Beat the Heat Program

A Program for Community Health and Resilience in Heat Emergencies

OCRA Office of COMMUNITY & RURAL AFFAIRS

INDIANA UNIVERSITY ENVIRONMENTAL RESILIENCE INSTITUTE

LUDDY

McKinney Climate Fellows

Summer 2026 application window for host and students opening soon

Next ERI webinar: Oct 1

EPA's Proposal to Repeal the Endangerment Finding: Background, Basis and Implications

Janet McCabe, visiting professor, IU McKinney School of Law and O'Neill School of Public and Environmental Affairs

Steve Vigdor, emeritus professor of physics, Indiana University

Pamela Guerrero
Senior CDBG Program and Policy Analyst,
Office of Community and Rural Affairs

Dana Habeeb
Assistant Professor
Luddy School of Informatics, Computing, and Engineering

PI for the Beat the Heat Program

Therese Dorau
Assistant Director for Policy and Implementation,
Environmental Resilience Institute

OCRA Office of COMMUNITY & RURAL AFFAIRS

LUDDY

INDIANA UNIVERSITY
ENVIRONMENTAL RESILIENCE INSTITUTE

Agenda

1. Beat the Heat Program - Round 1
2. Heat Vulnerability Dashboard
3. Dashboard Demonstration
4. Questions
5. Beat the Heat Program - Round 2
6. Questions

Beat the Heat Program:
Round 1

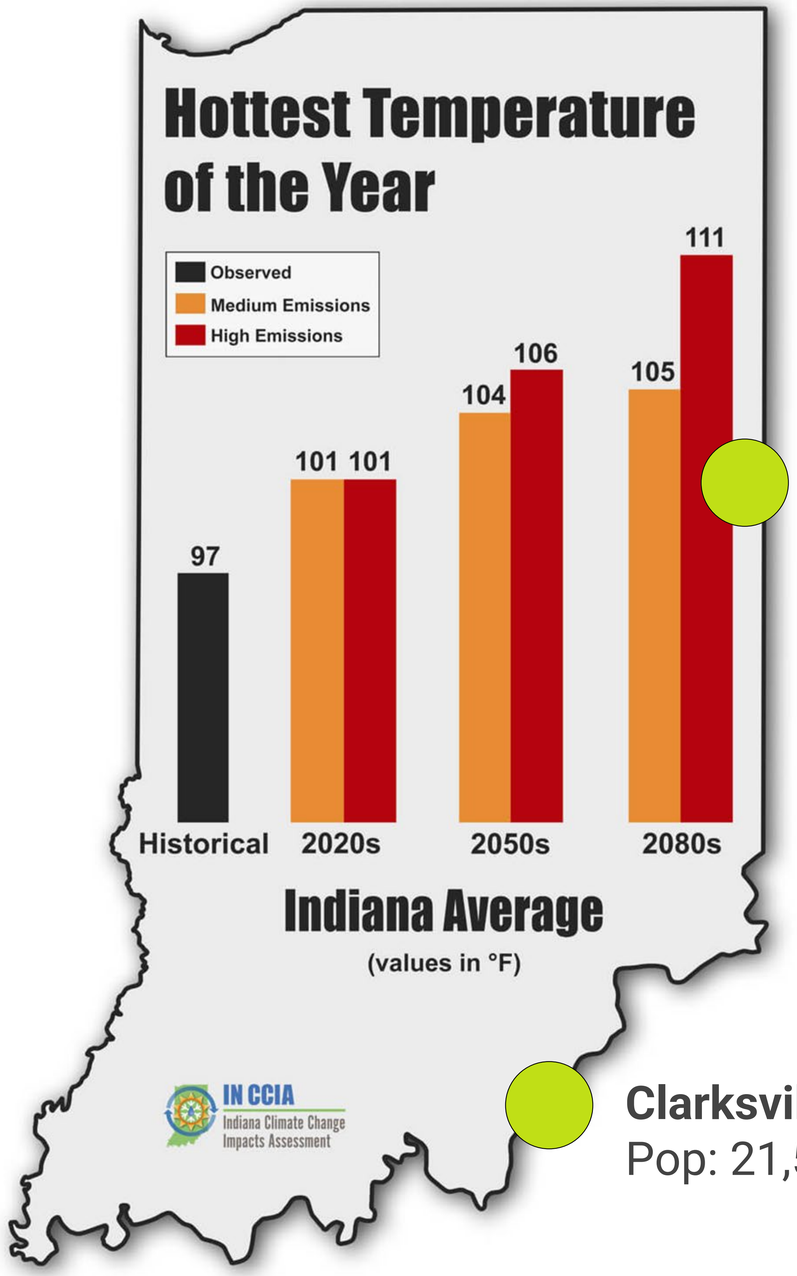
BEAT THE HEAT

A program to help local communities plan and prepare for extreme heat.

Office of COMMUNITY & RURAL AFFAIRS (OCRA)

LUDDY
SCHOOL OF INFORMATICS, COMPUTING, AND ENGINEERING

INDIANA UNIVERSITY
ENVIRONMENTAL RESILIENCE INSTITUTE



Richmond, IN
Pop: 35,539

Clarksville, IN
Pop: 21,548

Project Timeline

BEAT THE HEAT

PROGRAM TIMELINE

PHASE 1
Program Launch

MAY - JUNE 2021

- Establish a Heat Relief Task Force that is composed of community members to guide the program.
- Hire a Heat Relief Coordinator to lead the program.

PHASE 2
Community Needs Assessment

JUL 2021 - FEB 2022

- Collect community input on how heat impacts the lives of residents with a public survey, focus groups, and public observations.
- Conduct a Heat Watch Campaign to develop a map of both communities' hottest and coolest places.
- Develop a protocol for identifying high-heat weather in the community.
- Report the findings of Phase 2 work to inform a strategy for mitigating the impacts of extreme heat in both communities.

PHASE 3
Heat Relief Strategy Development

MAR - MAY 2022

- Develop a Heat Management Strategy that plans for both short and long-term responses to extreme heat.
- Host community meetings to share the results of the Heat Watch Campaign, hear ideas from the public about managing heat, and hear feedback on the proposed Heat Management Strategy.
- Work with local emergency management agencies to develop a response protocol for before and during extreme heat events.

PHASE 4
Heat Relief Strategy Implementation

JUN - OCT 2022

- Share educational materials with residents about staying cool and safe during extreme events.
- Implement the Heat Management Strategy.
- Begin developing the Continuity Plan.
- Create and Distribute Cool Kits
- Develop Relationships and Promote Utilization of Cooling Centers

PHASE 5
Continuity Planning + Program Evaluation

NOV 2022 - APR 2023

- Conduct a second Beat the Heat Public Survey targeted on questions about heat alerts, cooling centers, and awareness of the program
- Finalize the Continuity Plan to ensure future impact of Beat the Heat.

