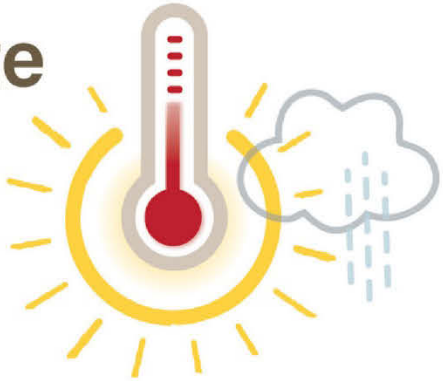
HEALTHY COMMUNITIES *task force*

&

Climate Adaptation Forum



EXTREME HEAT IN OUR REGION

A Joint Meeting of the HCTF and Climate Adaptation Forum

February 16, 2022

DELAWARE VALLEY dvrpc REGIONAL PLANNING COMMISSION

WELCOME!

- **Use the tools bar** at bottom for controls.
- You can **turn video on or off**.
- Use the **Chat Box** to submit questions for the speakers.
- Please complete the **post-meeting survey**.
- The meeting **will be recorded**.

HEALTHY COMMUNITIES task force & Climate Adaptation Forum

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TODAY'S AGENDA

Welcoming + Opening Remarks

Karin Morris, Director of Community Planning, DVRPC

Municipal Management of Extreme Heat

Chris Linn, Manager of the Office of Climate and Environment, DVRPC

Preparing for and Responding to Extreme Heat in Philadelphia

Alex Skula, Policy, Planning, and Evaluation Manager, City of Philadelphia Department of Public Health

Closing Remarks

Amy Verbofsky, Manager of Healthy and Resilient Communities, DVRPC

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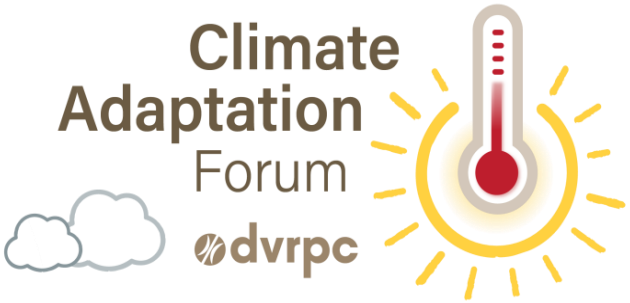
Extreme Heat in Our Region



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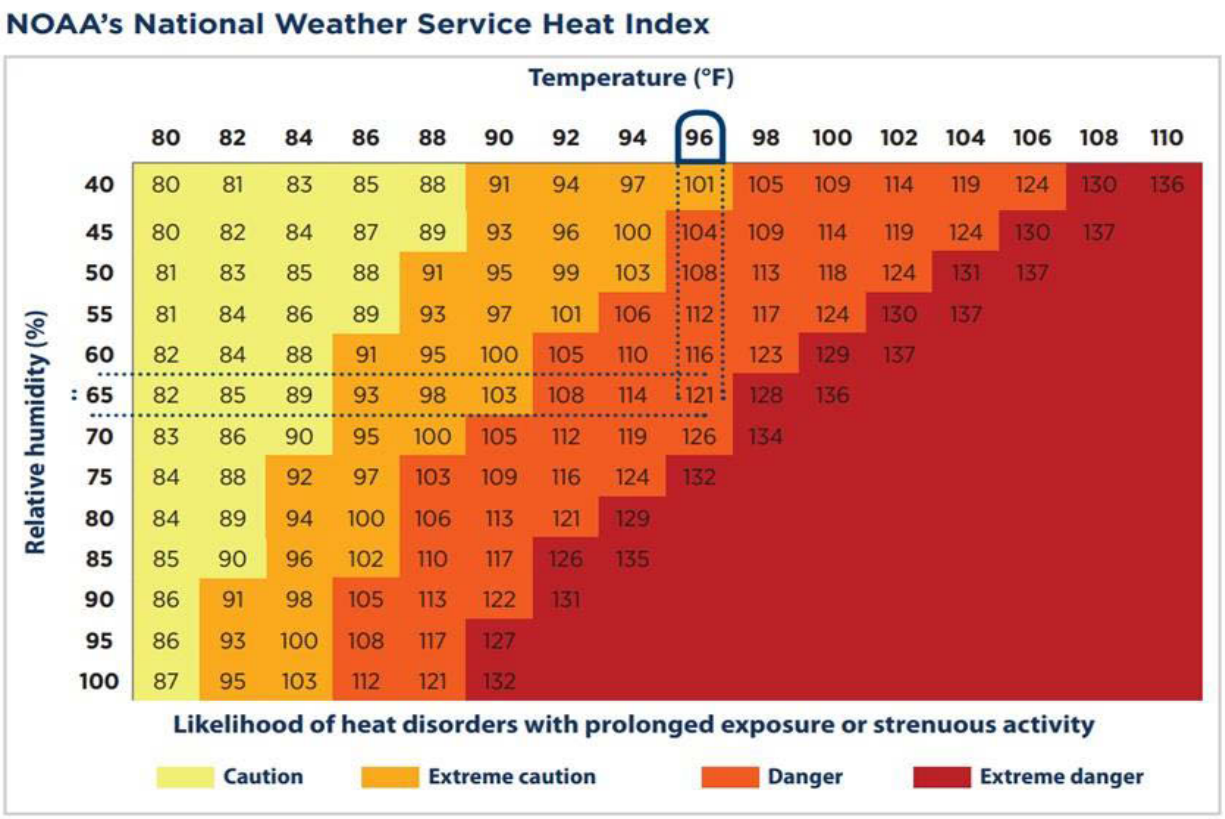
Municipal Management of Extreme Heat

- Overview of extreme heat: historic patterns and impacts of climate change
- Impacts of the urban heat island effect
- Impacts on populations and infrastructure
- Recommendations for mitigating extreme heat and responding to events

https://www.dvrpc.org/Products/MIT21011

What is Extreme Heat?

