





Rhode Island's Public Health Under a Changing Climate

December 2nd
CARI

RIDOH Climate Change Program



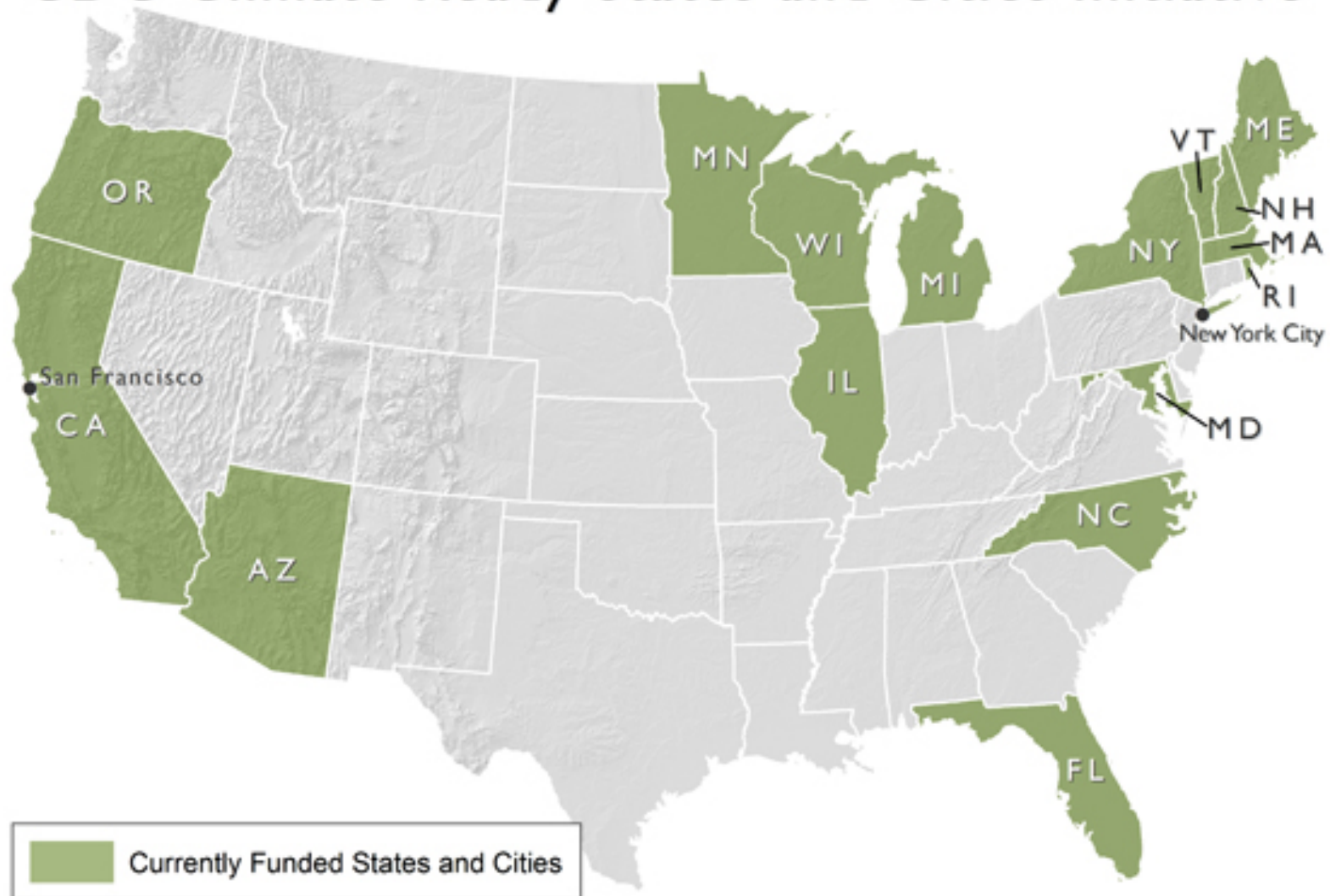
Our **mission** is to prepare for the human health effects related to climate change to create a healthy, sustainable, and resilient future for all Rhode Islanders.