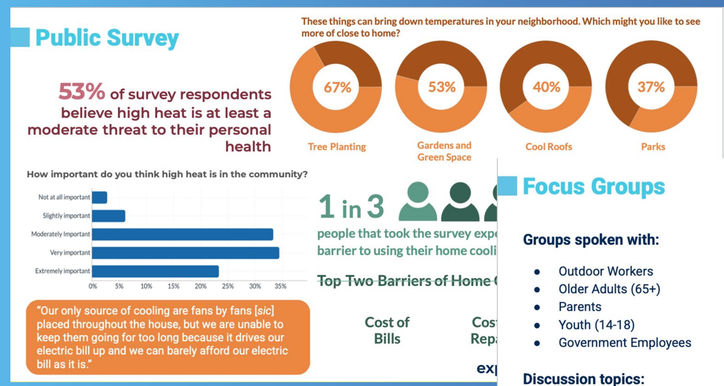
PHASE 6
Program Continuation

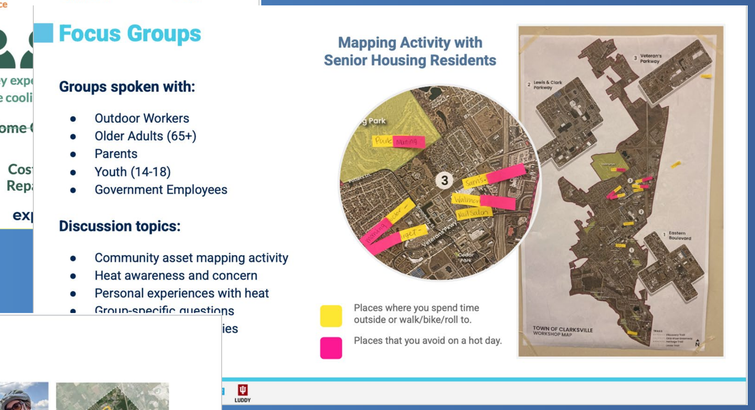
MAY 2023 - JUNE 2024

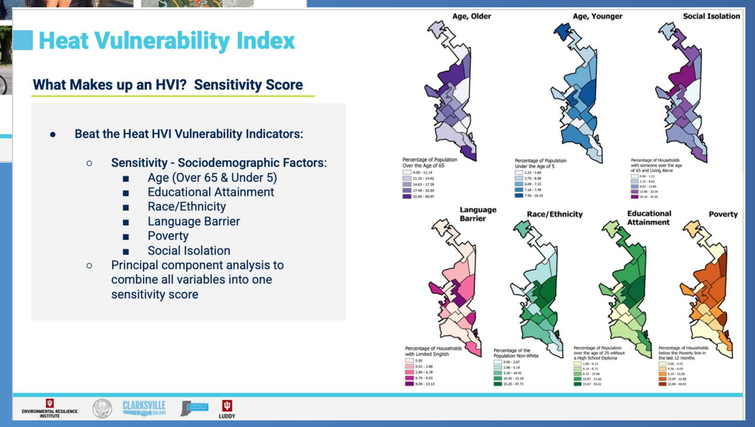
- Design and Develop a dynamic Heat Vulnerability Mapping Tool with updated susceptibility and adaptive capacity measures for both communities to identify priority areas
- Richmond: Implement an A.C. Unit Distribution and Utility Assistance Program for those at a heightened risk of heat related illness
- Clarksville: Plant native trees with a focus on mitigating the urban heat island effect

Phase 2 Overview

1. Collect community input
   a. Focus groups
   b. Interviews
   c. Public Heat Survey
2. Complete a Heat watch campaign
3. Create Heat Vulnerability Index
4. Develop community needs assessment presentation

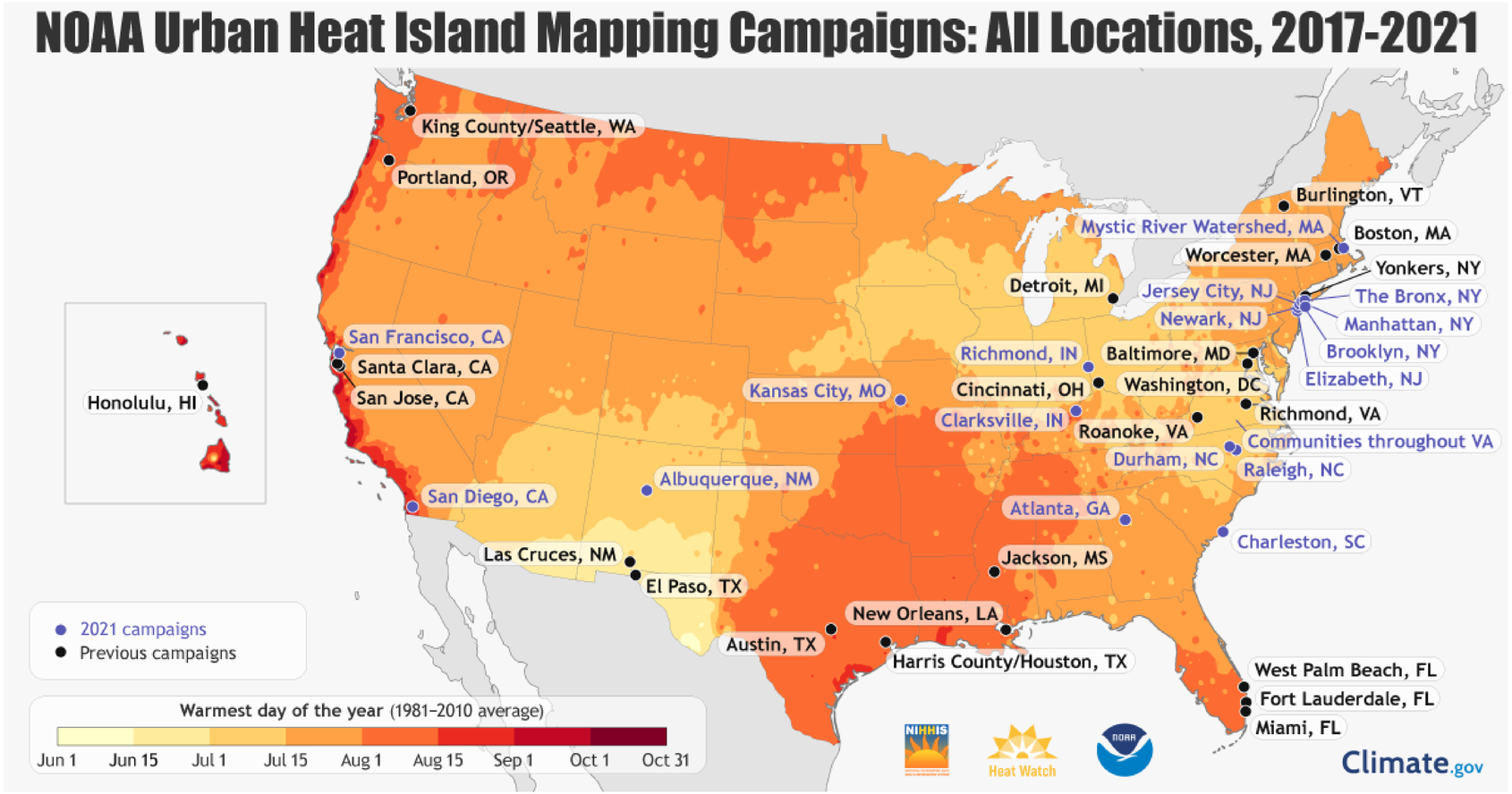






Heat Watch Campaign

- In partnership with CAPA Strategies, NOAA, and NIHHIS
- Citizen-science data collection effort
- Sensors affixed to cars/bikes gather data every second each hour
- Deliverable: Heat map created by CAPA strategies



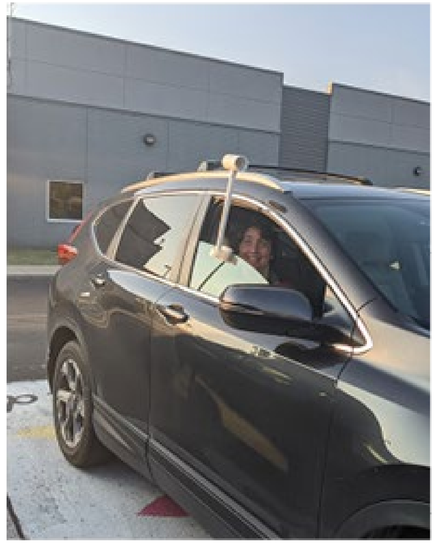
NATIONAL INTEGRATED HEAT HEALTH INFORMATION SYSTEM

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION · NOAA · U.S. DEPARTMENT OF COMMERCE

CAPA strategies

Heat Watch Campaign

- In partnership with CAPA Strategies, NOAA, and NIHHIS
- Citizen-science data collection effort
- Sensors affixed to cars/bikes gather data every second each hour
- Deliverable: Heat map created by CAPA strategies



RICHMOND

13
Volunteers

6
Routes

34,454
Measurements

91.8°
Max Temperature

12.5°
Temperature Differential

CAPA

Initial Observations

The distribution of heat across a region often varies by qualities of the land and its use. Here are several observations of how this phenomenon may be occurring in your region.

HEAT WATCH

The heat signal near farm land may vary seasonably and by crop use. The unique shape to these plots likely contribute to the circular and ring patterns in the models.

The Whitewater Gorge trail provides a cooler path for active transportation and recreation (credit: JLoveless_tl via TrailLink.com)

The concrete- and asphalt-laden downtown appears to retain heat throughout the day and keep warm surrounding residential areas that may be lacking mitigative canopy cover.

