SCAG Joint Working Group

Climate Adaptation, Public Health, Sustainable Communities

December 17, 2020

1:00 pm – 3:00 pm

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INNOVATING FOR A BETTER TOMORROW

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 meeting

Agenda

Climate Adaptation

1:00 pm – 1:50 pm

Public Health

1:50 pm – 2:40 pm

Sustainable Communities

2:40 pm – 3:00 pm

Climate Adaptation Working Group

Update on SCAG's Climate Adaptation Framework

SCAG Sustainability Department, Cambridge Systematics, HereLA, and ESA

December 17, 2020

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INNOVATING FOR A BETTER TOMORROW

SoCal Climate Adaptation Framework

- February 2019 Kickoff
- SB 1 Adaptation Planning Grant
- SCAG, Cambridge Systematics, with ESA, Here LA, and Urban Economics

Includes:

- **Tools and Resources**
- **Outreach and Communications Strategies**
- **Planning Guidance and Model Policy Language**
- **Vulnerability mapping and assessment tools**
- **Transportation and land use scenarios and modeling**
- **Finance and Funding Guidance**

Today's Agenda – How to Use the Tools

1. Project Background
2. Policy Background of State Bills
3. Climate Change Impacts in the SCAG Region
4. SoCal Adaptation Planning Guide
5. Model Policy Language
6. Vulnerability Mapping and Assessment Tools
7. Adaptation Actions and Strategies
8. Transportation and Land Use Scenarios and Modeling
9. Finance and Funding Guidance
10. Outreach Tools
11. NEW RESOURCE: Housing Element Parcel Tool (HELPR)
12. Questions and Discussion

Key State Bills – Safety & Climate

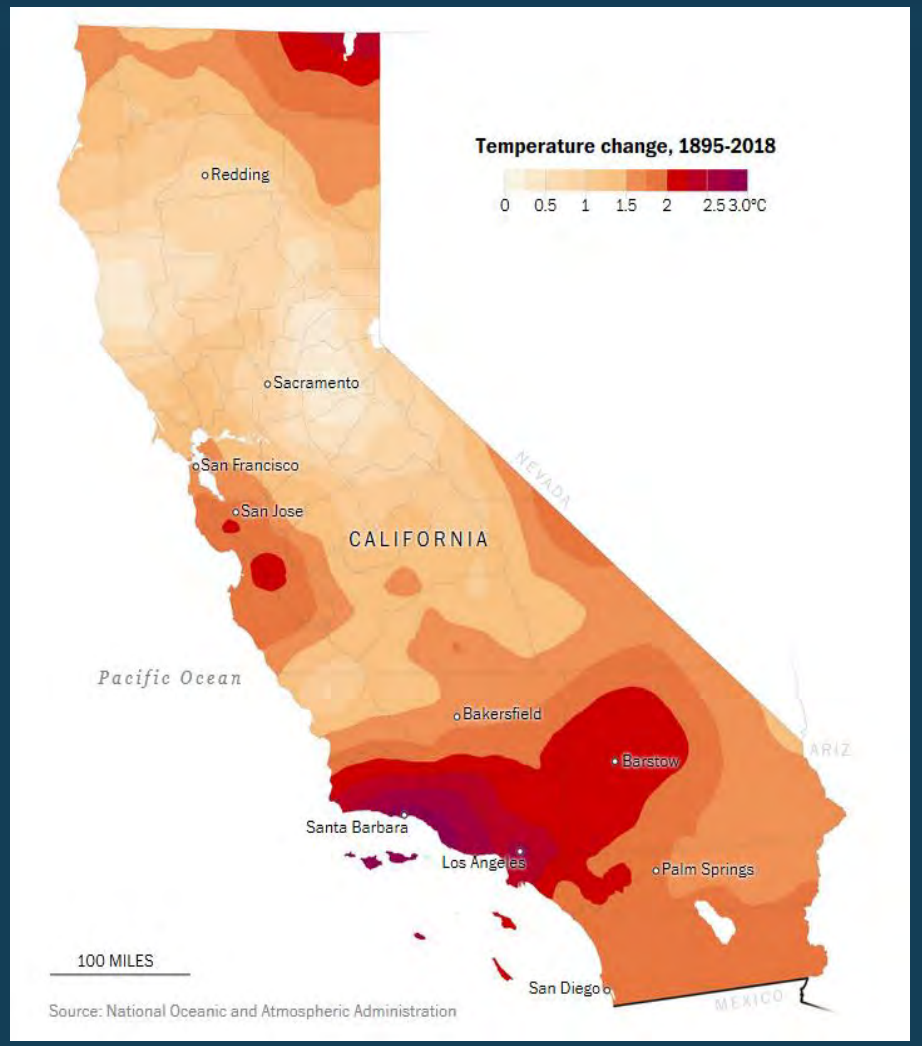
Senate Bill 379 – Safety Element of a General Plan and Local Hazard Mitigation Plan to address climate adaptation

Senate Bill 1035 – Safety Element regular updates to address climate change as part of Housing Element and Local Hazard Mitigation Plan updates

Senate Bill 1000 – Environmental Justice Element to be prepared when two or more elements are updated and the city or county has a disadvantaged community

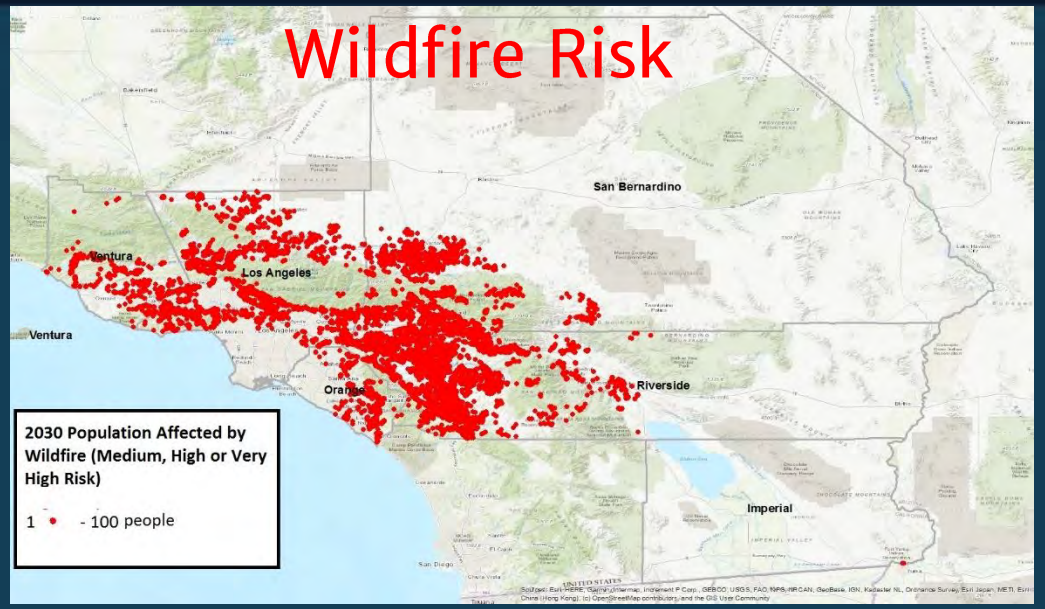
Climate Change Impacts in the SCAG Region

- *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*



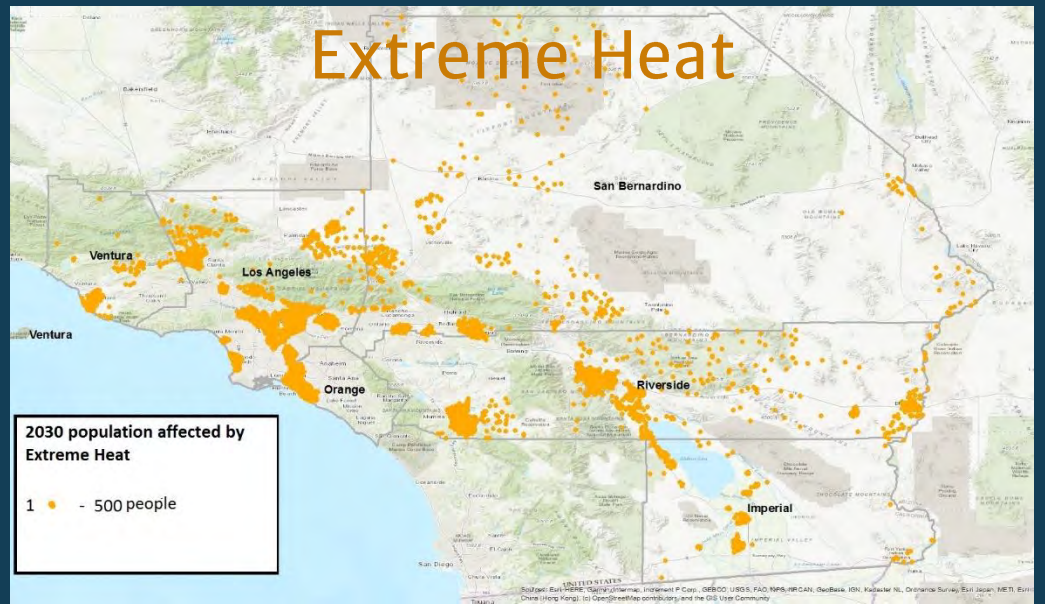
Widespread Impacts

Wildfire Risk

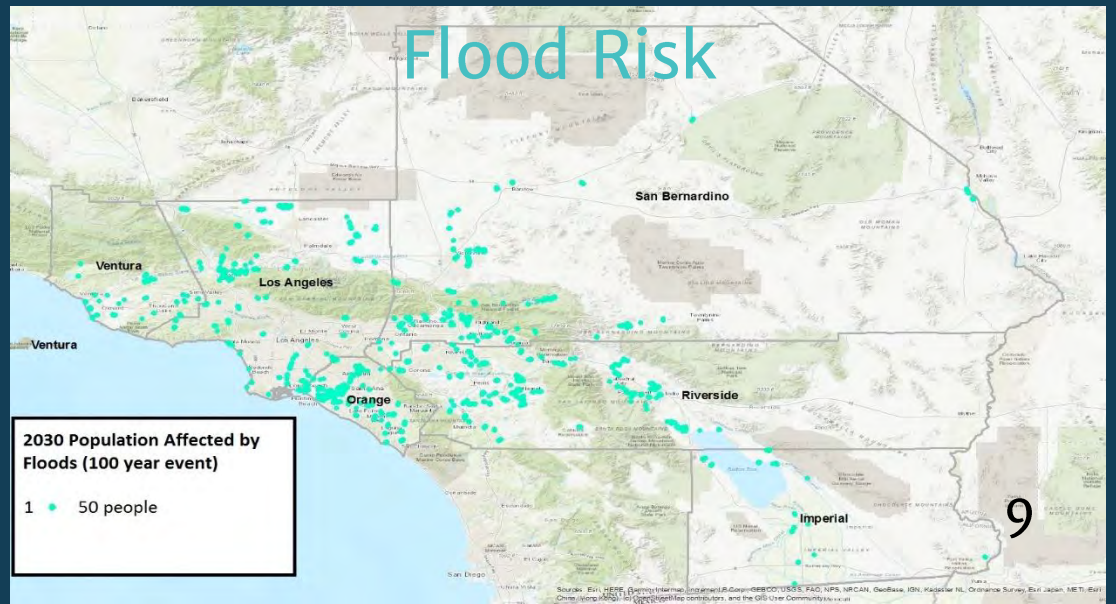


Sea Level Rise

Extreme Heat



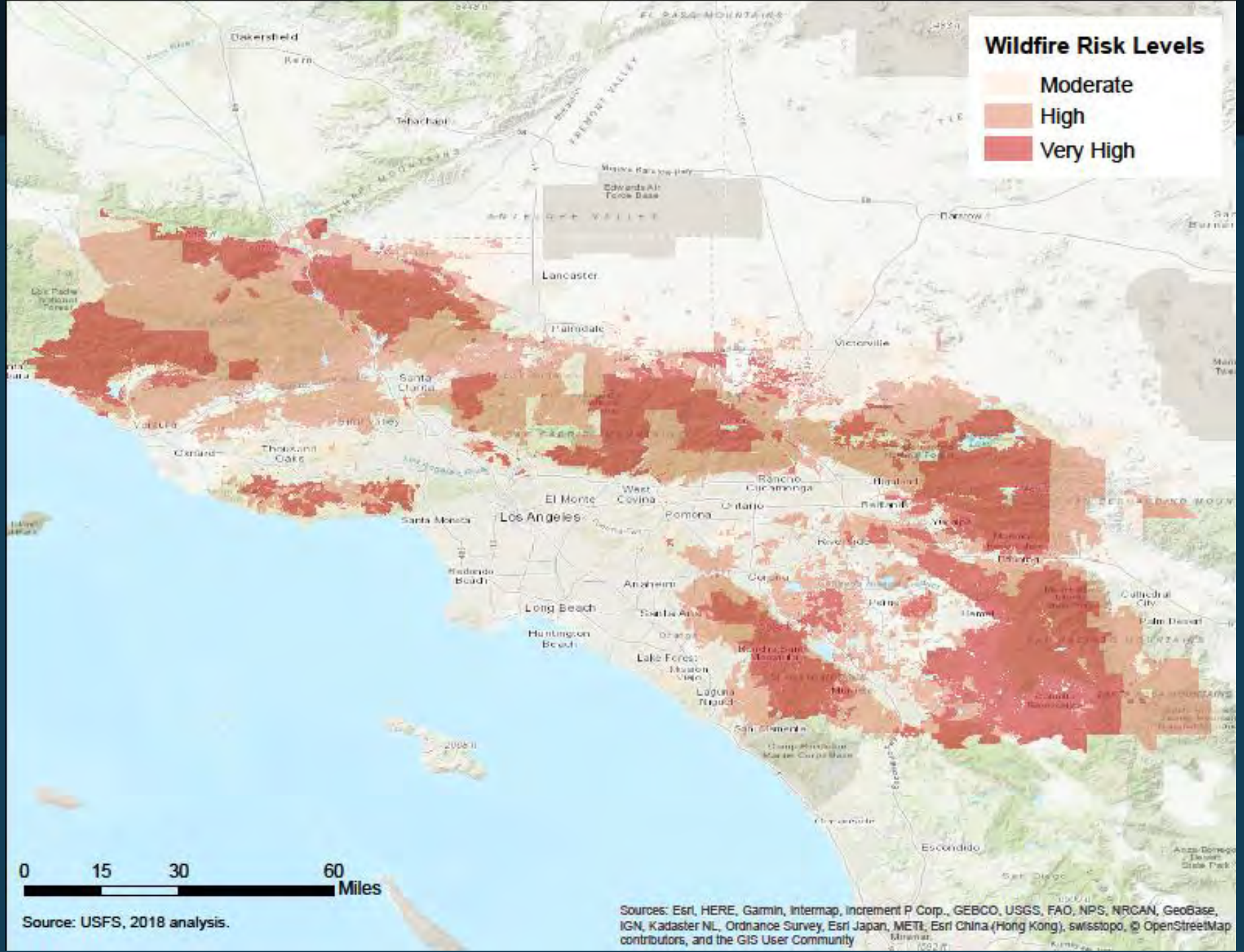
Flood Risk

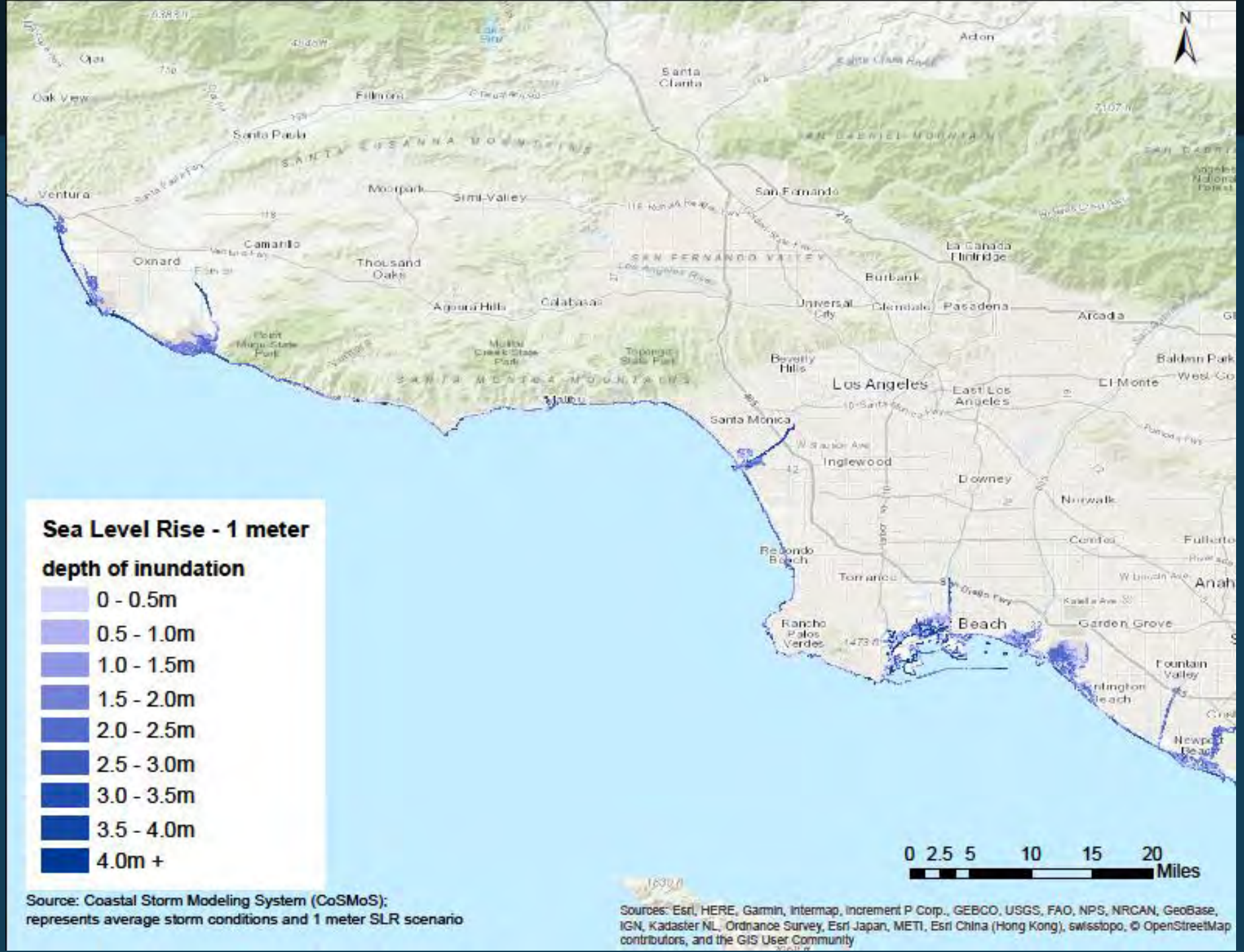


Raw Affected Demographics and Relocation Scenario Totals

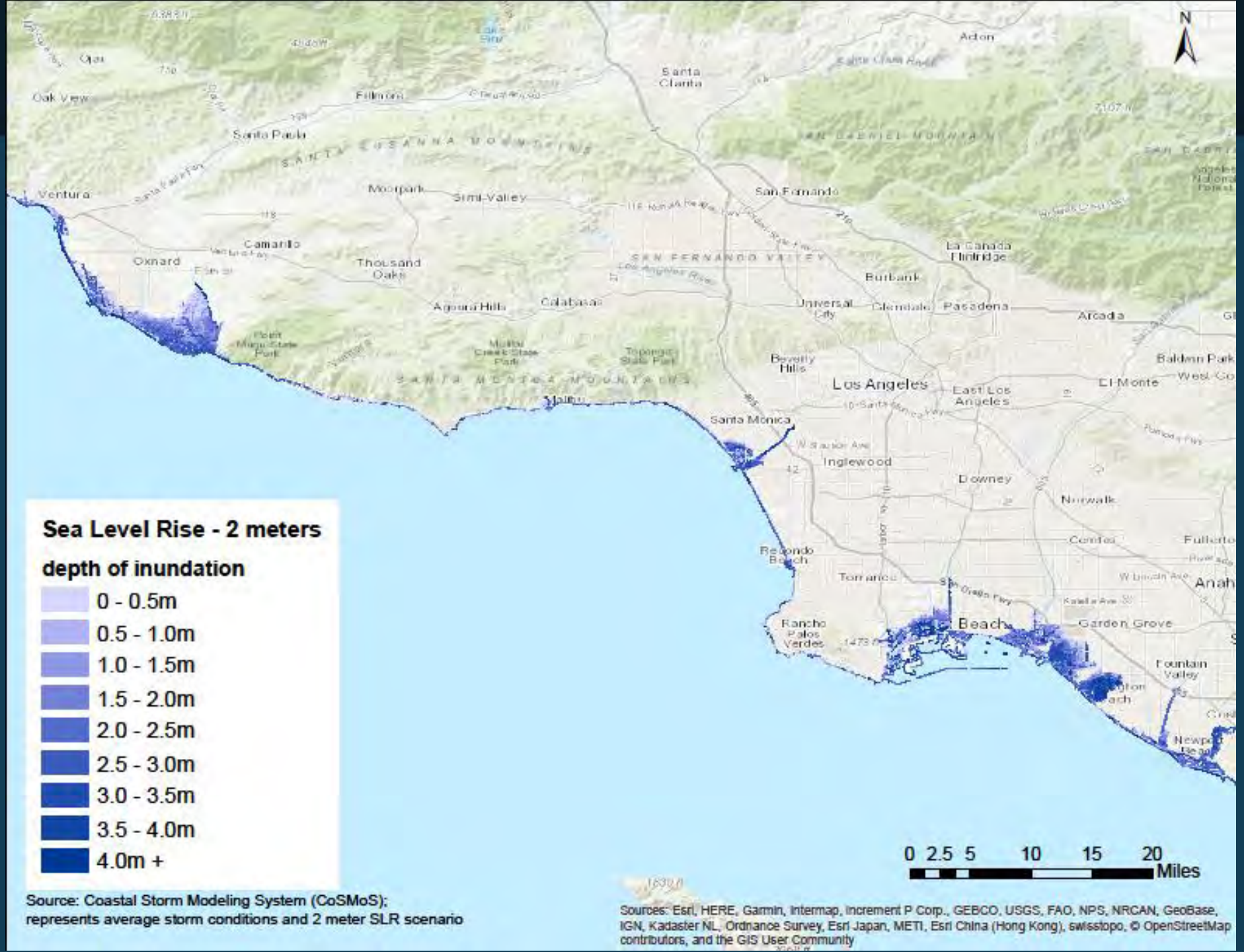
Total Affected Demographics			
Wildfire Risk	**2030 Pop**	**2030 Emp**	**2030 HHs**
Moderate	563,340	182,184	186,648
High	547,288	146,994	181,494
Very High	61,873	14,083	23,309
Very High (Stranded)	228,299	54,099	84,721
Total	1,400,800	397,360	476,172
Flood Risk	**2030 Pop**	**2030 Emp**	**2030 HHs**
A 100 year events	311,145	158,088	105,174
Sea Level Rise (1m)	**2030 Pop**	**2030 Emp**	**2030 HHs**
SLR Affected	371,624	214,219	163,585
Stranded	12,433	6,436	6,388
Total	384,057	220,655	169,973
Extreme Heat Health Events	**2030 Pop**	**2030 Emp**	**2030 HHs**
	6,250,328	2,361,705	2,153,175
Total Affected	**2030 Pop**	**2030 Emp**	**2030 HHs**
	8,346,330	**3,137,808**	**2,904,494**
Regional Totals 2030	**Pop**	**Emp**	**HH**
	20,803,607	6,924,493	9,203,450
Total Percentage Affected	40%	45%	32%

