



## Extreme heat exposure and adaptation

*Climate Solutions for a Warming World: Leveraging CPRG, GGRF and other EPA Resources for State Energy Offices*



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Director, Climate Resilience

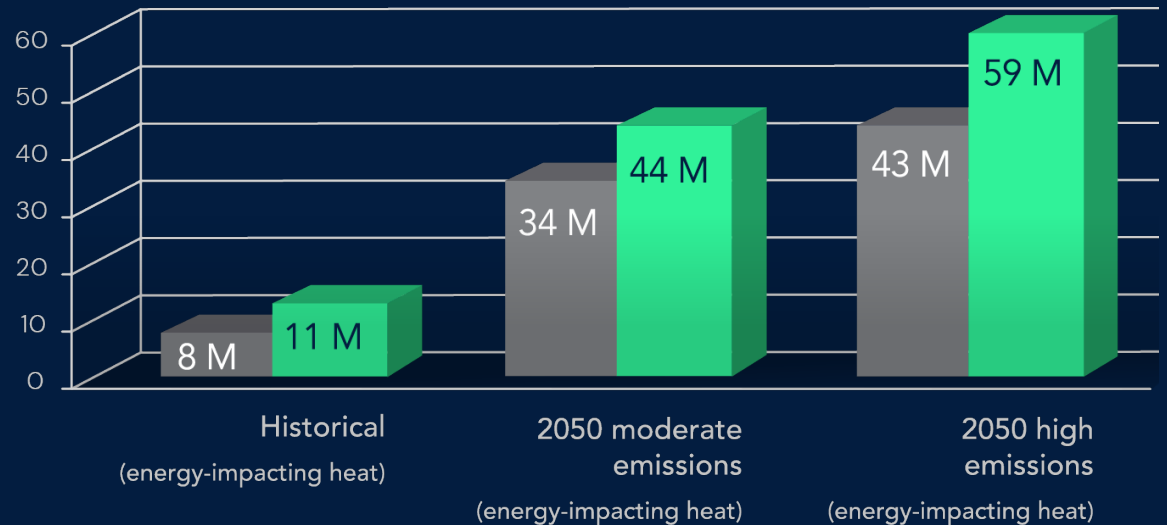
NASEO 2024 Annual Meeting –  
Investment, Innovation, Jobs, and Affordability

# Energy-impacting extreme heat exposure across U.S.

U.S. population exposed to energy-impacting heat

By 2050, **34 million additional people** in Justice40 communities could face energy-impacting heat each year in a moderate emissions scenario.

In a high emissions scenario, the number grows to **44 million people**.



Source: ICF/ClimateSight®

■ People in Justice40 communities

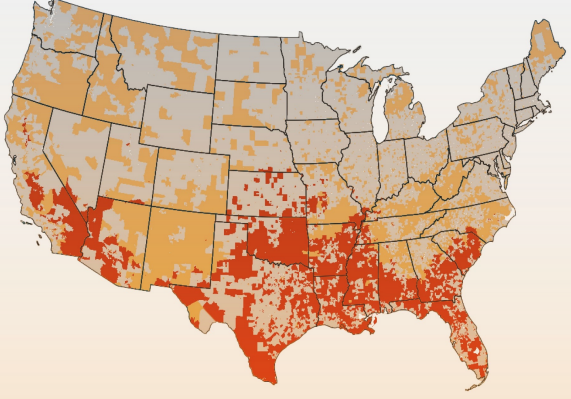
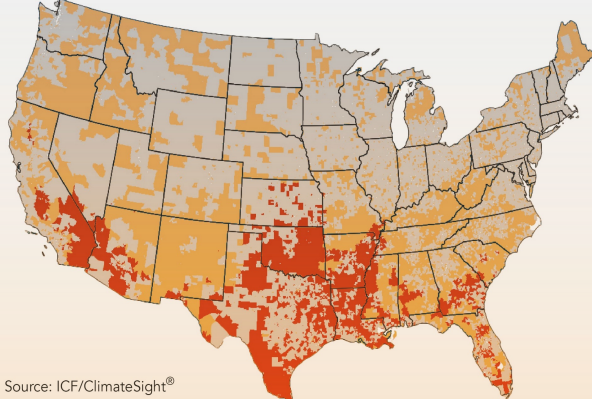
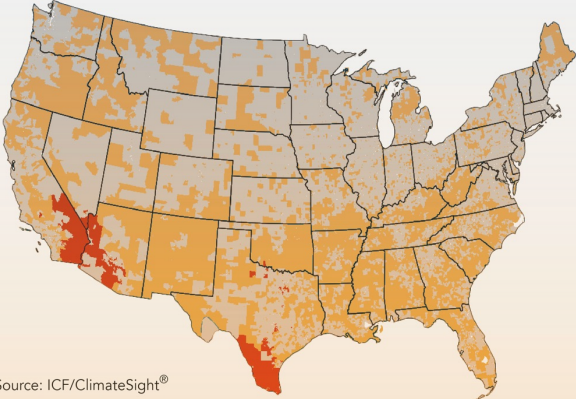
■ People not in Justice40 communities

