



# Planning for Urban Heat Resilience

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EESI Living with Climate Change:  
Extreme Heat

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# Planning for Urban Heat Resilience

Ladd Keith & Sara Meerow

**Chapter 1** | Urban Heat: A Growing Risk

**Chapter 2** | Understanding the Complexities of Urban Heat

**Chapter 3** | Equity and Urban Heat

**Chapter 4** | Urban Heat Resilience Planning Framework

**Chapter 5** | Heat Mitigation Strategies

**Chapter 6** | Heat Management Strategies

**Chapter 7** | Planning Tools for Urban Heat Resilience

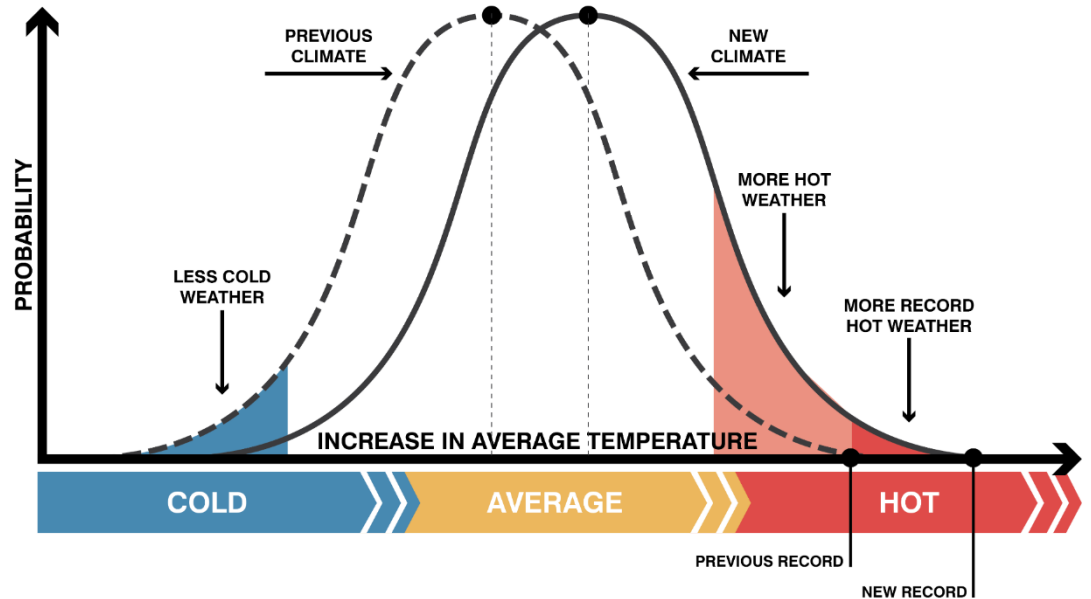
**Chapter 8** | Advancing Urban Heat Resilience

# Planning for Urban Heat Resilience

## Urban heat: A growing risk

Continued rise in average temperatures and increases in the intensity, duration, and frequency of extreme heat events

- Climate change
- Urban heat island (UHI) effect

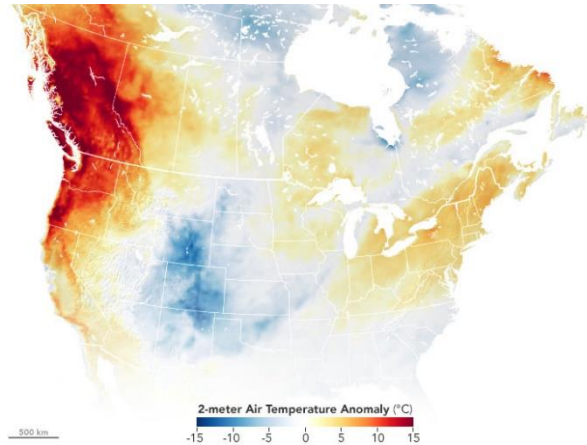


# Planning for Urban Heat Resilience

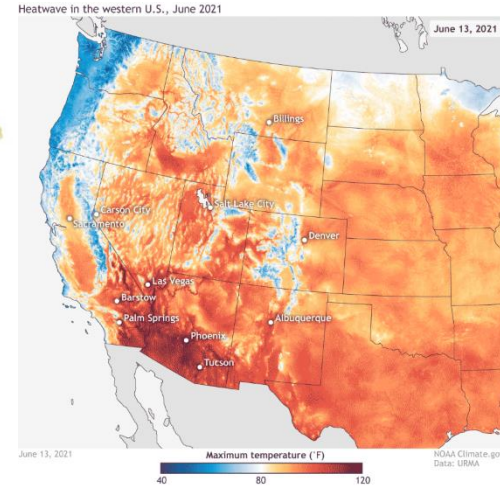
## Urban heat: A growing risk

- Social
  - Public health
  - Quality of life
- Economic
  - Labor
  - Economic productivity
- Environmental
  - Landscapes and ecology
- Infrastructure
  - Energy and water usage