ALL SCENARIOS COMBINED			
Wildfire Risk Relocation	**Realloc_pop30**	**Realloc_emp30**	**Realloc_hh30**
Moderate	136,339	44,363	45,072
High	272,104	72,857	90,186
Very High	46,116	10,369	17,395
Stranded	228,299	54,099	84,721
Total	682,858	181,688	237,374
Flood Risk (Calculated only for 100 year events)	**Realloc_pop30**	**Realloc_emp30**	**Realloc_hh30**
A 100 year events	19,544	11,197	6,234
Sea Level Rise (1m)	**Realloc_pop**	**Realloc_emp**	**Realloc_hh**
SLR Relocation	45,058	28,137	21,157
Stranded	12,433	6,436	6,388
Total	57,491	34,573	27,545
Extreme Heat Health Events	**Realloc_pop**	**Realloc_emp**	**Realloc_hh**
	192,198	71,801	63,280
Total	**Realloc_pop**	**Realloc_emp**	**Realloc_hh**
	952,091	**299,259**	**334,433**
Regional Totals 2030	**Pop**	**Emp**	**HH**
	20,803,607	6,924,493	9,203,450
Total Percentage Relocated	5%	4%	4%


Wildfire Risk Levels
Moderate
High
Very High
Bakersfield
Kern
Tehachapi
Edwards Air Force Base
Lancaster
Palmdale
Victorville
Santa Clarita
Valencia
Oxnard
Thousand Oaks
El Monte
West Covina
Los Angeles
Santa Monica
Pomona
Ontario
Rancho Cucamonga
Redondo Beach
Anaheim
Long Beach
Santa Ana
Huntington Beach
Lake Forest
Laguna Niguel
Escondido
0 15 30 60
Miles
Source: USFS, 2018 analysis.
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap contributors, and the GIS User Community

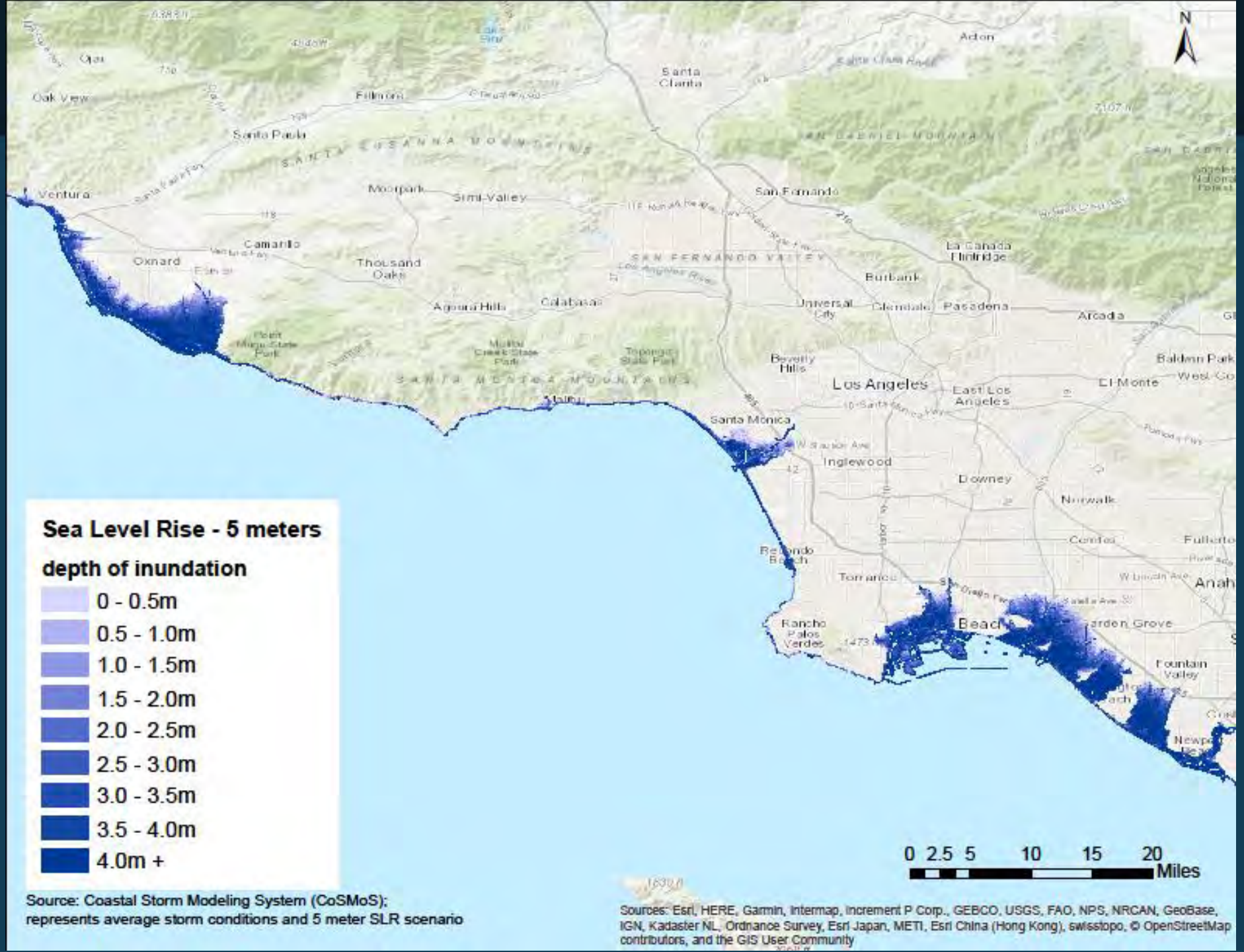


Source: Coastal Storm Modeling System (CoSMoS); represents average storm conditions and 1 meter SLR scenario

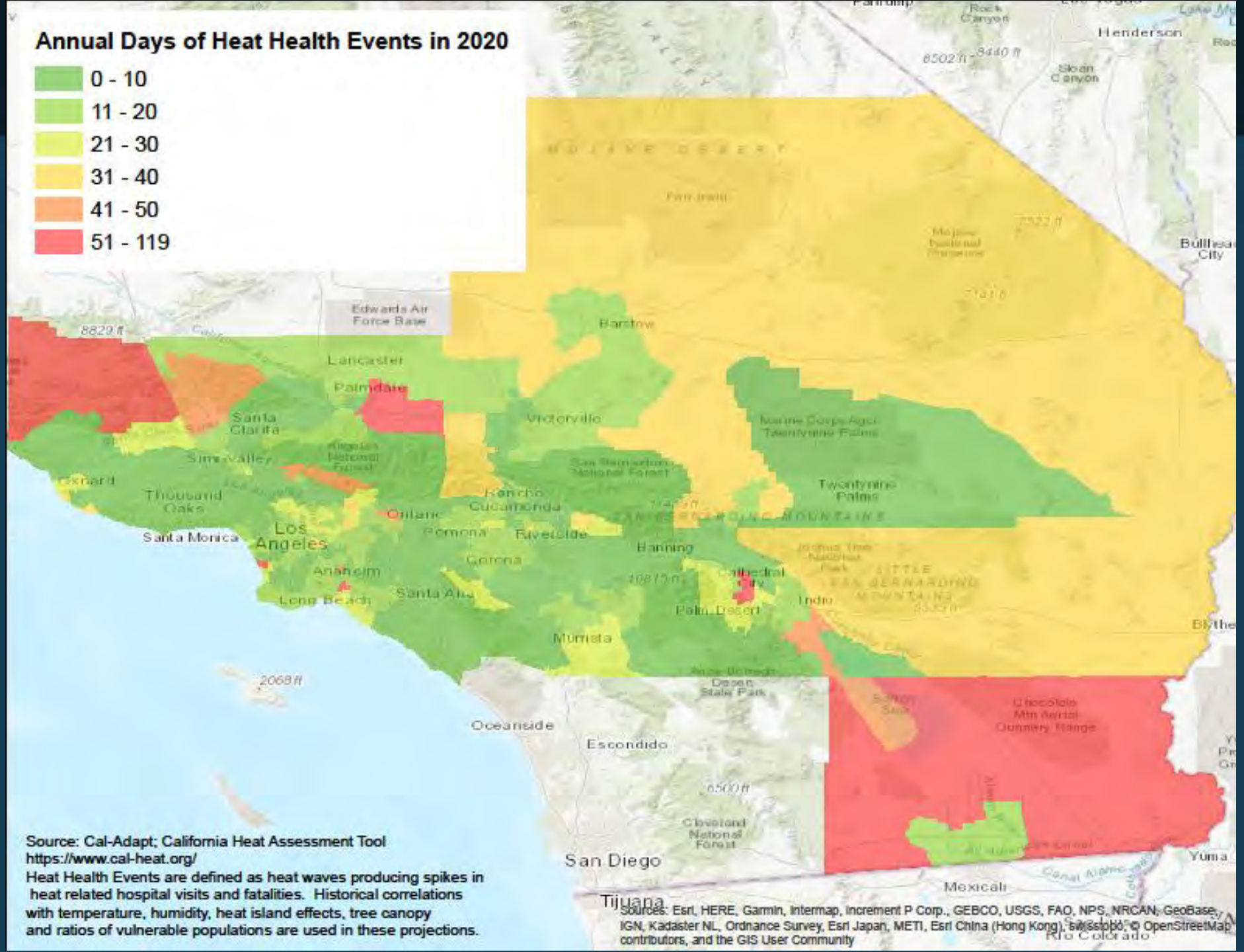


Source: Coastal Storm Modeling System (CoSMoS); represents average storm conditions and 2 meter SLR scenario

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap contributors, and the GIS User Community



Source: Coastal Storm Modeling System (CoSMoS); represents average storm conditions and 5 meter SLR scenario


Annual Days of Heat Health Events in 2020
0 - 10
11 - 20
21 - 30
31 - 40
41 - 50
51 - 119
Source: Cal-Adapt; California Heat Assessment Tool
https://www.cal-heat.org/
Heat Health Events are defined as heat waves producing spikes in heat related hospital visits and fatalities. Historical correlations with temperature, humidity, heat island effects, tree canopy and ratios of vulnerable populations are used in these projections.
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap contributors, and the GIS User Community
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Pomona
Riverside
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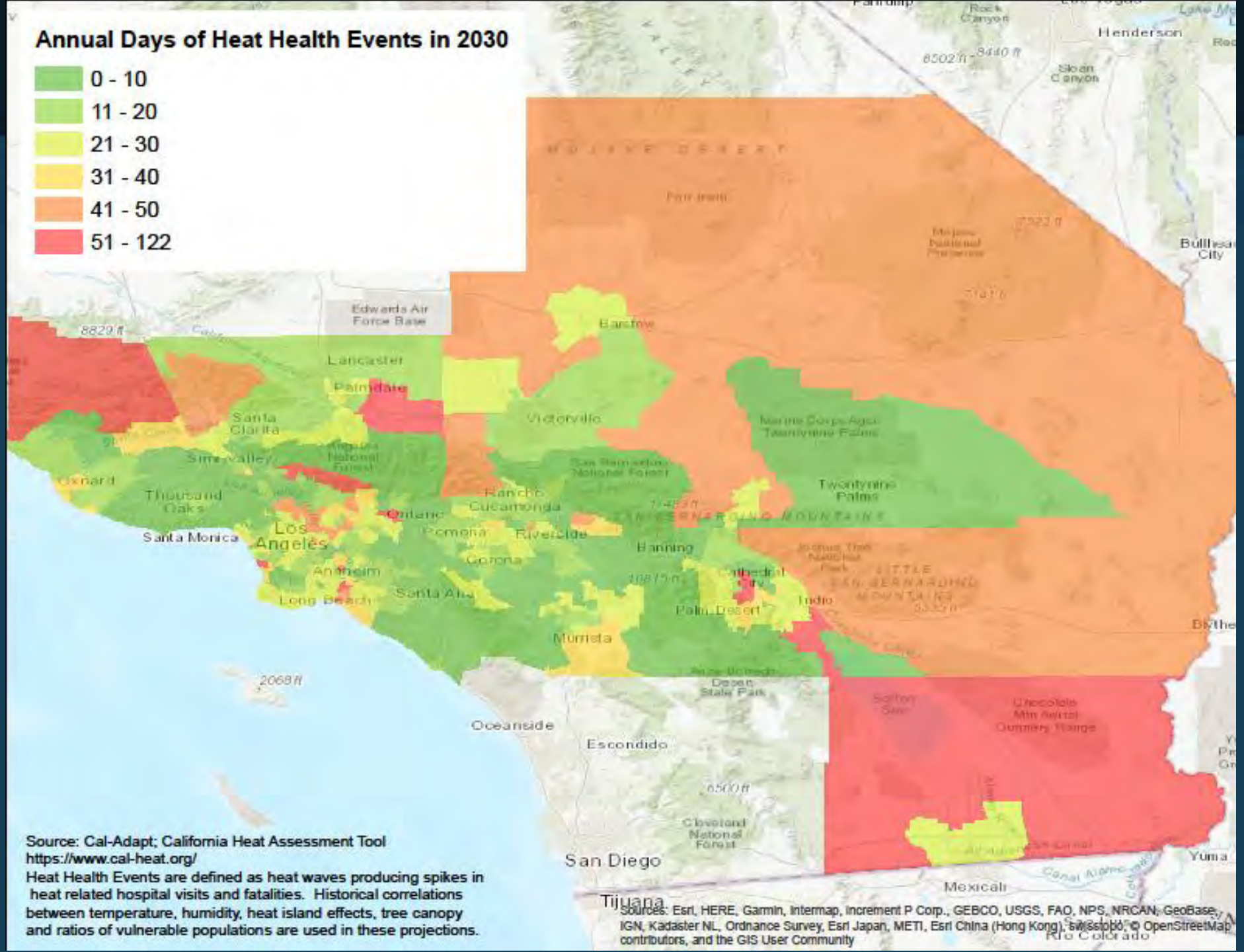
Corona
Murrieta
Palm Desert
Indio
Oceanside
Escondido
San Diego
Tijuana
Mexicali
Yuma
Bullhead City


Annual Days of Heat Health Events in 2030
0 - 10
11 - 20
21 - 30
31 - 40
41 - 50
51 - 122
Source: Cal-Adapt; California Heat Assessment Tool
https://www.cal-heat.org/
Heat Health Events are defined as heat waves producing spikes in heat related hospital visits and fatalities. Historical correlations between temperature, humidity, heat island effects, tree canopy and ratios of vulnerable populations are used in these projections.
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap contributors, and the GIS User Community
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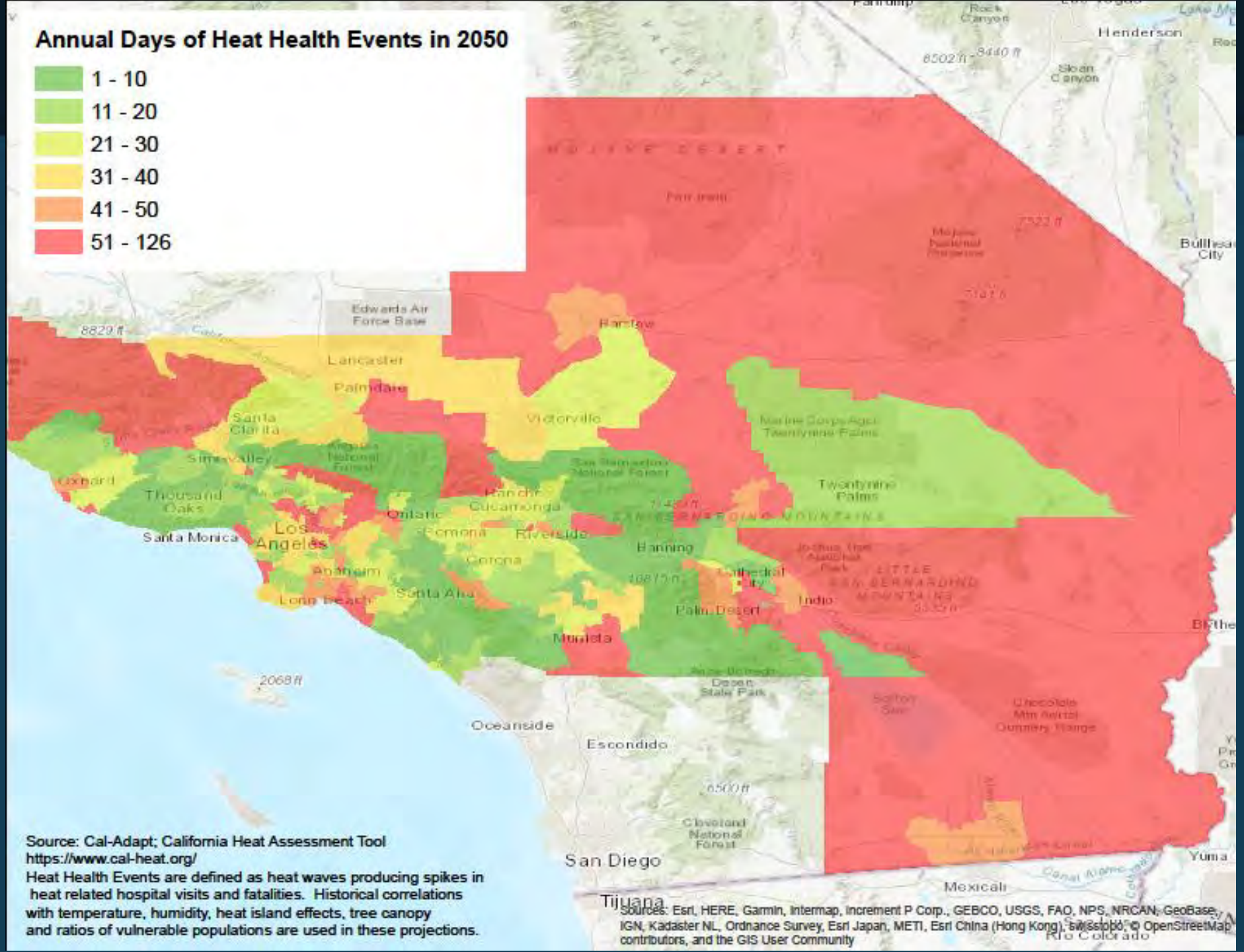
Indio
Palm Desert
Murrieta
Oceanside
Escondido
San Diego
Tijuana
Mexicali
Yuma
Rio Colorado


Annual Days of Heat Health Events in 2050
1 - 10
11 - 20
21 - 30
31 - 40
41 - 50
51 - 126
Source: Cal-Adapt; California Heat Assessment Tool
https://www.cal-heat.org/
Heat Health Events are defined as heat waves producing spikes in heat related hospital visits and fatalities. Historical correlations with temperature, humidity, heat island effects, tree canopy and ratios of vulnerable populations are used in these projections.
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap contributors, and the GIS User Community
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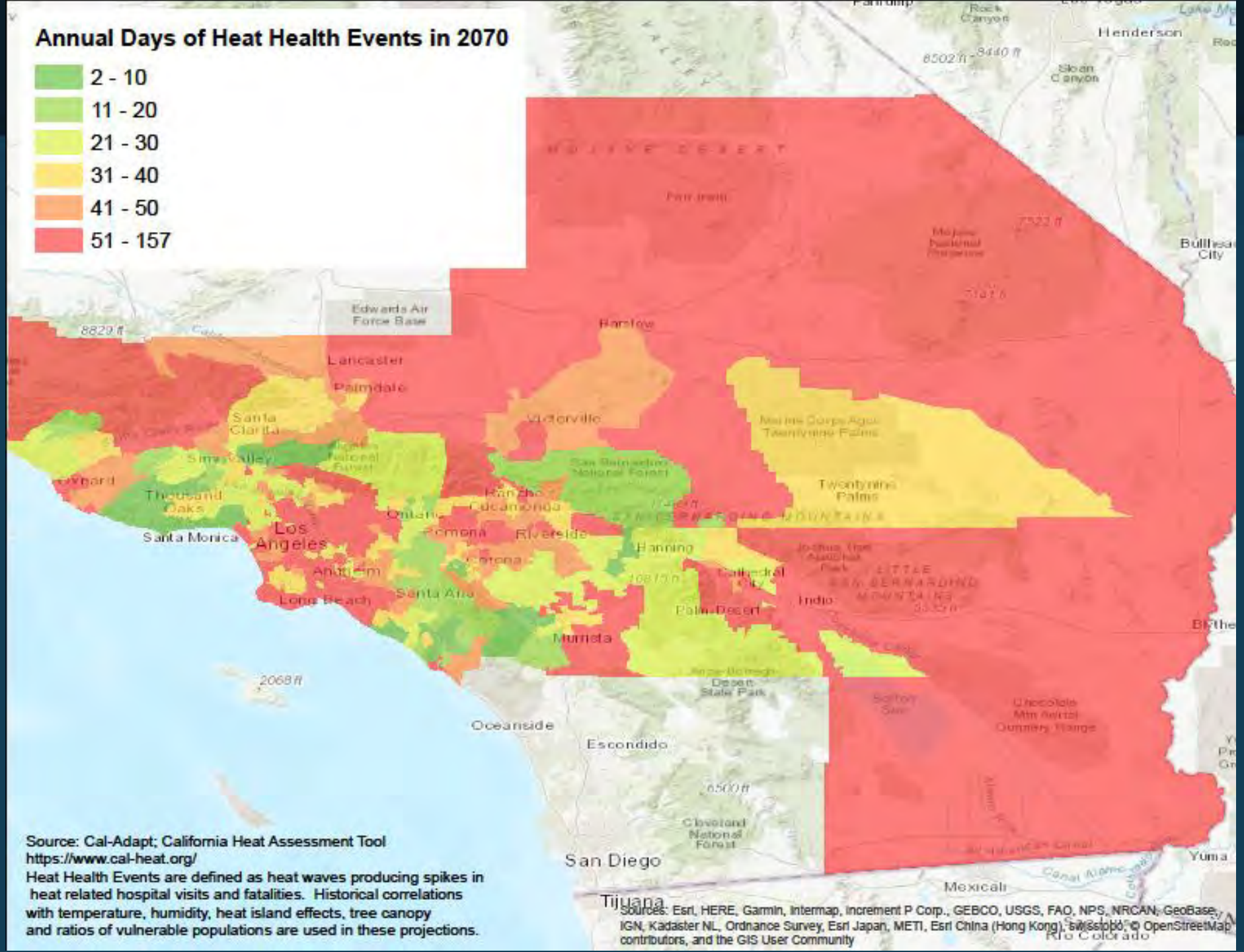
Bullhead City