Weather that is much hotter and/or more humid than historical averages for a given area.



This chart shows that as the temperature (horizontal axis) and relative humidity (vertical axis) each increase, they combine to create a heat index (colored values) that feels hotter than the actual temperature. For example, when the temperature is 96°F, with 65 percent humidity, it actually feels like 121°F (indicated by the blue lines in the chart above). Source: NOAA National Weather Service, 2016.[1]

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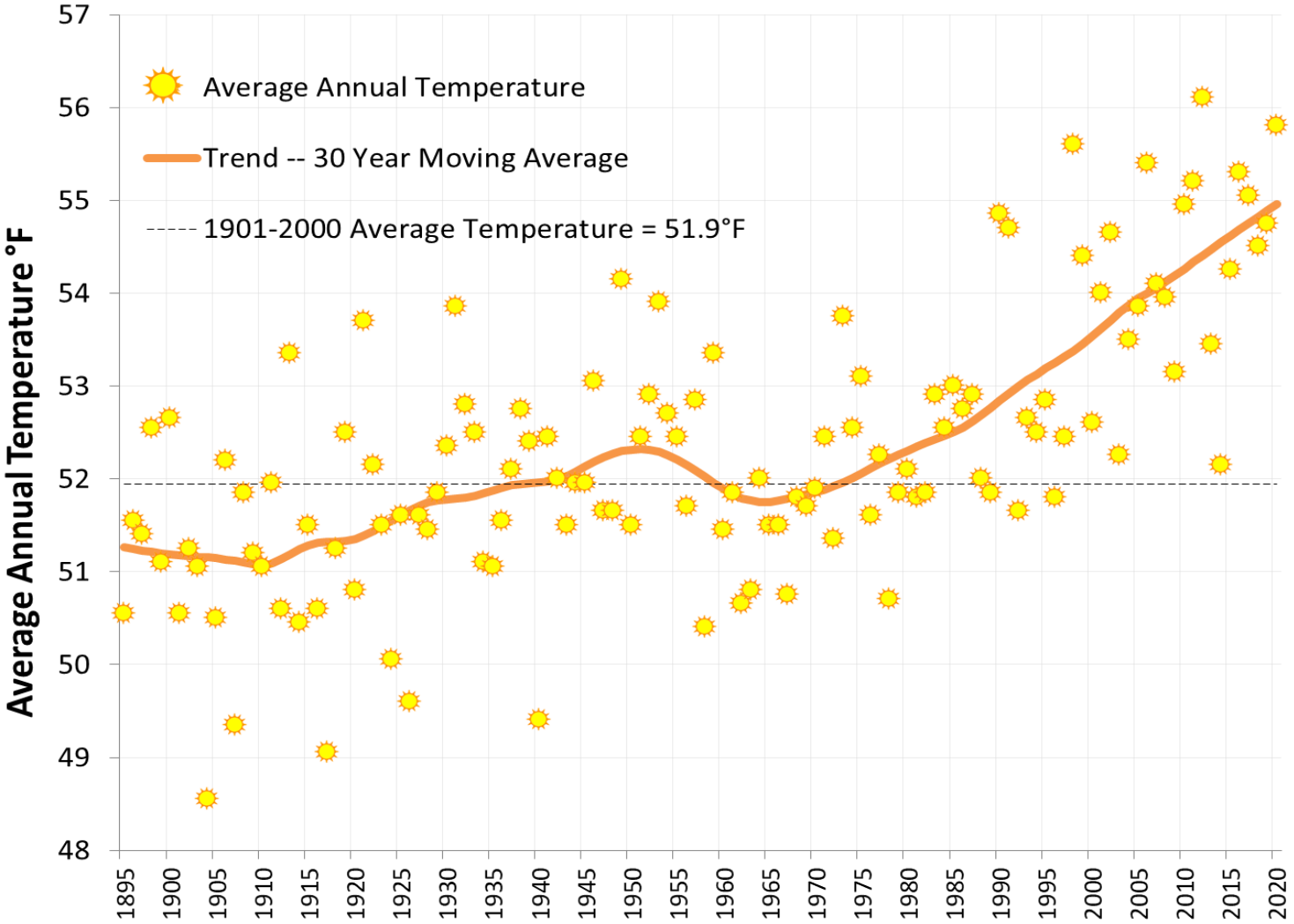
Impacts of Extreme Heat

- Heat-health risks

Heat Index	Possible Heat Disorders
90°F	Sun stroke, heat cramps, and heat exhaustion are possible for certain risk groups.
100°F	Heat stress or illnesses are possible, especially for elderly adults, children, and others sensitive to heat.
105°F	Even healthy adults are at risk of heat-related illness with prolonged exposure.
130°F	Heat stroke is highly likely with continued exposure.

