J4.5 Enhancing Heat Resilience in Southern Arizona through Codesign and Academic Public Health Partnerships

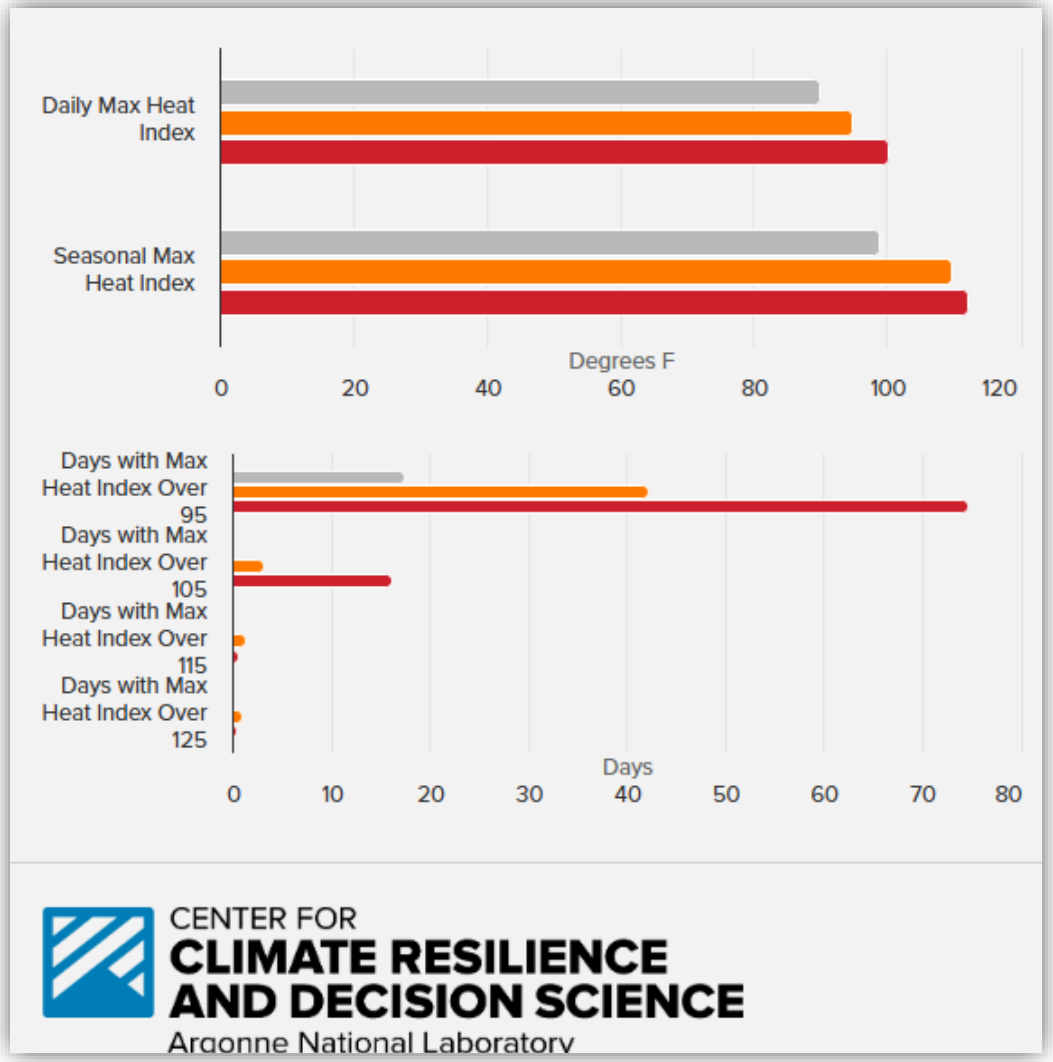
Presenter: Mona Arora, MSPH, PHD
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Challenge: Heat in Arizona

- 1970 to 2019, average daily temperatures in Tucson **increased 4.48°F, average 8°F nighttime**.
- Increasing days Max Heat Index over 95°F: **Hist – 22 days, 2050 – 43 days, 2100 – 69 days**.
- **Tucson** and Phoenix are among the **top five fastest warming cities in the nation**, Arizona is third fastest warming state in the nation.
- "Heat stroke occurs when the body's thermoregulatory mechanisms fail, and the core temperature rises to 41.1°C (106°F) or higher."