2021 Pacific Northwest Heatwave



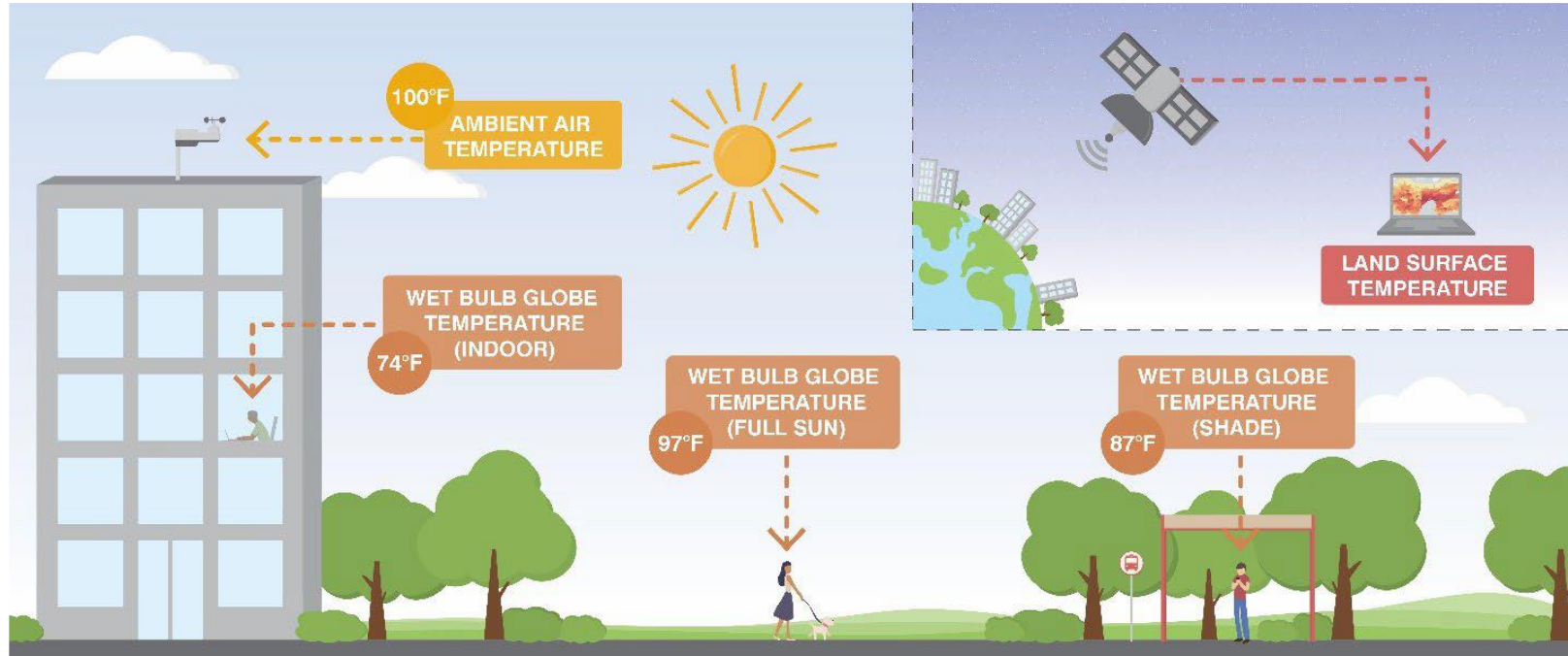
2021 Southwest Heatwave



(U.S. NOAA)

# Planning for Urban Heat Resilience

Understanding the complexities of urban heat



(Keith & Meerow, 2022)