8

CLARKSVILLE

17
Volunteers

7
Routes

24,311
Measurements

94.8°
Max Temperature

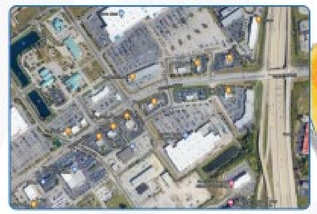
8.9°
Temperature Differential

CAPA

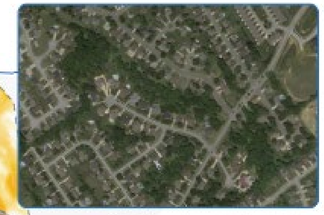
Initial Observations

The distribution of heat across a region often varies by qualities of the land and its use. Here are several observations of how this phenomenon may be occurring in your region.

HEAT WATCH



Impervious surfaces like concrete and asphalt absorb and retain heat throughout the day.



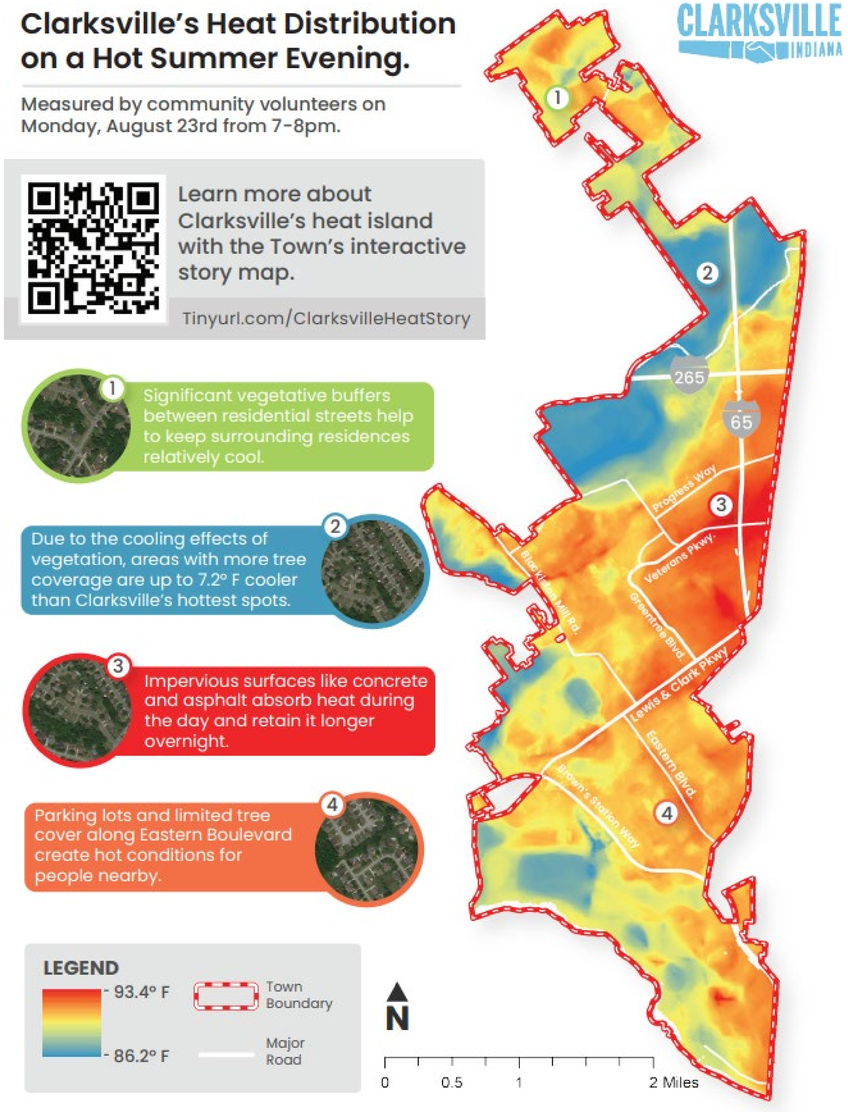
Significant vegetative buffers between residential streets help to keep surrounding residences relatively cool.

The parking lots and limited tree canopy cover along Eastern Boulevard create hot conditions for pedestrians and may limit active transportation use for surrounding neighbors.

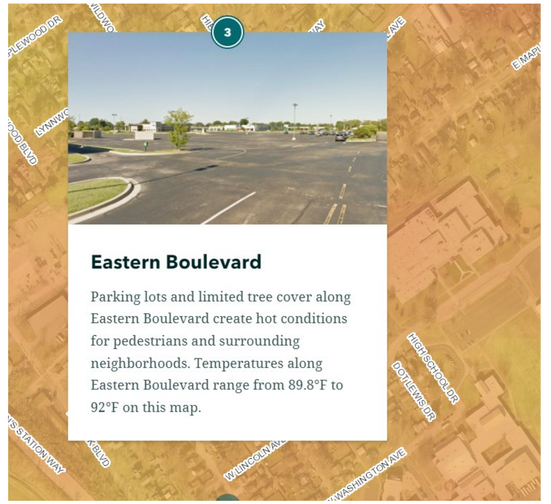
8

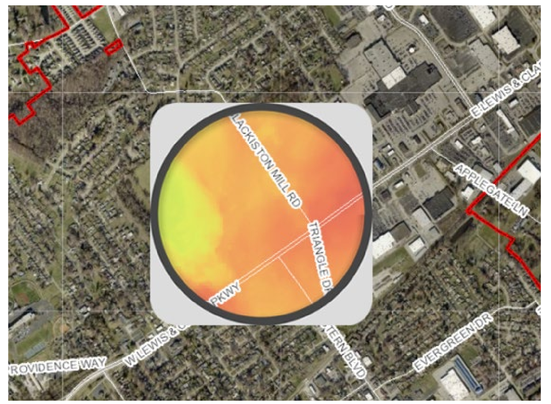
Heat Map Utilization

- Tool for public engagement with releases in Clarksville's town magazine, radio interviews, focus groups, story map.
- Identify areas where cooling interventions are most needed in both communities.
- Support the creation of the Heat Vulnerability Index, which overlays heat map with relevant demographics.



ONLINE STORY MAP





Heat Vulnerability Index

Goals for HVIs

- Identify areas that are most vulnerable to heat.
- Provide communication tools and grow engagement with communities
- Generate knowledge for heat management strategies
- Target heat strategies for priority areas
- Support tailoring interventions for specific communities

What Makes up an HVI?

Common Vulnerability Indicators

- Environmental Exposures- I.E High Heat Days
- Sensitivity- I.E Old Age
- Adaptive Capacity- I.E Access to Air Conditioning