Annual Days of Heat Health Events in 2070
2 - 10
11 - 20
21 - 30
31 - 40
41 - 50
51 - 157
Source: Cal-Adapt; California Heat Assessment Tool
https://www.cal-heat.org/
Heat Health Events are defined as heat waves producing spikes in heat related hospital visits and fatalities. Historical correlations with temperature, humidity, heat island effects, tree canopy and ratios of vulnerable populations are used in these projections.
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap contributors, and the GIS User Community
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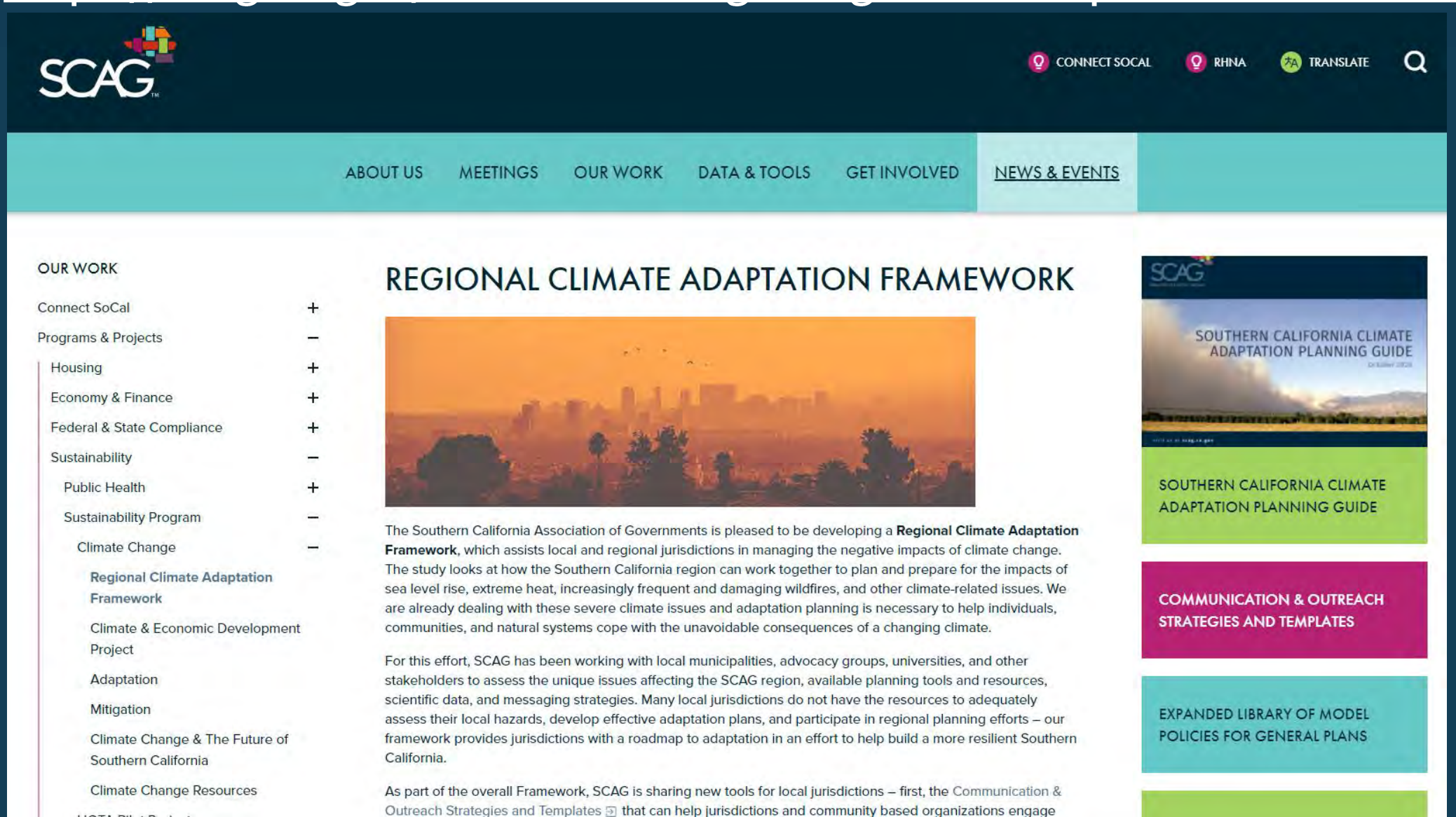
Palm Desert
Murrieta
Oceanside
Escondido
San Diego
Tijuana
Mexicali
Yuma

Four Phases of Climate Adaptation Planning

Project Website

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



PHASE 1

Explore, Define, and Initiate

Figure 8

Steps in Phase 1

Step 1.3: Identify Community Climate Hazards and Critical Assets at Risk

Goal: Identify climate change hazards that could impact the community and populations and assets that are at-risk.

Materials to Prepare

- Identification of capacity for adaptation planning
- Project budget estimate
- List of core project team members, and members of advisory body
- List of technical resources

The California APG provides detailed guidance on identifying climate change hazards and community assets at-risk. A brief summary of the guidance is provided here.

As described in the California APG, the goal of Phase 1 is to gain a preliminary understanding of climate change effects on the community to help support project scoping. To inform the detailed vulnerability assessment in Phase 2, identify the climate-related hazards expected to impact the community, as well as the types of community assets potentially at risk from those hazards. These climate-related hazards and community assets will be refined during Phase 2 as a result of stakeholder and community outreach efforts. *See Jurupa Valley example.*

Identify Current and Future Climate-related Hazards

Climate-related hazards can be organized into the following categories, described in more detail in the Background and Setting chapter:

- Extreme Heat
- Sea-level Rise/Coastal Flooding and Erosion
- Severe Storms/Wind
- Inland Flooding
- Drought
- Wilfire
- Air Quality and Vector Borne Diseases
- Landslides
- Pest and Ecological Hazards

Additional Tools and Resources for identifying Vulnerable Communities:

- Vulnerable Populations: CalEnviroScreen 3.0 is an online screening tool that identifies communities that are disproportionately burdened by and vulnerable to various sources of pollution based on existing pollution burden and environmental effects as well as population-based disparities.
- Disadvantaged Communities: Locate disadvantaged communities as defined by CalEPA for the purposes of funding projects pursuant to SB 535 using the SB 535 Online Mapping Application of Disadvantaged Communities based on CalEnviroScreen criteria.
- The SB 1000 Toolkit includes guidance and resources for identifying disadvantaged communities.
- Planning and Investing for a Resilient California: The Vulnerable Populations Appendix identifies vulnerable populations and explains why these populations may be disproportionately impacted by climate change. The Equity Checklist includes a list of questions that can be used to guide a planning phase or decision-making process with the intent of ensuring equitable community engagement and more equitable outcomes for vulnerable populations.
- The Regional Resilience Toolkit offers guidance regarding identifying disadvantaged communities. Additionally, the Stakeholder Identification and Stakeholder Mapping Worksheets in Appendix B are intended to facilitate the identification of vulnerable communities and key stakeholders within the communities that should be included in the planning process.
- California Heat Assessment Tool is an online mapping tool that identifies population groups by census tracts that are particularly vulnerable to heat events.
- The California Healthy Places Index (HPI) is an online mapping tool that reports on community conditions related to health outcomes. Data can be displayed at the census tract level, city, county and other boundaries. The Healthy Places Index allows users to see how existing conditions for health intersect with areas of climate hazards. The HPI Policy Guide includes strategies designed to improve health while also building climate resilience.

PHASE 2

Assess Vulnerability

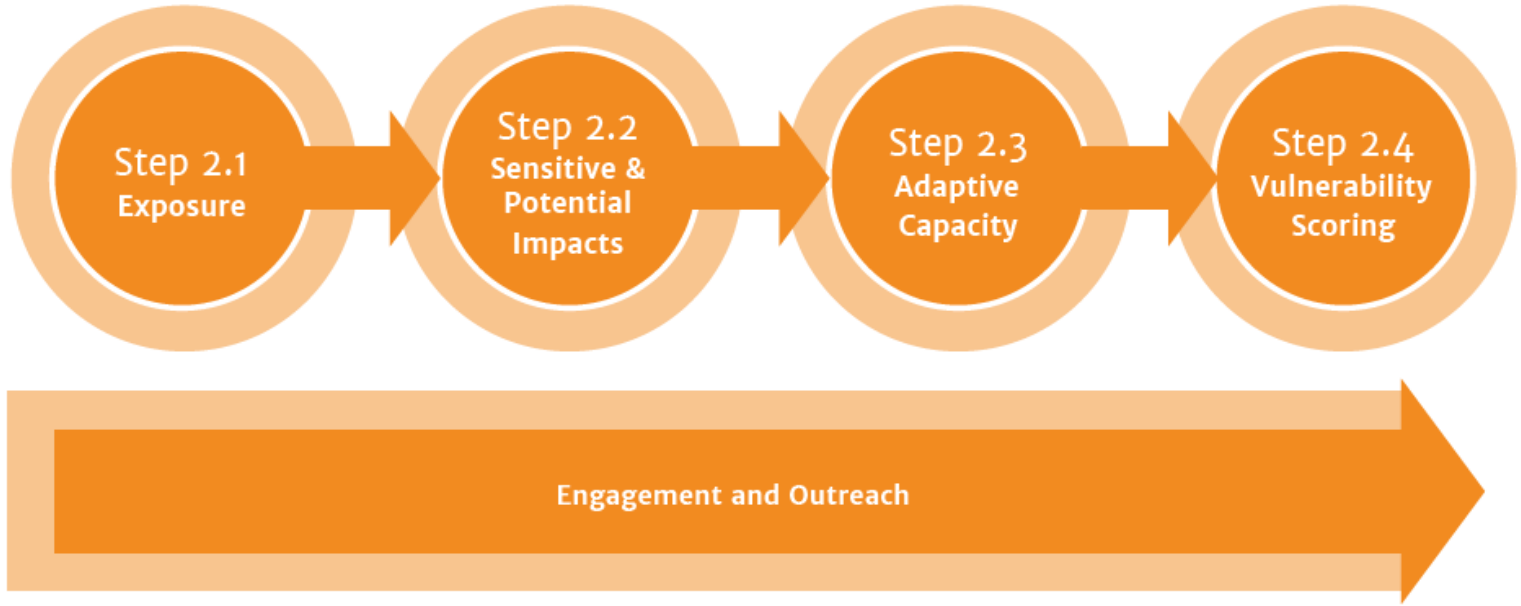


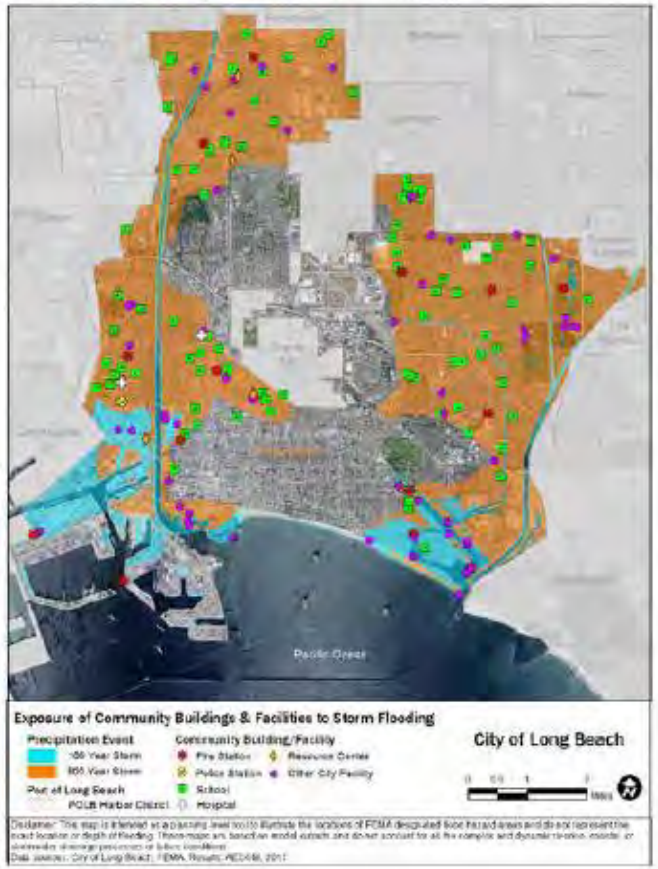
Figure 2.1 – Steps in Phase 2

Example of Exposure Map overlain with Community Assets

CITY OF LONG BEACH

Climate Change Vulnerablity Assessment Results (2018)

Figure 10: Exposure of Buildings and Facilities to Riverine Flooding



PHASE 3

Develop and Prioritize Strategies

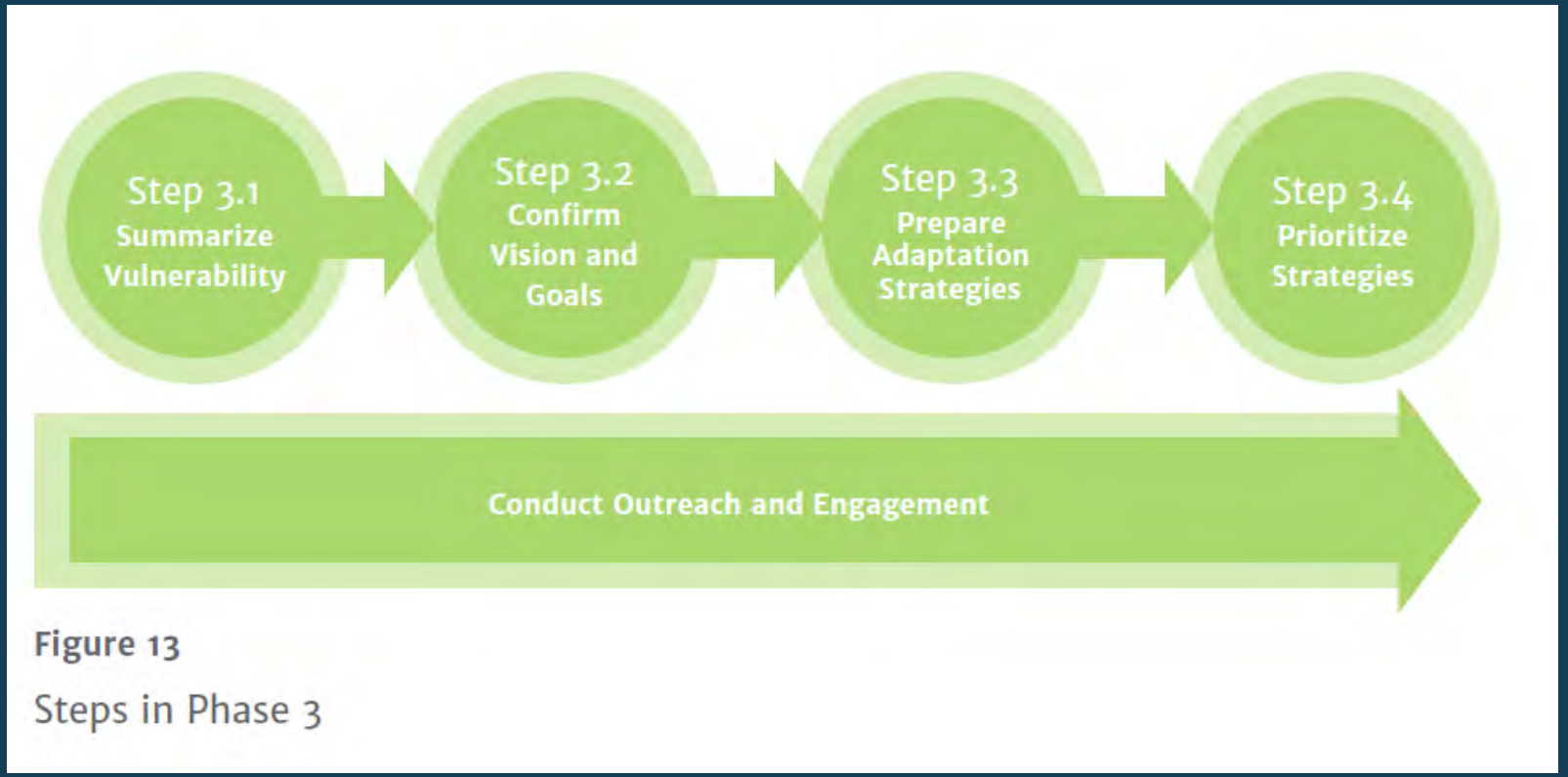


Figure 13

Steps in Phase 3

Step 3.3: Prepare Adaptation Strategies

In addition to the California APG there are many useful resources for identifying potential adaptation strategies

Goal: Develop ada strategies to addr community's vuln climate change ha

Materials to prepare

A list of adaptation strategies that address the problem statements developed in Step 3.1.

The problem statements or issue stat in Step 3.1 can be useful in identifying strategies needed to increase resilien most critical assets. The California AP on how to draft a strategy to support objectives developed in Step 3.2, and vulnerabilities and problem statemen 3.1. As explained in the California APG strategies should be developed within appropriate to the planning context – program being developed or updated plan safety element, climate action or local hazard mitigation plan, or other terminology used by the strategies sh with the policy/planning document w reside. *See Step 4.1 on creating an imple*

	A	B	C	D
1	Climate Change Hazard	Asset	Strategy	Action
81	Inland Flood	Buildings and Facilities	Account for climate change impacts when designing and approving future projects and retrofitting existing projects	Require accounting of flood risk in all applications for new development flood prone areas. Ensure that all applications for new development account for projected precipitation changes and provide adequate protection or design accommodations.
82	Inland Flood	Multiple Assets	Adapt river and reservoir management to accommodate changing precipitation patterns	Dredge river channels to increase flood capacity
83	Inland Flood	Multiple Assets	Adapt river and reservoir management to accommodate changing precipitation	Coordinate with water districts to explore reservoir management and operations options for improving river flood management in anticipation of changing precipitation patterns
84	Inland Flood	Biodiversity and Habitat	Build or expand flood defenses	Construct "living levees" by creating gently-sloping upland, transition, and wetland habitats between the levee and river
85	Inland Flood	Multiple Assets	Build or expand flood defenses	Upgrade or rebuild existing levees, flood walls, or other flood defenses along creeks and rivers to increase flood capacity of the channel
86	Inland Flood	Wastewater Treatment	Build or expand flood defenses	Increase the resiliency of wastewater plants and systems to flooding and severe weather.
87	Inland Flood	Stormwater	Design and utilize green infrastructure to provide adaptation benefits	Prioritize low-impact development (IID) stormwater practices in areas where storm sewers may be impaired by high water due to flood waters.
88	Inland Flood	Stormwater	Design and utilize green infrastructure to provide adaptation benefits	Where possible, use pervious pavement (e.g., for bicycle and pedestrian pathways) to increase water infiltration.
89	Inland Flood	Buildings and Facilities	Design buildings and facilities to minimize vulnerability to flood hazards	Elevate the first floor up to elevations above target flood levels accounting for projected precipitation changes.
90	Inland Flood	Buildings and Facilities	Design buildings and facilities to minimize vulnerability to flood hazards	Modify building design standards so that the second floor is above the target flood level and contains flood-sensitive features, while the first floor is used for parking and/or storage and is designed to be durable and resilient to flood damage. Target flood level
91	Inland Flood	Multiple Assets	Design buildings and facilities to minimize vulnerability to flood hazards	Raise buildings and roads by placing fill to rebuild the grades at higher elevations. Rebuild all connecting roads, trails, and utilities to slope up to the new grade. Elevation should account for projected precipitation changes.
92	Inland Flood	Biodiversity and Habitat	Design restoration of riparian corridors and wetlands in floodplains to be resilient to climate change	Choose plant species for restoration sites that are less vulnerable to flooding
93	Inland Flood	Biodiversity and Habitat	Design restoration of riparian corridors and wetlands in floodplains to be resilient to climate change	Establish transitional and upland habitat in restoration sites where feasible
94	Inland Flood	Biodiversity and Habitat	Design restoration of riparian corridors and wetlands in floodplains to be resilient to climate change	Require adaptive management plans for restoration/mitigation sites within floodplains to consider increased flooding potential
			Design restoration of riparian corridors and	Restore riparian corridors, soft-bottomed streambeds, and seasonal flood basins that

Instructions | Strategies and Actions | Sources

SoCal Adaptation Planning Guide

PHASE 4

Implement, Monitor, Evaluate, and Adjust

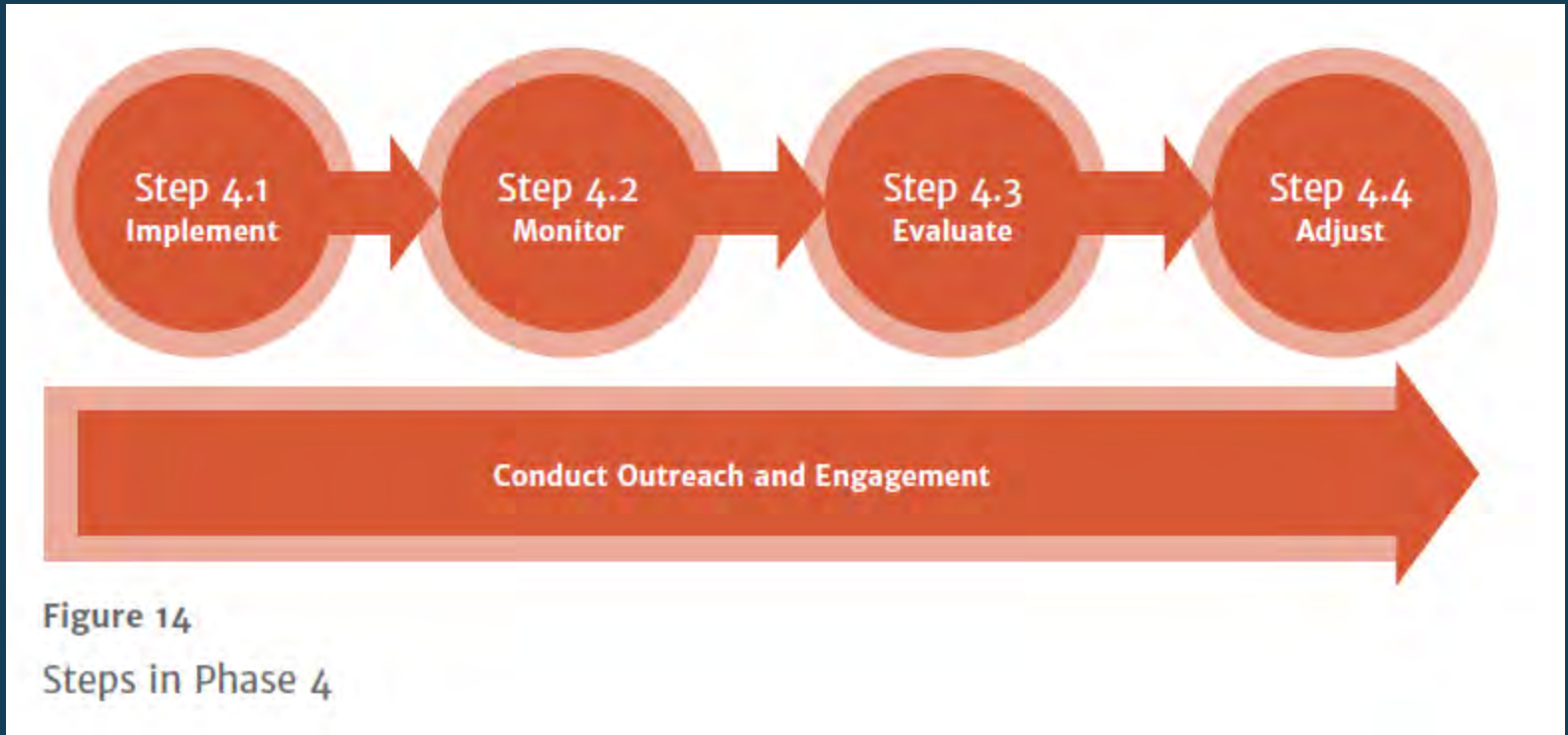


Figure 14

Steps in Phase 4

Model Policies for Local Coastal Programs & General Plans

Model policies organized by general plan element and climate hazard type

- Elements:
  - Environmental Justice
  - Circulation
  - Land Use
  - Safety
- Hazards:
  - Multiple hazards
  - Extreme heat
  - Air quality and human health
  - Other climate-related hazards

