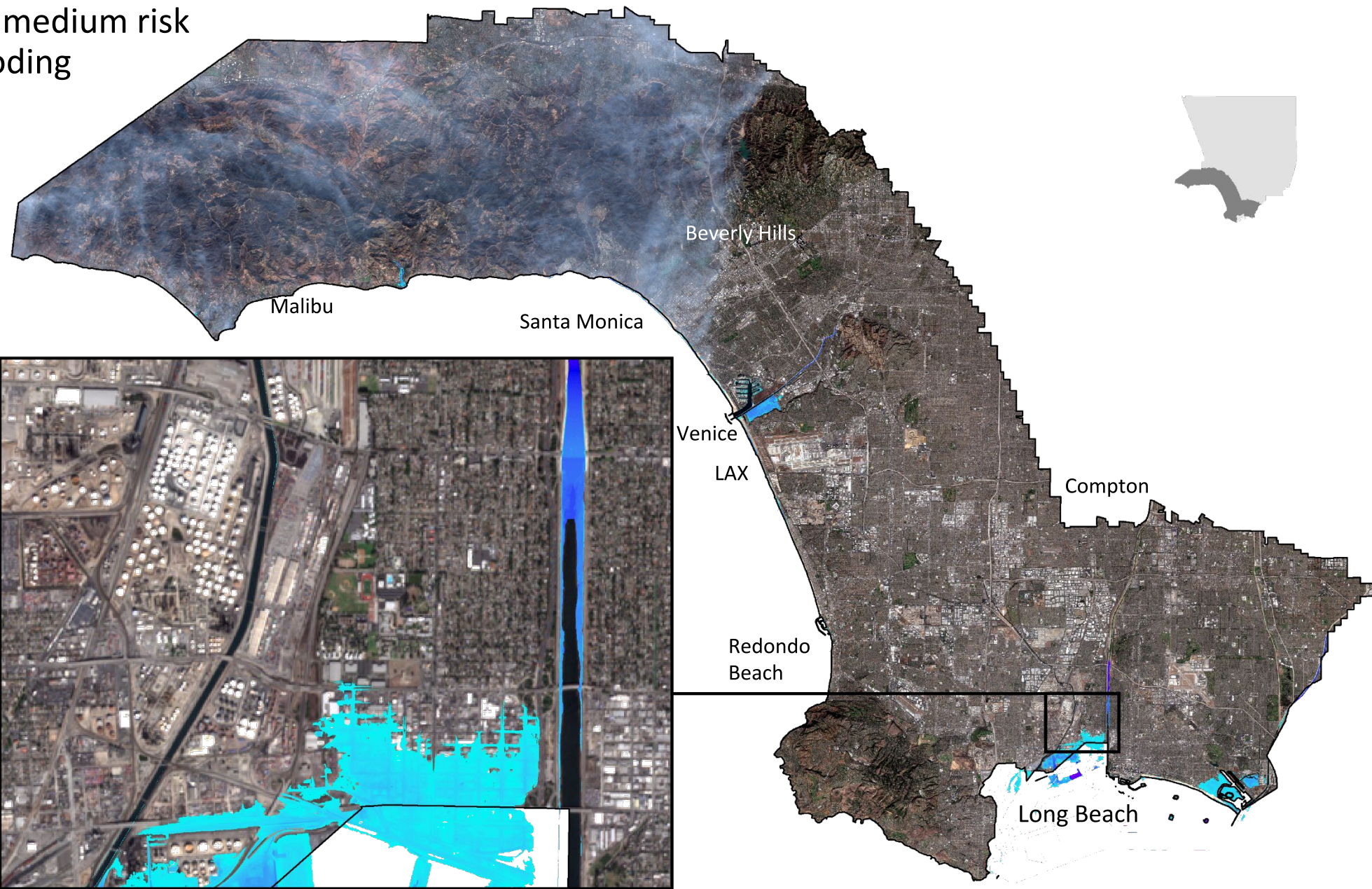
Flooding Risk

Near term - low risk coastal flooding



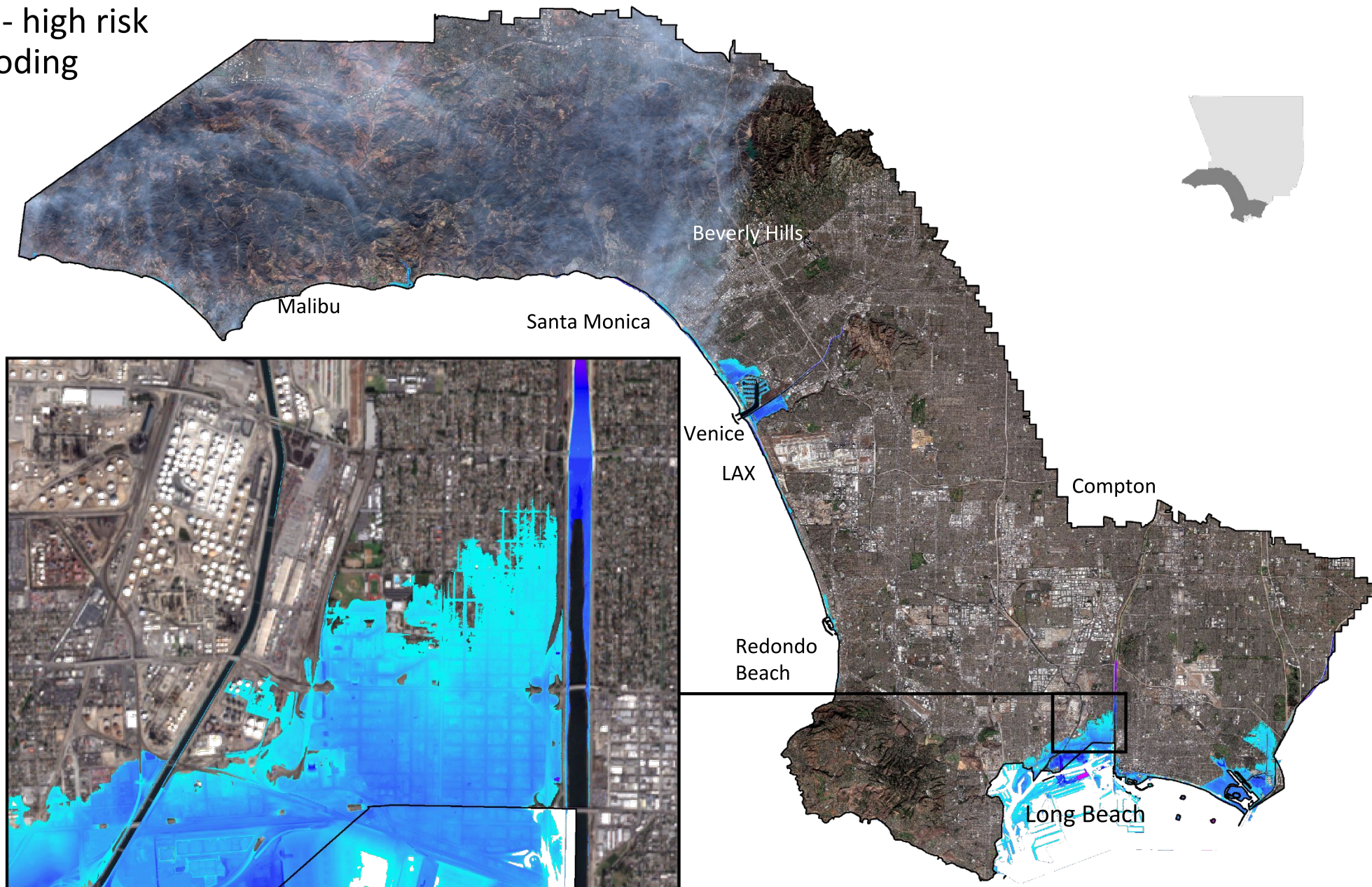
Westside/Wilmington Neighborhoods