Sources: Ch. 28. Southwest. In: Fifth National Climate Assessment (2023); Cronkite News (2019): Argonne Climate & Risk Resilience Portal; Ahima (2020)
Slide courtesy: Dr. Julie Robinson (Pima County Health Department)

The Road to Regional Heat Planning

- Record breaking heat in 2023
- 990 Heat Deaths in AZ, 126 in Pima County
  - US annual average is 1220
- August 2023: Governor Hobbs declared Heat Emergency
- Appointment of Dr. Eugene Livar as AZ's first Chief Heat Officer at Arizona Department of Health Services
- State wide initiatives revealed need for more proactive approach locally

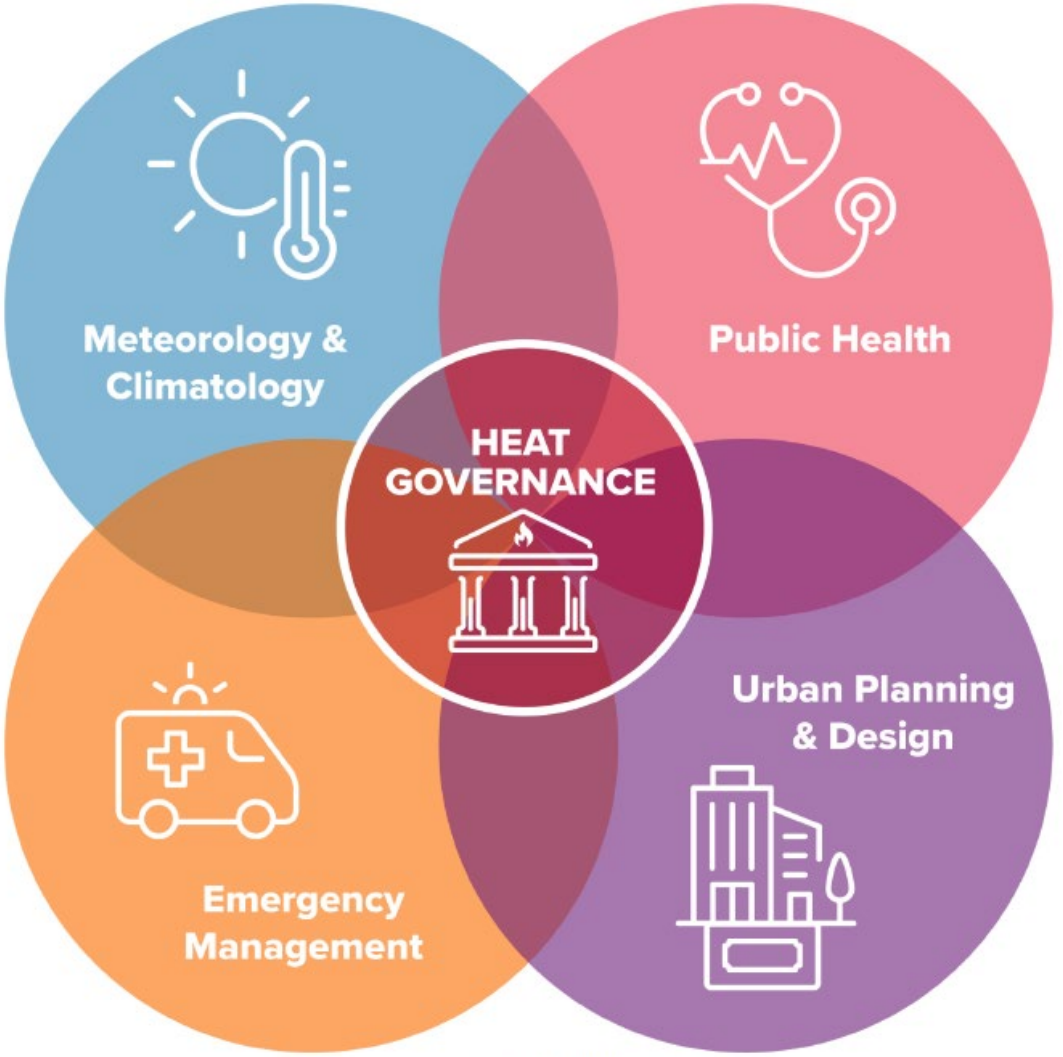


The Road to Regional Heat Planning

Heat resilience

Proactively mitigating and managing heat across the many systems and sectors it affects

Public Health and Healthcare
Workforce and Heat Protection
Energy and Our Grid
Community and Neighborhood Level Action
Built Environment



Meerow & Keith, 2024

Sources: Planning for Urban Heat Resilience (Keith, Meerow 2022); Cities at the forefront of emerging US heat governance (Keith, Meerow 2024)