Climate Adaptation Model Policies for General Plans
November 2020

Safety Element

Multiple Hazards

- **Identify Local Transit Agency's Role in Providing Evacuation Assistance.** Incorporate in the Local Hazard Mitigation Plan and any local emergency response plans, the role of the local transit agency(s) in providing evacuation assistance based upon the duration and severity of events related to climate change impacts.
- **Consider Vulnerability of Agricultural Operations as part of Climate Change Planning Process.** If the community includes agricultural uses, include vulnerability of agricultural operations as part of the climate change and/or adaptation planning process including assessments of climate, physical environment, farm-level factors and socio-economic forces.
- **Engage Stakeholders from the Agriculture Sector in Climate Change Planning Process.** If the community includes agricultural uses, ensure that all stakeholders, including industry specialists, farm operators, and other community groups are identified and engaged in all planning and policy development related to climate change and/or adaptation.
- **Encourage the Use of Williamson Act in the Zoning Ordinance.** Adopt provisions within the Community's zoning ordinance to encourage the use of the Williamson Act for preservation of agricultural lands and/or open space. The Williamson Act encourages the preservation of land for open space, forestry and agricultural operations through an easement and reassessment of the property. This can aid in carbon sequestration, protection of food supply, inland floodplain protection, or sensitive habitats to offset costs and provide additional land to mitigate climate change impacts.
- **Implement a Policy of Retreat.** Implement a policy of retreat for areas at-risk for repeated damage due to climate change hazards, such as areas of high subsidence, extreme wildfire risk, and floodplains to allow for natural modification of the landscape and reduction in risk to property and life.
- **Develop an Inclusive Public Outreach and Engagement Strategy.** As climate change and its associated

Project Checklists

TABLE 1
PROJECT SCREENING THRESHOLDS FOR CLIMATE HAZARDS (FOR PROJECT PROPONENT TO COMPLETE)

Climate Hazard	Screening Threshold Questions *(If the answer to any of the following questions is "Yes", then the checklist for that hazard must be completed*	Links or Sources of Information
Drought	• Would project consume water resources in its construction or operation and if so, are the water sources supplying the project at risk from drought? Yes ☐ No ☐	Urban Water Management Plan applicable to the project's location
Extreme Heat	• Is the area where your project is located expected to experience more than 30 heat health days per year over the project lifetime? Yes ☐ No ☐	Maps based on California Heat Assessment Tool (CHAT): https://www.cal-heat.org/
Inland Flooding	• Is the project located in the 100-year or larger FEMA floodplain, otherwise known as the 1% annual chance flood? Yes ☐ No ☐ • Using Cal-Adapt, will the project watershed be subject to an increase of extreme precipitation events? Yes ☐ No ☐	FEMA Flood Maps: https://msc.fema.gov/portal/home
Landslides	• Is the project located in area of moderate or high susceptibility to landslide hazards? Yes ☐ No ☐	USGS landslide susceptibility map: https://maps.conservation.ca.gov/cgs/lsi/
Sea Level Rise/ Coastal Flooding	• Is the project in a SLR vulnerability zone, or will any infrastructure or resources that the project relies upon be affected by SLR (e.g., beaches, groundwater)? Yes ☐ No ☐	Use detailed local SLR maps, if available. Alternatively, use Our Coast Our Future tool: http://data.pointblue.org/apps/ocof/cms/index.php?page=flood-map
Wildfire	• Is the project located in a high or very high fire hazard zone? Yes ☐ No ☐	CalFIRE Maps - https://osfm.fire.ca.gov/divisions/wildfire-planning-engineering/wildland-hazards-building-codes/fire-hazard-severity-zones-maps/

Template for incorporating climate change adaptation elements into local project approval process:

- Residential and commercial development
- Infrastructure projects

Two-step process:

1. Suggested screening thresholds for 6 hazards
2. Detailed checklist for each hazard

Project Checklists

Extreme Heat Checklist

Over the coming decades the SCAG region can expect longer and hotter heat waves. Average maximum temperatures are projected to increase around 4-5 degrees F by the mid-century, and 5-8 degrees F by the late-century. Extreme temperatures are also expected to increase in duration and intensity.

Exposure

1. **Historical exposure:** Has the site historically experienced extreme heat events? (*Provide supporting evidence. If yes, please describe past events or conditions: e.g., long heat spells, hot nights, etc.*)

   ☐ Yes ☐ No Basis for conclusion: ____

2. **Future Conditions over Project Lifetime:**

   ☐ Extreme heat events are expected to increase in duration and/or intensity.

   ☐ Extreme heat events are not expected to increase in duration and/or intensity

   ☐ Extreme heat events are expected to remain about the same.

   ☐ Unknown.

3. **Identify data source(s) or map(s)/modeling used for assessing past and future exposure of the asset** (check all that apply):

   ☐ California Heat Assessment Tool (CHAT) found at https://www.cal-heat.org

   ☐ Cal-Adapt

   ☐ Site Specific Modeling (please provide date and source of information): ____

Sensitivity

1. **Human Health:** Using the CHAT (www.cal-heat.org), determine the Heat Vulnerability Index (HVI) for the census tract where the project is located: _____.
   Areas with HVI values over 50 are considered highly vulnerable to heat-related health impacts.

2. **Physical Asset:** Assess sensitivity to the climate hazard based on the following criteria:

   ☐ **Low Sensitivity**: Climate hazard would have little or no impact on the asset's physical components or how the project functions.

   ☐ **Moderate Sensitivity:** Climate hazard would have an impact on the project's physical components and/or its functionality, but the project would recover quickly once hazard subsides. The project would retain some ability to function while exposed.

   ☐ **High Sensitivity:** Climate hazard would have a significant impact on the project/asset(s) physical components and/or its functionality, and the project would not recover quickly once the hazard subsides. The project would lose major functionality while exposed.

For each hazard of potential concern:

a. Assess project's vulnerability based on exposure and sensitivity
b. Assess potential consequences based on:
   I. Estimated level of asset damage
   II. Level of disruption of asset service or function
   III. Cost to replace and/or repair and cost of losing the service/function of the asset

Project Checklists

Adaptation Assessment

Project Adaptation Measures:
From the following list of adaptation measures, identify those that the project will incorporate to increase adaptive capacity to extreme heat. For all "no" answers provide additional explanatory information, including whether the measure is not applicable to the project.

Robustness	1. **Would project expand and maintain the urban tree canopy?** (e.g., by increasing tree cover for large parking lots) ☐ Yes ☐ No ____ 2. **Would the project expand the use of cool roofs and reflective building materials?** ☐ Yes ☐ No ____ 3. **Would the project use alternative vegetative solutions to alleviate urban heat island: for example, green walls and green roofs where trees are not possible?** ☐ Yes ☐ No ____ 4. **Would the project expand the use of cool, porous, high-reflectivity pavement or sustainable materials in pavements?** ☐ Yes ☐ No ____
Resilience	5. **Would the project use alternatives to grid-powered air conditioners for cooling, such as propane air conditioners, fans and cold water systems?** ☐ Yes ☐ No ____
Adaptability	6. **Would the project limit or remove impervious surfaces to help combat urban heat island effects?** ☐ Yes ☐ No ____ 7. **Does the project expand access to cooling centers for vulnerable populations to use during heat health events?** ☐ Yes ☐ No ____
Redundancy	8. **Would the project have at least 2 routes for emergency vehicle access to allow for emergency services/first responders to access people at project site in the event of an emergency?** ☐ Yes ☐ No ____

c. Assess project's adaptive capacity, based on the adaptation measures incorporated into its design
   i. Suggested measures: customize to local needs
   ii. Utilize the Strategy Matrix

Vulnerability Mapping and Assessment Tool

- ArcGIS Online and ESRI StoryMaps web-based tools
- Overlay risks with demographics in your community
- Select areas of interest
- Explore scenarios and model results

	Layer	Geography	Key Fields	Use	Source
Main layers	Sea Level Rise, 1m, avg storm conditions	Extent of inundation	Depth of inundation	Vulnerability mapping	COSMOS
	Wildfire Risk	Extent of risk	Level of risk	Vulnerability mapping	Urban Footprint interpolation of USFS and CalFire
	Extreme Heat Health Impacts	Census tract	Annual days of HHE	Vulnerability mapping	Cal-Heat
	Flood Risk	Extent of inundation	100 yr flood plain, base flood plain	Vulnerability mapping	FEMA
	Stranded Zones SLR	TAZ	Stranded, partially stranded	Stranded Zones Analysis	Cambridge Systematics analysis
	Stranded Zones wildfire	TAZ	Stranded, partially stranded, extreme detour percentage	Stranded Zones Analysis	Cambridge Systematics analysis
	Relocation scenarios, phase 1	TAZ	Pop, HH, Emp added and removed for each scenario	Scenario Relocation Summary	Cambridge Systematics analysis
	Detailed SPZ intersect of vulnerability	SPZ	SLR, Wildfire risk categories, Flood risk		
	Relocation scenarios, phase 2	TAZ	Pop, HH, Emp added and removed for each scenario	Scenario Relocation Summary	Cambridge Systematics analysis
	Relocation scenarios, phase 1	dot density	Pop, HH, Emp added and removed for each scenario	Scenario Relocation Summary	Cambridge Systematics analysis
	Relocation scenarios, phase 2	dot density	Pop, HH, Emp added and removed for each scenario	Scenario Relocation Summary	Cambridge Systematics analysis
Other layers	SLR, 0.5 m	Extent of inundation	Depth of inundation	Vulnerability mapping	COSMOS
	SLR, 1.5 m	Extent of inundation	Depth of inundation	Vulnerability mapping	COSMOS
	SLR, 2 m	Extent of inundation	Depth of inundation	Vulnerability mapping	COSMOS
	SLR, 5m	Extent of inundation	Depth of inundation	Vulnerability mapping	COSMOS
	Wildfire Risk	Extent of risk	Level of risk	Vulnerability mapping	CalFire

Decision Tree Tool

AGENCY INFO				
Select the County you represent	Riverside			
Select City you represent	Hemet			
Total	**Population**	**Employment**	**Households**	**Housing Units**
County	2,429,222	896,201	811,649	2,906,153
City	125,684	37,793	49,159	129,274
DAC* Total	**DAC Population**	**DAC Employment**	**DAC Households**	**DAC Housing Units**
County	493,455	306,399	142,808	590,336
City	21,694	10,451	8,024	22,314
Wildfire	**Population**	**Employment**	**Households**	**Housing Units**
County	615,144	215,618	207,610	743,358
City	26,256	7,895	10,269	27,006
DAC Wildfire Affected	**DAC Population**	**DAC Employment**	**DAC Households**	**DAC Housing Units**
County	13,941	12,840	11,228	16,847
City	561	649	107	577
Sea Level Rise	**Population**	**Employment**	**Households**	**Housing Units**
County	-	-	-	-
City	-	-	-	-
DAC Sea Level Rise Affected	**DAC Population**	**DAC Employment**	**DAC Households**	**DAC Housing Units**
County	-	-	-	-
City	-	-	-	-
Flood	**Population**	**Employment**	**Households**	**Housing Units**
County	99,430	32,875	36,976	132,394
City	22,796	6,855	8,916	23,447
DAC Flood Affected	**DAC Population**	**DAC Employment**	**DAC Households**	**DAC Housing Units**
County	5,017	1,417	1,685	6,680
City	210	18	89	216

PROJECT INFO	
Questions	**Project**
Which hazard category do you want to look for projects in?	Extreme_Heat
If selected "Other", please mention hazard name	
Asset protected in said project	Vulnerable_Populations
If selected "Other", please mention protected asset name you are interested in	
Desired strategy	Improve access to air conditioning and cooling centers by vulnerable populations
If selected "Other", please mention your desired strategem	
Action item interested in	Encourage partnerships between local emergency responders and local health departments to identify and reach vulnerable populations in need of access to cooling centers or personal cooling resources
If selected "Other", please mention your desired action item	

Project Tracking Tool

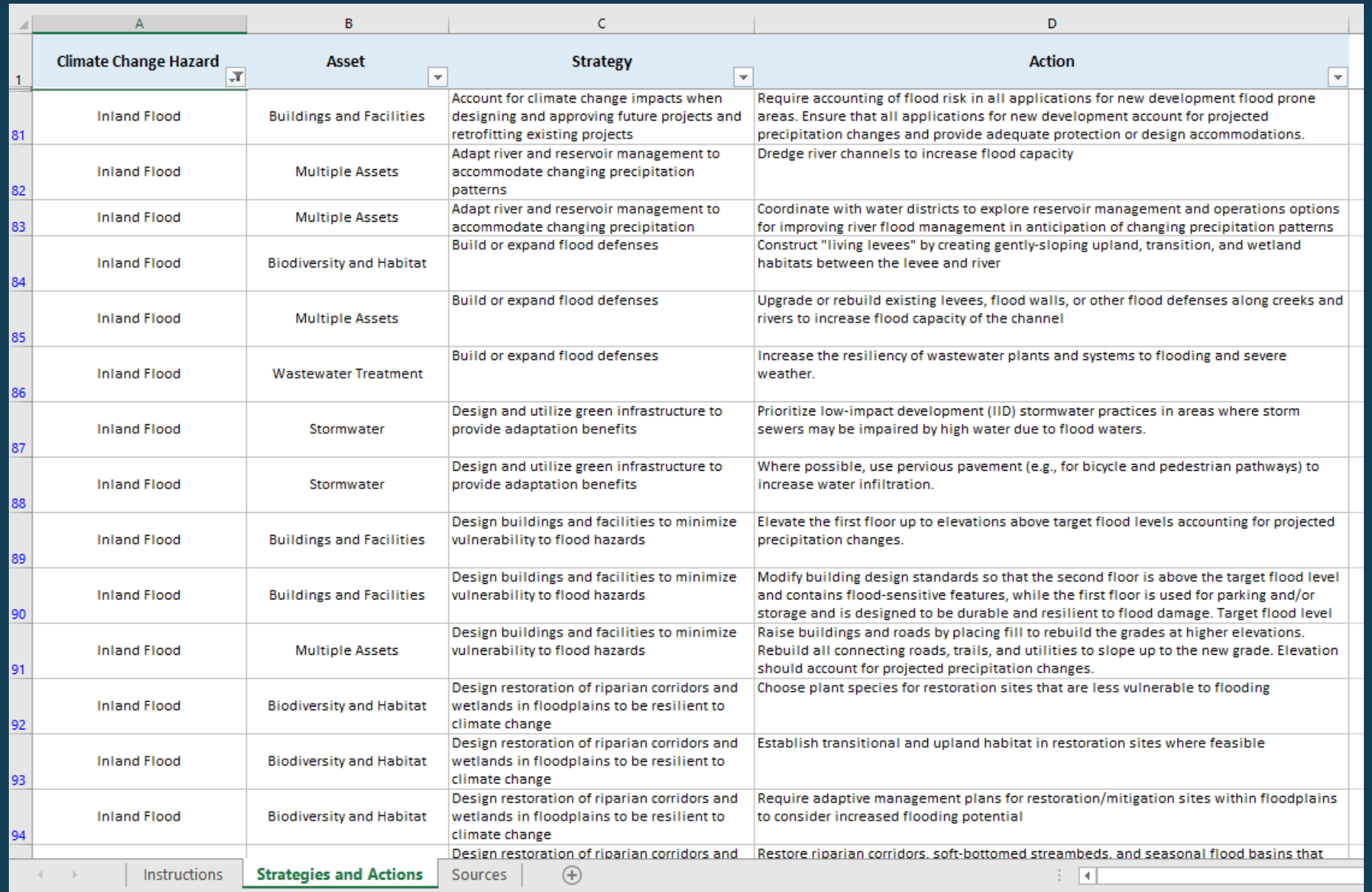
				AGENCY INFO		
Select the County you represent	San_Bernardino			Population	Employment	Households
Do you represent a County Agency, a City Agency or Other Agency?	City		County	2,258,662	828,692	700,095
If selected Other Agency, please select Agency Name from the list			City	7,828	3,264	3,151
If selected "Other", please mention the name of the agency you represent						
Select City you represent	Needles					

				PROJECT INFO		
Metrics	**Project 1**	**Project 2**	**Project 3**	**Project 4**	**Project 5**	**Project 6**
Climate Change Hazard combating through existing, planned or proposed projects (can mention as many as you know)	Extreme_Heat	Inland_Flood	Wildfire	Extreme_Heat	Severe_Storms _Or_Wind	
Affected Population	*7,828*	*708*	*1*	*7,828*	*Unknown*	*Unknown*
Affected Employment	*3,264*	*295*	*0*	*3,264*	*Unknown*	*Unknown*
Affected Households	*3,151*	*285*	*0*	*3,151*	*Unknown*	*Unknown*
If selected "Other", please mention hazard name						
Asset protected in said project	Public Transit	Multiple Assets	Public Health	Vulnerable Pop	Buildings and Facilities	
If selected "Other", please mention protected asset name						
Scale of project (SED protected) by this effort (in % ??)	0.05	0.35	0.9	0.2		
Protected Population	391	248	1	1,566	Unknown	Unknown
Protected Employment	163	103	0	653	Unknown	Unknown
Protected Households	158	100	0	630	Unknown	Unknown
Additional Description						
Stage of the project	Construction	Proposed	Planning	Engineering/De	No Action	
Timeline						
Cost						
Funding	Partially funded	Unfunded	Partially funded	Fully funded	Unfunded	
Contact Info for PM						

Adaptation Strategies and Actions

- Excel Spreadsheet
- Over 275 actions
- Filter by climate change hazard type (e.g., extreme heat, air quality)
- Filter by asset type (e.g., vulnerable populations, public health)
- Strategies and actions can be incorporated into Climate Adaptation Plans or as implementation programs for the General Plan

Strategies and Actions Spreadsheet Tool



	A	B	C	D
1	Climate Change Hazard	Asset	Strategy	Action
81	Inland Flood	Buildings and Facilities	Account for climate change impacts when designing and approving future projects and retrofitting existing projects	Require accounting of flood risk in all applications for new development flood prone areas. Ensure that all applications for new development account for projected precipitation changes and provide adequate protection or design accommodations.
82	Inland Flood	Multiple Assets	Adapt river and reservoir management to accommodate changing precipitation patterns	Dredge river channels to increase flood capacity
83	Inland Flood	Multiple Assets	Adapt river and reservoir management to accommodate changing precipitation	Coordinate with water districts to explore reservoir management and operations options for improving river flood management in anticipation of changing precipitation patterns
84	Inland Flood	Biodiversity and Habitat	Build or expand flood defenses	Construct "living levees" by creating gently-sloping upland, transition, and wetland habitats between the levee and river
85	Inland Flood	Multiple Assets	Build or expand flood defenses	Upgrade or rebuild existing levees, flood walls, or other flood defenses along creeks and rivers to increase flood capacity of the channel
86	Inland Flood	Wastewater Treatment	Build or expand flood defenses	Increase the resiliency of wastewater plants and systems to flooding and severe weather.
87	Inland Flood	Stormwater	Design and utilize green infrastructure to provide adaptation benefits	Prioritize low-impact development (IID) stormwater practices in areas where storm sewers may be impaired by high water due to flood waters.
88	Inland Flood	Stormwater	Design and utilize green infrastructure to provide adaptation benefits	Where possible, use pervious pavement (e.g., for bicycle and pedestrian pathways) to increase water infiltration.
89	Inland Flood	Buildings and Facilities	Design buildings and facilities to minimize vulnerability to flood hazards	Elevate the first floor up to elevations above target flood levels accounting for projected precipitation changes.
90	Inland Flood	Buildings and Facilities	Design buildings and facilities to minimize vulnerability to flood hazards	Modify building design standards so that the second floor is above the target flood level and contains flood-sensitive features, while the first floor is used for parking and/or storage and is designed to be durable and resilient to flood damage. Target flood level
91	Inland Flood	Multiple Assets	Design buildings and facilities to minimize vulnerability to flood hazards	Raise buildings and roads by placing fill to rebuild the grades at higher elevations. Rebuild all connecting roads, trails, and utilities to slope up to the new grade. Elevation should account for projected precipitation changes.
92	Inland Flood	Biodiversity and Habitat	Design restoration of riparian corridors and wetlands in floodplains to be resilient to climate change	Choose plant species for restoration sites that are less vulnerable to flooding
93	Inland Flood	Biodiversity and Habitat	Design restoration of riparian corridors and wetlands in floodplains to be resilient to climate change	Establish transitional and upland habitat in restoration sites where feasible
94	Inland Flood	Biodiversity and Habitat	Design restoration of riparian corridors and wetlands in floodplains to be resilient to climate change	Require adaptive management plans for restoration/mitigation sites within floodplains to consider increased flooding potential
			Design restoration of riparian corridors and	Restore riparian corridors, soft-bottomed streambeds, and seasonal flood basins that

Instructions | Strategies and Actions | Sources

Adaptation Strategies

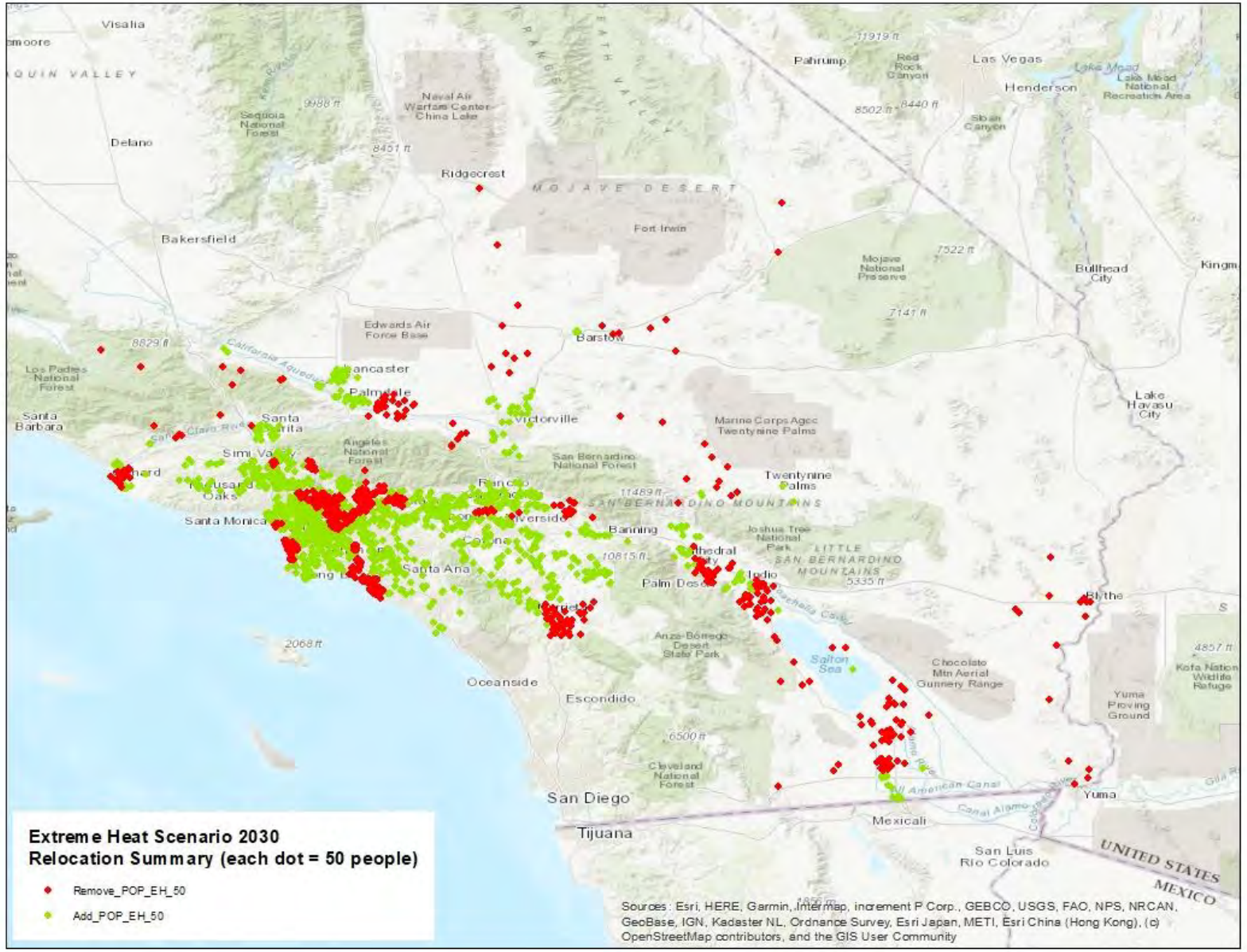
Key Strategies and Actions

	Wildfire	Extreme Heat Health Impacts	Sea Level Rise	Inland Flooding
Primary strategy	Preventative controlled burns	Increase tree canopy coverage	Strategically placed sea walls	Expand/ reinforce levees
Other strategies	Harden structures	Expand cooling centers	Pumping stations	Natural buffers
	Rezoning	Expand health care facilities	Rezoning	Rezoning
	Firebreak walls	White roofs	Natural Buffers	
		Reduce impervious surfaces		

Extreme Heat Scenario Development and Modeling

- Data from CHAT tool: Annual Days of Heat Health Events
  - More complex than temperature forecast data
  - Heat Health Events defined as heat waves which cause spikes in mortality and hospital visits
  - Sensitive to ratios of elderly and vulnerable populations, hospital beds, cooling centers, tree cover, etc.
- "Business as usual" relocation scenario starts relocating demographics once 30 days per year of heat health events reached at 1% per day
  - E.g., 35 days per year = 5% relocated; 50 days = 20% relocated, 70 days = 40% relocated
- "Mitigation" scenario reduces relocation through increased tree cover, cooling centers, hospital beds, etc.