Mid term - medium risk coastal flooding



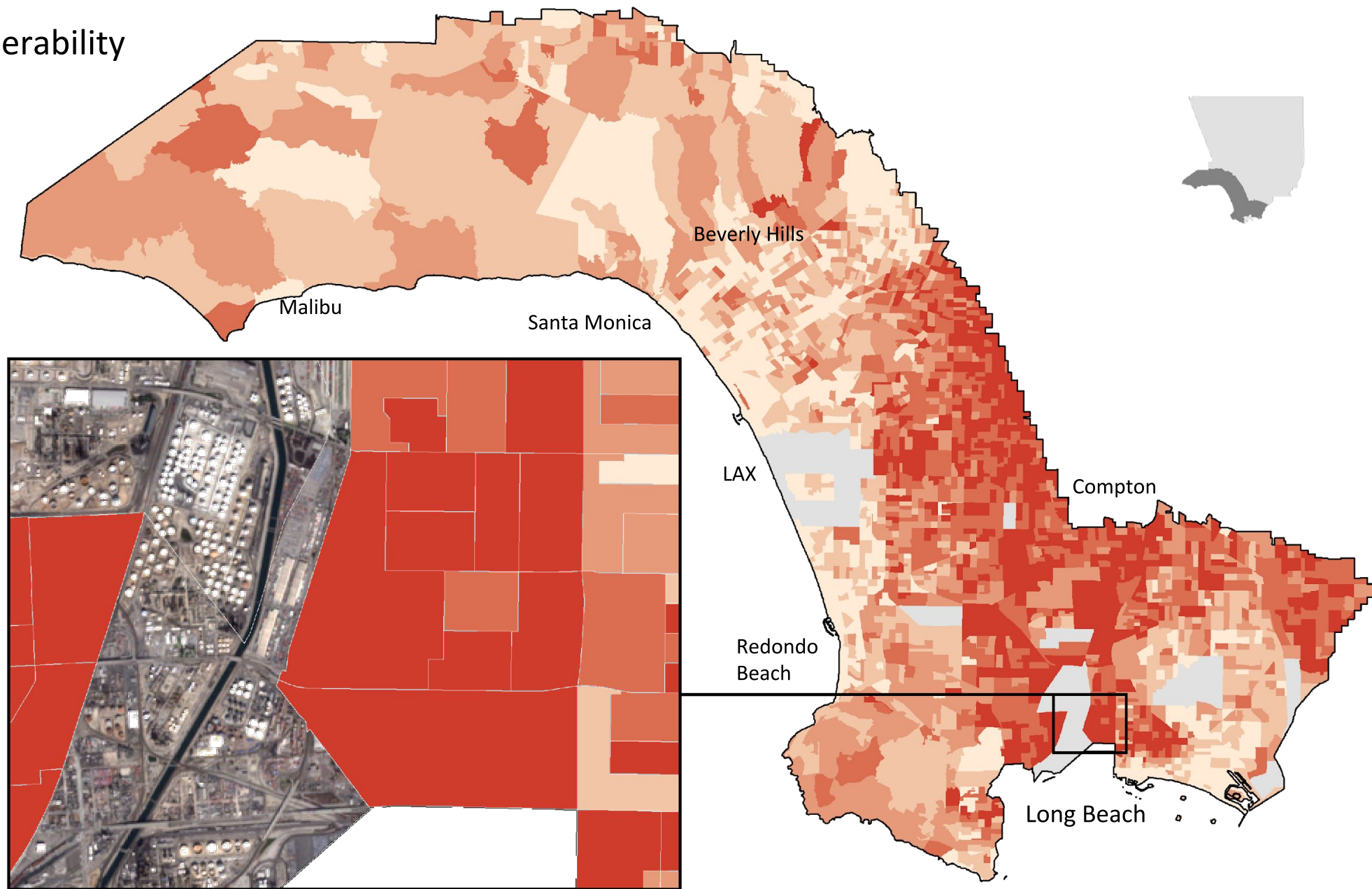
Westside/Wilmington Neighborhoods

Long term - high risk coastal flooding



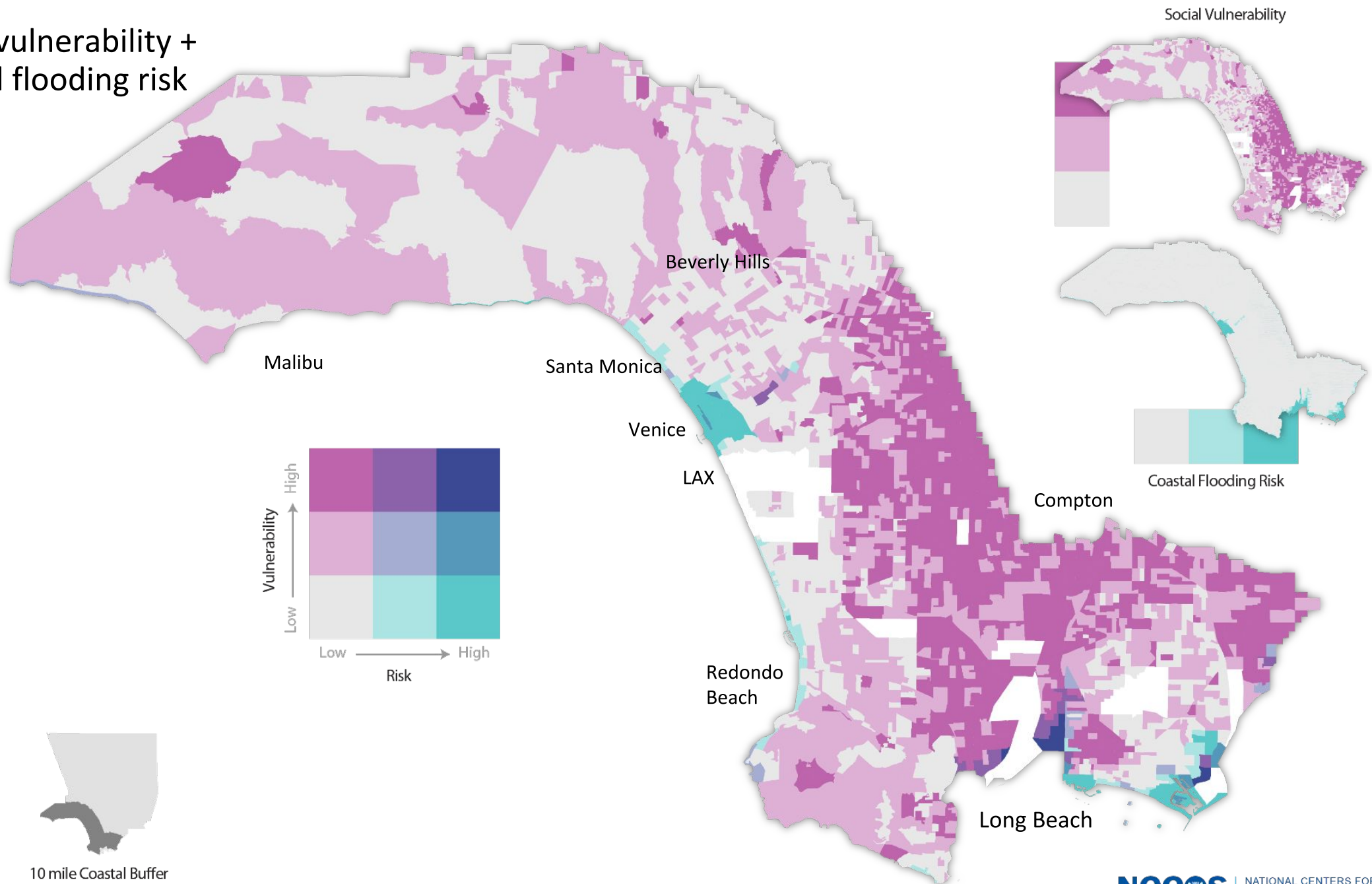