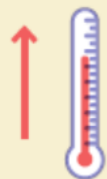
Centers for Disease Control and Prevention



CDC Climate Ready States and Cities Initiative



Key Climate Challenges



Rhode Island's average temperature has increased about three degrees since 1900. The rest of the continental United States has had an average temperature increase of about 1.5 degrees.



Rhode Island has seen a 76% increase in the number of heavy downpours since 1950 and has had the nation's largest increase of extreme precipitation events since the 1950s.



Spring is arriving earlier and bringing more precipitation, and summers are hotter and drier.



Heavy rainstorms are more frequent. Severe storms cause more floods that damage homes, businesses, and utilities.



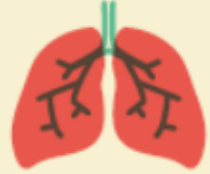
Warmer weather could increase the risk of insect-borne diseases.



Ticks that transmit Lyme disease and other diseases are active when temperatures are higher than 45 degrees.

According to a 2014 survey, 6 in 10 Americans have given little or no thought to the issue of how climate change might affect people's health.

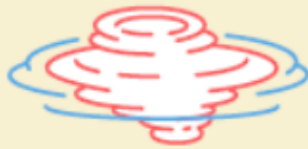
Key Health Challenges



Asthma, allergies, and other respiratory illness from increasing allergens/air pollution