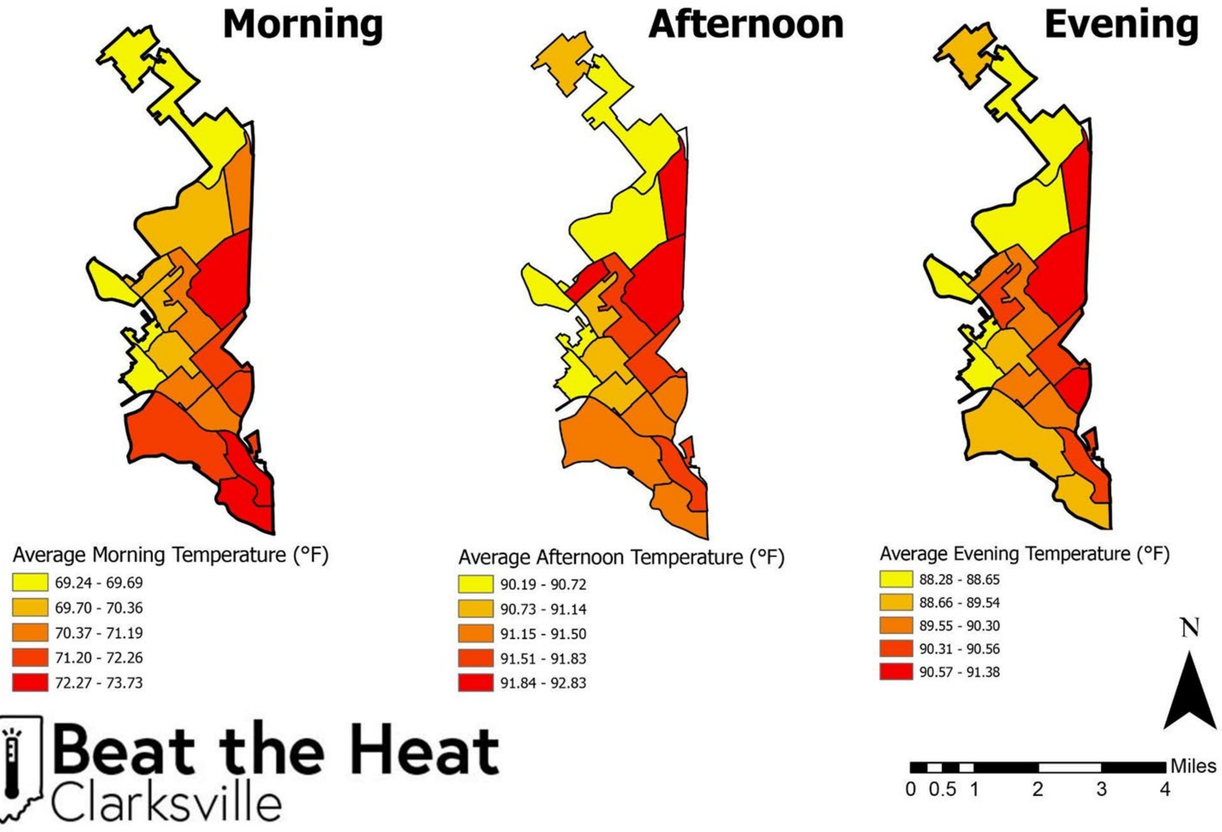
Heat Vulnerability Index

What Makes up an HVI?

Heat Exposure

- Beat the Heat HVI Vulnerability Indicators:
  - Environmental Exposure: Extreme Heat
    - Average evening temperatures

Clarksville Avg. Block Group Temperatures

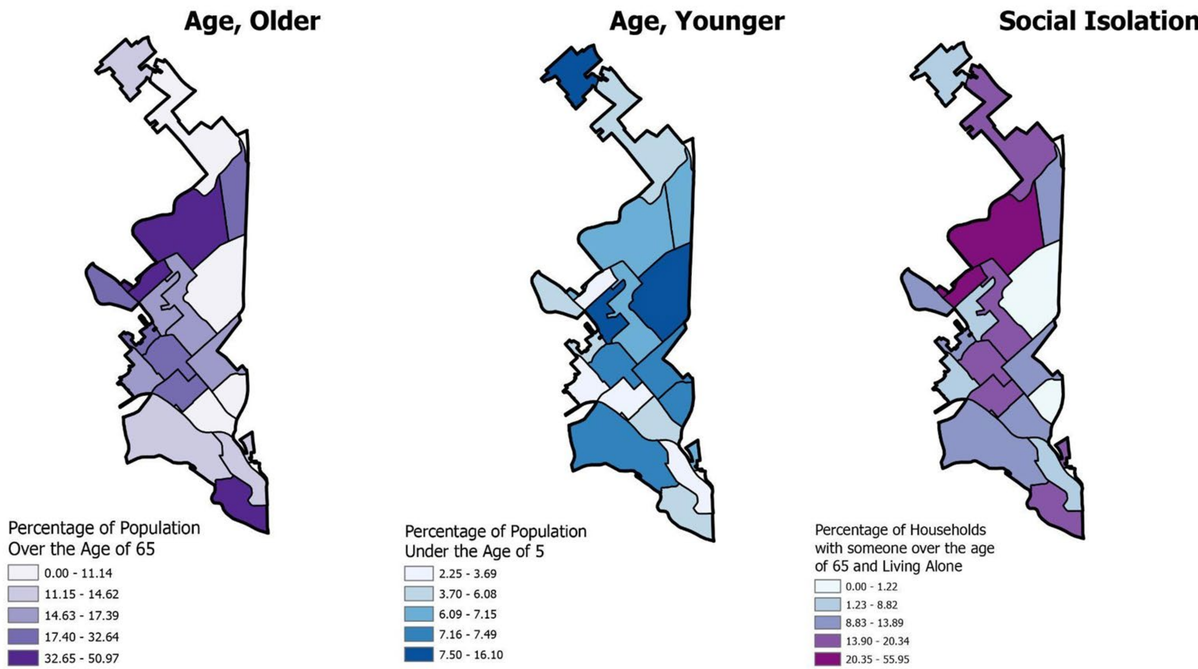


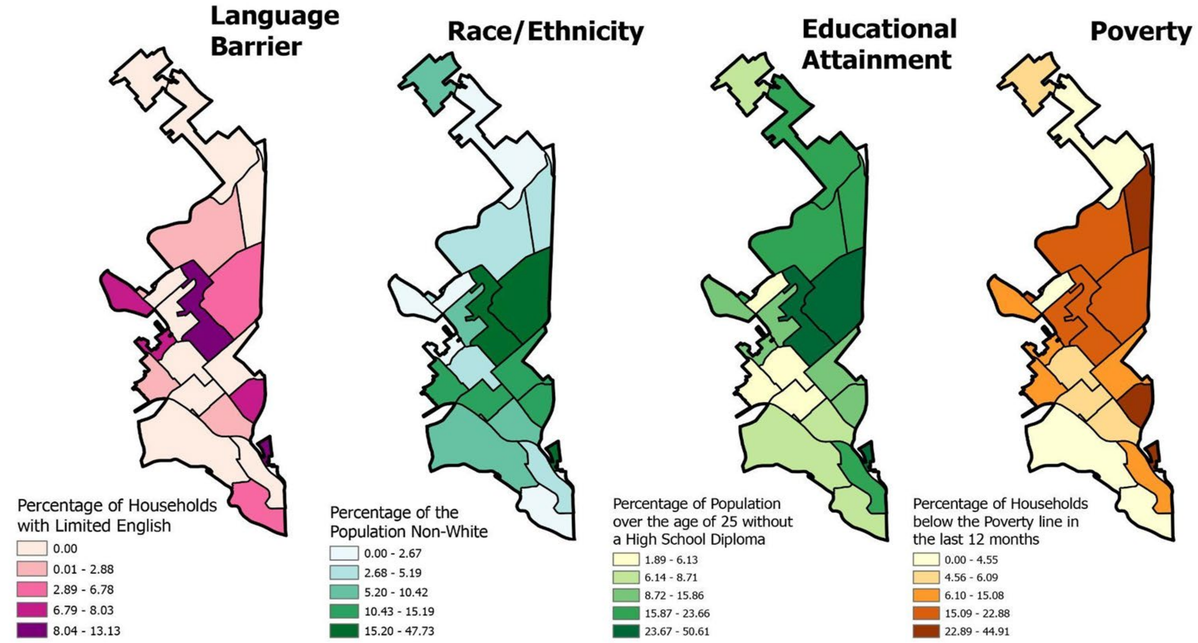
Heat Vulnerability Index

What Makes up an HVI?

Sensitivity Score

- Beat the Heat HVI Vulnerability Indicators:
  - Sensitivity - Sociodemographic Factors:
    - Age (Over 65 & Under 5)
    - Educational Attainment
    - Race/Ethnicity
    - Language Barrier
    - Poverty
    - Social Isolation
  - Principal component analysis to combine all variables into one sensitivity score