Westside/Wilmington Neighborhoods

Social vulnerability



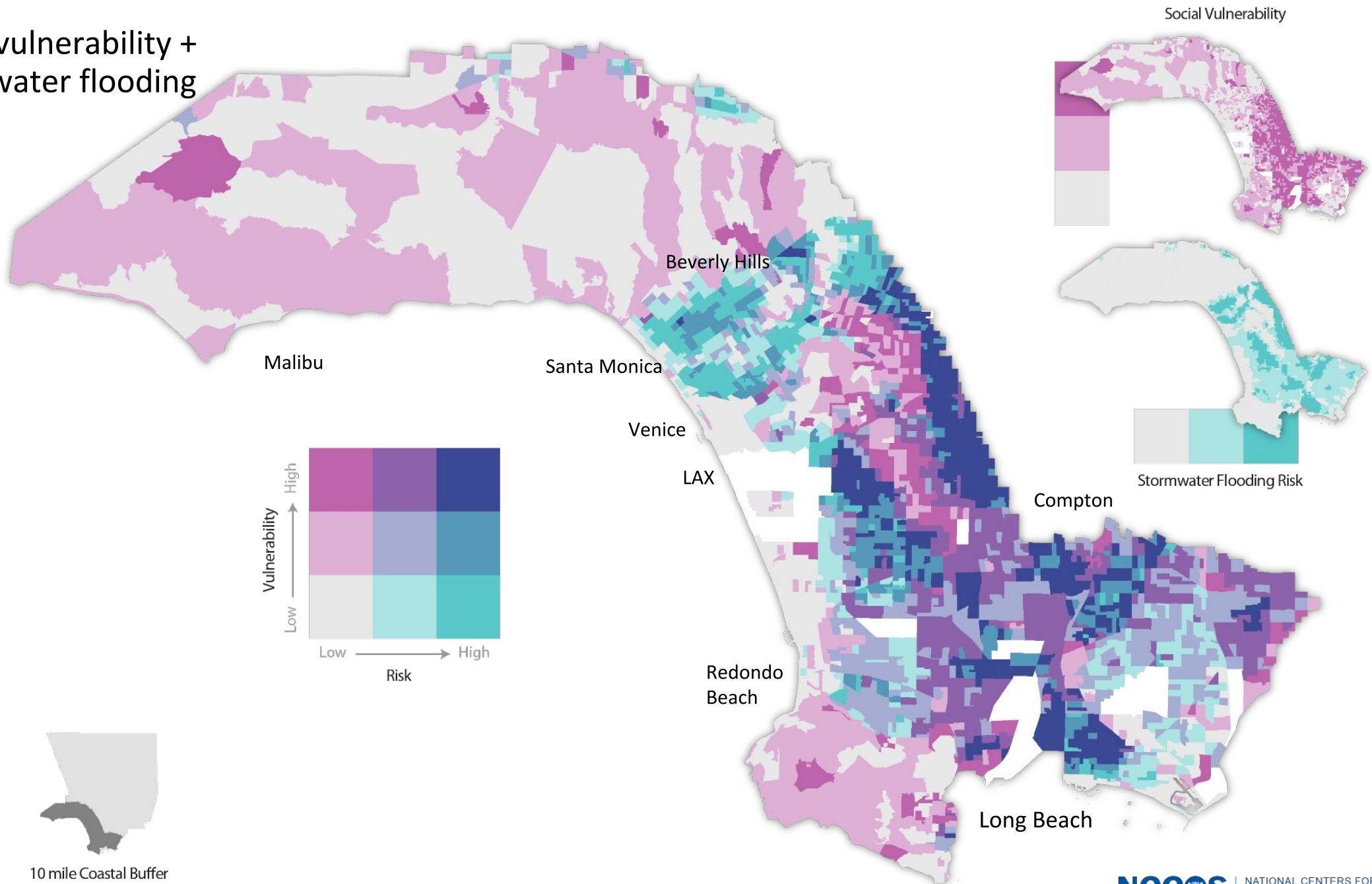
Westside/Wilmington Neighborhoods

Social vulnerability + coastal flooding risk