# Energy-impacting extreme heat exposure across U.S.

Historical

2050 moderate emissions scenario (SSP2-4.5)

2050 high emissions scenario (SSP5-8.5)



Source: ICF/ClimateSight®

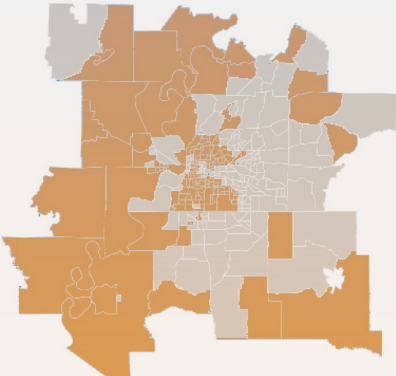
Source: ICF/ClimateSight®



■ Not Justice40 communities    ■ Justice40 communities not exposed    ■ Justice40 communities exposed

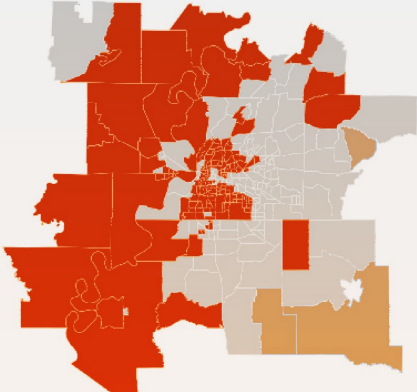
# Energy-impacting extreme heat exposure in Memphis, Tennessee

Historical extreme heat



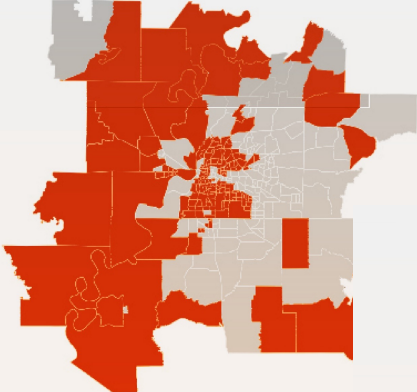
Source: ICF/ClimateSight®

2050 moderate emissions scenario (SSP2-4.5)



Source: ICF/ClimateSight®

2050 high emissions scenario (SSP5-8.5)



■ Not Justice40 communities    ■ Justice40 communities not exposed    ■ Justice40 communities exposed



# Planning actions that help Justice40 communities adapt to extreme heat

1

Identify location- and population-specific climate risks.

2

Engage with Justice40 communities.

3

Develop a plan that considers vulnerable and marginalized populations.

4

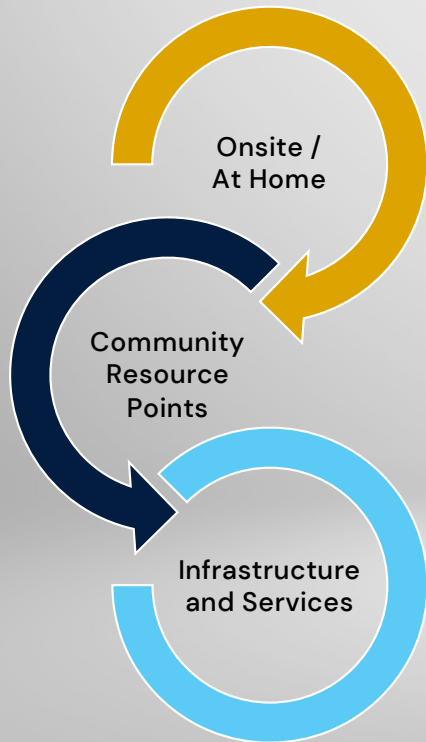
Leverage multiple funding sources for adaptation and resilience.

5

Prioritize Justice40 communities in policy and program implementation.

# Leveraging multiple funding sources for adaptation and resilience

Funding adaptation and resilience:



## Funding Program Examples

*Sample project focuses include weatherization, battery storage, nanogrids, shade/greenspaces, ZEVs as mobile power sources, microgrid districts*

EPA programs	<ul style="list-style-type: none"> <li>▪ EPA Environmental and Climate Justice Program                             <ul style="list-style-type: none"> <li>▪ Government-to-Government (G2G)</li> <li>▪ Community Change Grants</li> <li>▪ Environmental Justice Collaborative Problem-Solving (EJCPS) Cooperative Agreement Program</li> </ul> </li> <li>▪ EPA Greenhouse Gas Reduction Fund</li> <li>▪ EPA Climate Pollution Reduction Grants</li> </ul>
DOE programs	<ul style="list-style-type: none"> <li>▪ DOE Home Energy Rebates</li> <li>▪ DOE Energy Efficiency and Conservation Block Grant (EECBG)</li> <li>▪ DOE Grid Resilience Formula Grants 40101(d)</li> <li>▪ DOE Weatherization Assistance Program (WAP)</li> <li>▪ DOE Weatherization Assistance Program (WAP) Innovation Grants                             <ul style="list-style-type: none"> <li>▪ Enhancement and Innovation (E&amp;I)</li> <li>▪ Sustainable Energy Resources for Consumers (SERC)</li> </ul> </li> </ul>
Other federal programs and incentives	<ul style="list-style-type: none"> <li>▪ Federal Tax Credits</li> <li>▪ FEMA Building Resilient Infrastructure and Communities (BRIC)</li> <li>▪ HHS Low-income Home Energy Assistance Program (LIHEAP)</li> </ul>