Convening of the Minds

Grassroots, nonprofit organization

Local and tribal government

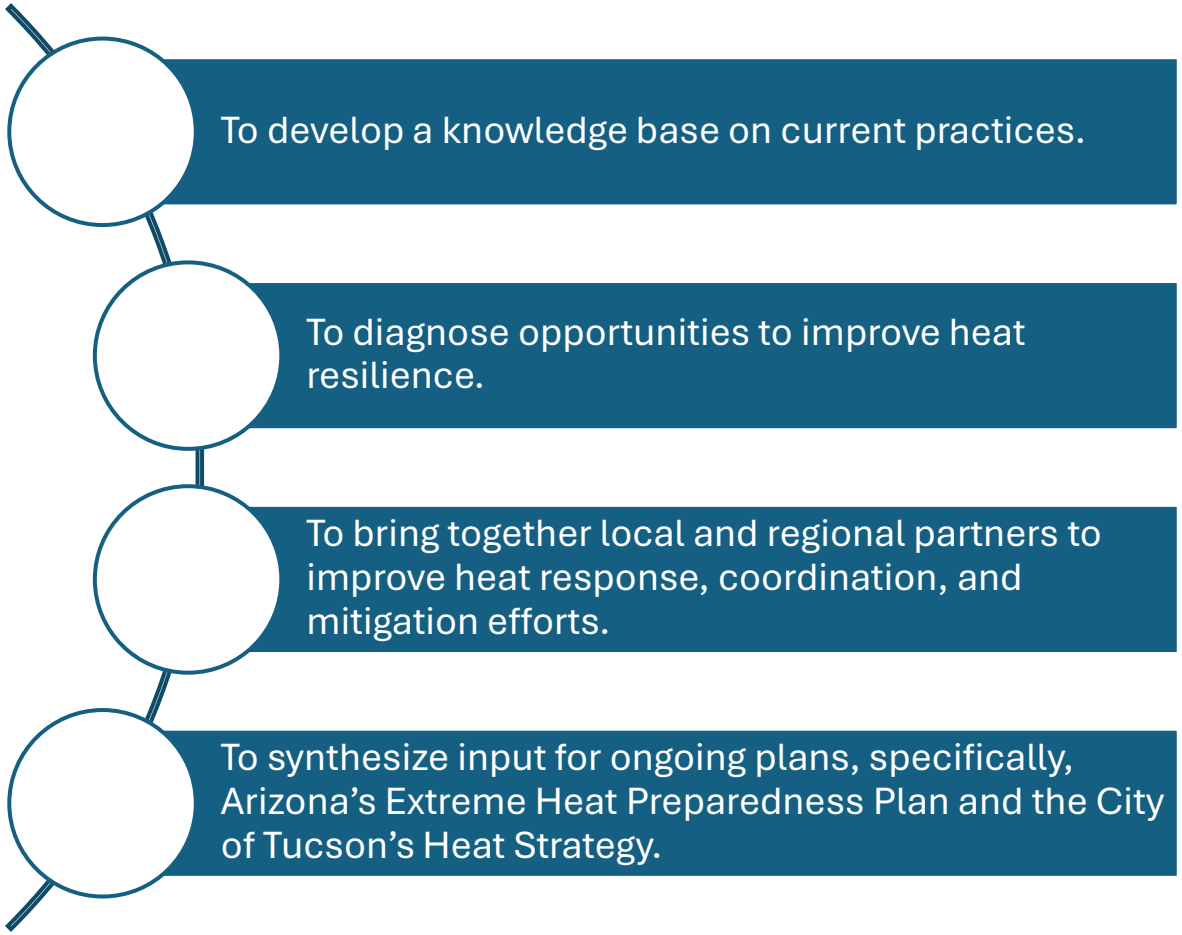
Private sector, labor unions, and utilities

Academic organizations across Southern Arizona

Public health, healthcare, emergency management, first responders

Urban planning and policy

Neighborhood leaders from heat-stressed communities



Co-design Approach

STEP1

Partnerships

Identifying community organizations and expanding partnerships across sectors to engage in collaborative planning and to build trust



STEP2

Common Vision

Shared understanding of community concerns and needs and understanding financial and resource commitments



STEP3

Workshops

Generating ideas through participatory approaches such as workshops, meetings



STEP4

Action Planning

Engaging partners to prioritize community-level actions and developing strategic plans



STEP5

Taking Action

Implementing community level interventions, actions between and during heat seasons.