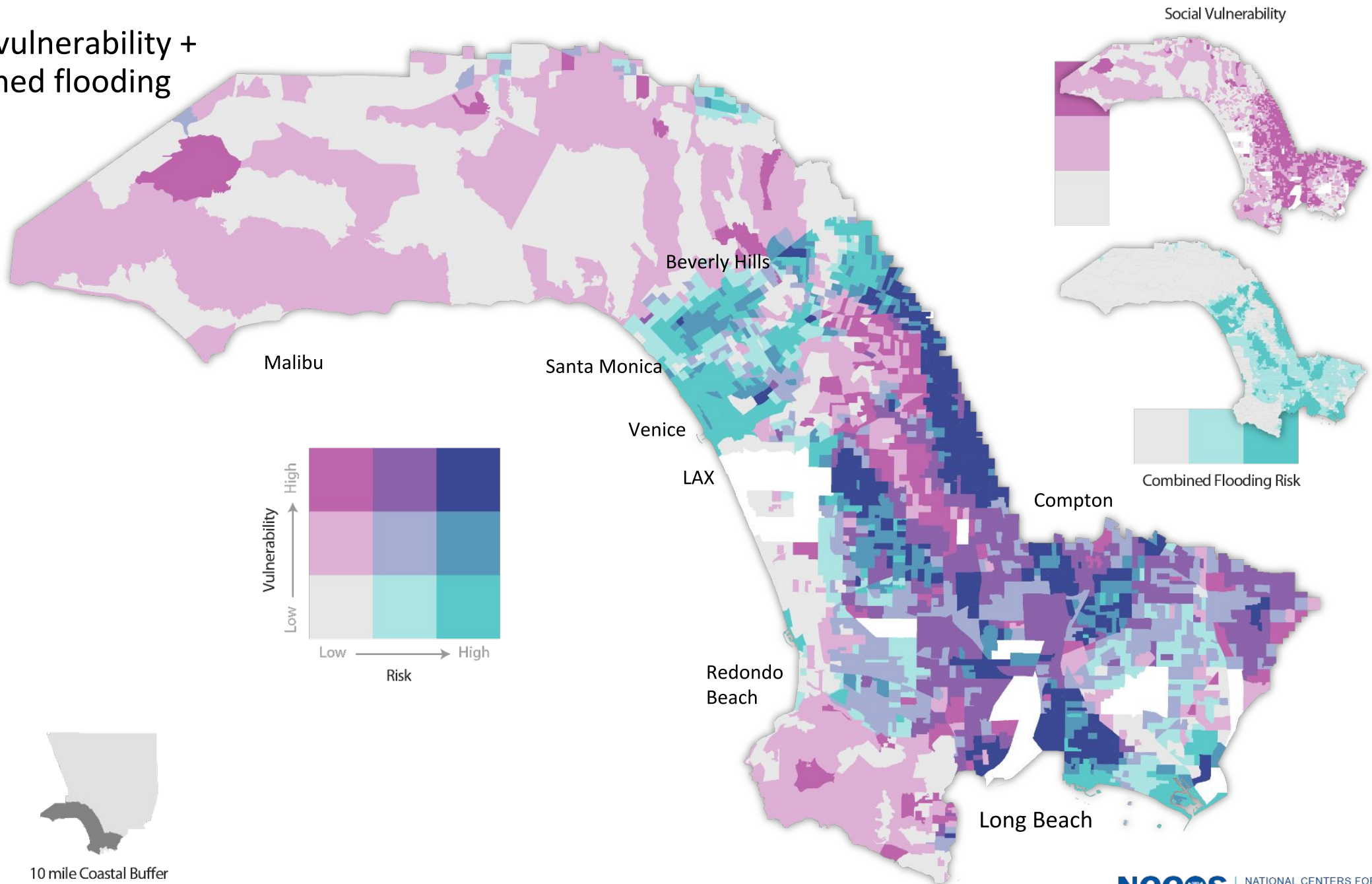
10 mile Coastal Buffer

Social vulnerability + stormwater flooding risk

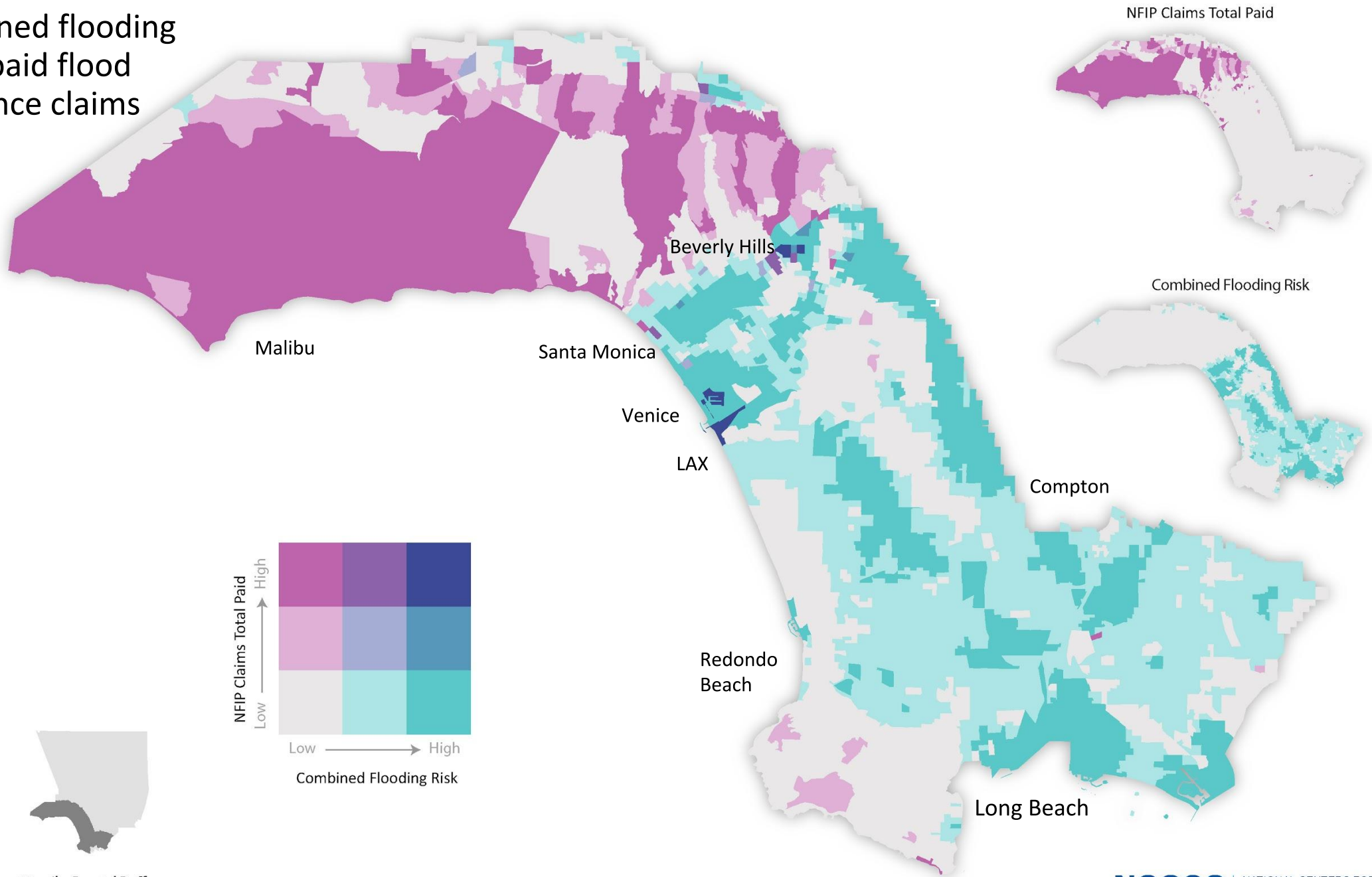


10 mile Coastal Buffer

