



# Data Centers and Urban Heat Islands

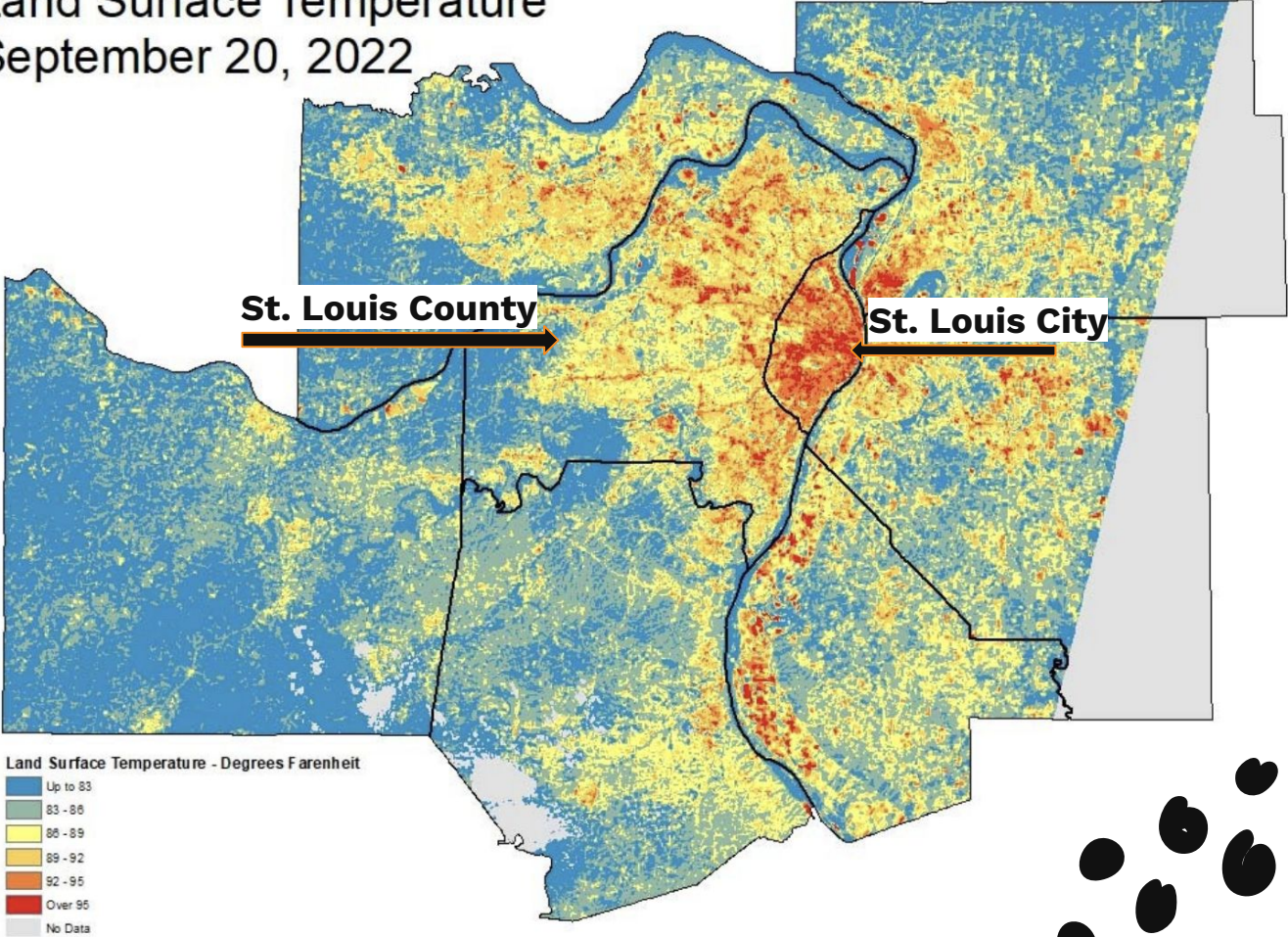
# Who are we?

## **Legislative advocacy**

for environmental issues  
that impact people  
across Missouri.