- Air quality degradation
- Transportation and utility infrastructure

Average Regional Temp: 1885 - 2020



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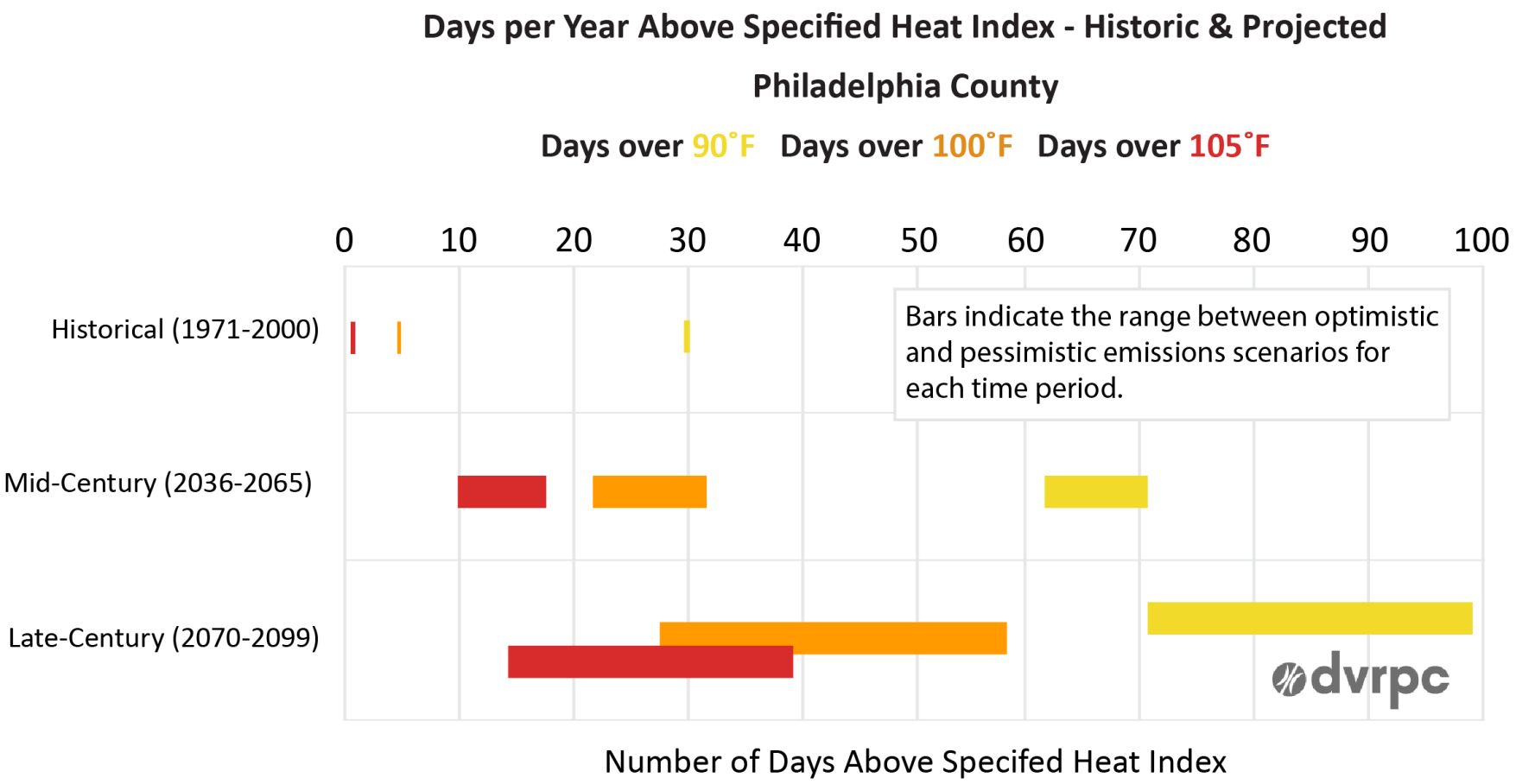
Extreme Heat Days Per Year - Philadelphia



Source: DVRPC chart using data provided by Union of Concerned Scientists *Killer Heat* report.