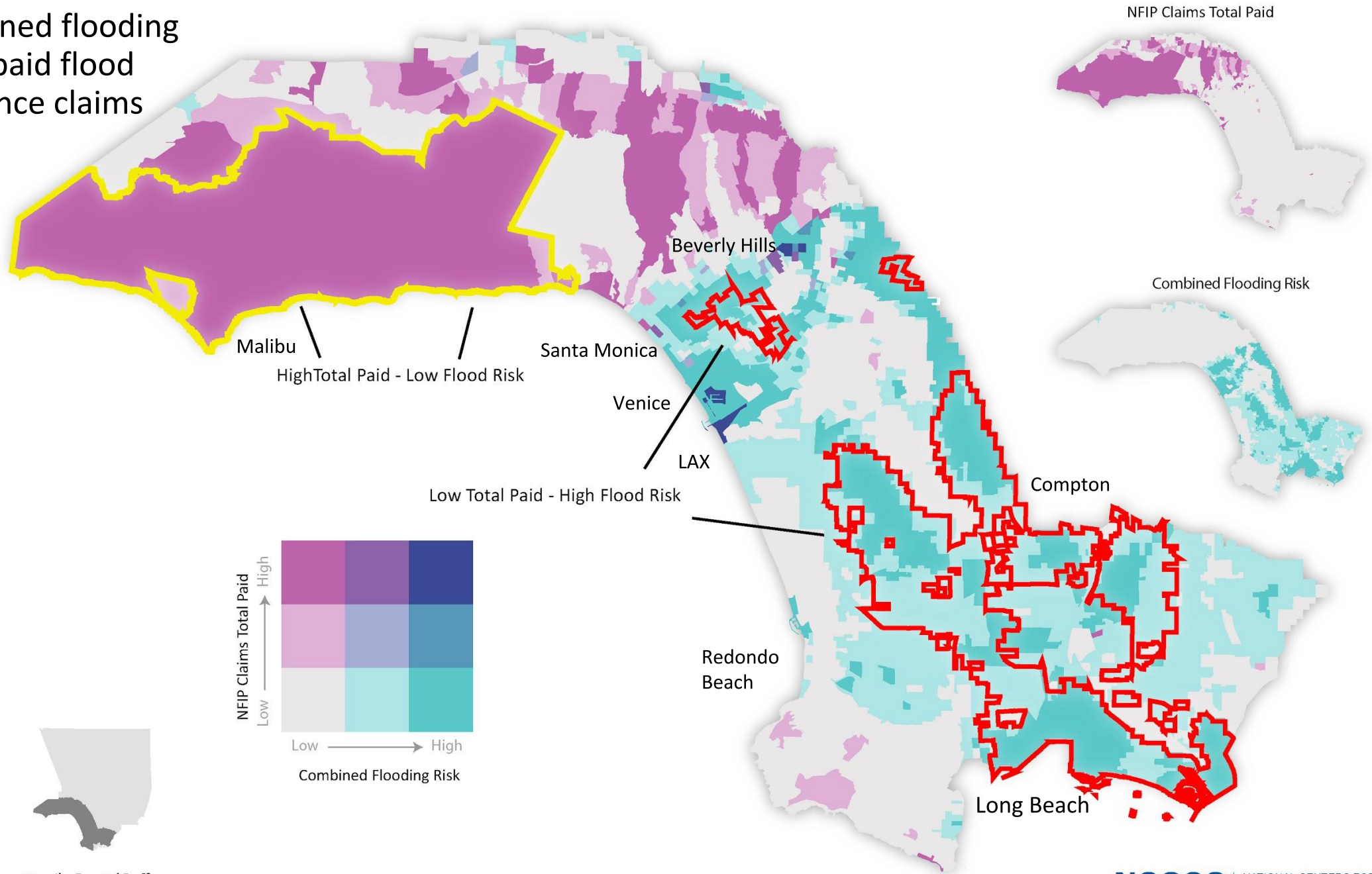
Social vulnerability + combined flooding risk



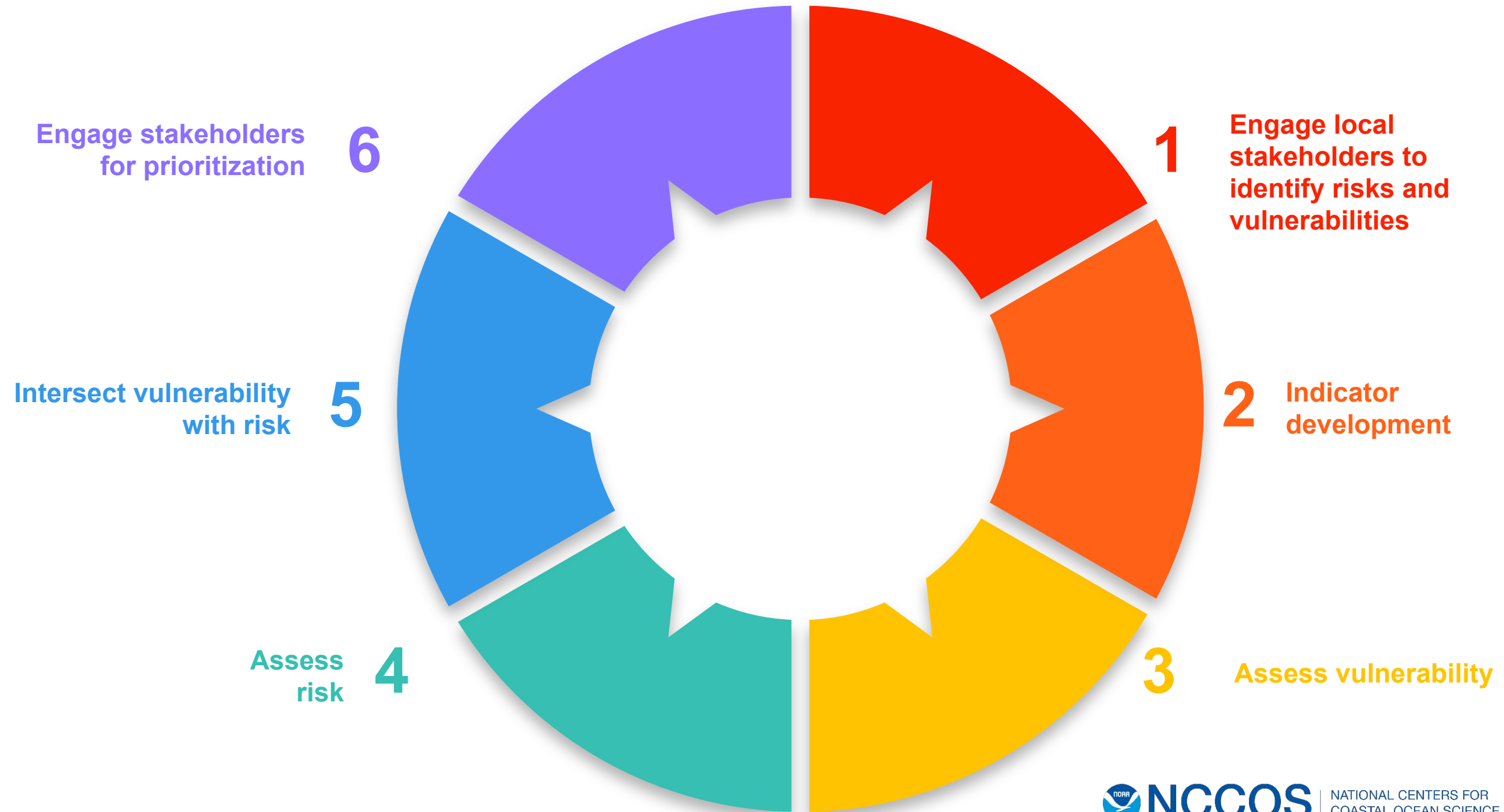
Combined flooding risk + paid flood insurance claims