More mosquito-borne and tick-borne illnesses related to changes in ecology



Injuries and fatalities due to severe/extreme weather and flooding



Increased levels of water-borne diseases and harmful algal blooms

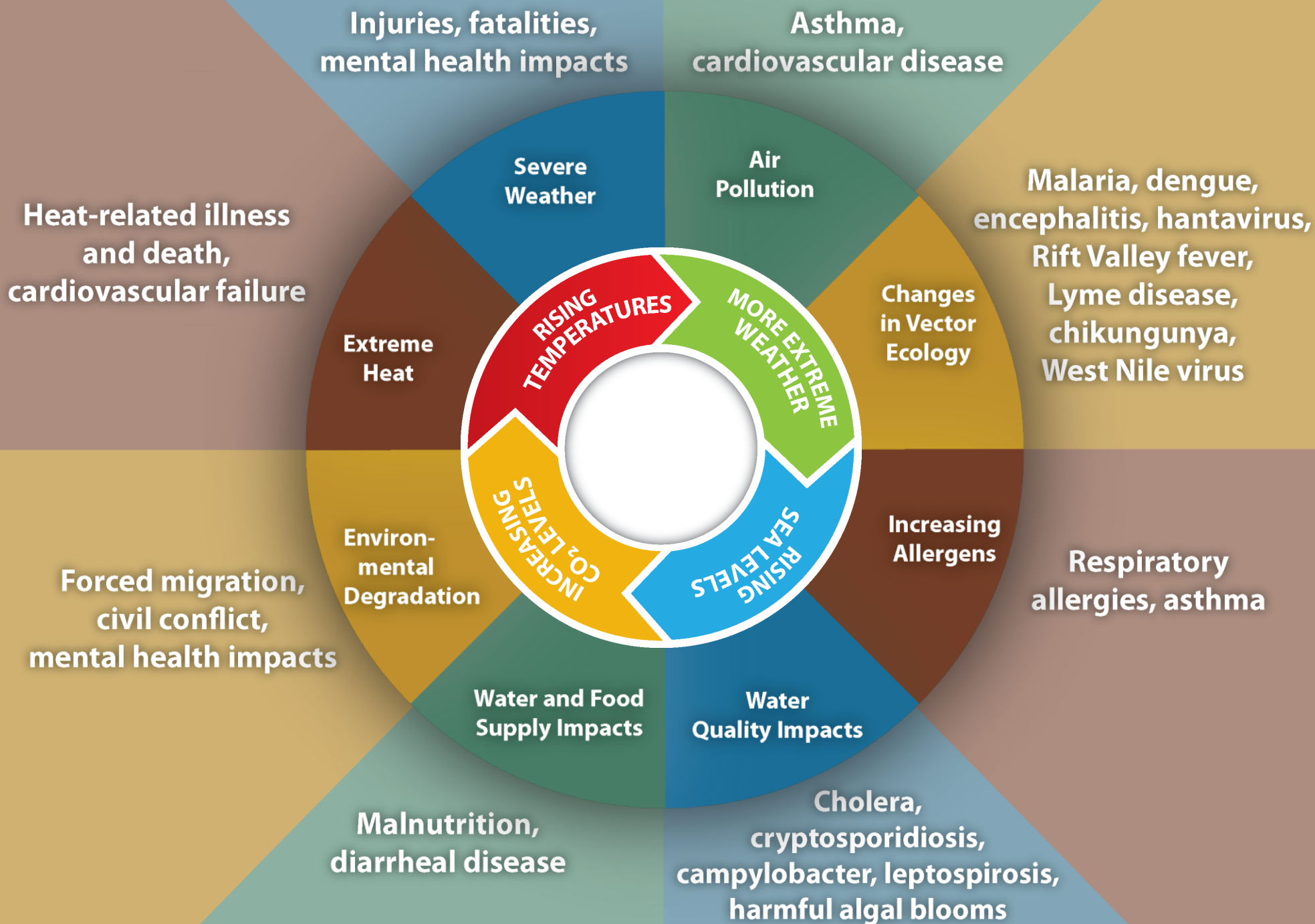