PHASE 1 Program Launch

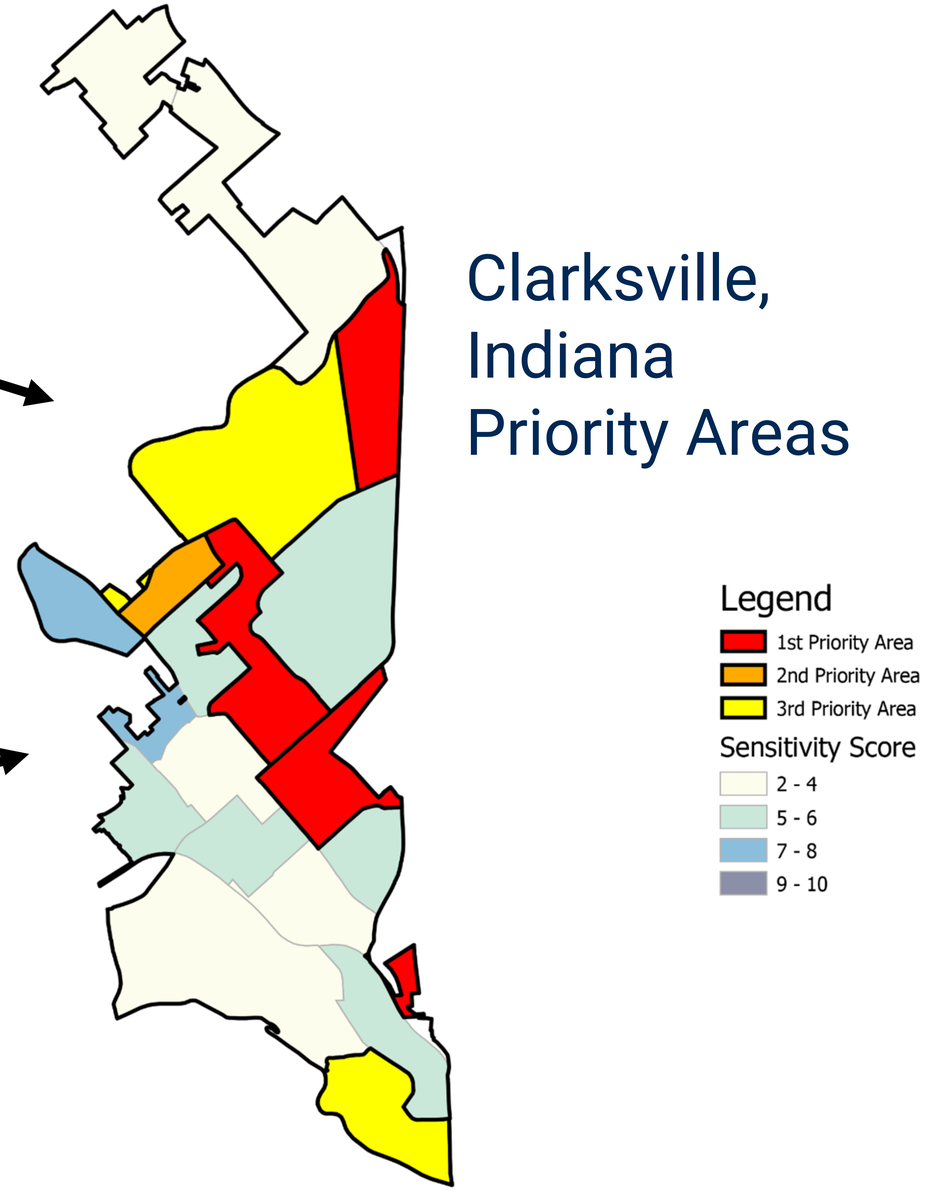
Heat Vulnerability Index

Process:

- Ranked ordered each heat vulnerability indicator.
- Overlaid heat exposure and sensitivity score rankings.
- Identified block groups that had the highest ranking for each indicator.

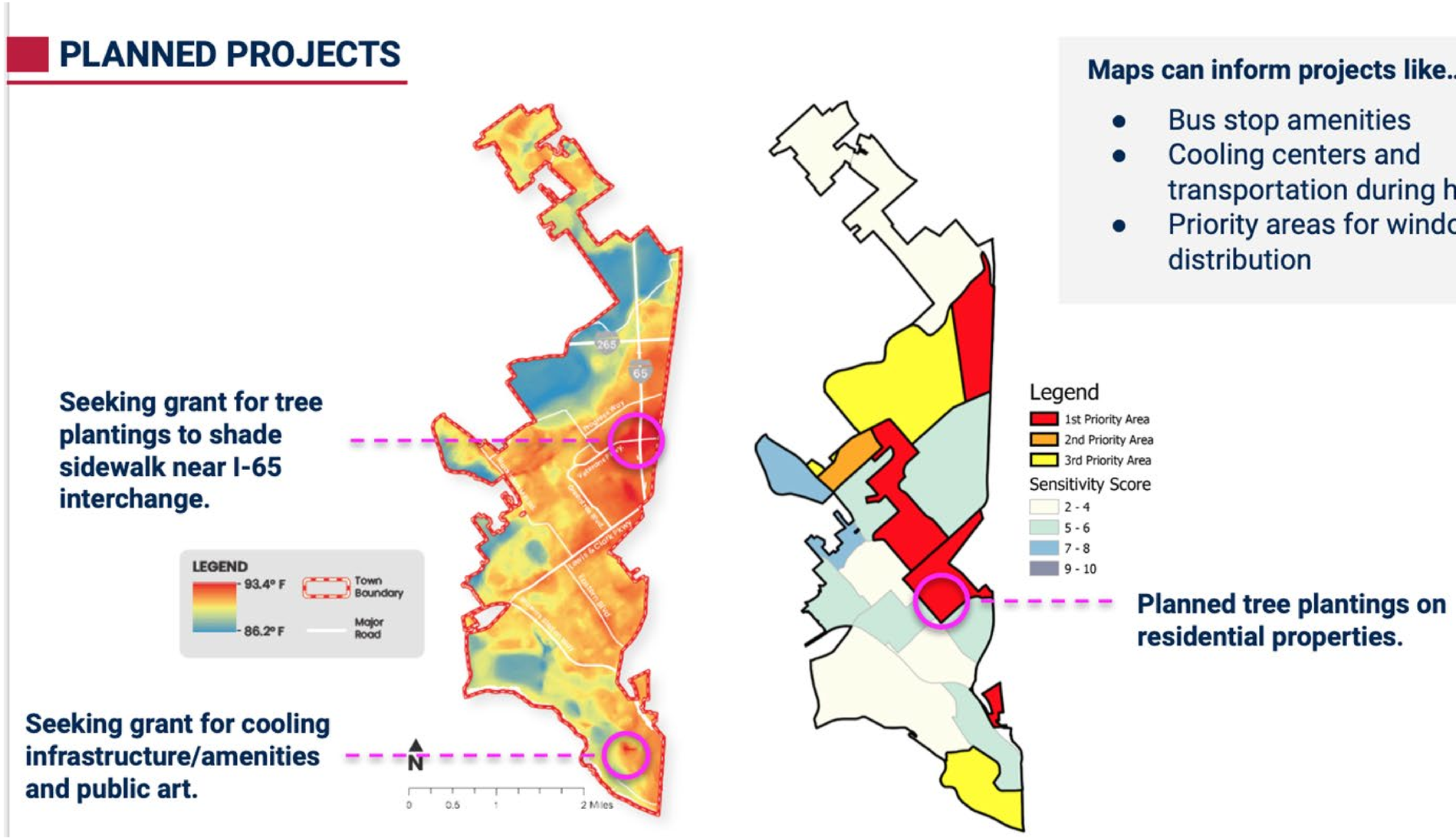
Heat Exposure

Sensitivity Scores



Heat Vulnerability Index

PLANNED PROJECTS



Maps can inform projects like...

- Bus stop amenities
- Cooling centers and transportation during heat events
- Priority areas for window unit distribution