STEP6

Evaluation

Integrate feedback mechanisms throughout planning and action cycle to understand what is effective and what needs to be improved



Priority Areas for Action

Ongoing Effective Initiatives

Heat risk, management, and mitigation training and education programs (e.g., Physicians for Social Responsibility program).
Free fare transit and utility relief programs
Cooling through green infrastructure (Million Trees program)
"Culture of Care"

Heat Management Recommendations

Improved EWS and timely communication.
Expanding education on existing resources, programs, and assistance, benefits of action.
Improved heat relief coordination.
Establishing cooling center protocols.

Heat Mitigation Recommendations

Augmenting existing green infrastructure and forestry programs.
New building codes requiring sustainable features.
Incentivizing energy efficiency.
Transitioning to alternate energy sources.
Principles and guidelines for an equitable approach toward heat resilience.

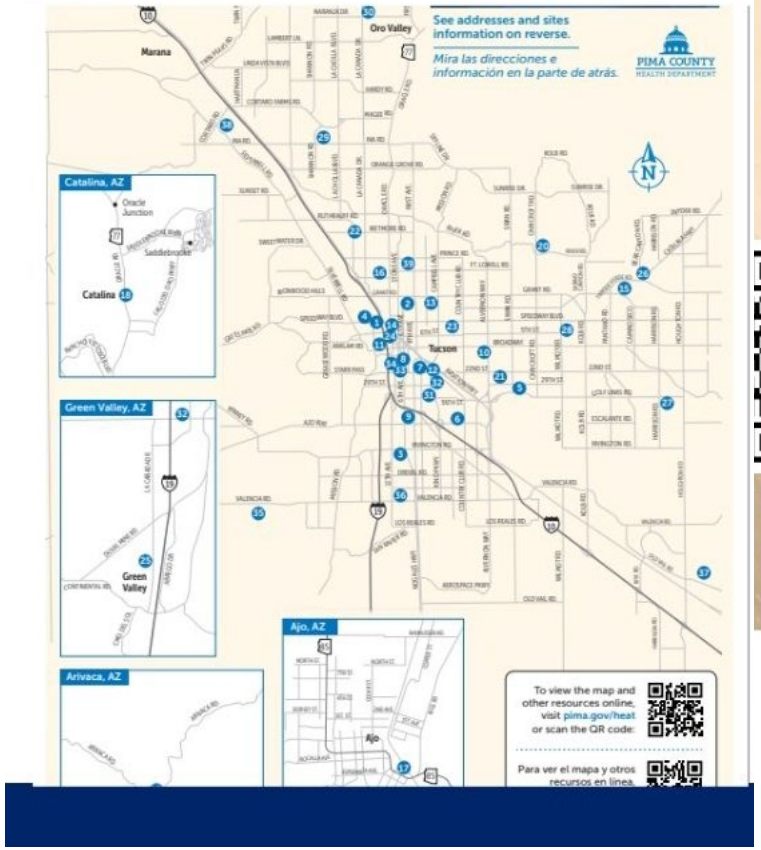
Heat Governance Recommendations

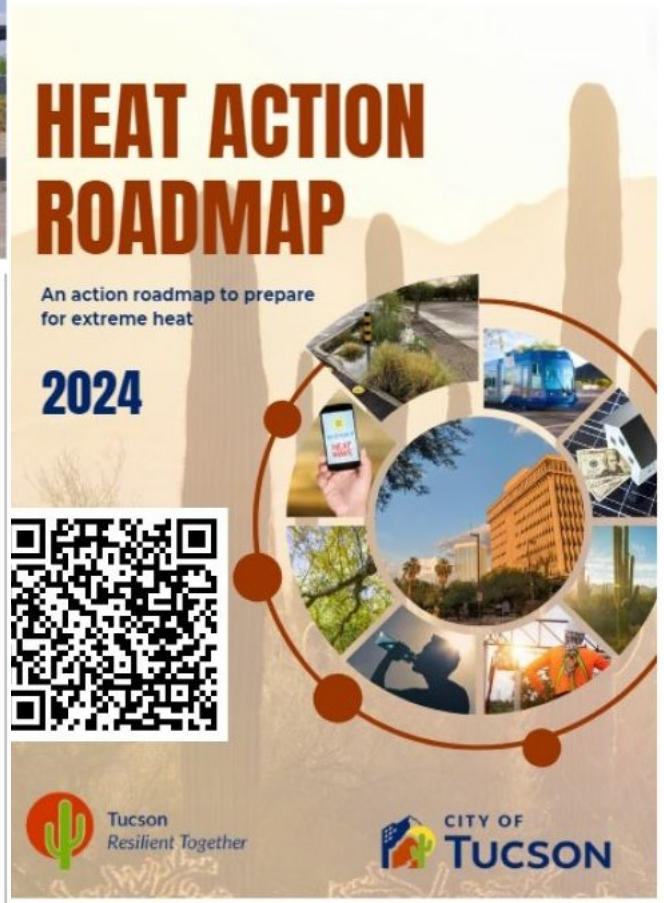
Establish trust.
Better communicate, identify needs, and allocate resources.
Coordinate and collaborate laterally across local partners and communities.