Related Funding Opportunities: [U.S. Climate Resilience Toolkit](#)

CASE STUDY

# Mirasol Village (Sacramento, CA)

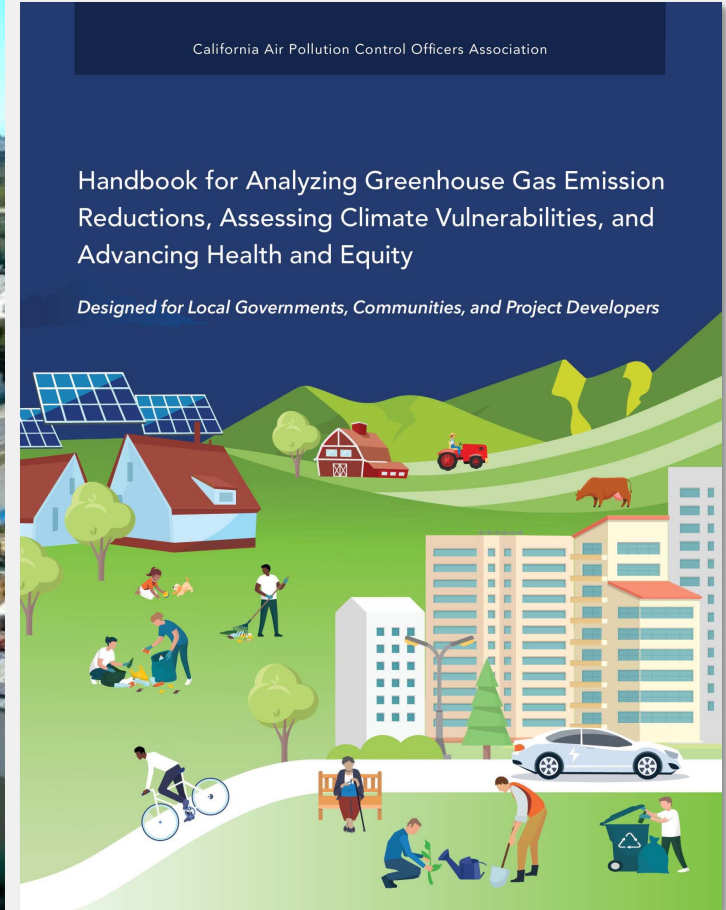
437 affordable/mixed income units

- CAPCOA, ICF, and partners developed a screening tool to assess climate hazards and identify relevant measures
- SHRA advocated to revitalize the Mirasol and its surrounding neighborhood
- Awarded \$330 million in Choice Neighborhoods Planning and Initiatives Implementation Grants



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# Assessing Measures to Reduce Vulnerability

#	Measure Title	Scale of Application	Reduces Exposure	Reduces Sensitivity	Increases Adaptive Capacity	Improved Air Quality	Energy and Fuel Savings	Vehicle Miles Traveled Reductions	Water Conservation	Enhanced Pedestrian or Traffic Safety	Improved Public Health	Improved Ecosystem Health	Enhanced Energy Security	Enhanced Food Security	Social Equity
<b>Temperature/Extreme Heat</b>															
<b>Infrastructure Improvements and Projects</b>															
EH-1.	Install Green Infrastructure*	All	1-3	1-3	0	●	◐	○	○	○	●	●	○	○	●
EH-2.	Provide Heat Mitigation for Public Walkways and Transit Stops	All	2-4	0	0	●	○	○	○	○	●	○	○	○	●
EH-3.	Install Heat-Reducing Roof	All	2-3	0	0	●	●	○	○	○	●	○	○	○	●
EH-4.	Enhance Building Envelope Efficiency	P/S	0	0	1-3	●	●	○	○	○	●	○	○	○	◐
EH-5.	Upgrade to Efficient Equipment/Infrastructure	All	0	0	1-3	○	●	○	○	○	○	○	○	○	○

**99 climate adaptation measures (15 Extreme Heat)**

**50 health and equity measures**

**+ Co-benefit quantification**

**+ Climate vulnerability scoring**

**+ Health and equity scoring**







## New Amenities

- Community rooms
- Business Center
- Swimming Pool
- Bicycle Parking
- Electric vehicle chargers
- Future Dos Rios light rail station
- Dog park
- Park/Joint use Detention Basin
- Playgrounds
- Community garden
- Fitness equipment
- Pedestrian walking paths
- Fruit and shade trees

Get in touch with us:

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