Impacts on food supply and access to clean water due to extreme weather and droughts



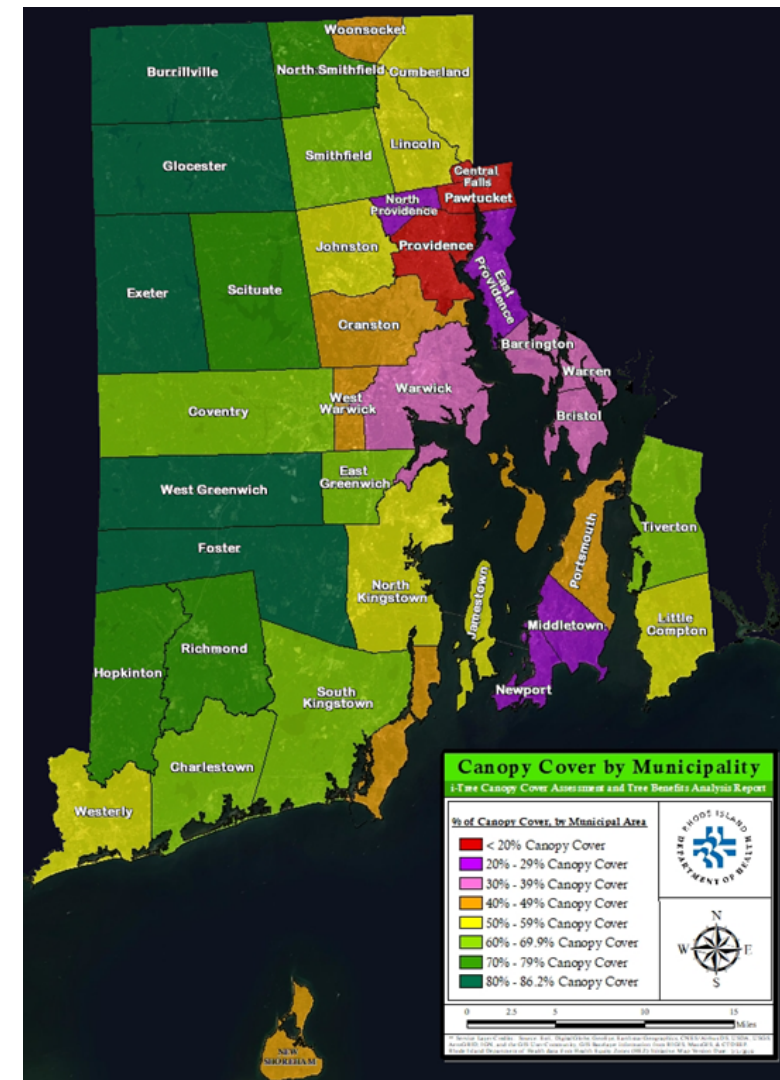
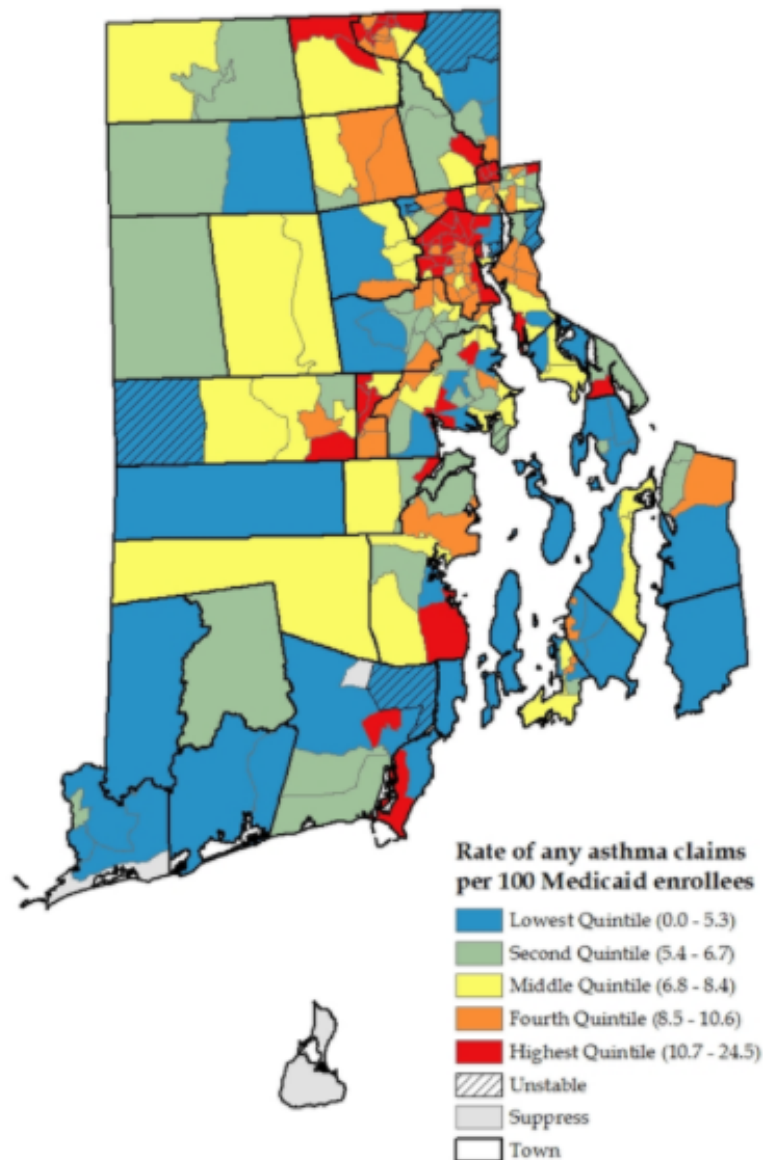
Increased levels of anxiety, post-traumatic stress disorder (PTSD), and other long-term mental health effects