OUTPUTS

- Within 3 weeks, recommendations compiled and incorporated into Arizona's Extreme Heat Preparedness Plan (2024)
- Pima County Health Department (PCHD): 2024 Heat Season used Emergency Response framework for hybrid response
- PCHD convened the Joint Heat Action Team (J-HAT) to hold weekly briefings with partners.
- Expansion of heat relief sites to 43
- 5 Cooltainers
  - City of Tucson (2)
  - Tohono O'odham Nation (2)
  - City of Ajo (1)
- Heat Protection Ordinance for City Contractors and Administrative Directive for City Employees
- Heat Advisory Committee established







Next Steps

2nd Annual Southern Arizona Heat Summit scheduled for February 1st, 2025

Expanding partners with agencies serving individuals with access and functional needs, pets, veterans

Expanding heat relief network to explore expansion of respite centers

Engaging academic partners to develop data-driven, evidence-based solutions in real-time.

Building regional capacity through training and education



TOGETHER WE ACHIEVE REMARKABLE RESULTS!



HEAT RELIEF KITS

TUCSON Resilient Together

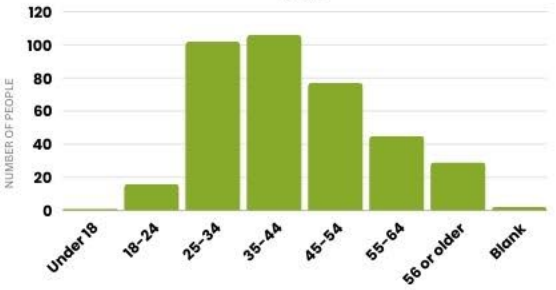


By the Numbers

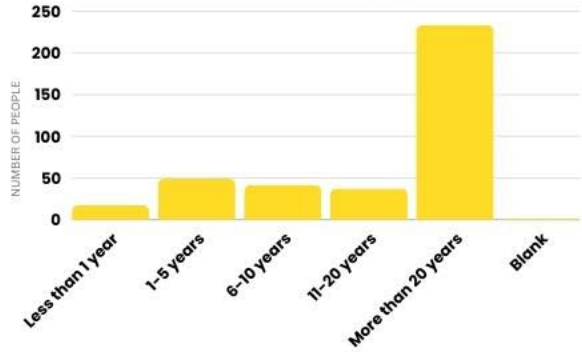
- 915 KITS DISTRIBUTED
- 3 KIT ASSEMBLING EVENTS | 9 KIT DISTRIBUTION EVENTS
- 117 UNIQUE VOLUNTEERS | 211 VOLUNTEER HOURS
- 17 UNIQUE LOCATIONS

Kit Recipients

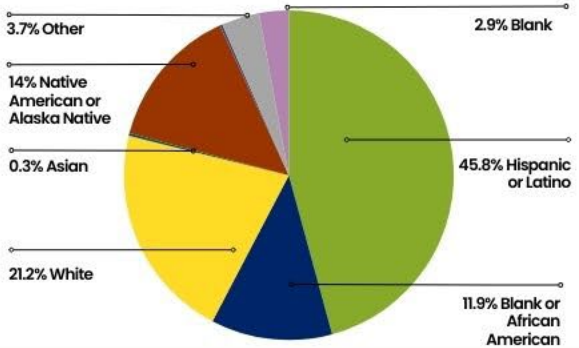
AGE



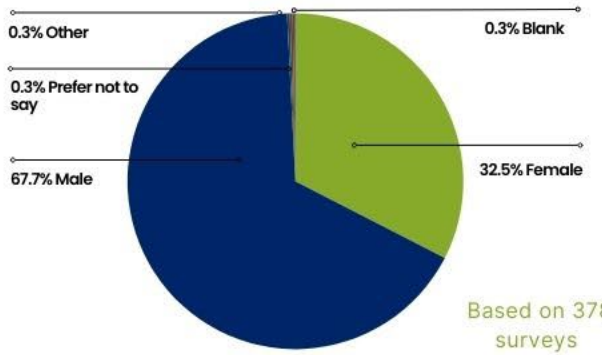
TIME LIVING IN TUCSON



ETHNIC BACKGROUND



GENDER IDENTITY



Based on 378 surveys

Slide source: Ms. Fatima Luna (City of Tucson)

Thank you!