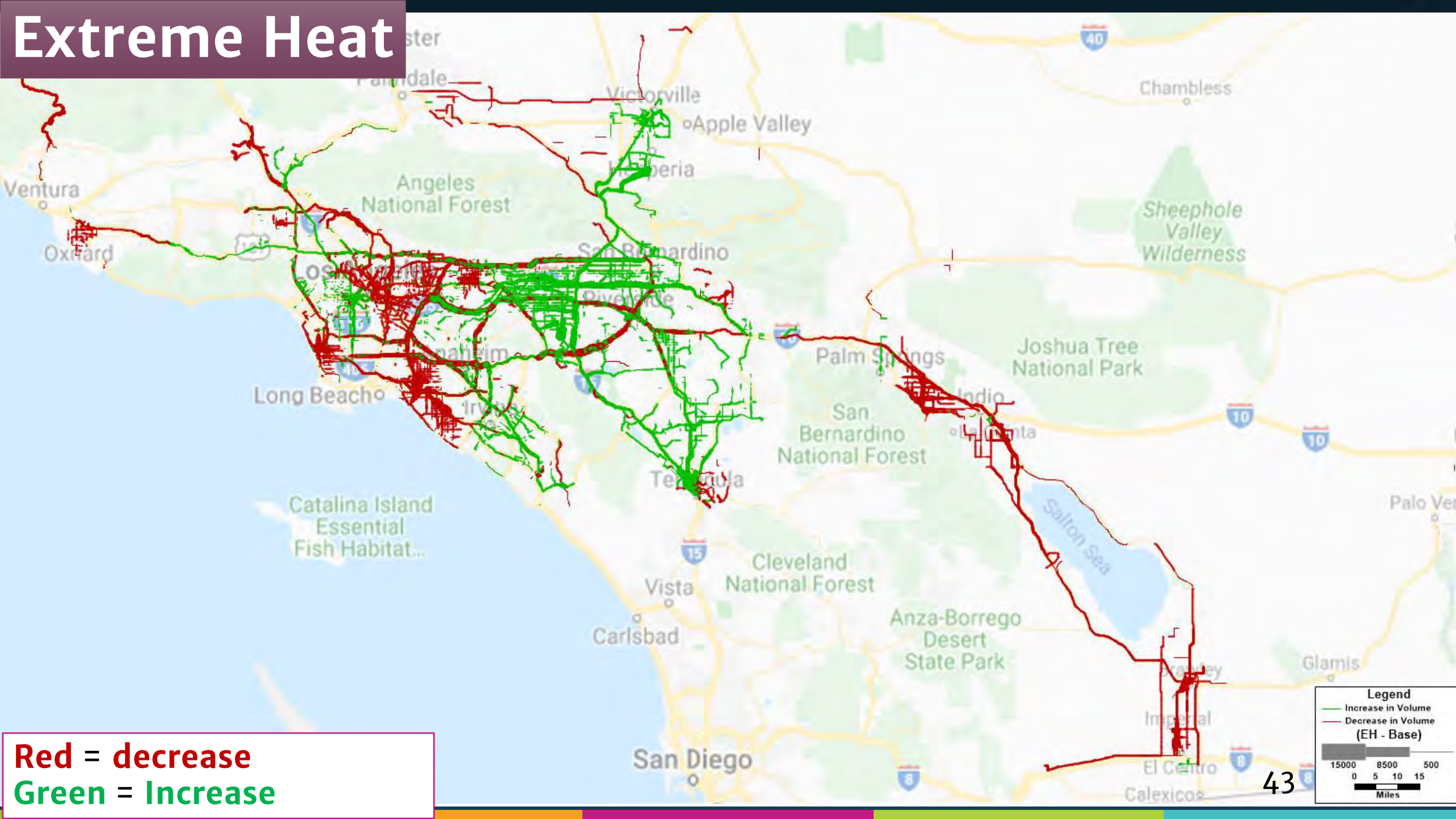
Extreme Heat 2030 – "Business as Usual" Scenario



Extreme Heat Health Events 2030 "Business as Usual" Scenario

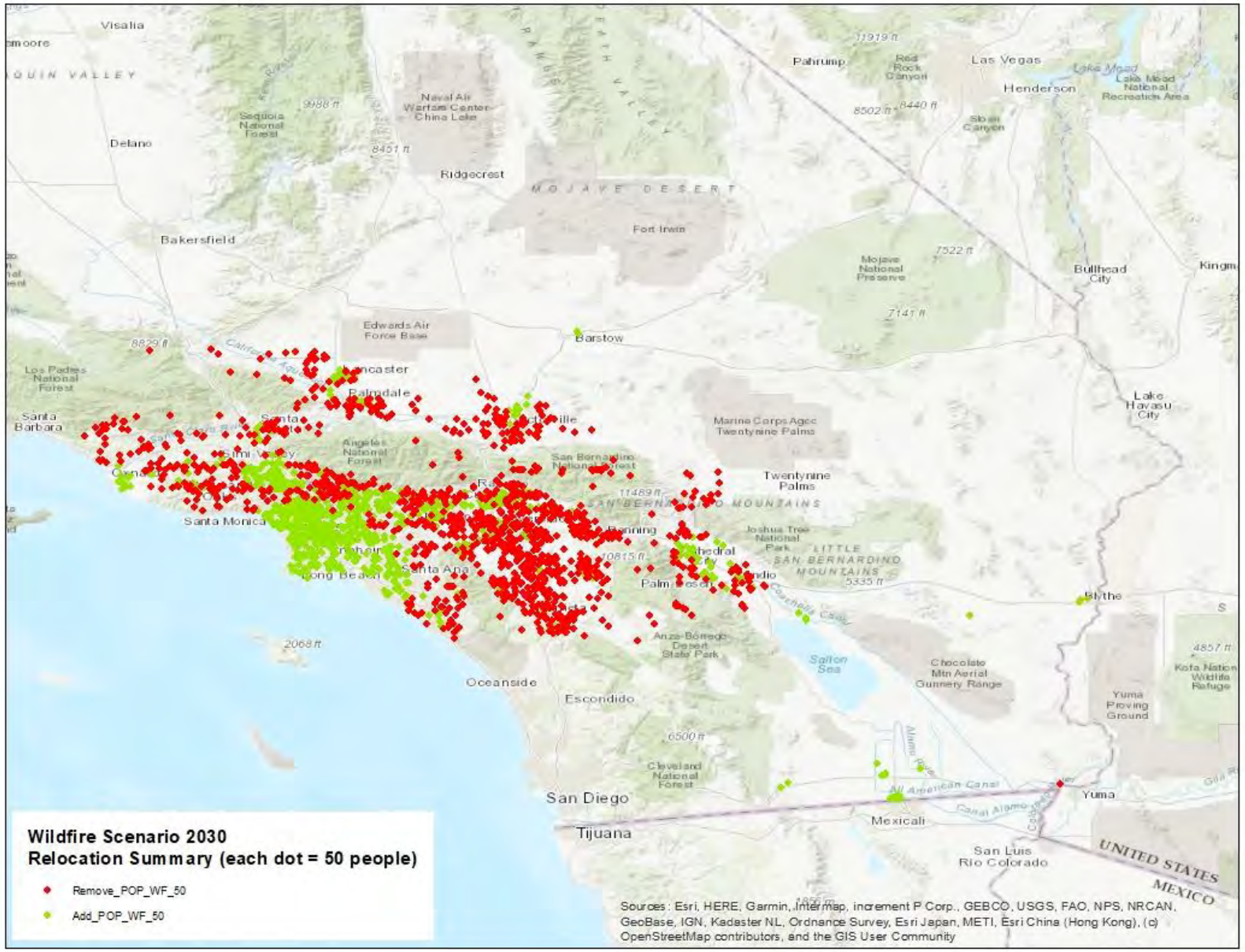
		Base				Extreme Heat				Numeric Difference				Difference			
Code	County	Trips	VMT	VHT	VHD	Trips	VMT	VHT	VHD	Trips	VMT	VHT	VHD	Trips	VMT	VHT	VHD
1	Imperial	524,487	6,755,364	120,182	3,519	464,631	6,225,064	110,087	2,874	**(59,856)**	(530,300)	(10,095)	(645)	-11%	-8%	-8.40%	-18.34%
2	Los Angeles	22,544,031	234,673,126	7,195,893	2,251,895	22,416,901	233,736,930	7,212,870	2,287,800	**(127,130)**	(936,196)	16,978	35,905	-1%	0%	0.24%	1.59%
3	Orange	8,097,287	79,600,042	2,091,159	549,667	8,074,927	79,553,716	2,099,833	559,164	(22,360)	(46,327)	8,673	9,497	0%	0%	0.41%	1.73%
4	Riverside	6,293,669	77,764,585	1,994,026	575,835	6,347,084	78,077,313	2,078,758	652,601	**53,416**	312,727	84,732	76,766	1%	0%	4.25%	13.33%
5	San Bernardino	5,560,880	75,639,862	1,572,418	210,823	5,676,502	76,634,464	1,616,612	234,797	**115,622**	994,602	44,194	23,973	2%	1%	2.81%	11.37%
6	Ventura	2,180,683	19,718,820	465,617	88,599	2,166,273	19,541,435	463,005	89,838	(14,409)	(177,385)	(2,612)	1,239	-1%	-1%	-0.56%	1.40%
	Total	45,201,037	494,151,800	13,439,295	3,680,338	45,146,319	493,768,921	13,581,166	3,827,073	(54,718)	(382,878)	141,871	146,735	-0.12%	-0.08%	1.06%	3.99%

Extreme Heat

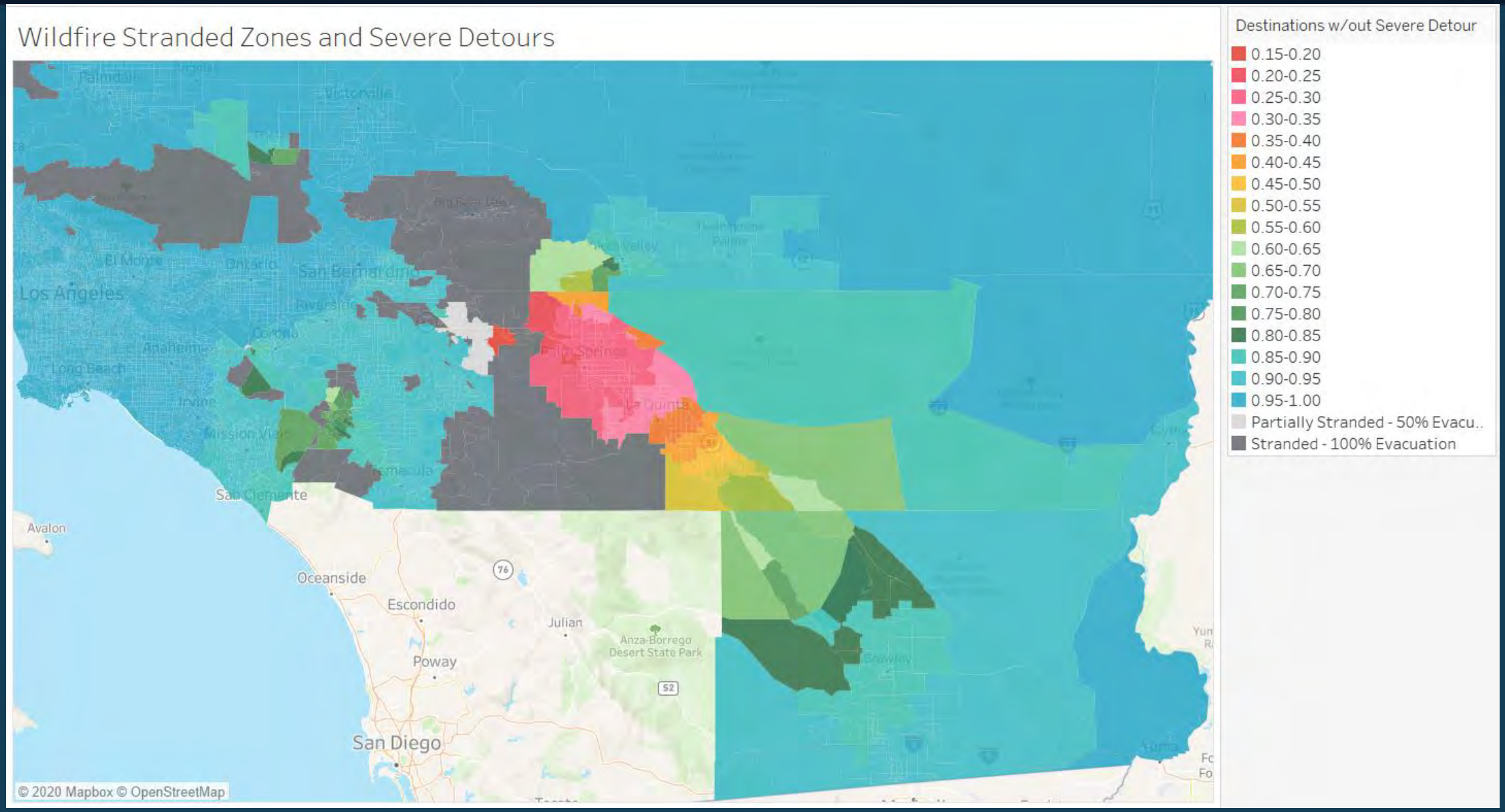


Red = **decrease**
Green = **Increase**

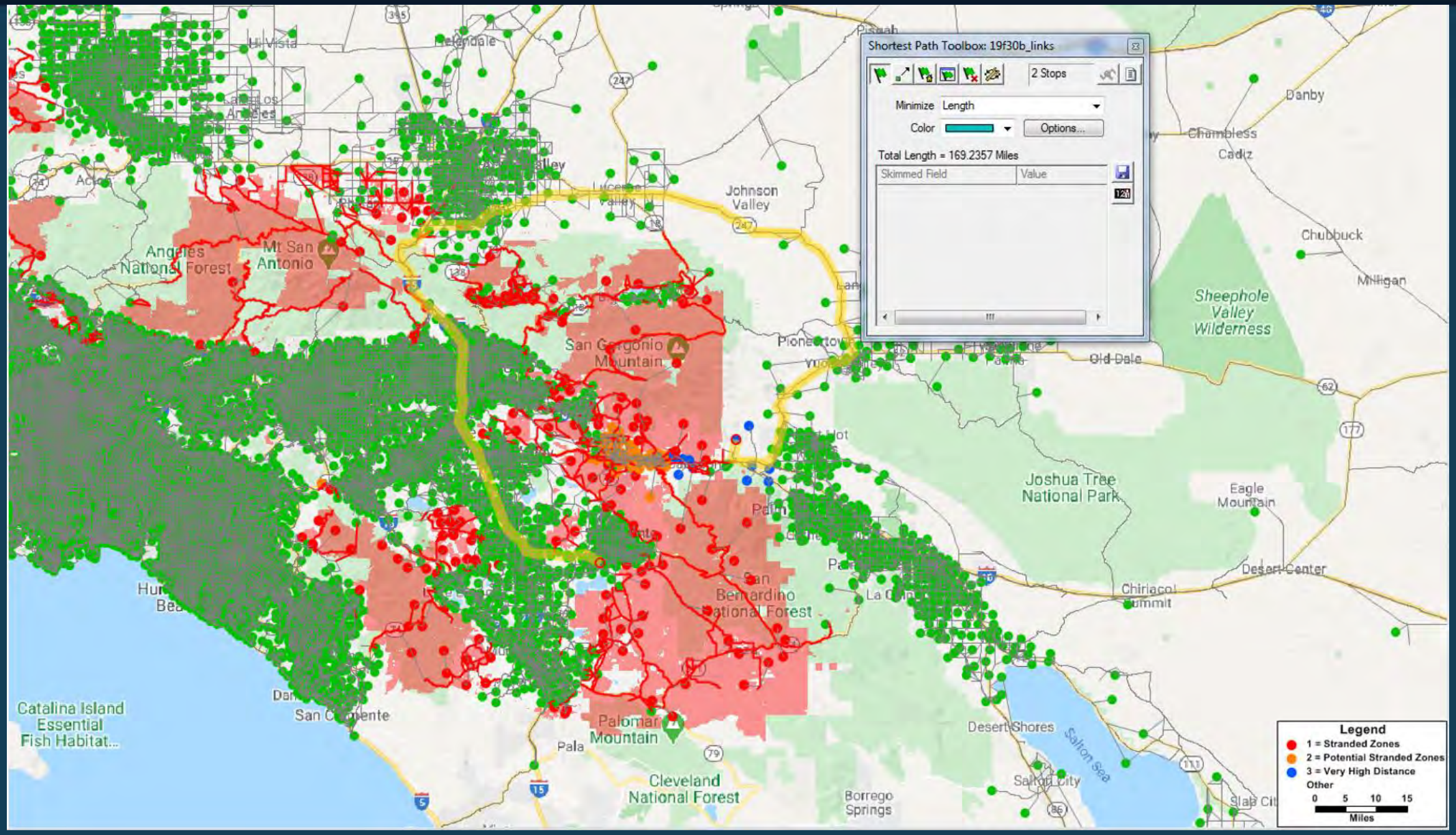
Wildfire Scenario 2030 – "Business as Usual" Scenario



Stranded Zones Analysis for Wildfire Scenario



Severe Detour Analysis for Wildfire Scenario



Funding

Finding adequate funding to implement adaptation strategies is an ongoing challenge. As mentioned at the end of Chapter 1, the most significant source of funding is from integrating climate adaptation into existing local agency expenditures. In terms of new funding, there are state and federal grant programs currently available to support both adaptation planning and strategy implementation.

Additional funding programs are likely to emerge in coming years as more and more communities experience the impacts of climate change. Over time, communities should develop a layered funding strategy that uses local investments to leverage regional, state, and federal grants, and loans, as well as private sector investments. The variety of tools that local agencies can utilize to generate adequate funds are summarized in the table below.

Table 4.1: Local Revenue Sources for Climate Adaptation

Revenue Source	Applicability to Climate Adaptation	Revenue Potential	Ease of Authorization
Financing Districts[1]			
Benefit Assessments[2]	NARROW: Must provide direct benefit to assessed parcels	LIMITED: But critical to leverage funding from directly benefitting property owners	MODEST: Majority district property owner approval weighted by assessment[3]
Community Facilities District Special Tax (Mello Roos)	MODEST: Wide range of facilities & services; but must benefit taxed parcels		MODEST: 2/3 district property owners[3], or 2/3 voter approval if more than 12 voters in district
Property Tax Increment[4]	BROAD: Facilities (no services), environ-menttal mitigation	LIMITED in the short run; INCREASING over time with new development	SIMPLE: Governing board approval subject to majority protest by property owners
Local/Regional Public Enterprises			
Water, Sewer & Refuse Charges	NARROW: Must support enterprise operations	MODERATE to SIGNIFICANT: Depends on climate adaptation priorities relative to other enterprise needs	SIMPLE: Governing board approval subject to majority protest by ratepayers
Sea & Airport Revenues			SIMPLE: Governing board approval

Outreach Overview

What is the Climate Talks Box?

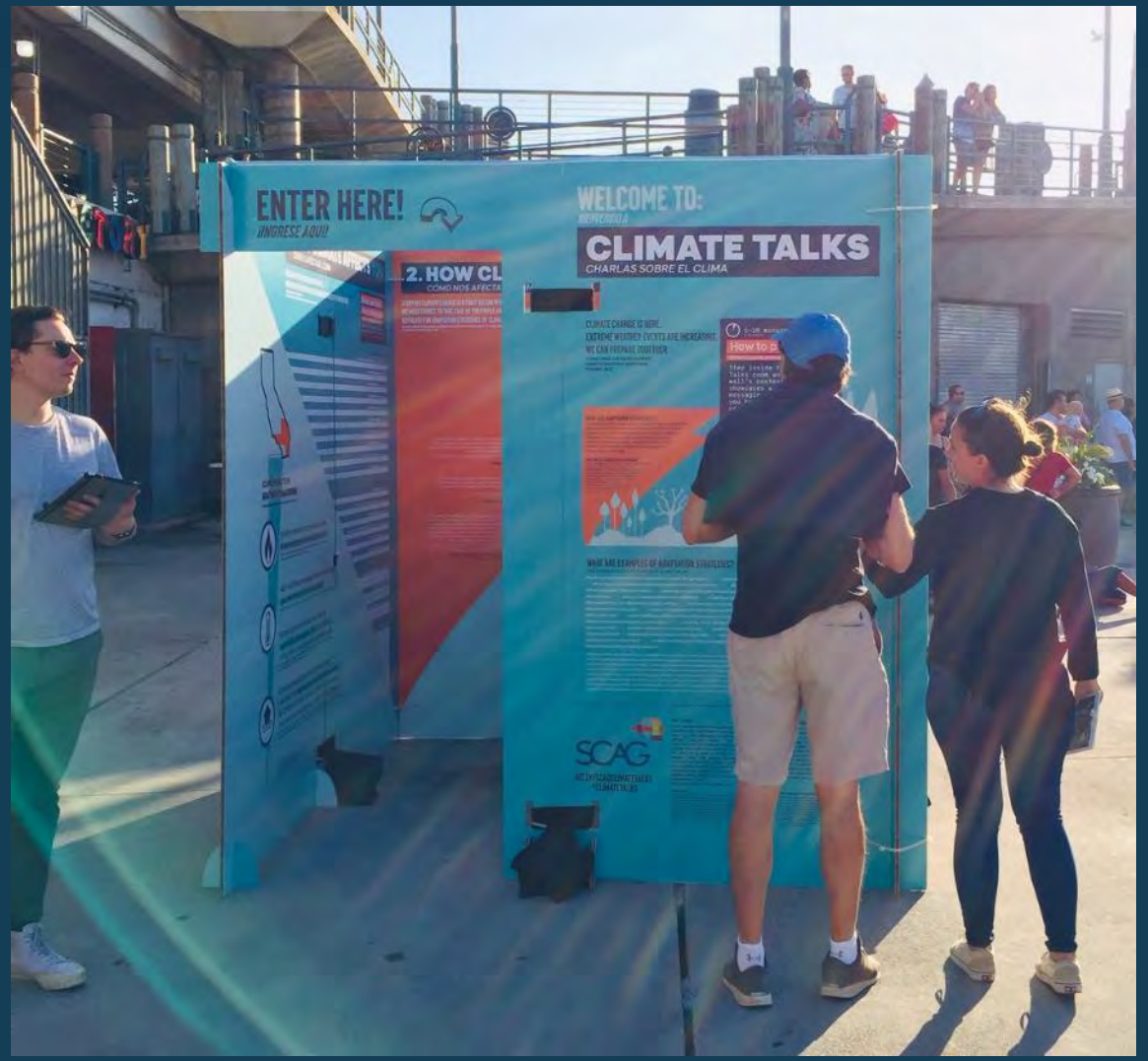
An immersive pop-up experience, crafted with sustainable materials, educating the public about climate change and climate adaptation strategies.