Rising temperatures could increase heat-related illness and death

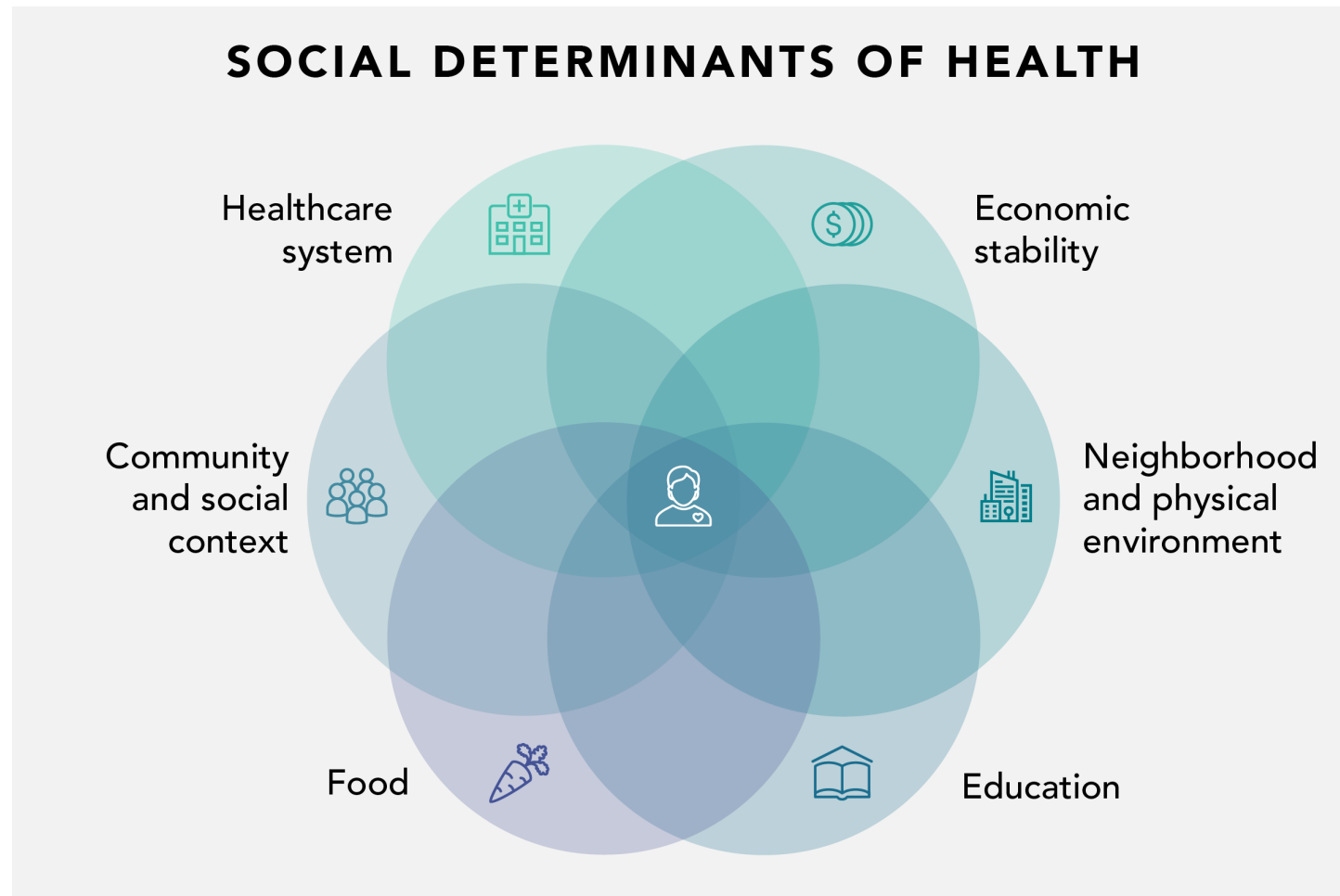


Climate Change is a *Risk Amplifier*

Asthma Claims Among Children on Medicaid, 2013-2017 (asthma prevalence)



Social Determinants of Health



If you want to learn about the health of a population, look at the air they breathe, the water they drink, and the places where they live.

-Hippocrates, in the 5th century B.C.

Rhode Island Health Equity Measures



Health happens inside our homes, schools, jobs, and communities

RIDOH Health Equity Measures include fifteen measures that look at determinants of health in five domains

Community Resiliency	Civic Engagement	Percentage of registered voters participating in the most recent presidential election	Rhode Island Board of Elections
	Social Vulnerability	Index score that reflects the social vulnerability of communities	Centers for Disease Control and Prevention (CDC) Social Vulnerability Index, Agency for Toxic Substances and Disease Registry (ATSDR)
	Equity in Policy	Ratio: Number of low to moderate-income housing units to number of low to moderate-income households	HousingWorks RI, Comprehensive Housing Affordability Strategy
Physical Environment	Natural Environment	Percentage of overall landmass with tree canopy cover	US Department of Agriculture (USDA) Forest Service i-Tree Tools
	Transportation	Index score that reflects the affordability of transportation for renters	US Department of Housing and Urban Development (HUD) Low-Cost Transportation Index
	Environmental Hazards	Number and percentage of children with blood lead levels higher than 5 micrograms per deciliter	RIDOH Environmental Lead Program