Combined flooding risk + paid flood insurance claims



Key takeaways



Thank you!

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Seann.Regan@noaa.gov
<https://coastalscience.noaa.gov>

Photos used in this presentation were provided by Chloe Fleming, Theresa Goedeke, PublicDomainPictures/Pixabay, CA King Tides Project by Tim Keagy and LA Waterkeeper, David Mark/Pixabay, Kyle Grillot/Getty Images, and University of Maryland IAN



LA County Chief Sustainability Office
Environment • Economy • Equity

Climate Planning in Los Angeles County

Congressional Briefing

January 2021

Introduction

County of Los Angeles



- Inhabited for more than 10,000 years, most of that time the land of the Chumash, Tongva, and Tataviam tribes
- 1 out of 4 Californians and 1 in 33 Americans lives in Los Angeles county
- 200+ languages spoken
- 75 miles of coastline
- At 4,084 square miles, the county is roughly the size of Hawaii's Big Island and larger than several U.S. states

“Five LA Counties”

TABLE 1 Human Development in the “Five LA Counties”



Glittering LA

Elite Enclave LA

Main Street LA

Struggling LA

Precarious LA

HD Index	9 and above	7 to 8.99	5 to 6.99	3 to 4.99	below 3
Life Expectancy (years)	86.4	83.9	82.9	81.5	78.7
Less than High School (%)*	2.3	5.4	14.9	30.8	51.8
At least Bachelor’s Degree (%)*	69.9	58.3	35.5	19.6	4.7
Graduate/Professional Degree (%)*	31.5	24.0	12.6	5.4	0.7
School Enrollment (%)	91.7	84.7	82.6	77.1	73.4
Median Earnings (2015 \$)	\$52,687 and up	48,347	35,773	25,469	19,060

*Percent of adults age 25 and up.

Climate Planning in LA County

Sustainability Plan Action Examples



Create and implement a community-informed Urban Forest Management Plan that incorporates equitable urban forest practices.

Develop a comprehensive heat island mitigation strategy and implementation plan that addresses cool pavements and roofs, pavement reduction, and urban greening.

Complete an assessment of the region's drinking water systems to identify resiliency to drought and shocks, as well as risk of water quality issues due to aging infrastructure, deferred maintenance, etc.

Develop and implement a strategy to preserve and protect priority ecological sites, supporting sites, and priority species (including but not limited to significant ecological areas, habitat connections, terrestrial streams, wetlands and aquatic habitats).

Develop minimum requirements and best practices for amenities, programming, and accessibility of cooling centers.

County Climate Vulnerability Assessment

Action 28A: Conduct a countywide climate vulnerability assessment that addresses social vulnerability and use it to guide priorities for investments in public health preparedness, emergency preparedness and response planning, and community resiliency.

Action 28B: Conduct a countywide climate vulnerability assessment that addresses physical infrastructure vulnerability and use it to guide priorities for investments in building upgrades, infrastructure improvements, and zoning and code changes.



CicLAvia, photographer Jon Endow



OurCountyLA.org

Social Vulnerability Assessment for West Hollywood

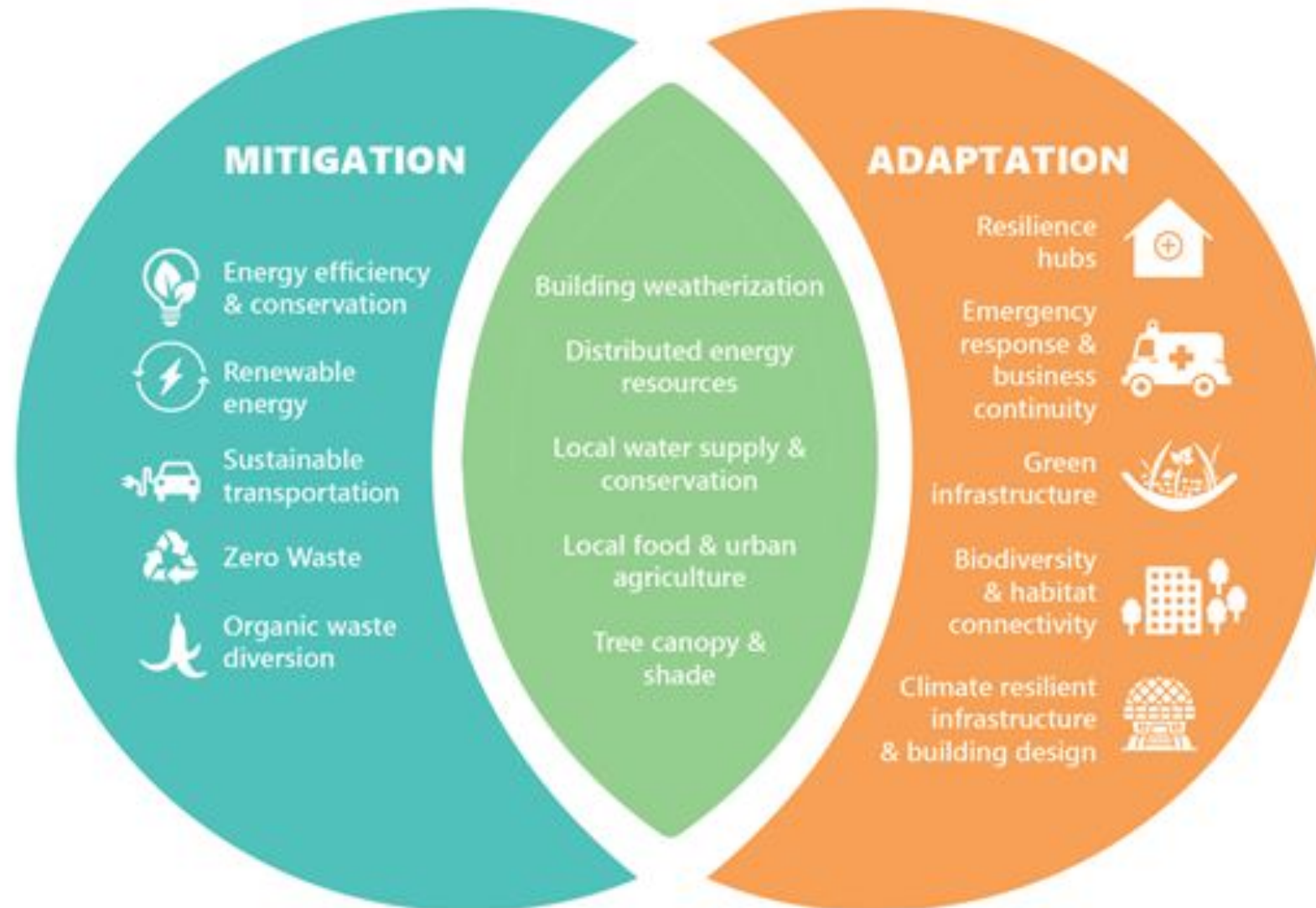
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Climate, Resilience, and Adaptation Plans Across the Country