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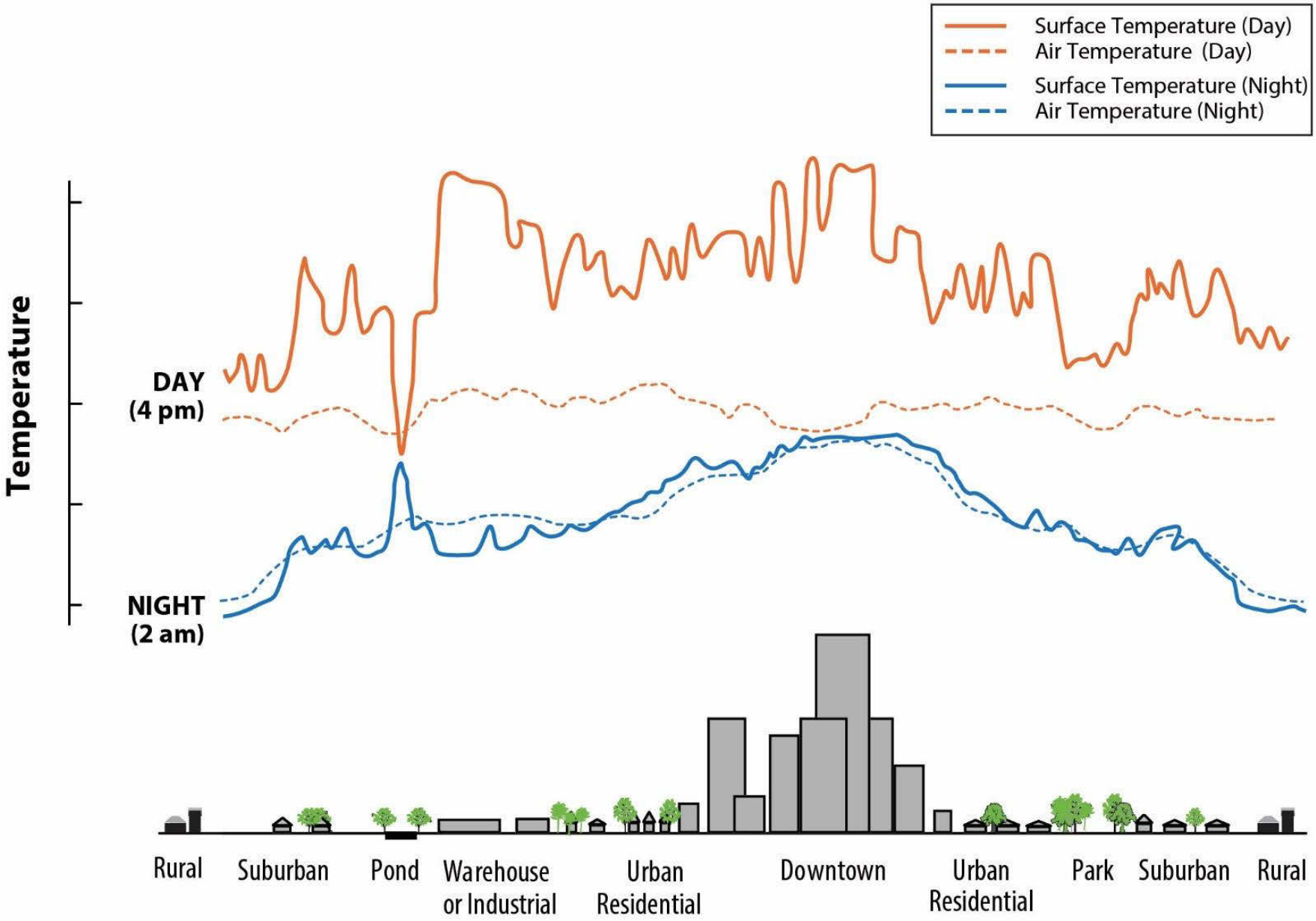