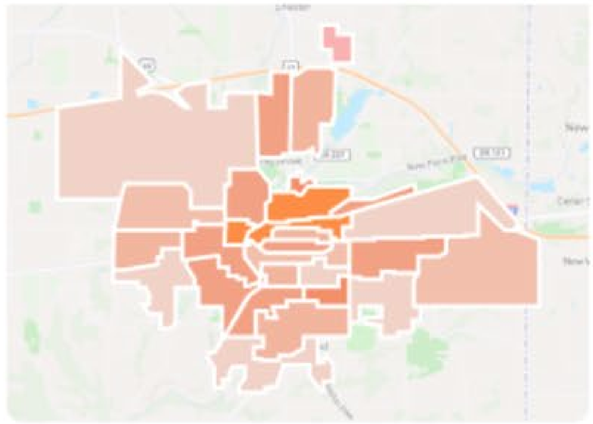
Heat Vulnerability Dashboard

Heat Vulnerability Dashboard

Heat Exposure

Temperature

Heat Index



Susceptibility

Age

Social isolation

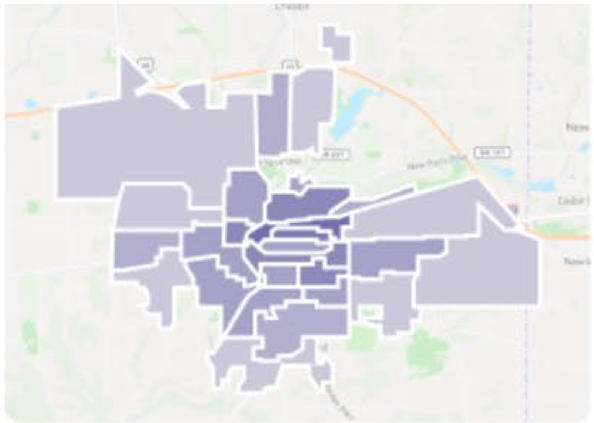
Poverty

Race / Ethnicity

Language barrier

Educational attainment

Health insurance



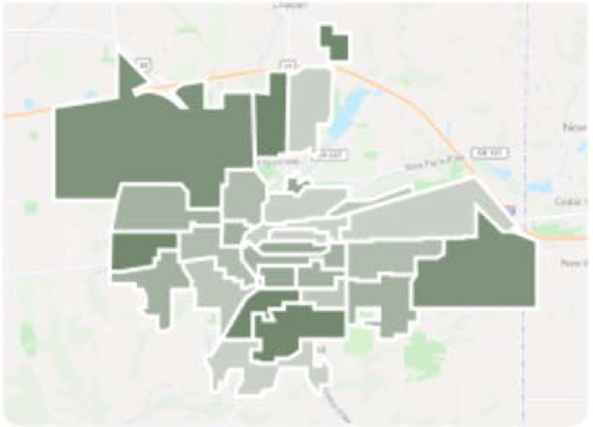
Adaptive Capacity

Vehicle access

Internet access

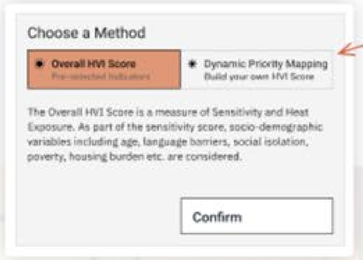
A.C. access

Renter occupied

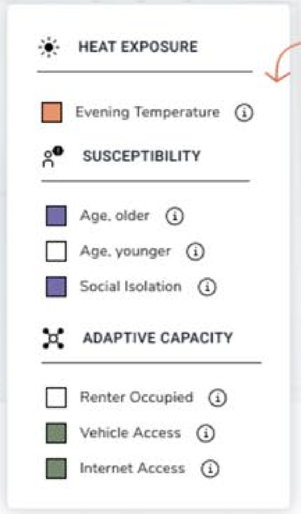


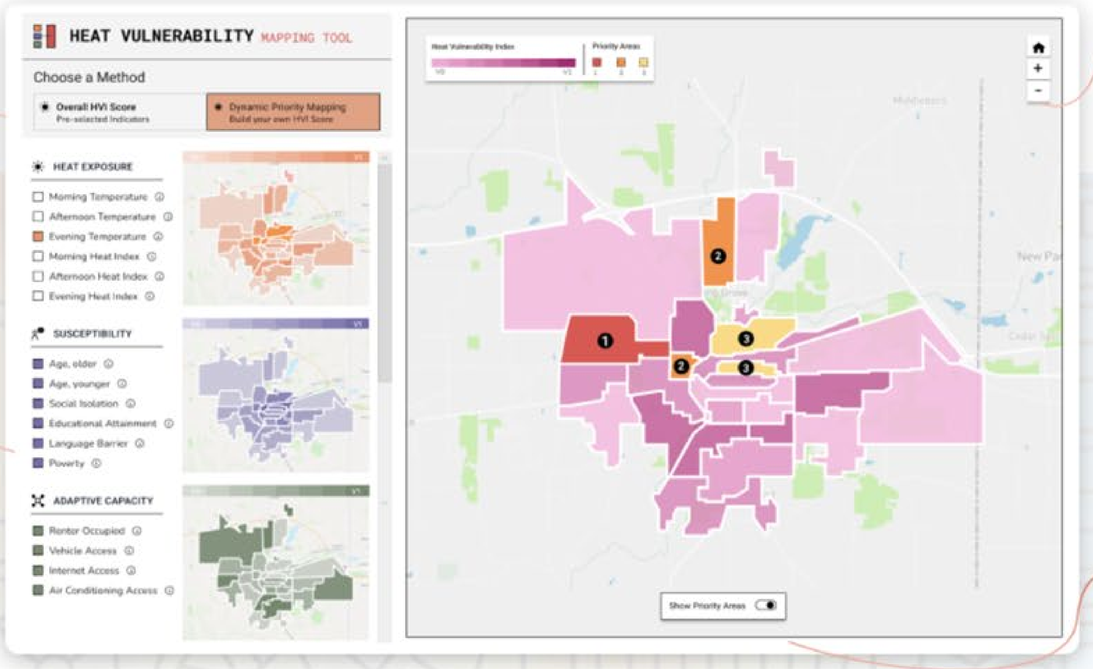
Heat Vulnerability Dashboard

1 CHOOSE A METHOD
Choose between two different HVI calculation methods.

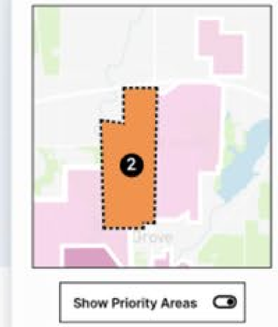


2 DYNAMIC PRIORITY MAPPING
Select indicators to build your own HVI Score.

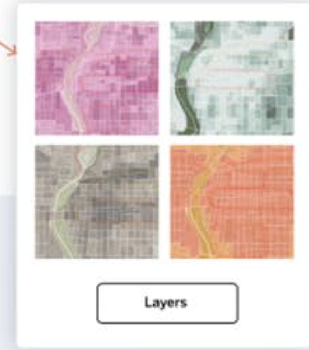




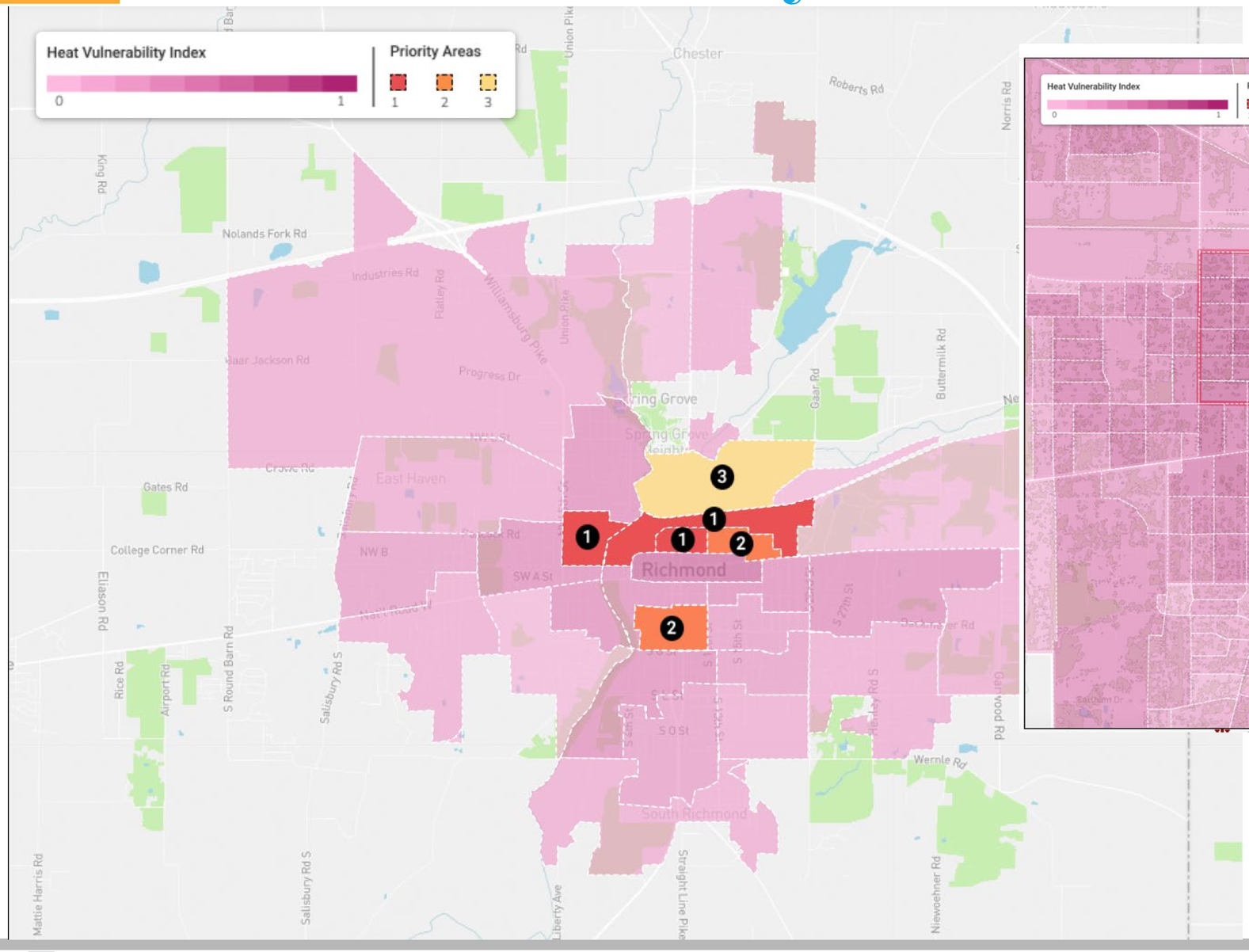
3 IDENTIFY PRIORITY AREAS
Toggle to view priority areas ranked in order of heat vulnerability.