Goal

Test four different messaging strategies about climate change to understand what resonates with people who live in the SCAG region.

Messaging Strategies

1. How climate change causes personal, monetary & health-related harm
2. How trusted leaders are speaking about climate change
3. How climate change is affecting California's natural resources
4. How climate change will affect the region surrounding the pop-up



Communication Strategies

1) Make it personal

Use a personal "risk-based" messaging strategy that identifies the monetary costs and health impacts of climate change for your constituency.

- This strategy ranked as the most effective during SCAG's community outreach.
- Use facts that can apply to an individual's or family's life and phrase the risk so that the effects are tangible. A utility bill increasing by hundreds of dollars is an experience that is easy to grasp; it is much more difficult to grasp a change in millions of dollars to a government's budget.
- ***As an example, we have included four such facts in the "How the Climate Affects You" section of the slide deck.***

2) Localize and concretize

Use a before and after visualization of a familiar and beloved resource.

- In this strategy, you can direct your audience's feelings of attachment towards a place, into collective support. Use a visual (photographs, videos, renderings) to show the before and after effects of our changing climate. This allows attendees to see the effects for themselves.
- A good subject is nearby nature that has been affected by extreme weather events.
- As an additional note, the literature shows that conservative audiences respond more favorably to changes that are framed as the "past & present," whereas liberal audiences preferred a "present & future" framing.
- ***See the examples in the "How the Climate Affects California" section of the slide deck.***

3) Map the risk

Use a chronological map to show the proximity of risk and change over time.

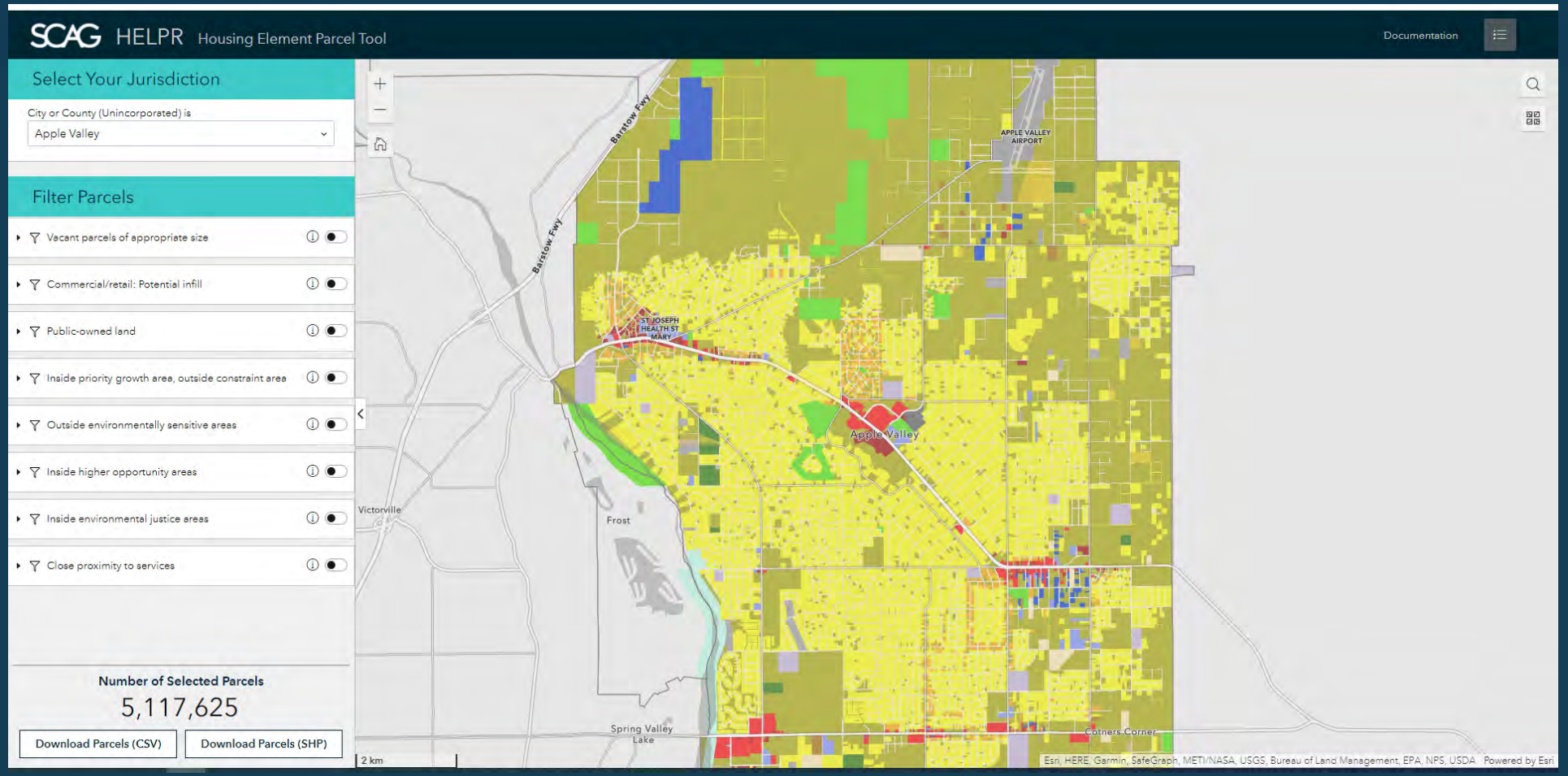
- This strategy uses mapping visualization to help participants understand the future effects of climate change.
- It is important to keep in mind that map-reading is a special skill. Aid participant understanding by ensuring your visualizations are focused on your immediate locality, and that familiar landmarks are called out .
- Connecting the familiar (local places) to the hard-to-grasp (future climate effects) builds a kind of support grounded in personal affection.
- ***See the examples in the "How Climate Changes at Home" section of the slide deck.***

4) Bring in a trusted advisor:

Use the words and stature of someone your community already trusts.

- This strategy requires the identification of a leader or authority figure with whom your community has a rapport and finding a values-based message that will resonate with them.
- This can occur as quotes, a video message, or an in-person appearance. The literature says this strategy can work especially well with older, and more conservative constituencies.
- However, appropriate advisor selection can align this strategy with a wide range of ideologies. Notably, this strategy was reported as slightly less impactful than the other strategies explained here.
- ***See the examples in the "How the Climate Affects Us" section of the slide deck.***

NEW RESOURCE: Housing Element Parcel Tool (HELPR)



http://maps.scag.ca.gov/helpr

How to explore parcel data using HELPR

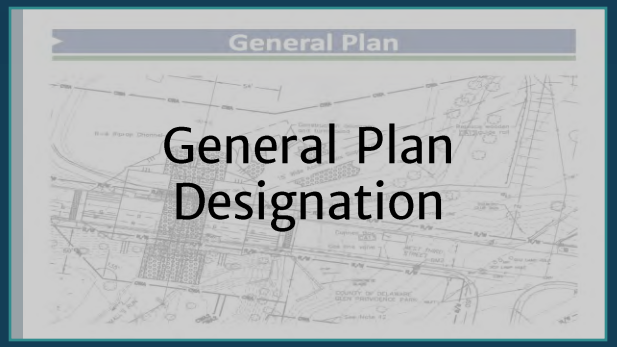
1. Basic filtering
   - 8 pre-made site screening filters
2. Refined filtering
   - Refine filter options across several additional attributes
3. Advanced analysis
   - Using Excel, desktop GIS, or other platform
   - Additional attributes available
   - Rudimentary ADU capacity calculation

Word cloud of HELPR's data dictionary

Selected Parcel Attributes in HELPR

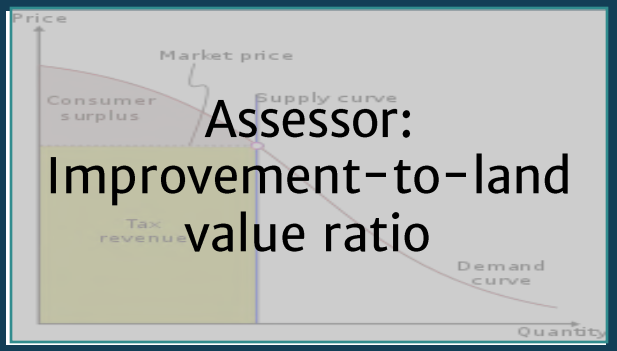

Existing Land Use

Zoning Designation



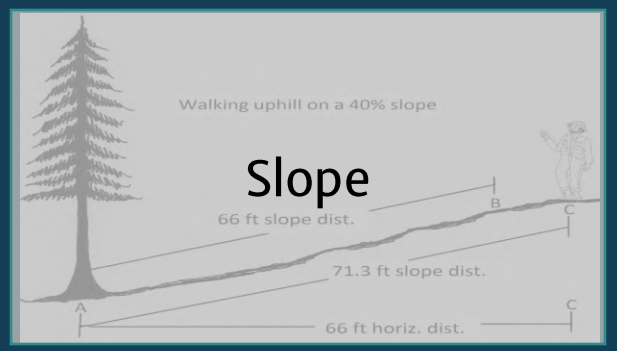
General Plan Designation


Specific Plan Designation



Assessor: Improvement-to-land value ratio

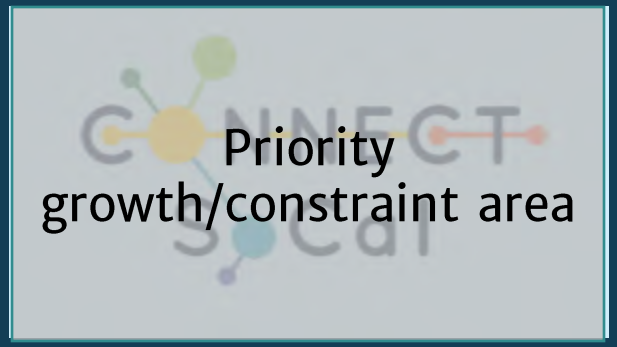
Parcel size (acres)



Slope

Building footprint area

Brownfield/superfund designation



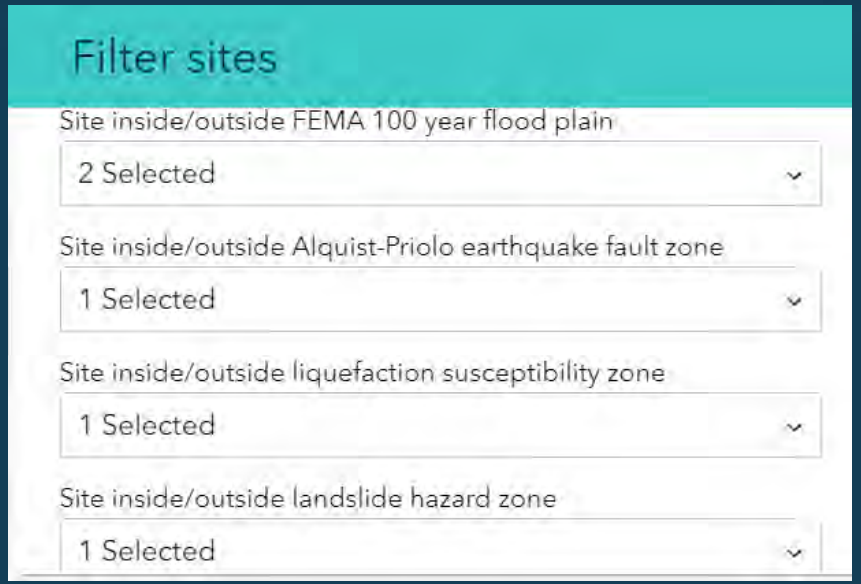
Priority growth/constraint area

Environmental justice/opportunity areas

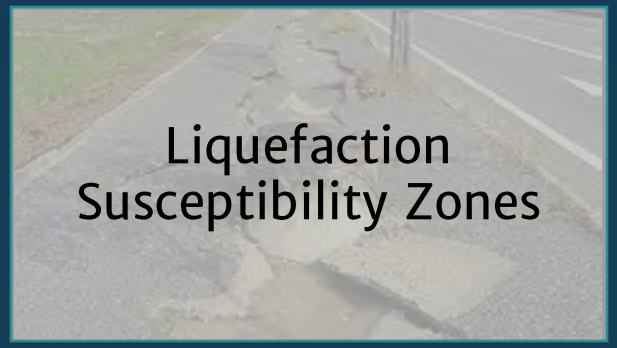
Proximity to grocery/heathcare/open space

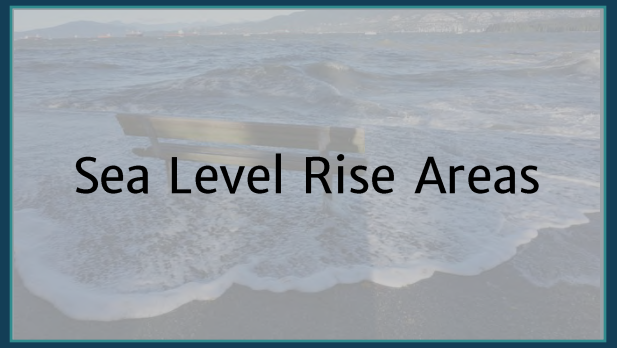
Selected Environmentally Sensitive Areas

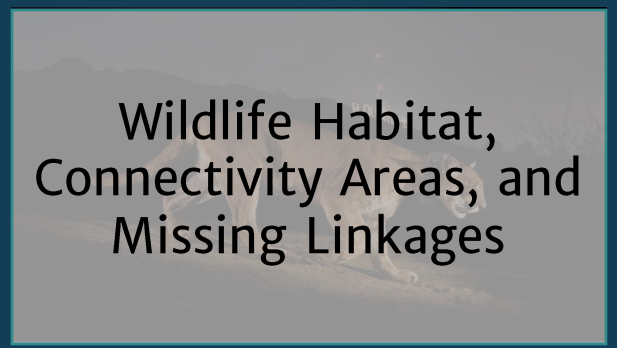
- SCAG selected layers based on guidance from partner agencies, as well as recommendations from The Nature Conservancy
- Impacted parcels can be filtered out for environmentally sensitive areas
- Factors are common considerations in CEQA and support conservation strategies in Connect SoCal
- Layers will be available within the tool for visualizing in the next update *(coming soon)*
- Additional layers will be forthcoming in later releases

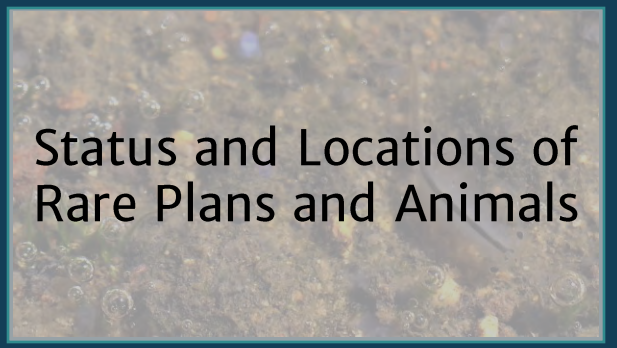


Selected Environmentally Sensitive Areas









maps.scag.ca.gov/helpr/?page=page_0

SCAG HELPR Housing Element Parcel Tool

Documentation

Select Your Jurisdiction

City or County (Unincorporated) is

- All -

Filter Parcels

Outside environmentally sensitive areas

Parcel inside/outside fire hazard area

1 Selected

Parcel inside/outside 3ft sea-level rise inundation area

1 Selected

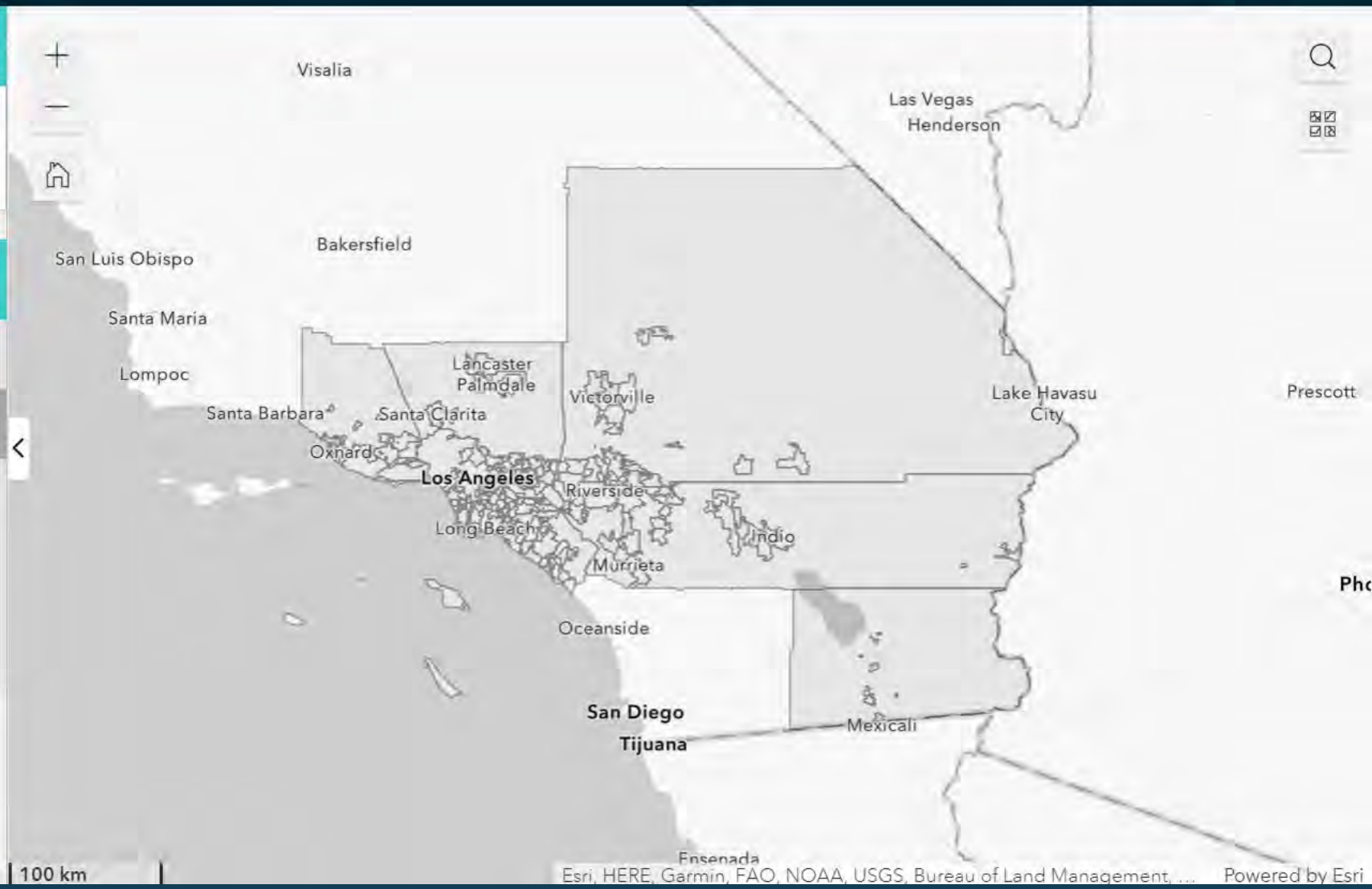
Parcel inside/outside FEMA 100 year flood plain

1 Selected

Number of Selected Parcels

5,117,625

Download Parcels (CSV) Download Parcels (SHP)



maps.scag.ca.gov/helpr/?page=page_0

SCAG HELPR Housing Element Parcel Tool

Documentation

Select Your Jurisdiction

City or County (Unincorporated) is

- All -

Filter Parcels

Outside environmentally sensitive areas

Parcel inside/outside fire hazard area

1 Selected

Search

Outside

Inside

Number of Selected Parcels

5,117,625

Download Parcels (CSV)

Download Parcels (SHP)

Contact the project team

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Public Health Working Group

A Focus on Extreme Heat and Equity

SCAG Sustainability & Planning Strategy Departments

UCLA Luskin Center for Innovation (LCI)

December 17, 2020

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Extreme Heat and Public Health

Natalie Arreaga
CivicSpark Fellow
SCAG Sustainability Department
December 17, 2020

www.scag.ca.gov

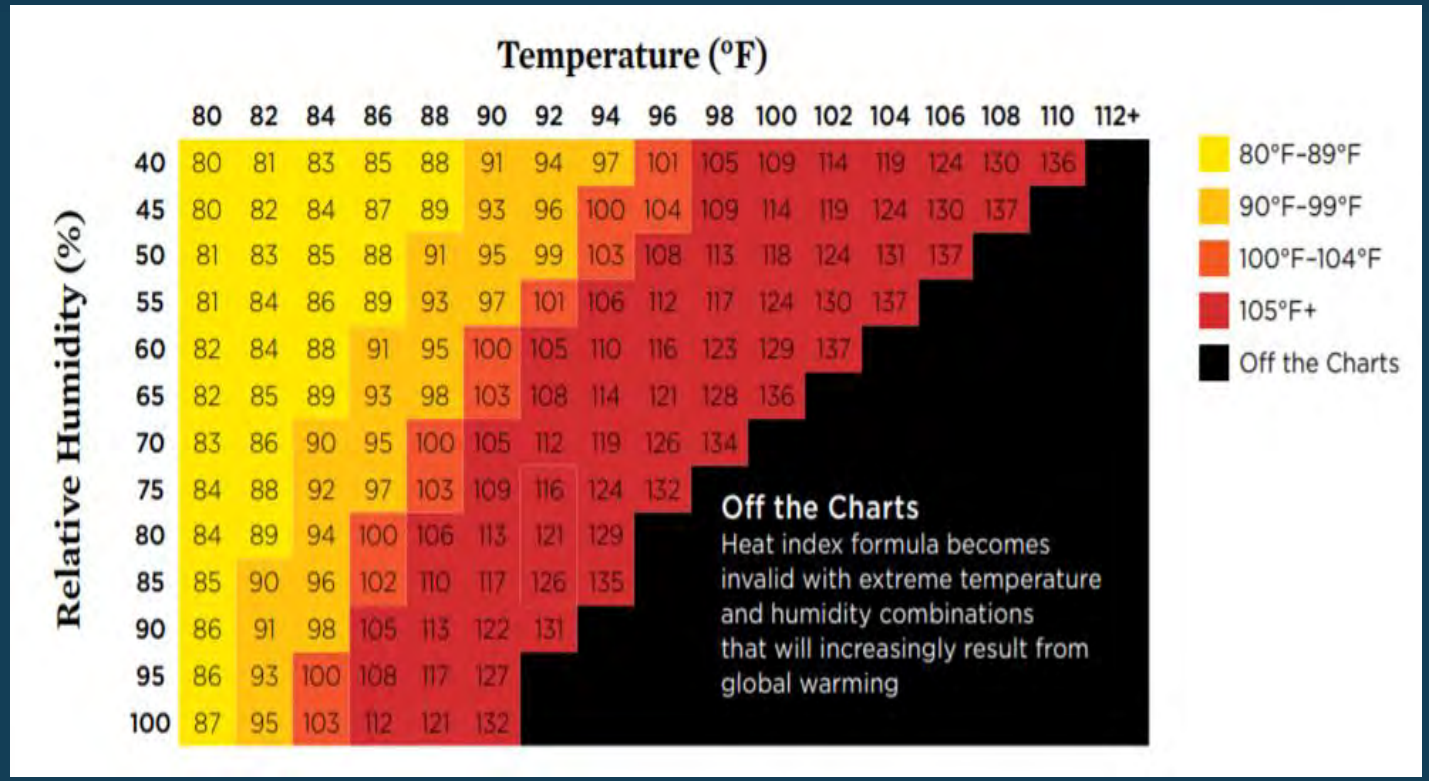
INNOVATING FOR A BETTER TOMORROW

What is Extreme Heat?