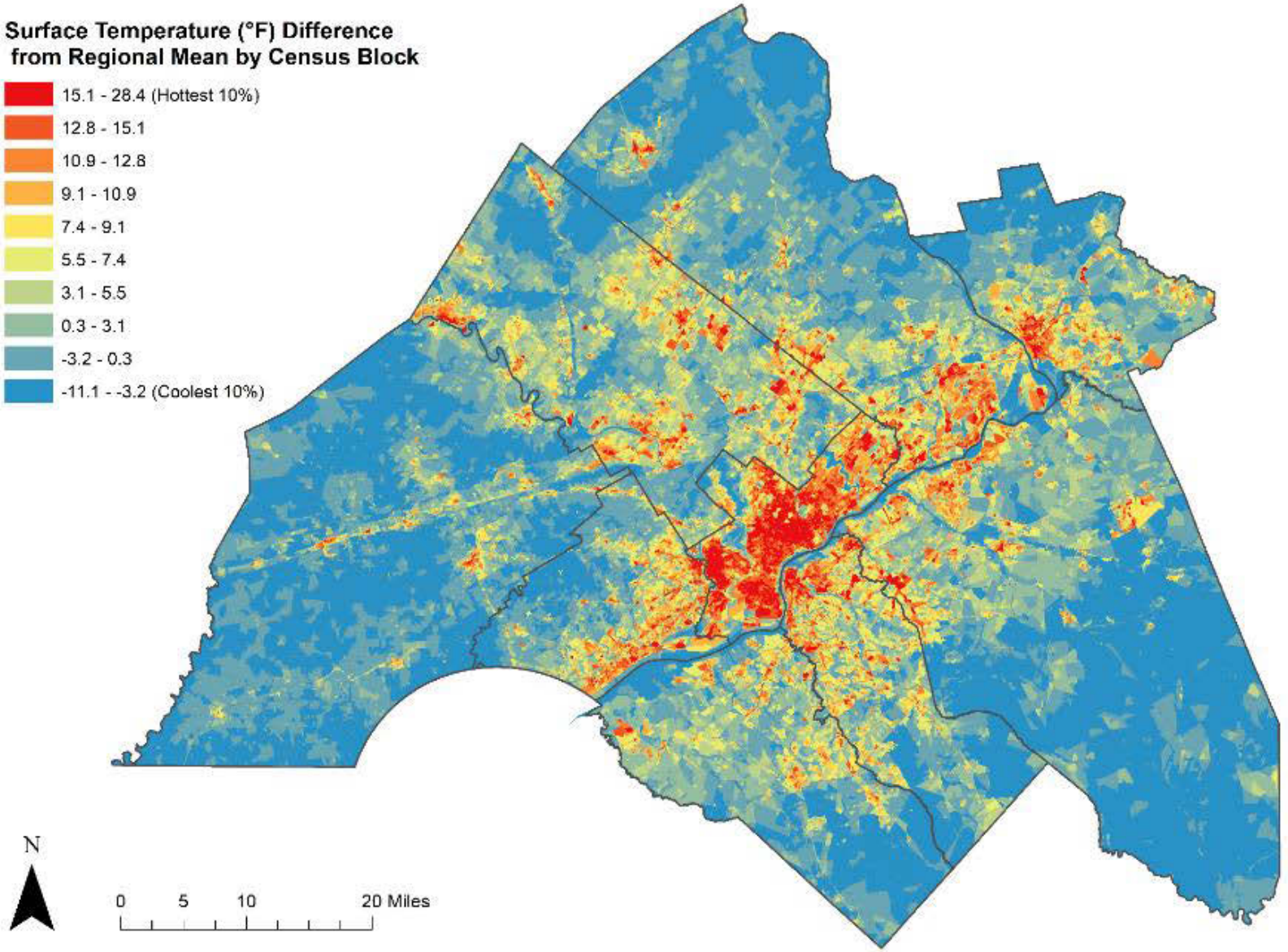
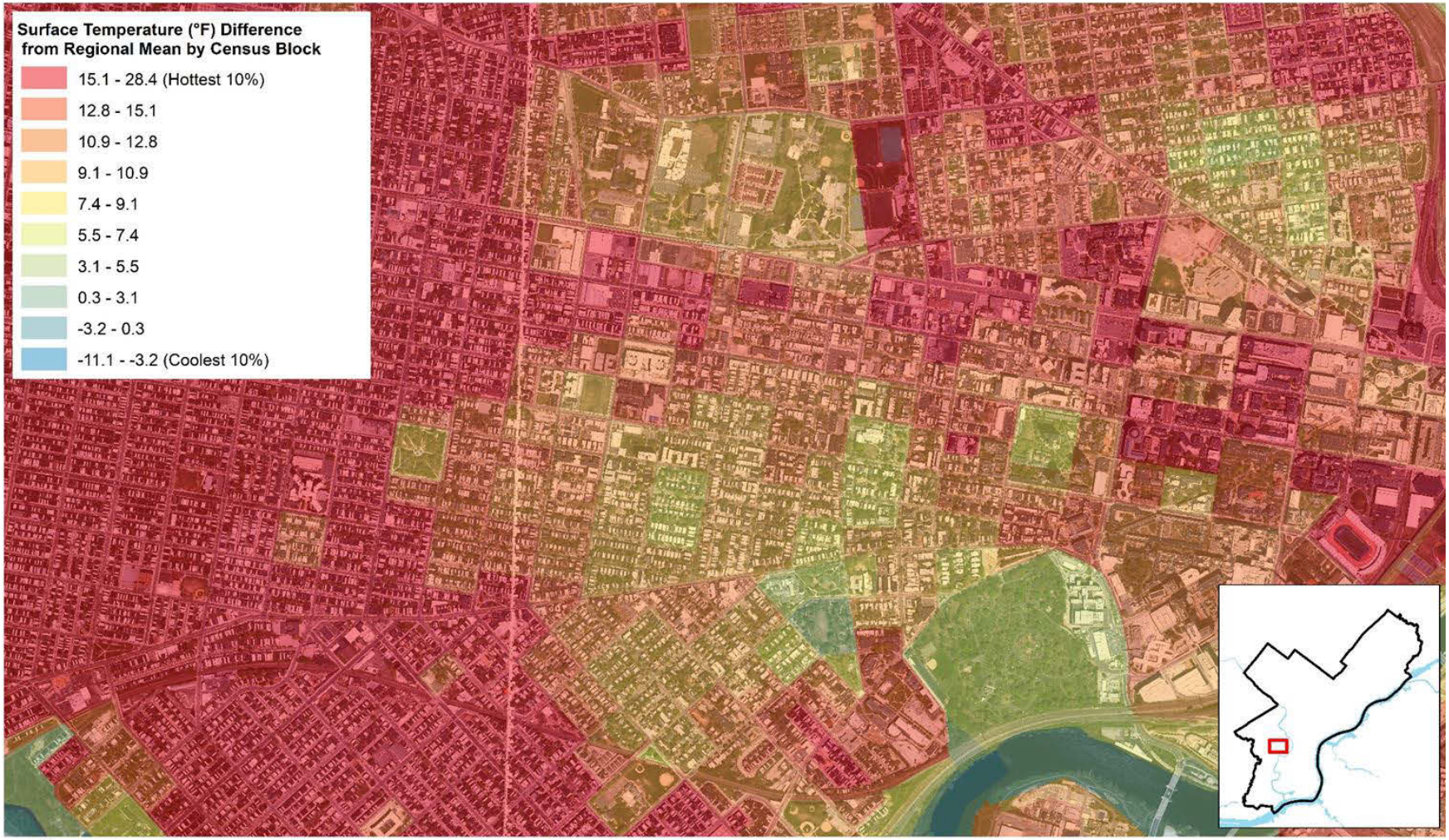
Urban Heat Islands