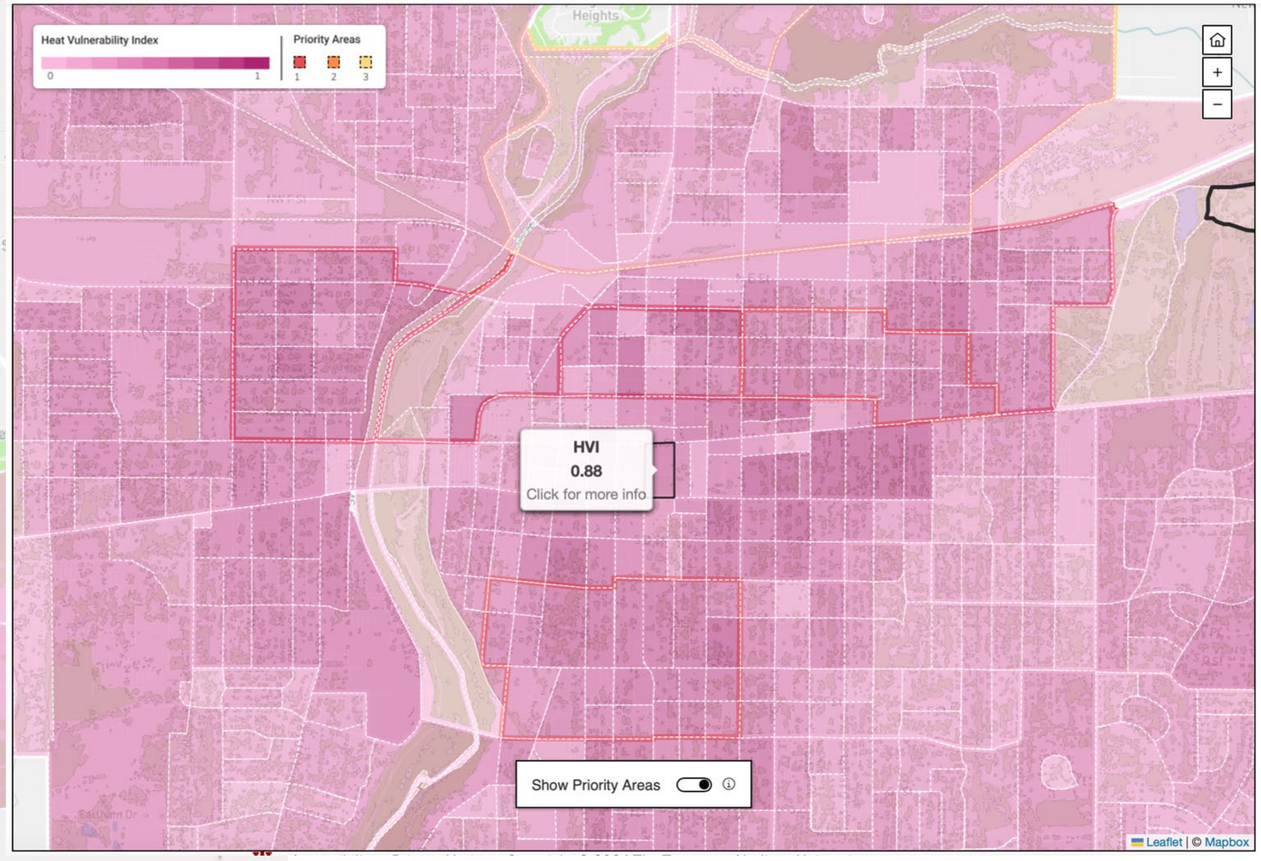


4 EXPLORE LOCAL CONTEXT
Zoom in to explore local context information.



Heat Vulnerability and Local Content





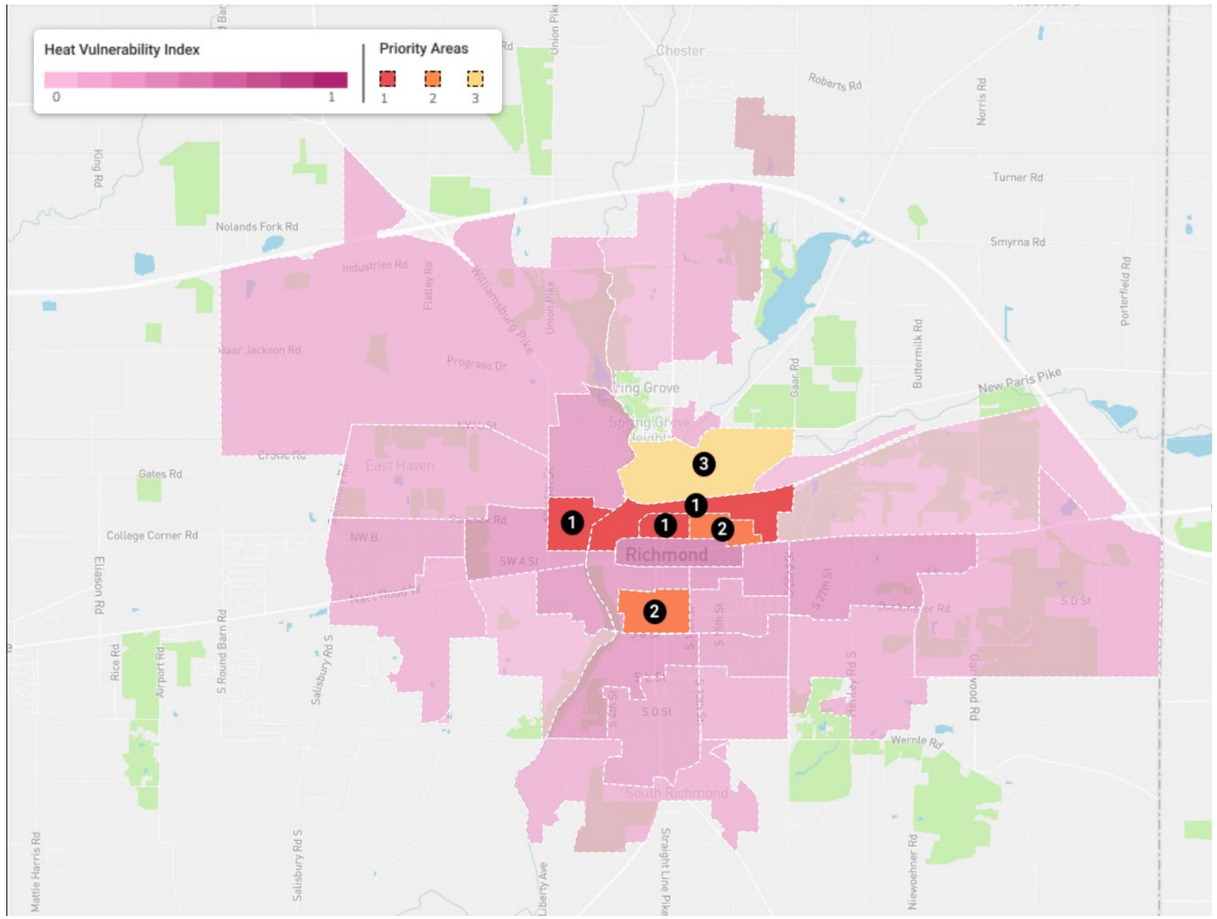
OCRA Office of COMMUNITY & RURAL AFFAIRS