- Extreme heat conditions are defined as weather that is substantially hotter than average for a specific time and place (EPA, 2016)
- Extreme heat events, also known as "heat waves," have no standard definition
- Extreme heat events are characterized by stagnant warm air and consecutive nights with above average temperatures
- The United States is already experiencing an increase in extreme heat events

Heat Index

- The heat index is a measure of what temperature feels like when relative humidity is factored in with the air temperature.
- The National Weather Service (NWS) refers to it as the "feels like" weather and is also known as apparent temperature.
- Relative humidity is the ratio of the percentage of moisture in the air and the maximum amount of moisture the air can hold.
- Heat Index thresholds are used by the NWS to issue heat advisories and excessive heat warnings.



Forecasts of Extreme Heat (United States)

The Union of Concerned Scientists (UCS) analysis on extreme heat projections throughout the United States over the next century:

Mid-Century (2036-2065)

- Days per year with a heat index above 100 degrees average will more than double.
- Over a third of the United States will experience heat conditions once a year, on average exceeding the heat index range.
- About one-third of the 481 urban areas in the United States with a population of 50,000 people or more will experience an average of 30 or more days per year with a heat index above 105°F.

Late Century (2070-2099)

- On average, the United States will experience four times as many days per year with a heat index above 100°F, and almost eight times as many days per year above 105°F, as it has historically.
- On average, more than 60 percent of the United States will experience off-the- charts conditions that exceed the NWS heat index range and present mortal danger to people, at least once per year.
- More than 60 percent of urban areas in the United States will experience an average of 30 or more days with a heat index above 105°F.
- An additional 9,300 heat-related annual deaths will occur across the country.

Forecasts of Extreme Heat (SCAG Region)

Projections from Connect SoCal Public Health Technical Report:

- By 2030, California is expected to have an increase in annual average temperatures of 5 degrees and 10 degrees by the end of the century.
- The SCAG region is projected to have an average increase of 35 extreme heat days from 2040-2060.
- The county in the SCAG region with the highest projections is Imperial County, which is expected to have over 43 extreme heat days per year from 2040-2060.
- Riverside, San Bernardino, and Los Angeles Counties are expected to have 42, 41, and 37 extreme heat days, respectively, per year.
- Ventura County is projected to have 32 extreme heat days. Orange County is expected to have 15 extreme heat days per year which is the lowest projection of extreme heat days in the SCAG region from 2040-2060.
- Extreme heat days per year are expected to more than double across the entire region after 2085.

Urban Heat Island Effect

Causes

- Low albedo materials
- Large Populations
- Increased use of air conditioning
- Destruction of trees
- Urban Canopy
- Wind Blocking
- Air Pollutants

Reduction Strategies

- Trees and other vegetation
- Green roofs
- Cool roofs
- Cool pavements
- Smart growth

Extreme Heat and Public Health Effects

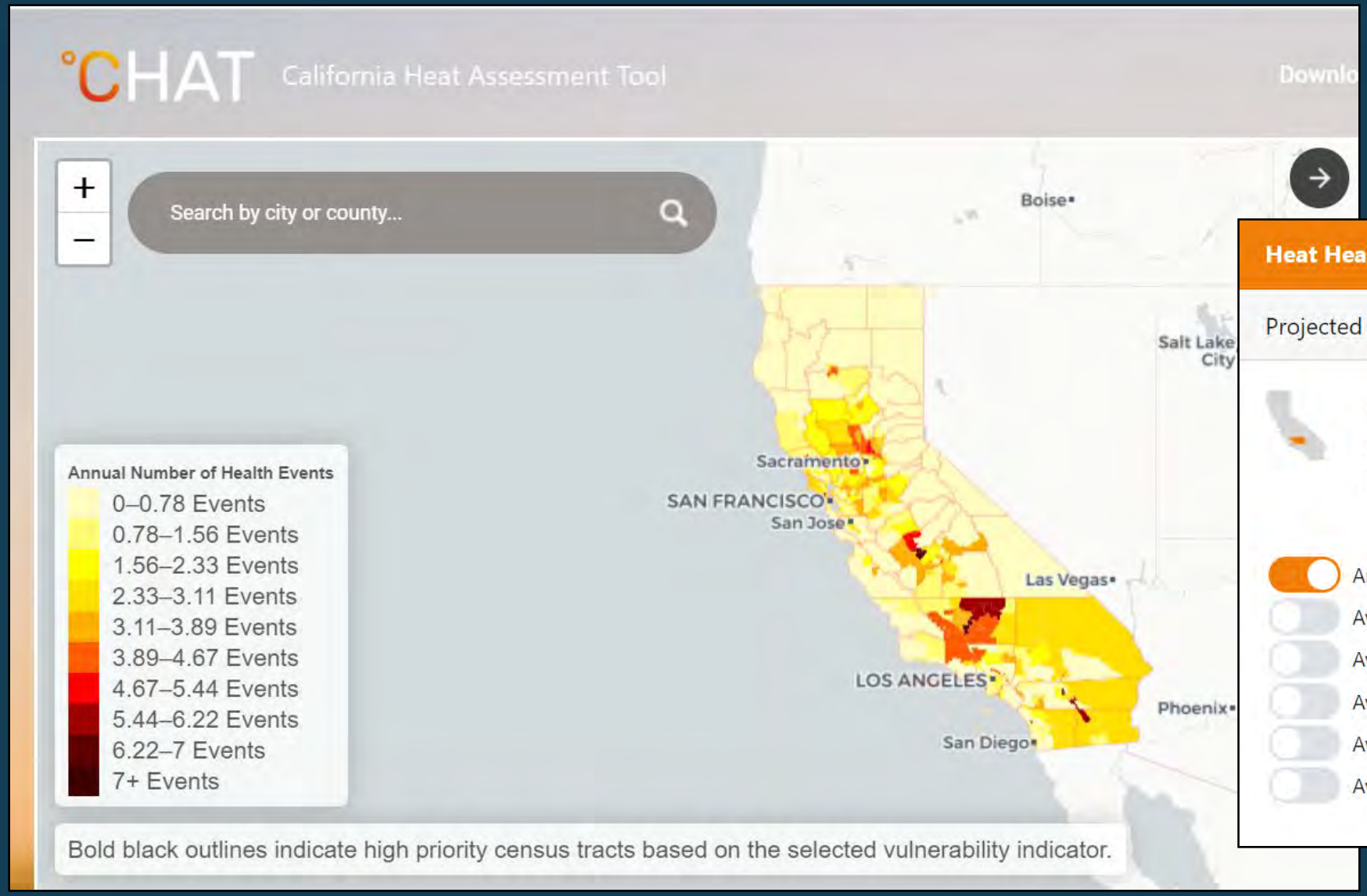
Many serious illnesses are caused by extreme heat exposure and over the last 30 years, extreme heat was the leading weather-related cause of death in the United states (NWS 2018). The following are negative impacts that extreme heat has on human health.

- Heat Cramps
- Heat Exhaustion
- Heat Stroke
- Heat Related Mortality
- Respiratory Illness
- Vector Borne Illness
- Water Quality

Most Vulnerable to Extreme Heat Impacts

- Infants and small children under the age of 4
- Children under the age of 14
- Population over 65 years of age
- Rural residents
- City dwellers
- Outdoor workers
- Low-income communities
- People with chronic diseases
- Adults living alone

California Heat Assessment Tool (CHAT)



Thank You!

Questions?

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INNOVATING FOR A BETTER TOMORROW

A Preview:
California Healthy Places Index
Extreme Heat Edition

UCLA Luskin Center for Innovation (LCI)

J.R. DeShazo, Principal Investigator deshazo@ucla.edu

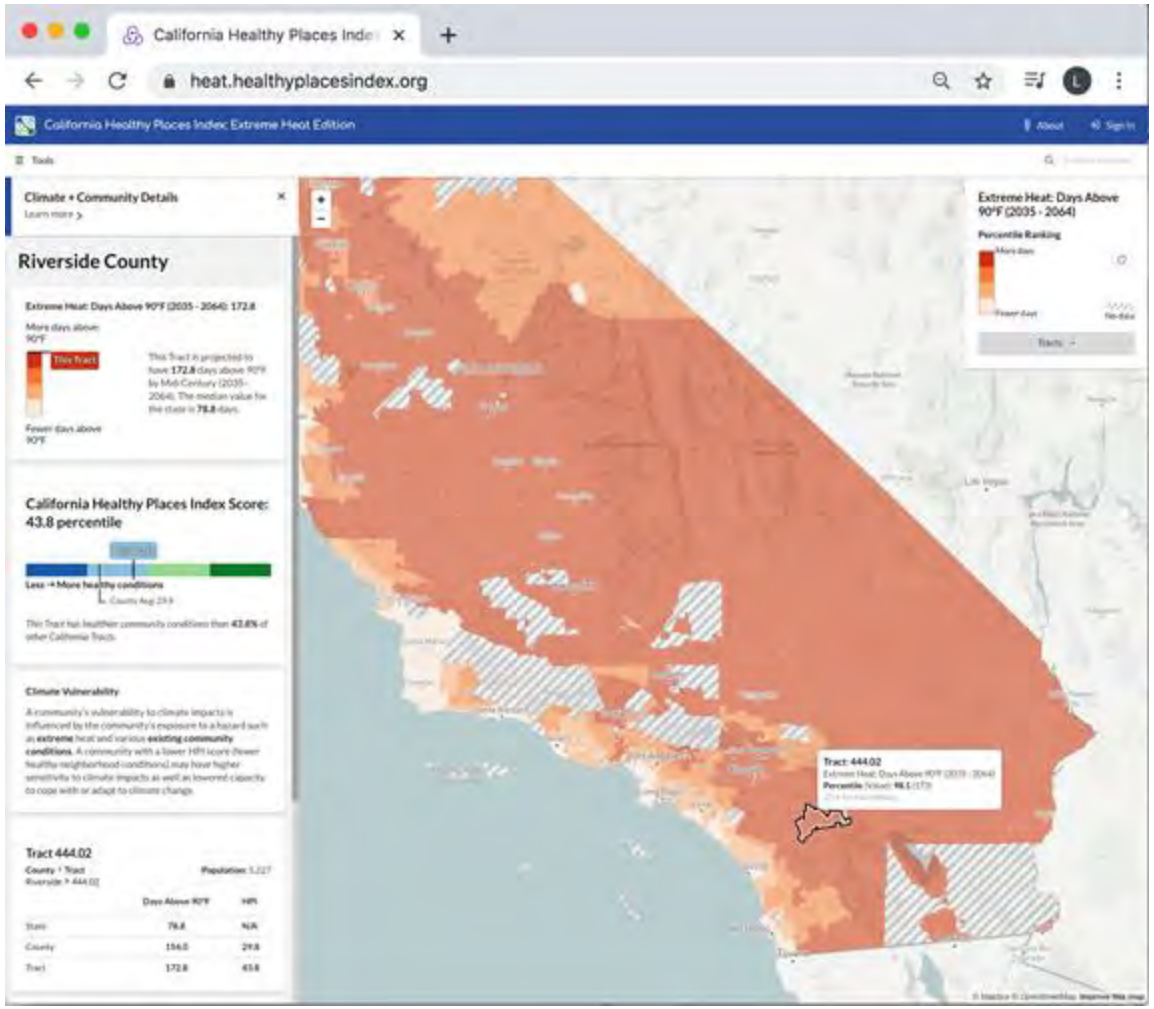
Lolly Lim, Project Manager llim@luskin.ucla.edu

December 17, 2020

California Healthy Places Index: Extreme Heat Edition

The California Healthy Places Index (HPI): Extreme Heat Edition is a tool developed by the Alliance in partnership with the UCLA Luskin Center for Innovation. The Extreme Heat Edition of the HPI provides datasets on projected heat exposure for the State of California, place-based indicators measuring community conditions, and sensitive populations. It also provides a list of State resources and funding opportunities that can be used to address extreme heat.

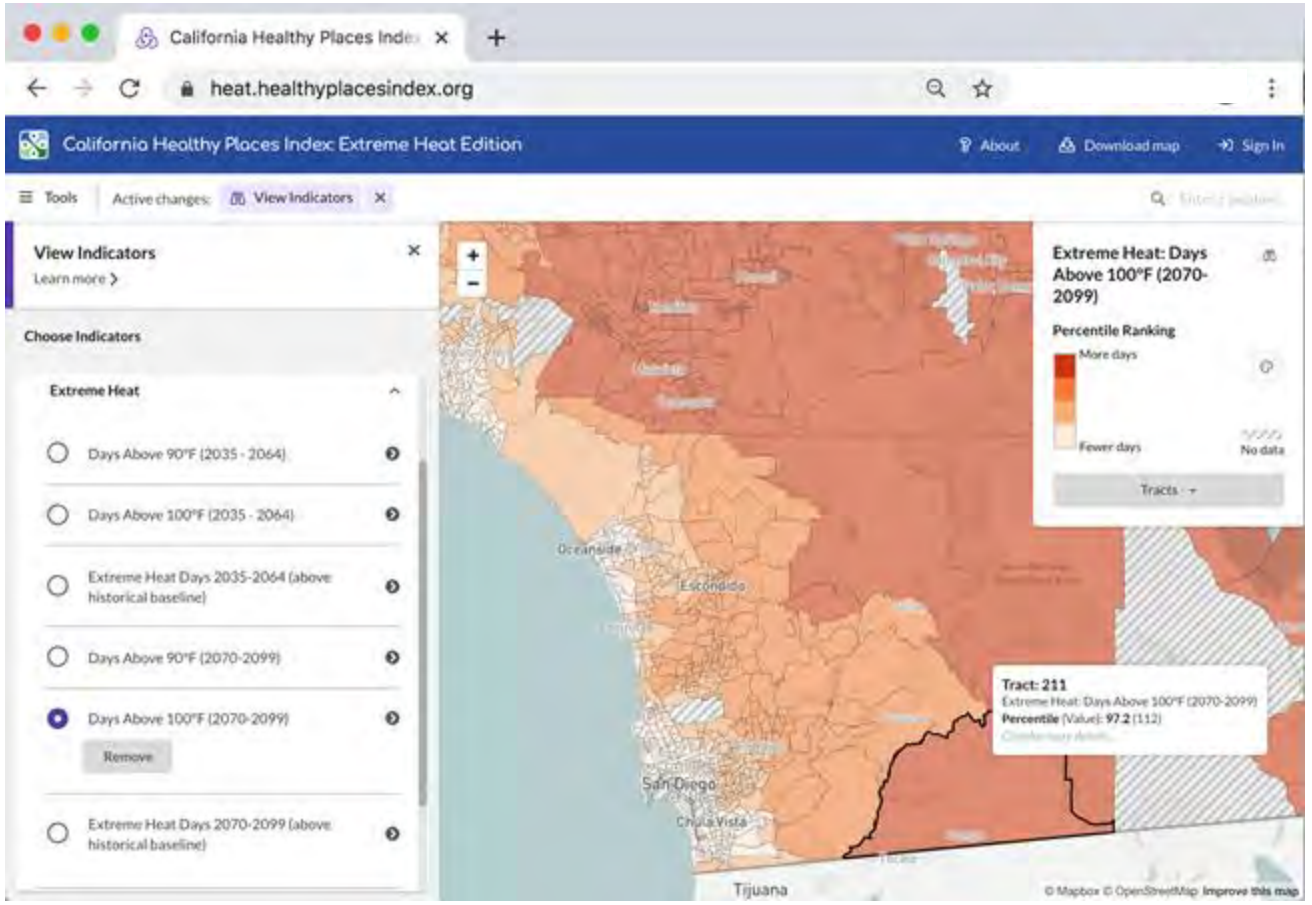
The Extreme Heat Edition of the HPI is a flexible tool that can be used to understand underlying heat vulnerability and resilience characteristics of a community, to identify resources to mitigate adverse effects of extreme heat, and to prioritize public and private investments, resources and programs.



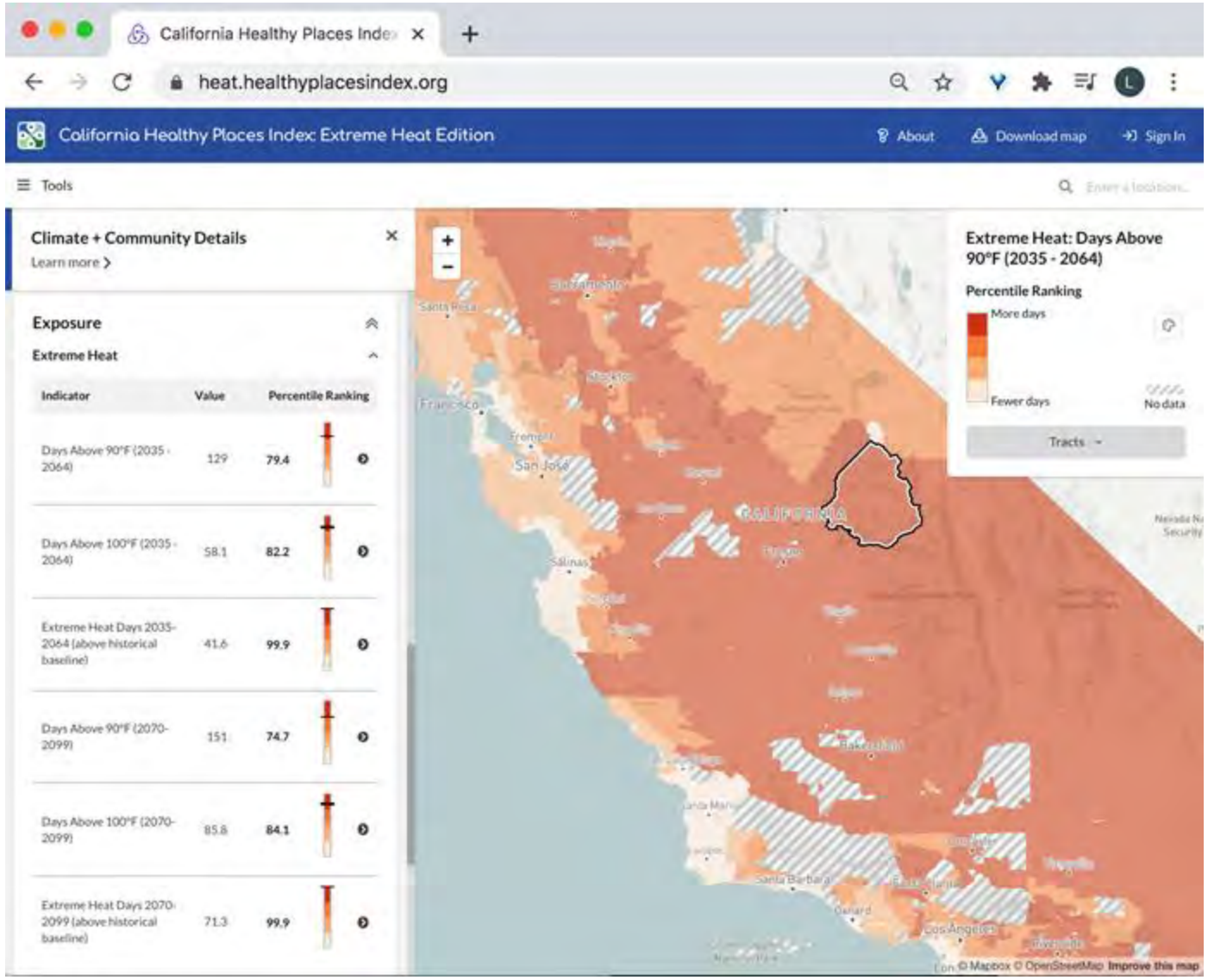
California Healthy Places Index: Extreme Heat Edition

Can be used to understand:

- Anticipated extreme heat days / days over 90F / days over 100F by mid-century and end-of-century (by census tract, city / town, county, and other geographic units)
- Areas in which heat-sensitive populations are concentrated within a community
- Areas were selected heat-related vulnerability factors overlap (e.g., housing quality, sensitive populations, anticipated extreme heat)
- Can be used to inform planning decisions (e.g., siting cooling centers; prioritizing weatherization investments; prioritizing greening)



Projected Extreme Heat Indicators on Tool



Mid-Century (2035 - 2064)	End of Century (2070 - 2099)
Days Above 90F	Days Above 90F
Days Above 100F	Days Above 100F
Extreme Heat Days (above 98th percentile of historical baseline)	Extreme Heat Days (above 98th percentile of historical baseline)

Community Conditions ("Place") Indicators in Tool

Index Score Indicators
Healthy Places Index
CalEnviroScreen 3.0
Economic
> 80% of Median Household Income
Above Poverty
Median Household Income

Environment
Clean Air - Diesel PM
Clean Air - PM 2.5
Clean Air - Ozone
Impervious Surface Cover
Park Access
Tree Canopy
Urban Heat Island Index

Housing
Homeowner Housing Cost Burden
Renter Housing Cost Burden
Homes with Kitchens
Homes WIth Plumbing
Uncrowded Housing
Homes Built Before 1940
Households in Mobile Homes
Households in RV, Van, or Boat
HUD-subsidized Housing Units
LIHTC Housing Units
Housing Voucher Subsidized Units
Public Housing Units
Other HUD-subsidized units (e.g., Section 8, Section 236)

Transit
Active Commuting
Automobile Access

Sensitive Population ("People") Indicators in Tool

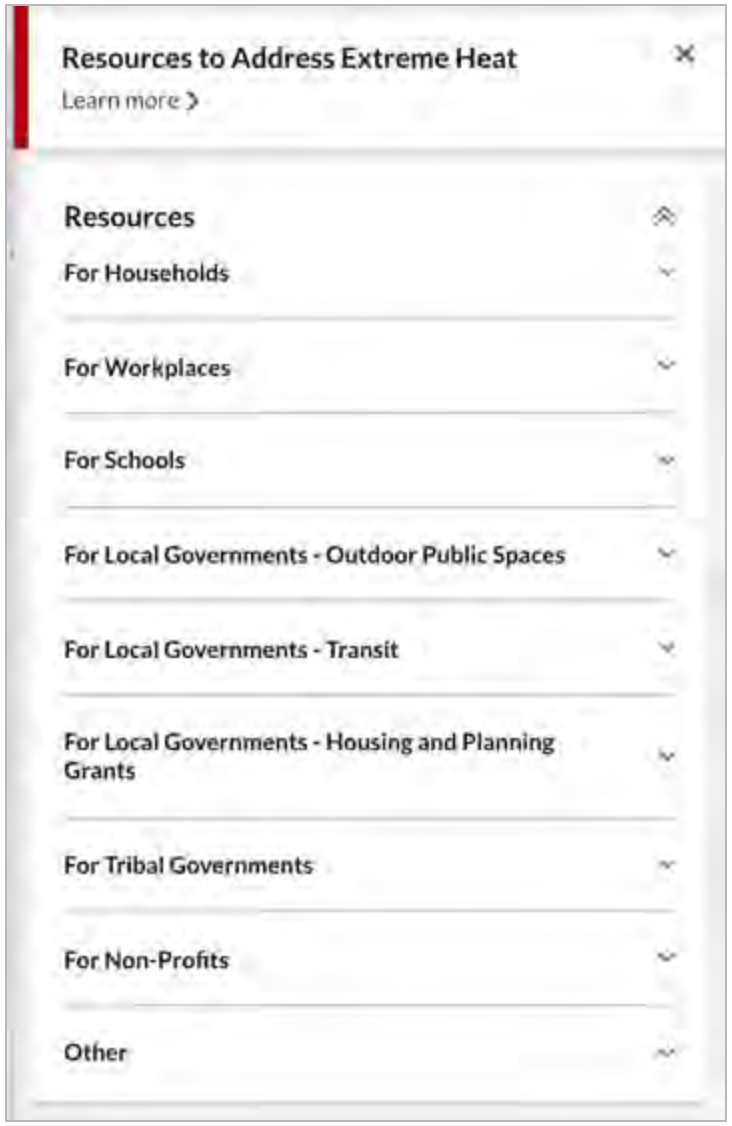
Mothers / Infants
Population Under 5
Preterm Births
Youth
Population 5-14 Years Old
Students Eligible for Free & Reduced Meal Program
Other
Disability
Limited English