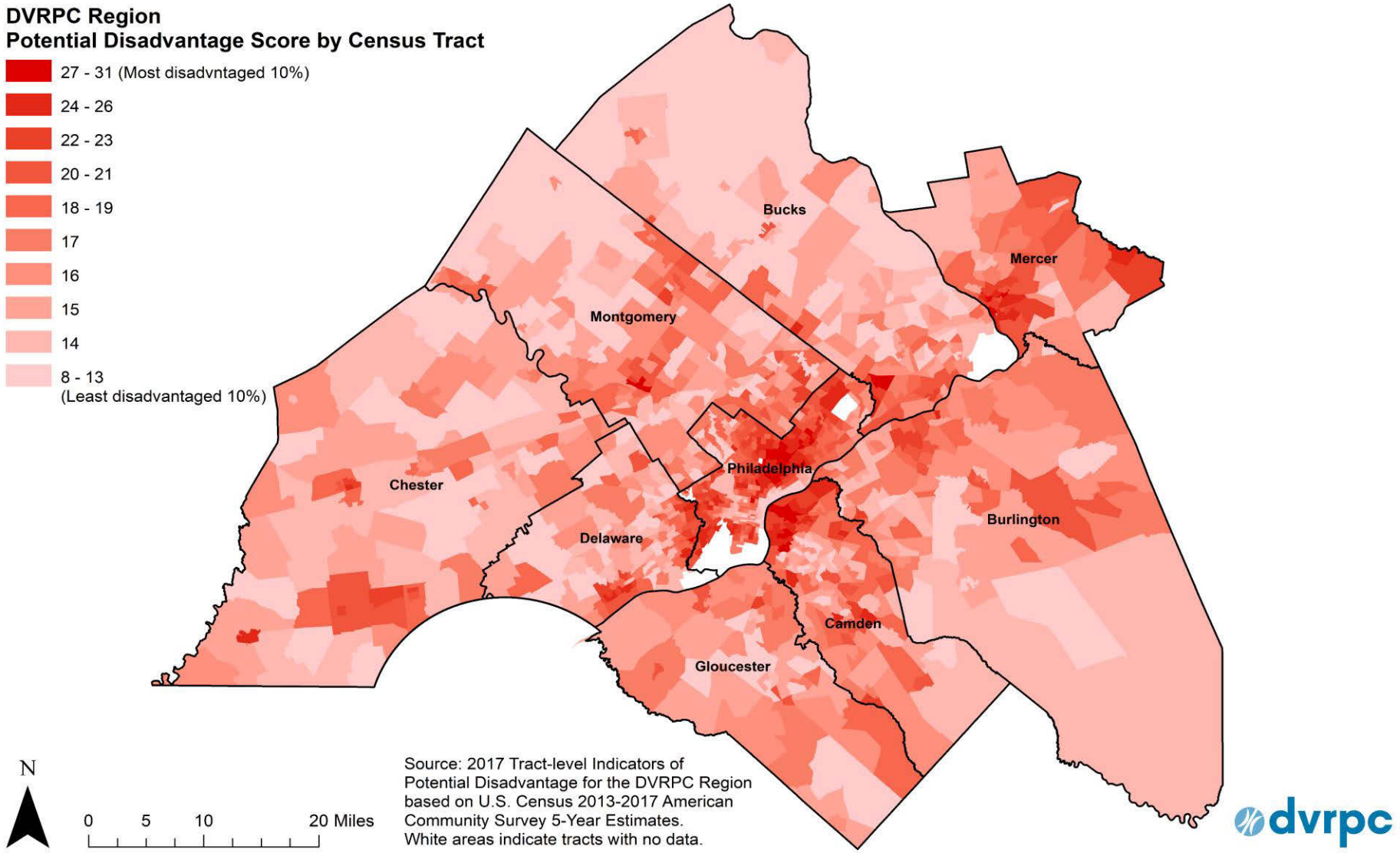
Source: Environmental Protection Agency


Surface Temperature (°F) Difference
from Regional Mean by Census Block
15.1 - 28.4 (Hottest 10%)
12.8 - 15.1
10.9 - 12.8
9.1 - 10.9
7.4 - 9.1
5.5 - 7.4
3.1 - 5.5
0.3 - 3.1
-3.2 - 0.3
-11.1 - -3.2 (Coolest 10%)
N
0
5
10
20 Miles

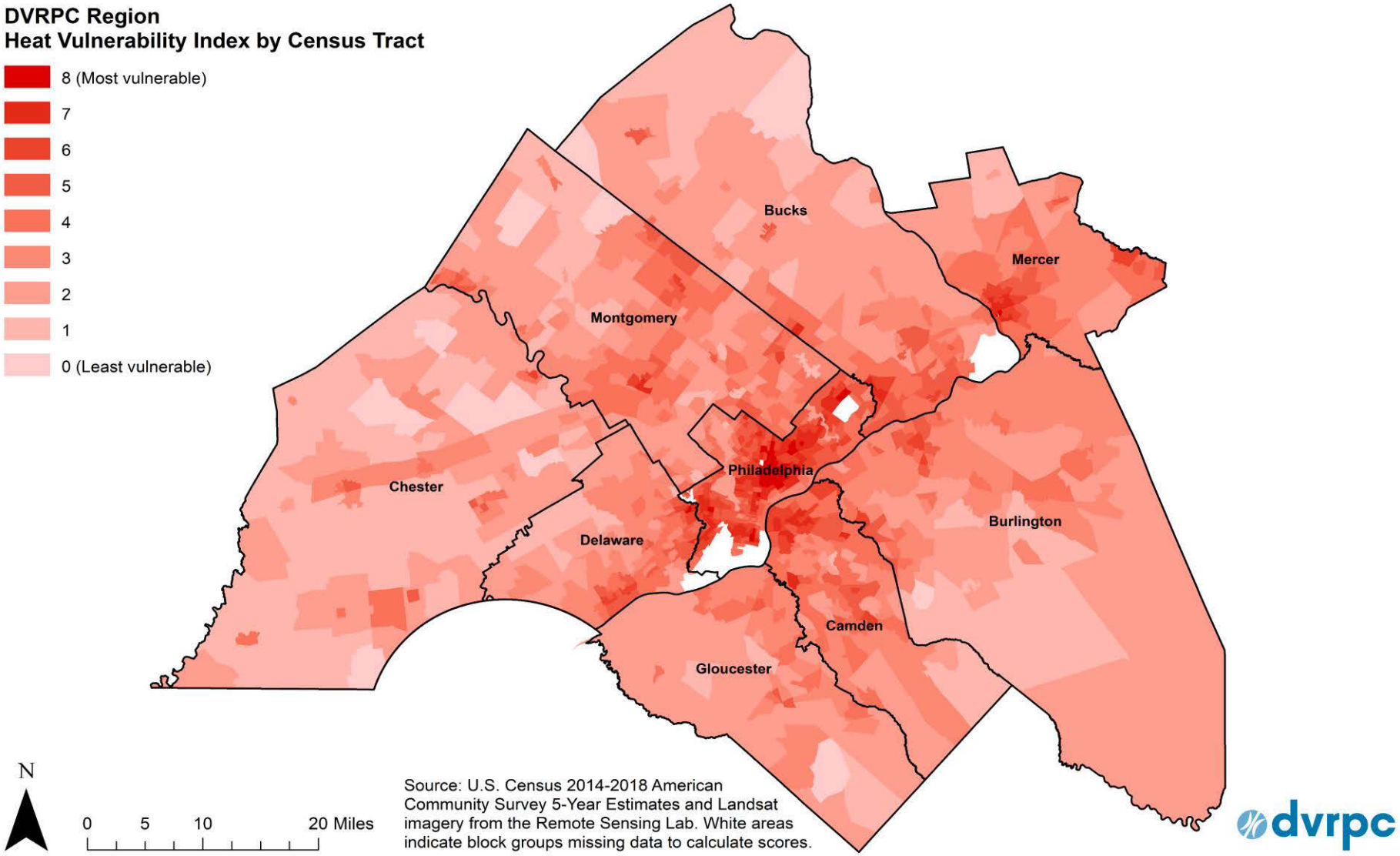
Surface Temperatures – West Philadelphia