Mitigation and Adaptation - Integrated Climate Planning

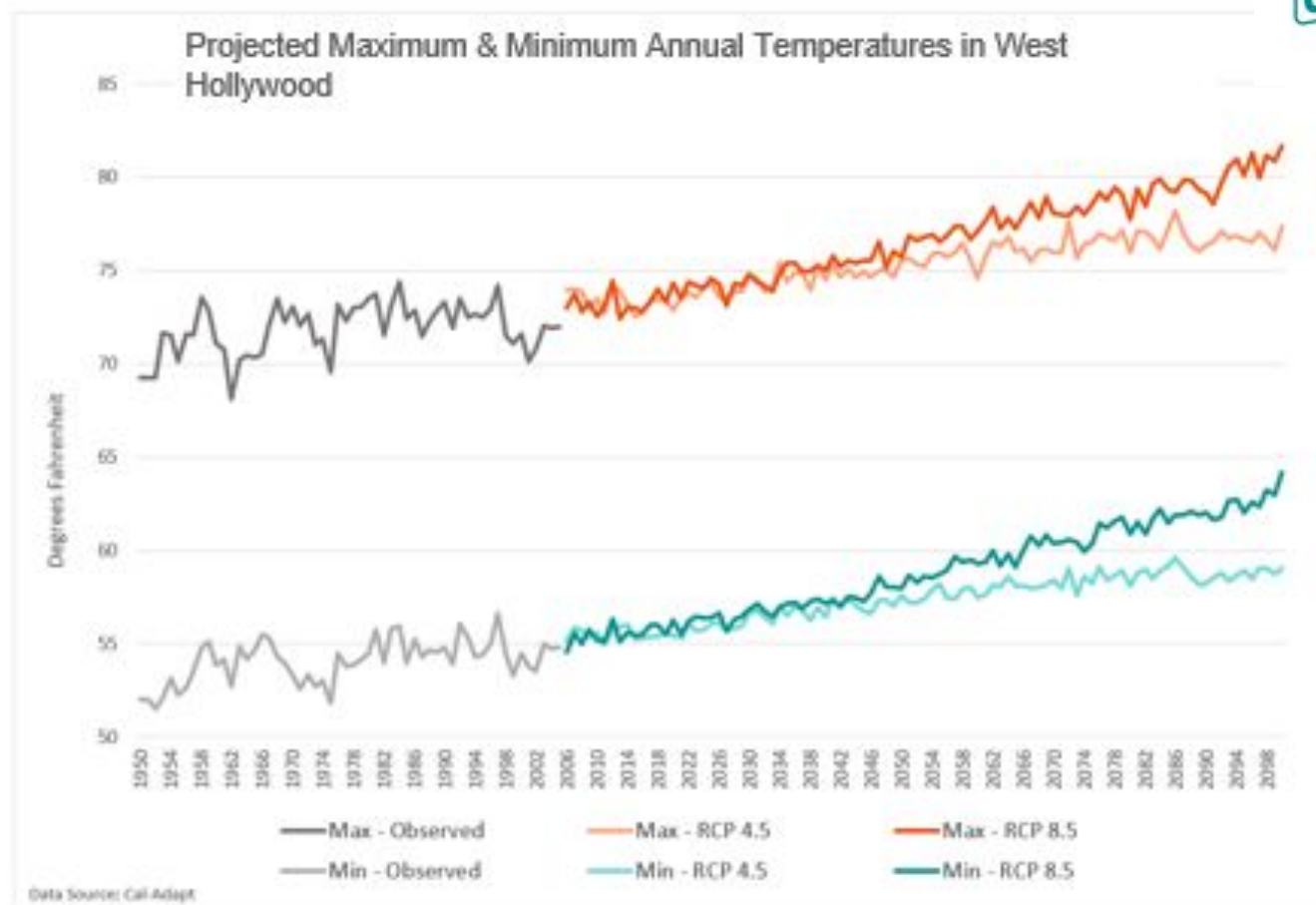


Climate Hazards in West Hollywood

West Hollywood is relatively less vulnerable to climate hazards than the region.