Older Adults
65 and older
65+ Below Poverty
65+ Limited English
65+ Living Alone
65+ Non-White
65+ with Disability
75+ and older
Workers
Workers experiencing high environmental exposure

Health
Asthma ER Admissions
Heart Attack ER Admissions
Chronic Kidney Disease
Diagnosed Diabetes
Stroke

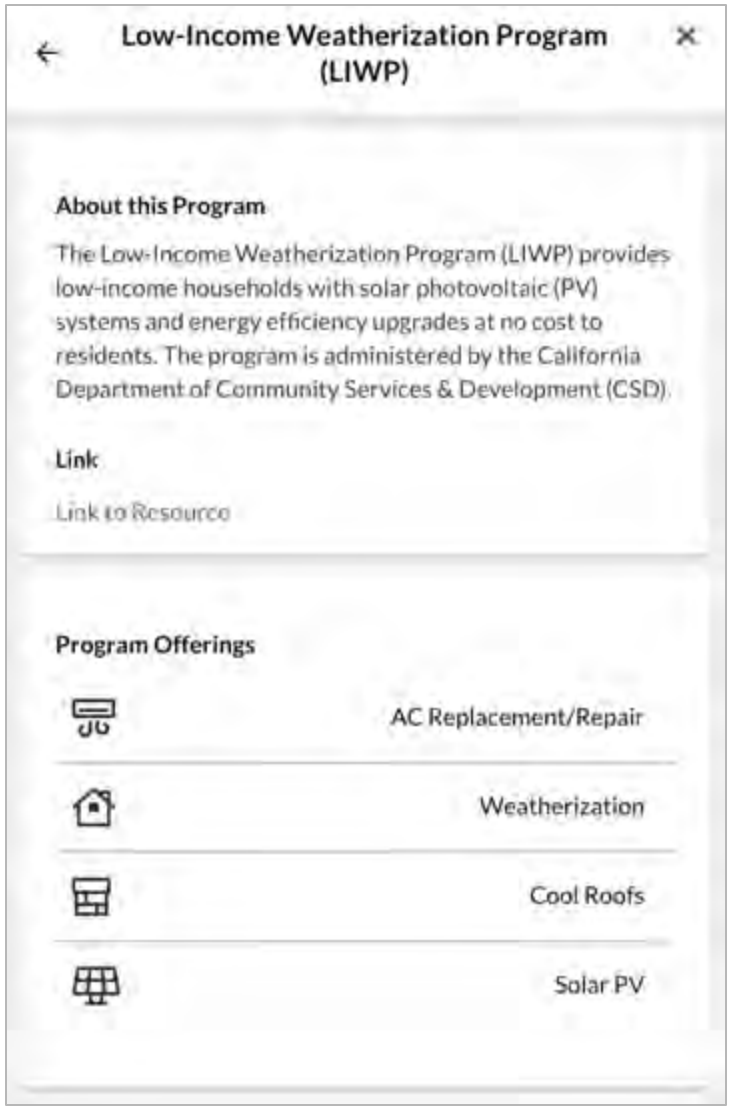
Race / Ethnicity
American Indian / Alaskan Native
Asian
Black
Latino
Native Hawaiians or Other Pacific Islanders
Some Other Races
Two or more races
White

State Resources and Funding Opportunities to Address Heat



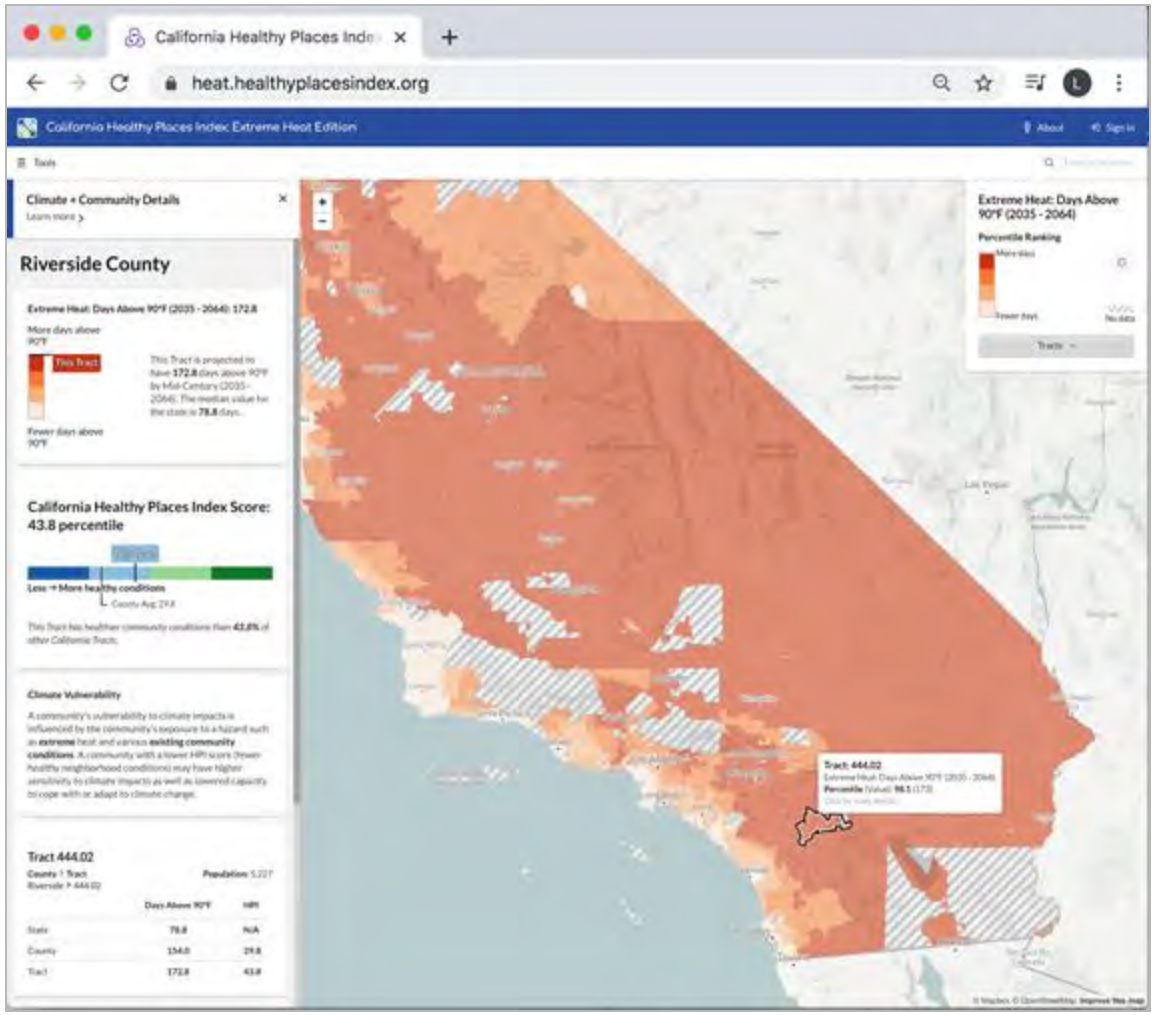
Organized by user groups

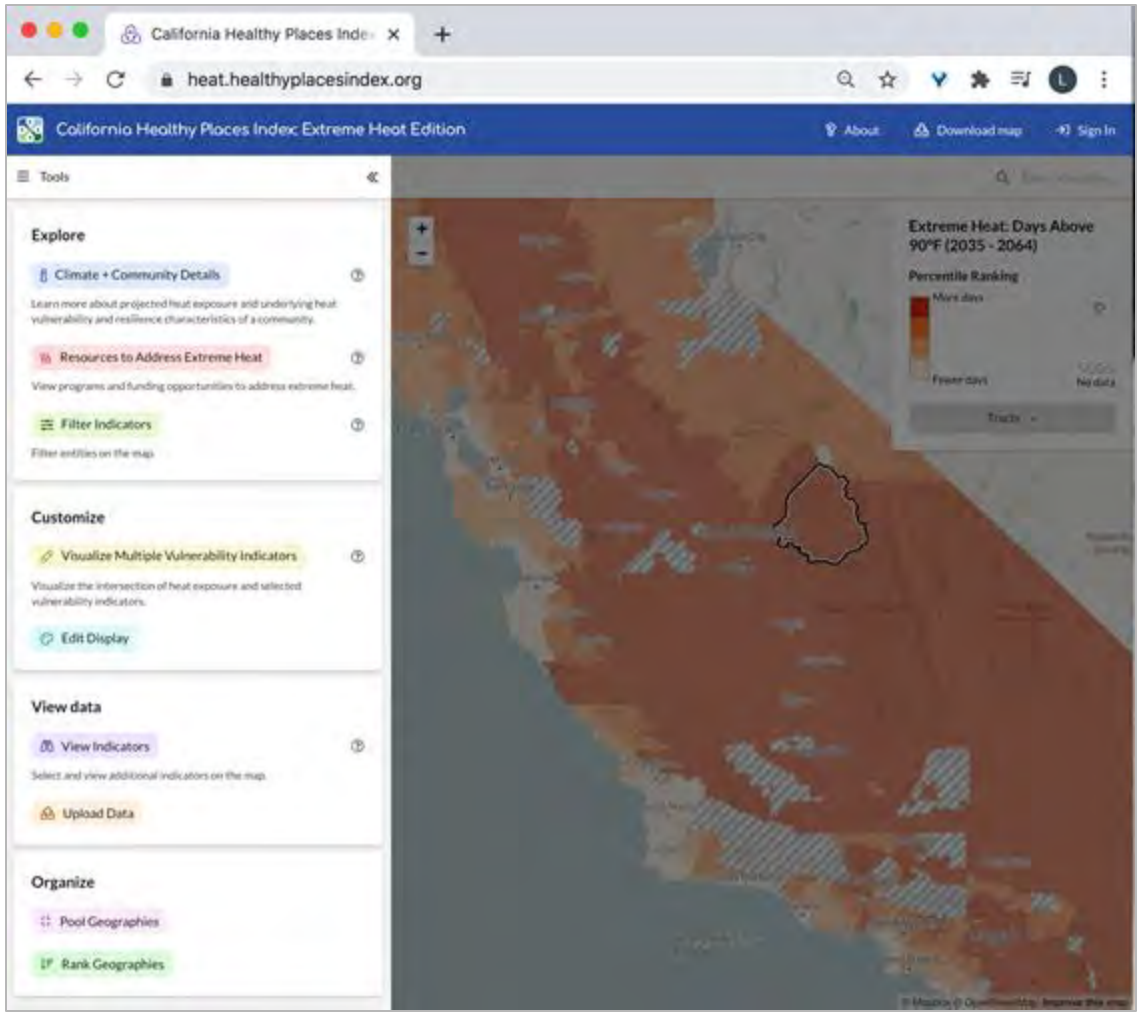
Provides descriptions of programs and heat-relevant program offerings



Tool Demonstration

Currently undergoing final edits; to be launched January 2021





SCAG's Progress on Equity Efforts

SCAG Joint Working Group: Public Health, Sustainable Communities, Climate Adaptation

Courtney Aguirre

December 17, 2020

1:00 p.m. - 3:00 p.m.

www.scag.ca.gov

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SCAG's Commitment to Racial & Social Justice

- On July 14, SCAG Board adopted resolution on its support for racial & social justice.
- SCAG's policy for a regional discussion and Action on Equity and Social Justice
- Directs staff to regularly report back on the work of the Special Committee on Equity and Social Justice
- Identified core deliverables, including:
  - Establishing a working definition of equity
  - Completing an equity inventory
  - Developing an equity framework
  - Developing a Diversity, Equity, and Inclusion work plan
  - Reviewing the Public Participation Plan

Staff report on board action available here

Special Committee on Equity & Social Justice website

Equity Definition Background Research

- Equity Work Group scanned for equity definitions from peer agencies within the state.
  - LA Metro
  - MTC-ABAG (Bay Area MPO)
  - SACOG (Sacramento Council of Governments)
  - SBCTA, SBCOG, & SB County (San Bernardino County)
- Scan included other national agencies, such as Oregon Metro and Metropolitan Council (Twin Cities).

LA Metro
2020 LRTP

MTC-ABAG
Equity Platform

SACOG
Equity, Race, & Inclusion Working Group

SBCTA, SBCOG, & SB County
Equity Ad Hoc Committee & Equity Element in Countywide Vision

Snapshot of Equity Efforts across California

	Los Angeles Metro	MTC-ABAG	SACOG	SBCTA, SBCOG, & SB County
Statement on Racism	Metro statement on Black Lives Matter and our commitment to fighting racial injustice	MTC Resolution No. 4435. "MTC's conviction that Black Lives Matter and reaffirming its commitment to advancing justice, equity, diversity and inclusion in the nine-county Bay Area"	Statement from SACOG Board Chair and Vice-Chair. Formation of Board Working Group on Race, Equity and Inclusion	Resolution No. 2020-103. "Resolution Affirming that Racism is a Public Health Crisis that Results in Disparities in Family Stability, Health and Mental Wellness, Education, Employment, Economic Development, Public Safety, Criminal Justice, and Housing"
Equity within Policy or Planning Document	Equity Focus Communities in 2020 LRTP	Equity assessment & strategic implementation plan identified as action in Equity Platform	Our Path Forward: The Prosperty Strategy. A Bridge to Action for Inclusive Economic Recovery & Growth	Addition of "Equity" as eleventh element in Countywide Vision
Action Plan	LRTP Priority Area 4.1f. Develop and advance a Racial and Socio-Economic Equity Action Plan	Equity Platform Next Steps	Equity, Race, & Inclusion Working Group; Racial Equity Audit performed by The McKensie Mack Group	Formation of Equity Element Group

Revised Equity Definition Working Draft

From 11/16/20

As central to SCAG's work, equity describes the actions, policies and practices that eliminate bias and barriers to create opportunities for all people, and especially historically and systemically marginalized people, to be healthy and prosperous and to participate fully in civic life.

Revised working draft 12/8/20

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 and prosperous and to participate fully in civic life.

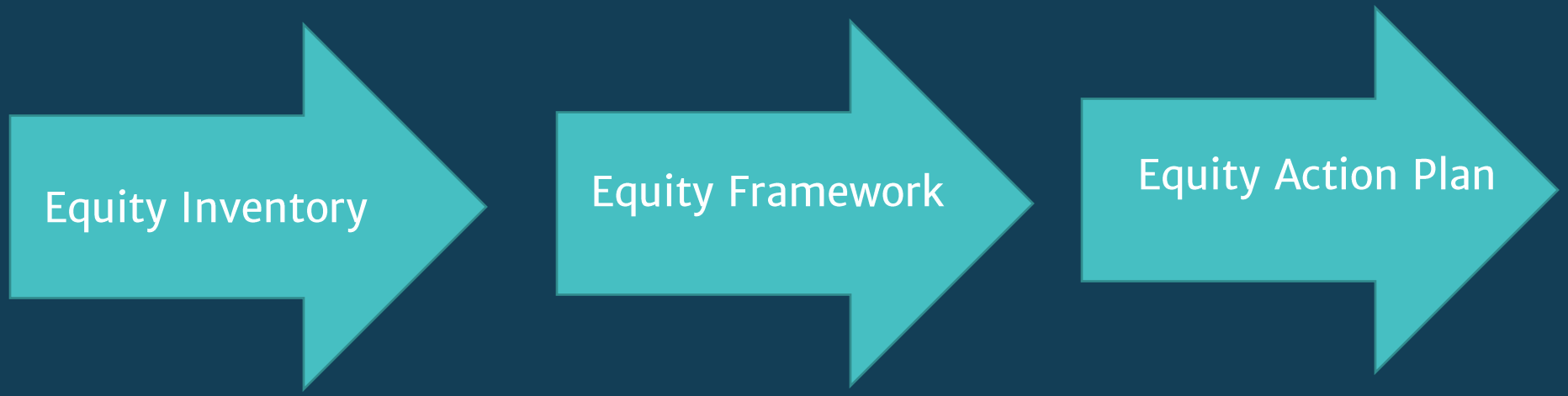
Equity Core Concepts

- Core Concepts (equity-related terms- establishing a SCAG lexicon)
  - Racism
  - Racial justice
  - Social justice
  - Race
  - Ethnicity
  - Discrimination
  - Prejudice
  - Privilege
  - White Supremacy
  - Historically marginalized
  - Systemically marginalized
  - Power (institutional)
  - Intersectionality
  - Distributional, procedural, and structural equity
  - Explicit and implicit bias

Additional dimensions include and are not limited to housing, infrastructure, economic, environmental, health and food.

Equity Inventory & Framework

- First step towards developing larger strategic approach to integrating equity in SCAG's work
- Catalogues existing planning work that takes equity into account and identifies additional areas where equity could be integrated
- Provides holistic snapshot of how equity is currently taken into account



Human Resources: Diversity, Equity, and Inclusion

Support Strategic Plan Goal 5: Recruit, support, and develop a world-class workforce and be the workplace of choice

Recruit	Recruit and retain a highly skilled and diverse workforce at all levels through removing barriers in the hiring process, mitigating implicit bias, and ensuring an equitable, accessible, and transparent hiring process
Foster	Foster an organizational culture around equity, diversity, and inclusion where employees of diverse backgrounds can be their authentic selves, feel a sense of belonging, and have their unique talents, skills, and perspectives valued and supported
Integrate and align	Integrate and align equity, diversity, and inclusion initiatives with organizational strategies, objectives, and culture and ensure accountability through measurable outcomes

Future Public Participation Plan Recommendations with Emphasis on Equity

- Reflect on our approach and take into consideration ways communication and information-sharing have changed since 2018
- In preparation for the development of the next Connect SoCal, implement intentional, grassroots process to engage diverse constituencies without geographic barriers
- Engage CBO's and foster partnerships for a more equitable, sustainable, accessible, and affordable region through organizing
- Acknowledge digital divide and promote efforts for broadband across the region
- Continue to bringing traditionally underrepresented and underserved communities to the Table
- Support resiliency that looks to climate adaptation and public health preparedness as key strategies to address community prosperity, safety and economic recovery

Questions? Comments?

Courtney Aguirre – Aguirre@scag.ca.gov

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Sustainable Communities Working Group

Connect SoCal Update

Sarah Dominguez

December 17, 2020

www.scag.ca.gov

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Connect SoCal Update

- California Air Resources Board Executive Order G-20-239
  - Accepts SCAG's determination that the SCS meets greenhouse gas emission reduction targets

- SCAG eligible for SB 1 funding (Awarded by CTC in December)
  - Trade Corridor Enhancement Program
  - Solutions for Congested Corridors

- Connect SoCal can be used for CEQA Streamlining

SCAG now focused on implementation of Connect SoCal through programs such as the Sustainable Communities Program

Julia Lippe-Klein

Planning Strategy

December 17, 2020

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SCAG Sustainable Communities Program (SCP) Timeline

2020 Sustainable Communities Program (SCP): Program Goals

- Provide Needed Planning Resources
- Promote & Address Health & Equity
- Reduce VMT & GHG Emissions
- Support the Implementation of Key Strategies and Goals of Connect SoCal's SCS
- Support Connect SoCal's Key Connections
- Support a Resilient Region
- Support the Region's Competitiveness for Federal & State Funds

2020 Sustainable Communities Program (SCP)

- Supports implementation of 2020 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), *Connect SoCal*
- Provides **multiple opportunities** to seek funding and resources to meet the needs of communities, address recovery and resiliency strategies considering COVID-19, and support regional goals

2020/21 Sustainable Communities Program (SCP)

- Multiple Funding Calls:
  - **Active Transportation & Safety (AT&S) Call Now Closed**
  - **Housing & Sustainable Development (HSD) Call Now Open (Deadline Extended to January 29)**
  - **Smart Cities & Mobility Innovations (SCMI) Call – Developing Now**
- Successful applicants receive technical assistance from SCAG
  - SCAG will complete procurement process for awarded jurisdictions

Call 2: Housing & Sustainable Development ~ Priorities

HSD Program will provide beneficial resources to cities and counties for housing production planning and:

- Encourage development and preservation of diverse housing types in areas that are supported by multiple transportation options
- Create dynamic, connected, built environments that support multimodal mobility, reduce reliance on single-occupant vehicles, and reduce VMT
- Reduce greenhouse gas emissions and improve air quality
- Support healthy and equitable communities
- Complement and increase competitiveness for state funding programs, including by increasing the number of cities with "pro-housing local policies"
- Employ strategies to mitigate negative community impacts associated with gentrification and displacement.

Call 2: Housing and Sustainable Development Project Types

Advancing Accessory Dwelling Unit (ADU) Implementation

Housing Sustainability Districts, Workforce Housing Opportunity Zones, and Housing Supportive Tax Increment Financing Districts

Objective Development Standards for Streamlined Housing, Pro-housing Designation Program and Parking Innovation

Call 2: Housing and Sustainable Development Schedule

Application Deadline Extended

Housing and Sustainable Development: Schedule	
Call for Applications Opens	November 9, 2020
Application Workshop	December 2, 2020
Application Deadline	**January 29, 2021**
Regional Council Approval of 2020 SCP Projects	April 1, 2021
Projects Begin	2021-2022
Final Work and Invoices Submitted	June 30, 2023

Call 3: Smart Cities & Mobility Innovations ~ Priorities

This Call aims to implement three Connect SoCal Key Connections:

- Smart Cities & Job Centers
- Go Zones
- Shared Mobility/Mobility as a Service

Funding to be directed towards local jurisdictions to use technology and innovation to improve the efficiency and performance of the transportation system by implementing curb space management measures that encourage shared modes, manage parking effectively, and support commerce and the growth of housing and employment in job centers.

Project Type and Eligible Projects

Curb Space Data Collection & Inventory

Technology Assessment or Adoption Plan

Parking Management Plan

Permitting Process Evaluation

Call 3: Smart Cities & Mobility Innovations Schedule

SCP-Smart Cities and Mobility Innovations Milestones	Date
Call for Applications Opens	February 8, 2021
Application Workshop	March 8, 2021, April 5, 2021
Call for Applications Submission Deadline	April 23, 2021 (5:00 p.m.)
Regional Council Recommendation	July 1, 2021
Final Work and Invoices Submitted	June 30, 2023

Additional Resources

- Program Fact Sheet
- Program Toolkit
- One-to-One Application Coaching
- Application Webinar Recordings & Presentation Slide Decks
- Listening Sessions
- Web-based Application
- **https://scag.ca.gov/sustainability-program-call-applications**

Thank you.

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Thank you!

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