# Planning for Urban Heat Resilience

## Equity and urban heat

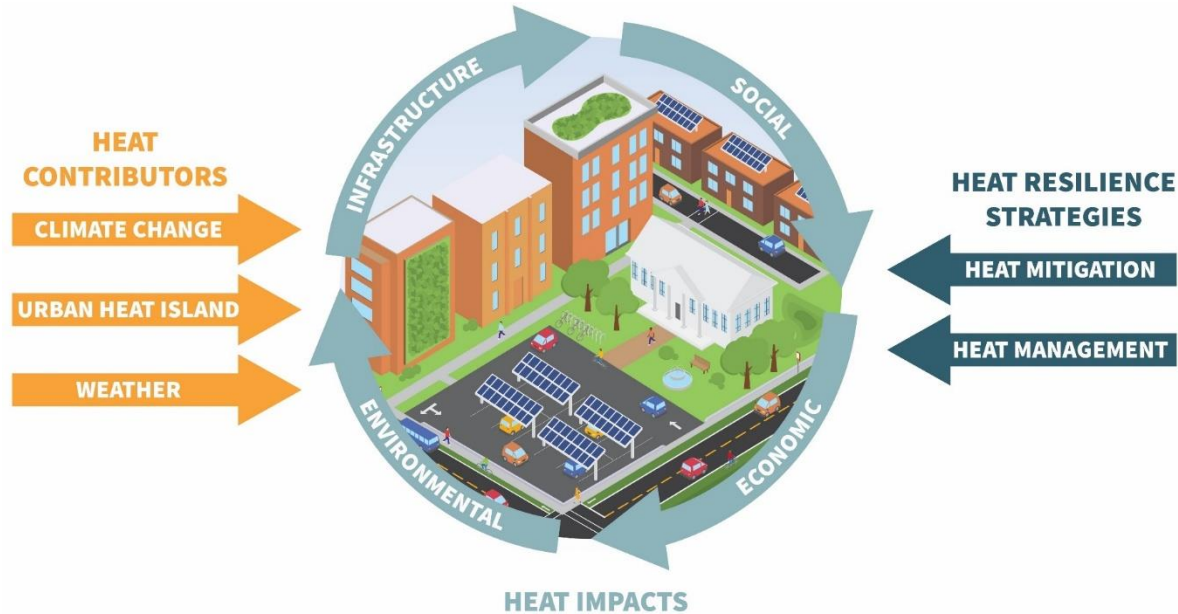
- Inequitable distribution of heat severity
  - Legacy of racist land use practices (redlining)
  - Continued community disinvestment
- Systematic inequities
  - Housing and indoor cooling
  - Workplace and school environments
  - Transportation
  - Healthcare
  - Exclusion from decision-making



# Planning for Urban Heat Resilience

## Urban heat resilience planning framework

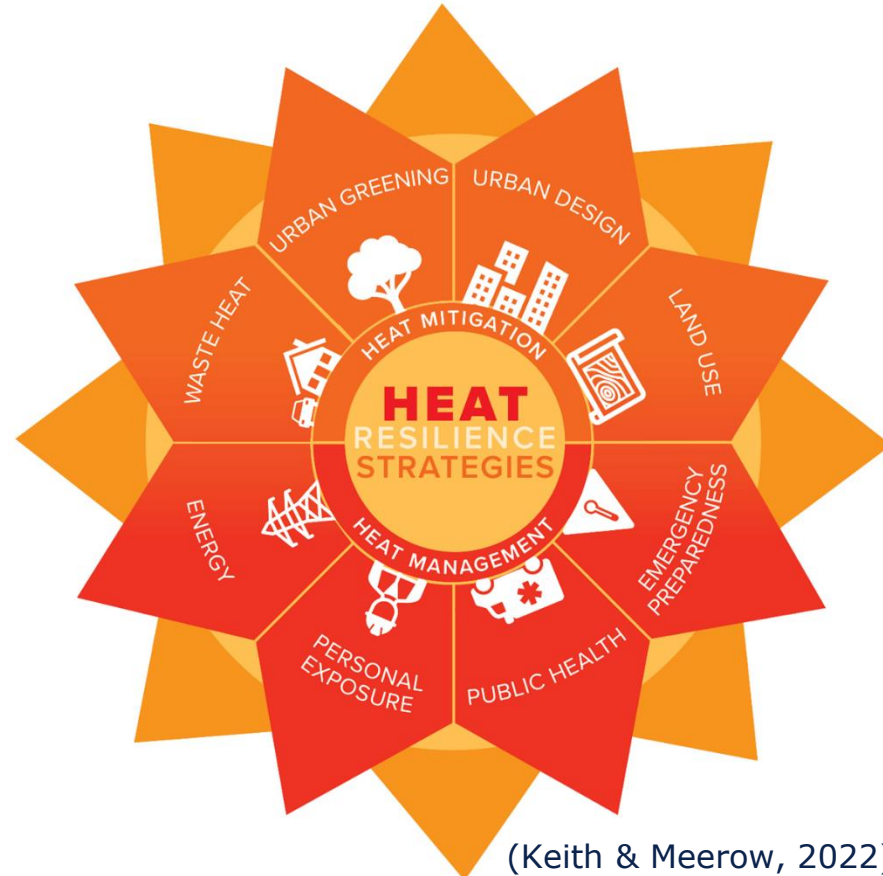
*"Proactively mitigating and managing urban heat across the many systems and sectors it affects."*