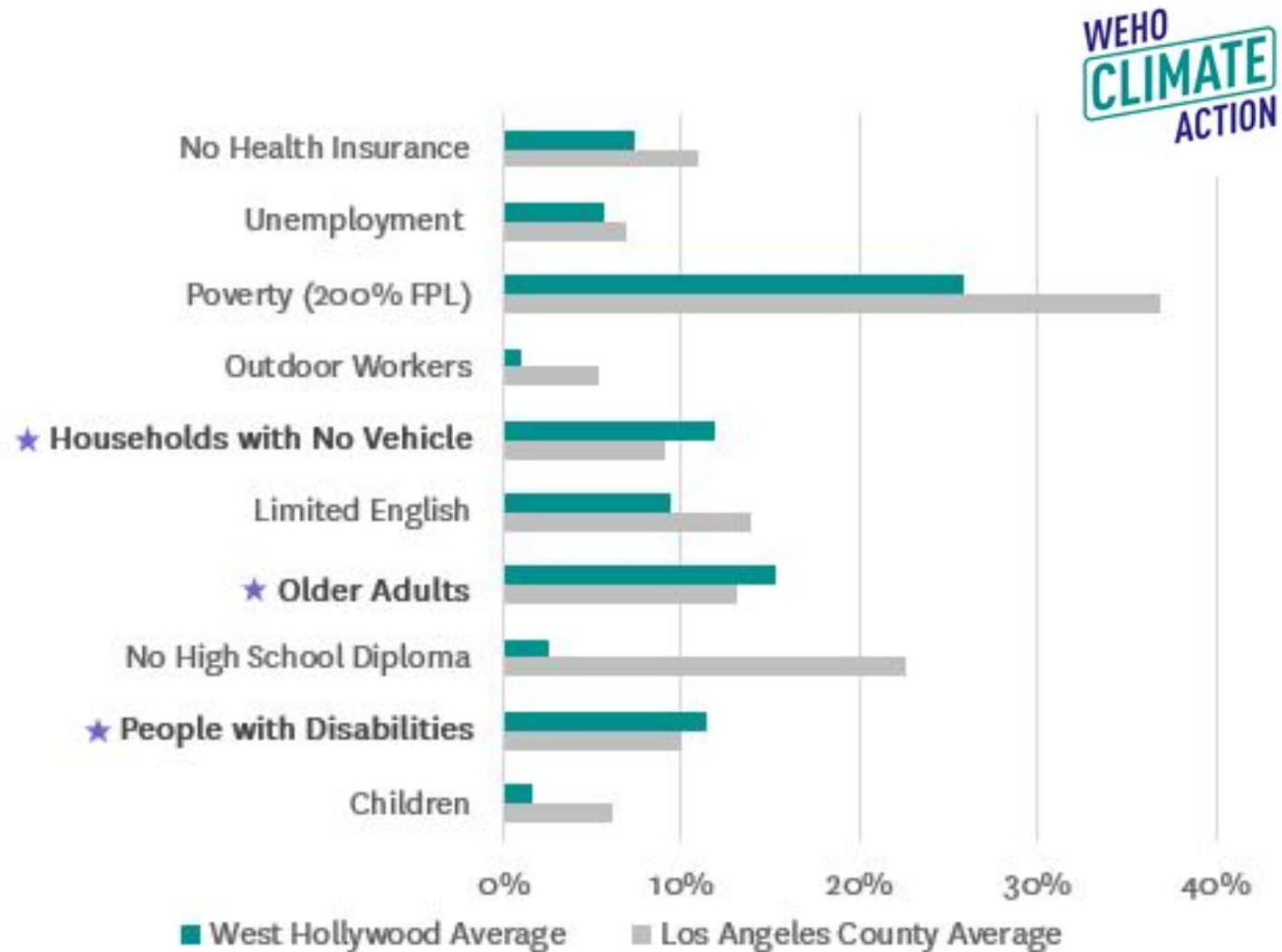
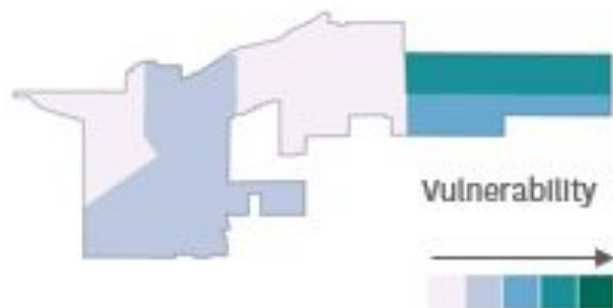
The following climate hazards are projected to increase:

- Heat waves
- Extreme rain events
- Drought (regionally)
- Wildfires (regionally)



Social Vulnerability

Higher percentage of **vulnerable populations** in the eastern portion of the city.



Community Engagement Plan



Engagement Action	Target Populations
Partner with Parks and Rec doing wellness checks	Older adults
Flyer distribution at affordable housing sites	Russian Speaking, low-wage families and individuals
Pop-ups at key essential businesses (following public health guidelines)	Russian Speaking, low-wage families and individuals
Home meal delivery flyer distribution	Previously Unhoused
Partnership with Sacred Spaces Institute for Indigenous Peoples (SPI)	Tongva/Kizh and other Urban Indigenous Populations

Survey (Co-developed with SPI) and **Multi-generational Interviews** via phone (curated audio, portraits)



Potential Adaptation Strategies



Stakeholder Feedback

Implement a "telephone reassurance program" that dials constituents to check in on how they're doing, offer reminders, etc.

Prioritize businesses that matter most to LGBTQIA+ and other marginalized communities; businesses are a lifeline for lower-income residents

Incorporate more mental health-minded outreach and programs into emergency planning processes

Community Services

1. Emergency response & business continuity
2. Outreach and engagement programs
3. Resilience hubs
 - Information sharing
 - Resource distribution

Thoughts from the California Coastal Commission

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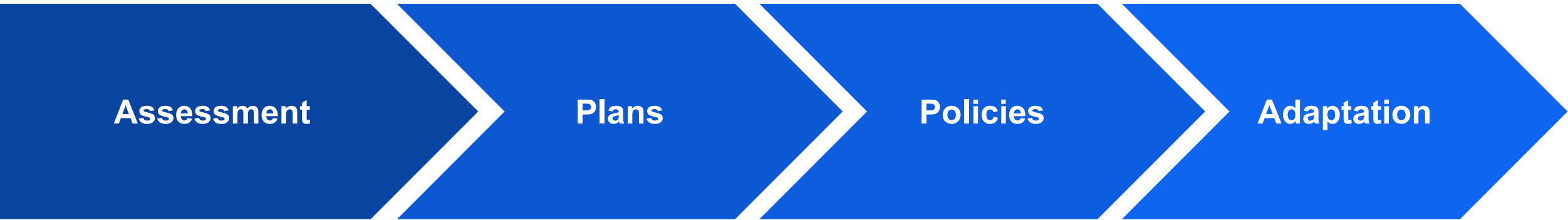
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The California Coastal Commission is one of three state agencies that implements California's federally approved coastal management program under the Coastal Zone Management Act.

The California Coastal Commission works closely with local governments to manage California's coast line, including to protect coastal resources and public access and to plan for climate impacts.

Leo Carillo Beach, LA County,
CA

Photo Credit: Tim Keagy



Sea Level Rise
Vulnerability Assessments

Coastal Resilience
Plans

Land Use Policies

Permitting

Asset Inventories

Climate
Action/Adaptation Plans

Local Ordinance

Capital Projects

Models (e.g. climate,
storm)

Community Driven

Ensure Equitable
Outcomes

Prioritization

Social Vulnerability

- Vulnerability assessment is a critical step in the process of addressing climate risks and hazards.
- Public and stakeholder engagement in the process is key to successful implementation of adaptation plans and ultimately reduction of climate risks.
- The NCCOS vulnerability assessment framework is a model for facilitating integration of social data and including the public and stakeholders in the process.



25th Street, Del Mar, CA

Questions?

For more information, please contact:

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