St. Louis Region  
Land Surface Temperature  
September 20, 2022



**UHI at a glance**

East-West Gateway Council of  
Governments: OneSTL



# What is the urban heat island?

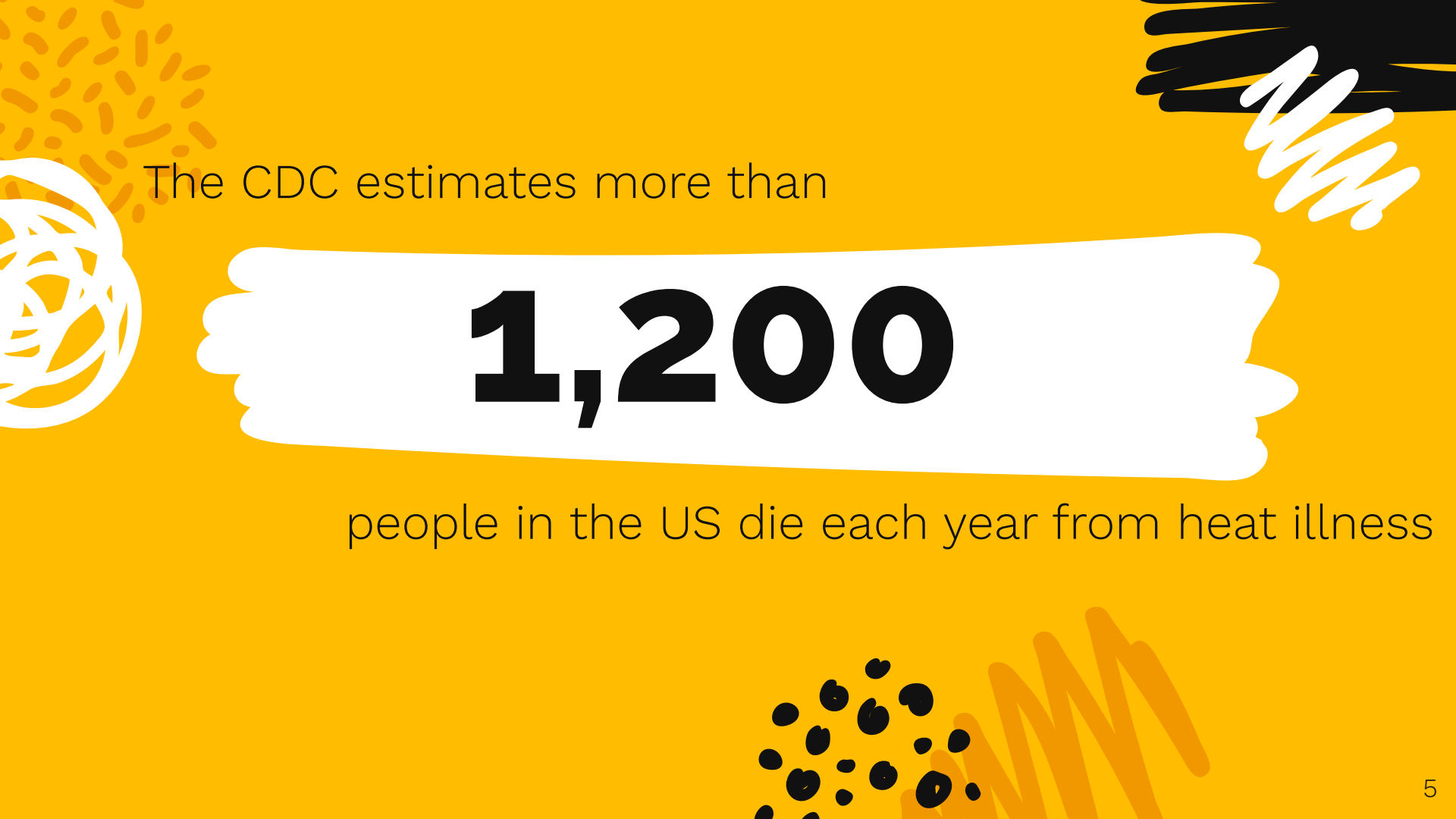


## Indirect

- x Burning fossil fuels
    - x Electricity
    - x Gasoline
    - x "Natural" gas, or methane gas
- 