# Planning for Urban Heat Resilience

## Heat resilience strategies

- Heat mitigation
  - Land use
  - Urban design
  - Urban greening
  - Waste heat
- Heat management
  - Energy systems
  - Personal exposure
  - Public health
  - Emergency preparedness

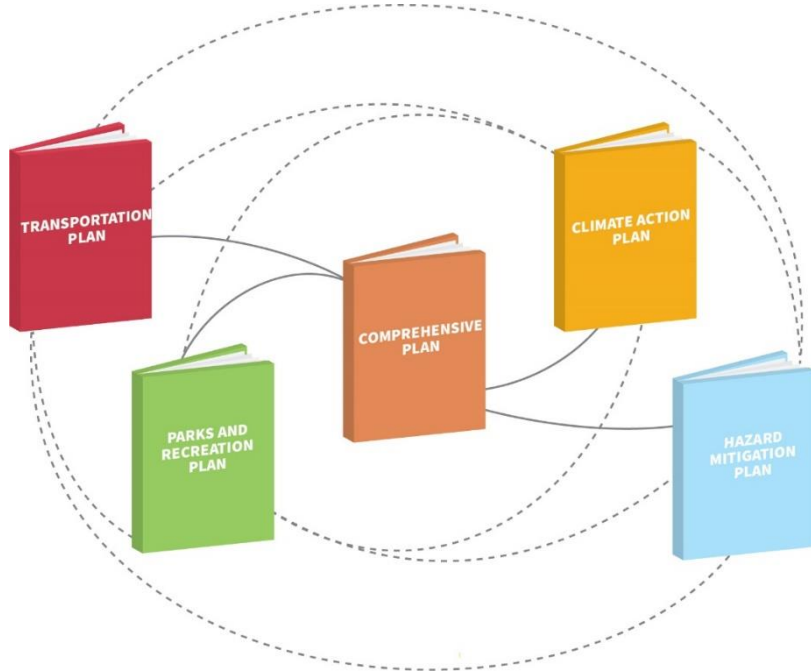




# Planning for Urban Heat Resilience

## Planning tools for heat mitigation

“Network of plans”



- Community visioning and engagement
- Plans and policies
  - Comprehensive plan
  - Hazard mitigation plan
  - Climate action plan
- Regulations and project review
  - Zoning and land use regulations
  - Streetscape design guidelines
  - Building codes
  - HOA regulations and CC&Rs
- Public investments
  - Parks, open space, and connections
  - Flood management infrastructure
  - Transportation and transit infrastructure
  - Public buildings

# Deploy Heat Officers, Policies and Metrics

Ladd Keith, Sara Meerow, David M. Hondula & James C. Arnott

## Heat governance

*"The actors, strategies, processes, and institutions that guide decision-making for mitigating and managing heat as a hazard."*

## Six guiding principles

- Advance heat equity
- Mitigate heat
- Manage heat
- Develop metrics
- Coordinate initiatives
- Build heat institutions

 @LaddKeith

nature

Setting the agenda in research

## Comment



In June, residents in Portland, Oregon, fill a cooling centre to escape record-breaking temperatures.

## Deploy heat officers, policies and metrics

Ladd Keith, Sara Meerow, David M. Hondula, V. Kelly Turner & James C. Arnott

# Thank You



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Planning for Urban Heat Resilience  
[tinyurl.com/urbanheatresilience](https://tinyurl.com/urbanheatresilience)

Deploy heat officers, policies and metrics  
[tinyurl.com/heatgovernance](https://tinyurl.com/heatgovernance)

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