LUDDY SCHOOL OF INFORMATICS, COMPUTING, AND ENGINEERING

INDIANA UNIVERSITY ENVIRONMENTAL RESILIENCE INSTITUTE

CLARKSVILLE INDIANA

Heat Vulnerability Dashboard



Explore the Beat the Heat:
Heat Vulnerability Dashboard

https://healthycities.luddy.indiana.edu/beattheheat/hvmt/index.html

EVALUATIONS

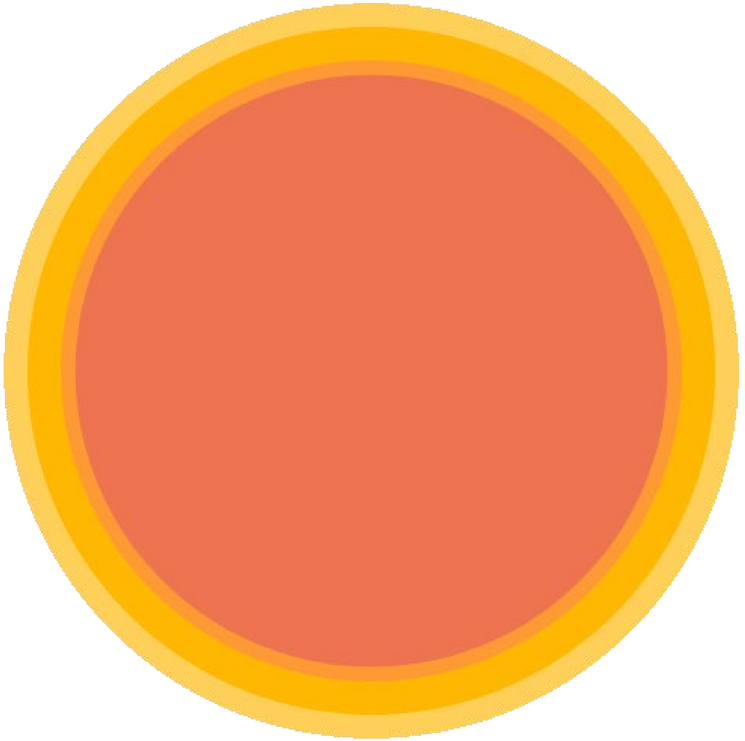
If interested in participating in the dashboard evaluations, please email us at:

hcities@iu.edu

dhabeeb@iu.edu

QUESTIONS?

Beat The Heat Round 2: A Program for Community Health and Resilience in Heat Emergencies



OCRA Office of COMMUNITY & RURAL AFFAIRS

LUDDY

INDIANA UNIVERSITY ENVIRONMENTAL RESILIENCE INSTITUTE

Beat The Heat Round 2: Program Overview

Beat The Heat Round 2 is a capacity-building initiative designed to help Indiana communities strengthen their resilience to extreme heat. This program offers tailored strategies, practical tools, expert guidance, and a collaborative framework to support the creation of safer and healthier communities prepared to face heat-related challenges through more resilient planning.

The program is currently been developed in partnership with IU Luddy School of Informatics, Computing, and Engineering and the Environmental Resilience Institute. The program opening has not yet been announced.

01

Capacity Building

Establish Heat Task Forces and host a Heat Fellow to support training and program implementation.

02

Community Needs Assessment

Receive assistance to conduct a Community Needs Assessments and heat mapping with mobile sensors on public infrastructure to identify heat related challenges.

03

Tailored Data and Products

Develop customized products like

- Heat maps
- Urban form analyses
- Policy scorecards
- Social media campaign
- Heat dashboard

to support heat mitigation and deliver data-informed planning resources

04

Strategy Development

Create heat resilience strategies to address identified needs and implement at least

✓ 1 heat strategy to create actionable, community-specific interventions

05

Funding Support

Receive support from the Indiana Resilience Funding Hub and the Environmental Resilience Institute to identify relevant funding opportunities to implement at least 1 heat resilience project.

Earn Bonus!

Earn Bonus Points towards a CDBG application to implement 1 high-impact heat resilience strategy

OCRA Office of COMMUNITY & RURAL AFFAIRS

LUDDY

INDIANA UNIVERSITY ENVIRONMENTAL RESILIENCE INSTITUTE

Eligibility

Who's Eligible:
Non-Entitlement Cities and Towns

Population Size:
Communities with population under 50,000

- ✓ Non-entitlement cities or towns with a population under 50,000 can apply for this program.
- ✓ The community must submit a required Letter of Intent by the deadline to successfully apply for this program.
- ✓ The community should have the capacity to engage with OCRA, IU, and a Heat Fellow throughout the program.

Sample Heat Relief Projects

Communities can think of a variety of projects while applying for funding, including:

Urban Canopy

Increase urban canopy to reduce heat islands

Bus Stop Shelters

Provide shaded areas for public transit users

Cool Kits

Distribute kits with cooling resources (e.g., water bottles, cooling towels)

Albedo Strategies

Use reflective surfaces to reduce heat absorption

Air Conditioning Unit Distribution

Provide AC units to vulnerable populations

Heat Alert Tools

Develop systems to notify residents of extreme heat events

Tentative: Program Activities and Timeline

Winter Year 1

The public application process to select two participating communities officially opens.

Interested applicants submit letters of intent.

Winter Year 1

- ✓ Selected cities are announced
- ✓ Heat Fellow is introduced to communities
- ✓ Virtual training webinars begins,
- ✓ Establish their Local Heat Relief Task Force.

Summer Year 2

- ✓ Community needs assessment
- ✓ Local temperature mapping
- ✓ Installation of sensors.
- ✓ Heat Taskforce Workshop
- ✓ Beat the Heat Week - Social Media Campaign

Summer Year 2

- ✓ Community Heat Survey concludes, and survey data is analyzed.
- ✓ Heat Taskforce Workshop happens,

Fall Year 2

- ✓Develop Community-Specific Heat Resiliency strategies
- ✓Develop Tailored Products
- ✓Identify funding opportunities

End of Program Year 2

- ✓ At least one heat strategy is funded and implemented in each community
- ✓ Program wrap-up & concluding webinar

OCRA Office of COMMUNITY & RURAL AFFAIRS

LUDDY

INDIANA UNIVERSITY ENVIRONMENTAL RESILIENCE INSTITUTE

Application Guideline: Program Announcement Date Coming Soon

Apply Online: Submit your application through the Qualtrics portal.

Deadline: To be announced

Answer Essay Questions: Respond to all essay questions.

Fill out all required information for Local Government, Chief Elected Official Authorization, and Primary Point of Contact.

Attach required uploads.

OCRA Office of COMMUNITY & RURAL AFFAIRS

LUDDY

INDIANA UNIVERSITY ENVIRONMENTAL RESILIENCE INSTITUTE

What Makes A Good Application?

Preference will be given to applicants:

- Detailed responses to the essay questions.
- Clearly express community priority and need
- Align community resilience goals with program purpose
- Identify support local support towards participation in the program through letters of support.
- A demonstrated ability and willingness to identify funding for community project.
- Showcase experience, commitment, and volunteer strategies
- A demonstrated commitment to increasing residents 'health and safety to heat events
- A strong commitment to continuity following the end of the program.
- Emphasize unique strengths

Metrics of Success

Immediate Success Metrics:

✓**Establish Local Heat Task Force**: Task force successfully formed with stakeholders and initial meeting held

✓**Capacity Developed with Local Government and Community:** Regular participation in webinars and workshops

✓**Completion of Community Needs Assessments:** Successful surveys, workshops, and temperature mapping.

Long-Term Metrics:

✓**Tailored community Product:** The community is equipped with tailored products to incorporate heat resilience planning to improve safety.

✓**Implementation of Heat Strategies:** At least one strategy implemented per community by end of the program.

Ongoing Success Metrics:

✓**Awareness:** Build community awareness to prepare and respond to summer heat risks.

✓**Utilize Heat Dashboard:** Use platform to inform future program and policy development to improve communities' health and safety to extreme heat.

Stay Informed About Program Opening Announcements!

Subscribe to the OCRA News to receive updates on the Beat the Heat Program
https://bit.ly/OCRA-signup

Questions

If you have any questions about the Beat The Heat, please contact CDBG@OCRA.in.gov