## Direct

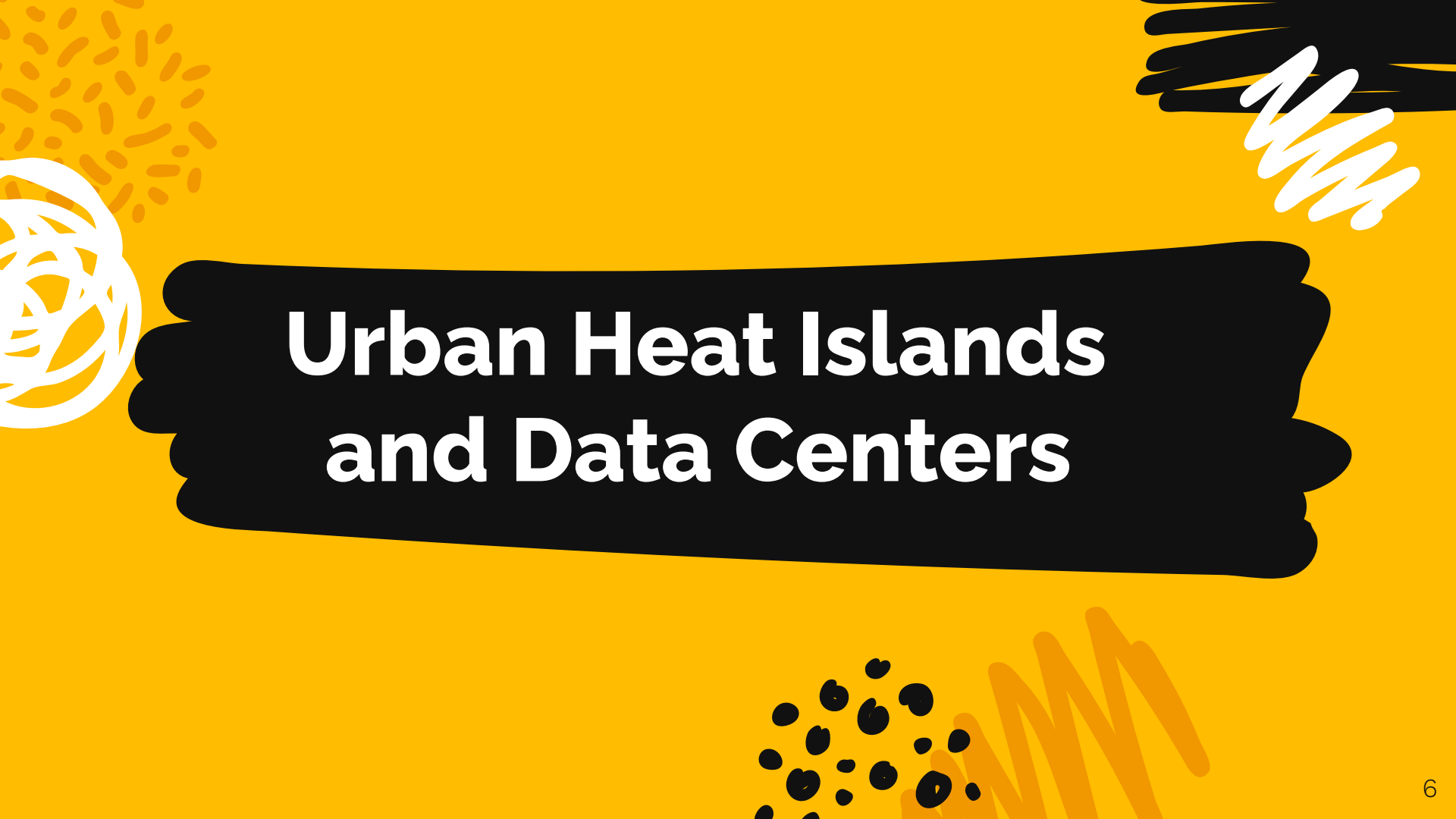
- x Brick, asphalt, concrete
  - x Building efficiency (or lack thereof)
- 