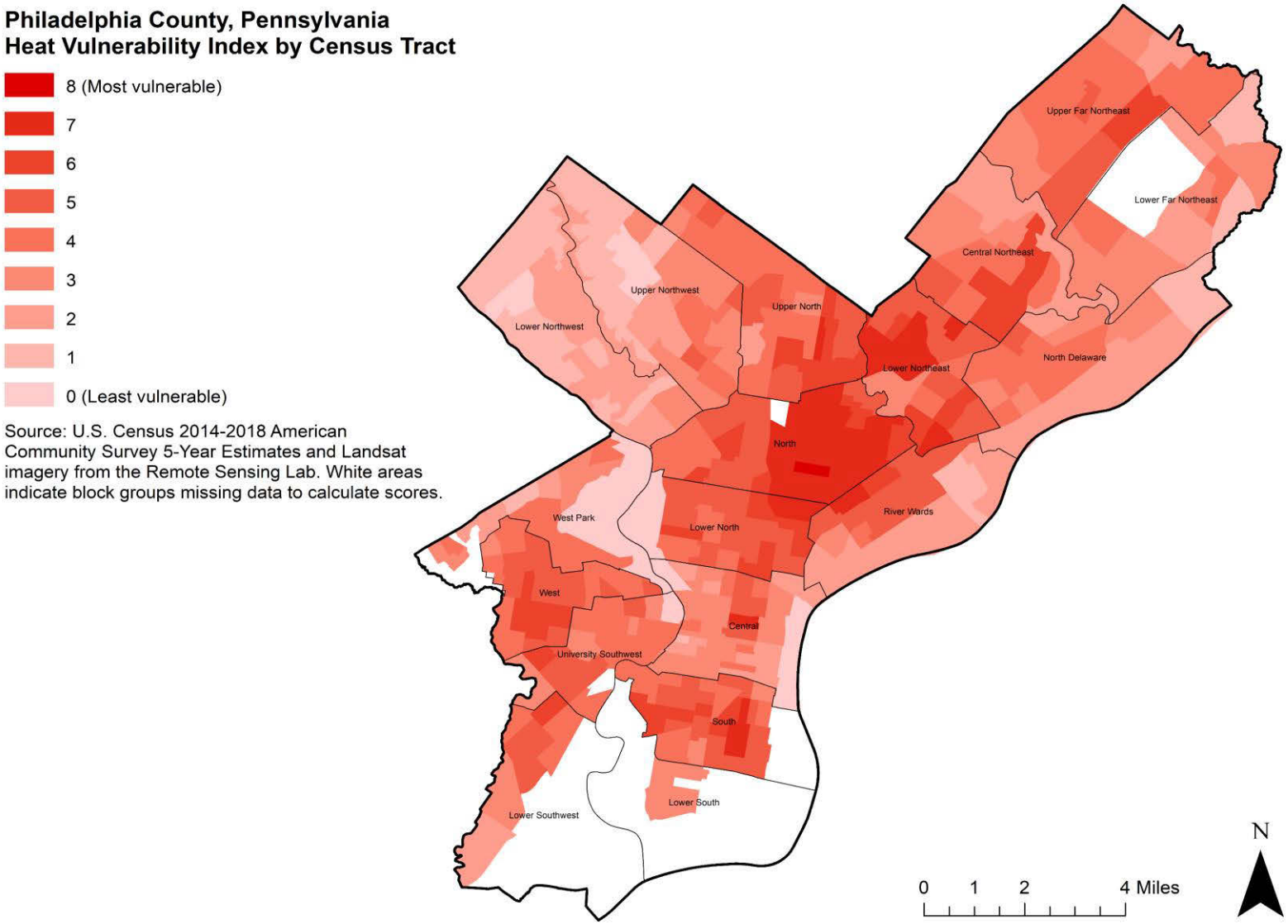
Potential Indicators of Disadvantage



Heat Vulnerability Index



Heat Vulnerability Index

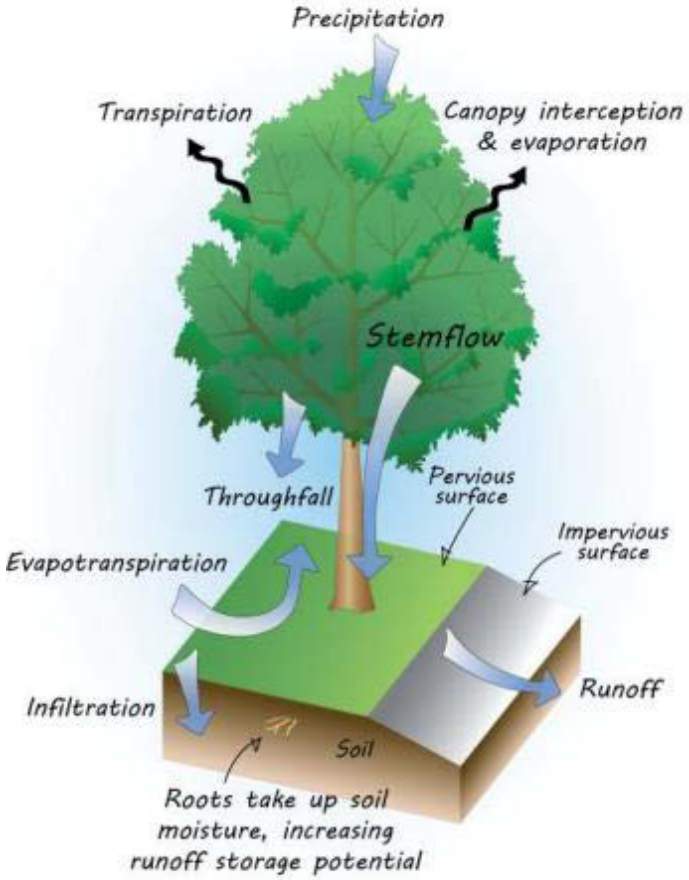


Mitigation Measures – Trees and Vegetation

- Leaves and branches reduce the amount of solar radiation that reaches the area below the canopy
- This can reduce surface temperatures by 20°F – 45°F

Mitigation Measures – Evapotranspiration

- Transpiration - trees and vegetation absorb water through roots and emit through leaves
- Evaporation – the conversion of water from liquid to gas through leaves
- Creates a net cooling effect on the surrounding area



Source: Environmental Protection Agency

Mitigation Measures – Cool Roofs

- Reflective roofing material or coating, often white
- Reduce energy costs in the summer

Mitigation Measures – Cool Pavements

- More reflective
- Decreases formation of ground-level ozone
- Can be combined with permeable pavements to mitigate stormwater and increase safety

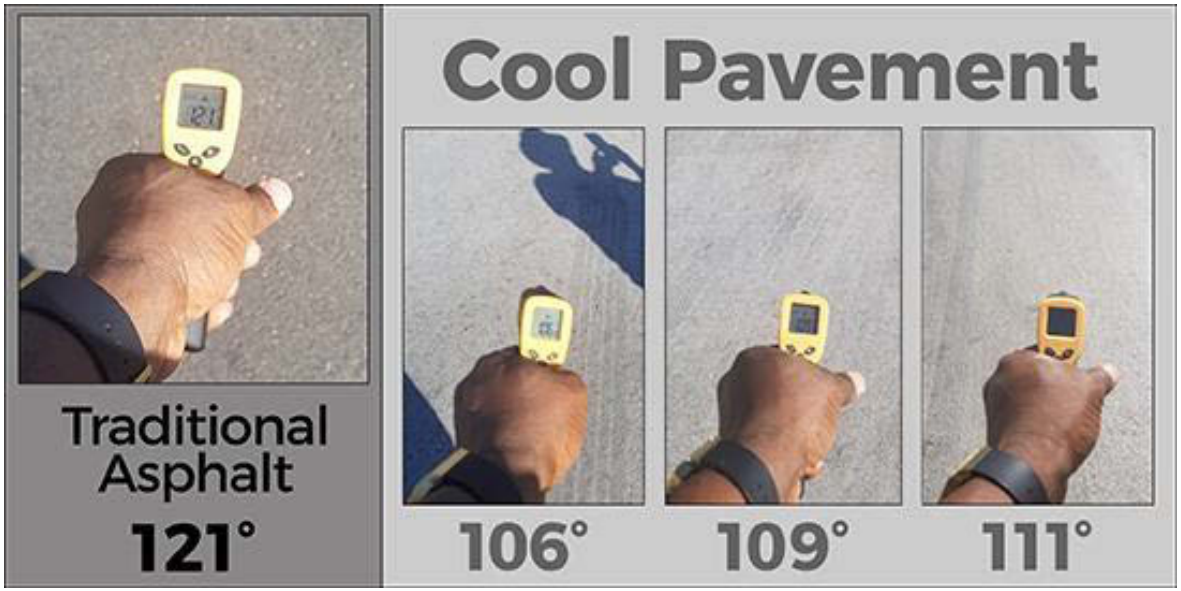


Image courtesy of phoenix.gov

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Mitigation Measures – Cooling Public Spaces

- Bus shelters
- Shade structures
- Pools/spray grounds
- Cooling centers

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Prepare and Adapt

- Forecast, Monitor, Notify
  - Typically done through county public health offices
- Education and Awareness
  - Inform prior to first heat wave of season
  - First heatwave is the deadliest
- Responses to Heat Waves
  - Check water and electrical infrastructure
  - Resident buddy programs
  - Cooling centers
  - Outdoor cooling sites

Thank you!

Chris Linn

Manager, Office of Climate and the Environment

clinn@dvrpc.org

NEXT STEPS

- Please complete the post-meeting survey after leaving the meeting.
- AICP CM Event #**9229243**
- Upcoming HCTF meeting:
  - Housing, Health, and Equity: *A Joint Meeting of the HCTF and the Regional Community Economic Development Forum* | March 9, 2022 | 11am-12pm

HEALTHY COMMUNITIES task force & Climate Adaptation Forum

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