The CDC estimates more than

**1,200**

people in the US die each year from heat illness



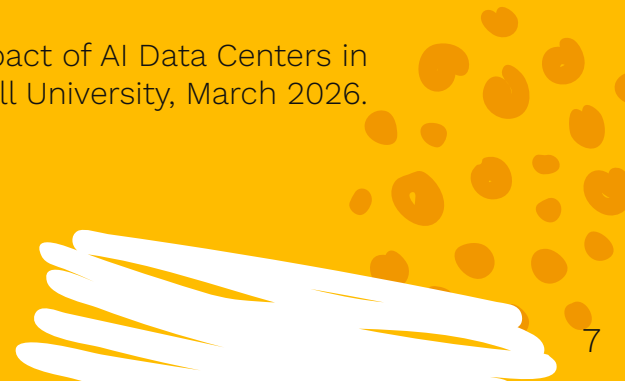
# Urban Heat Islands and Data Centers

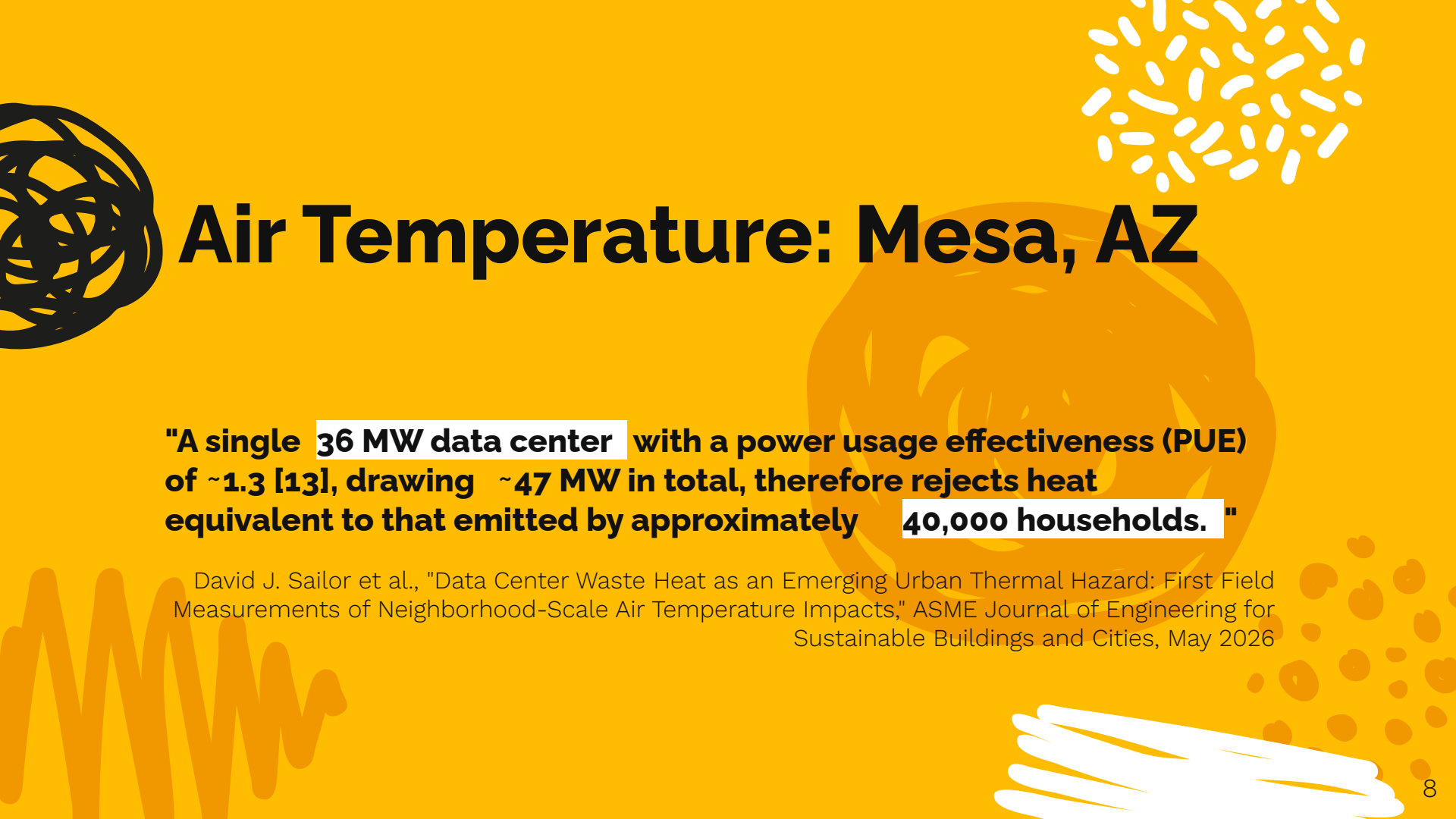


# Land Surface Temperature

**"The average LST [land surface temperature] increase across the data centres is 2.07 °C [~4 °F]... the impact of LST increase reaches up to 10 km."**

Andrea Marinoni et al. "The Data Heat Island Effect: Quantifying the Impact of AI Data Centers in a Warming World," *arXiv* at Cornell University, March 2026.





# Air Temperature: Mesa, AZ

**"A single 36 MW data center with a power usage effectiveness (PUE) of ~1.3 [13], drawing ~47 MW in total, therefore rejects heat equivalent to that emitted by approximately 40,000 households. "**

David J. Sailor et al., "Data Center Waste Heat as an Emerging Urban Thermal Hazard: First Field Measurements of Neighborhood-Scale Air Temperature Impacts," ASME Journal of Engineering for Sustainable Buildings and Cities, May 2026





# Air Temperature: Mesa, AZ

**Discharged air from Mesa's data centers raised temperatures by as much as 4 °C temperatures, in residential neighborhoods within 1,600 feet.**

David J. Sailor et al., "Data Center Waste Heat as an Emerging Urban Thermal Hazard: First Field Measurements of Neighborhood-Scale Air Temperature Impacts," ASME Journal of Engineering for Sustainable Buildings and Cities, May 2026





**100° days in STL  
have **doubled** in  
the past 30  
years**

First Street Foundation





**In 30 years from now...**

**50 days over**

**100°**

**1 day over 125°**



First Street Foundation





# Thank you!