Environmental burden is not equal

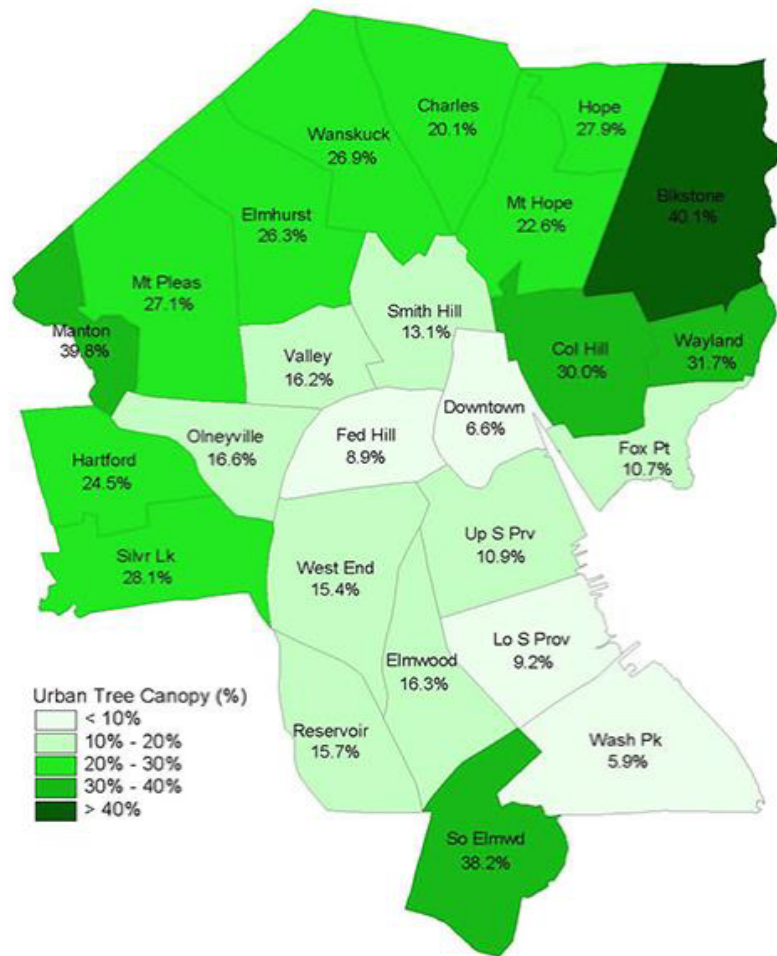


Providence ranks:

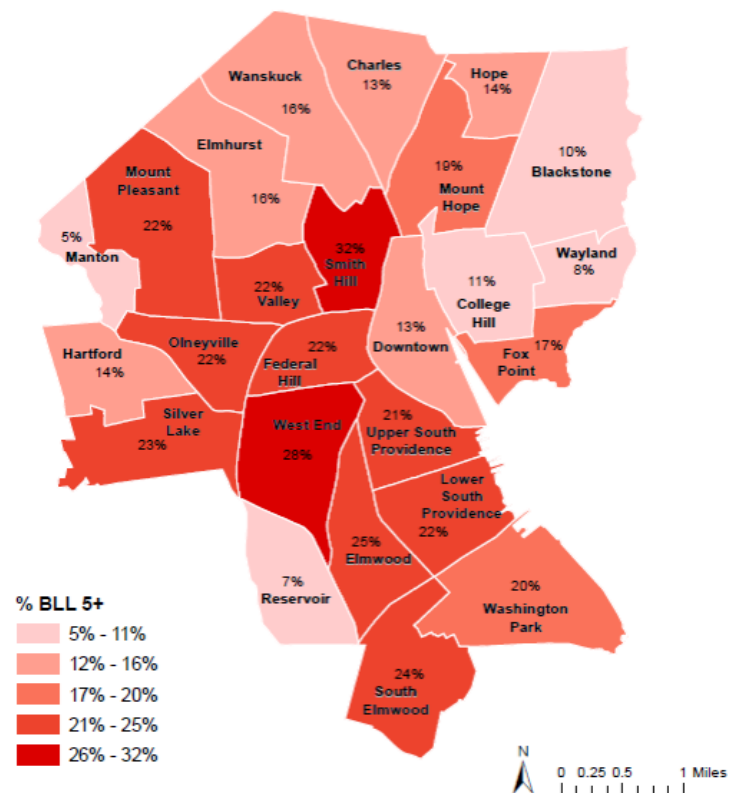
- Fifth highest in nation for income inequality (Brookings)
 - Fifth highest in nation for low-income energy burden (ACEEE)
 - Most polluted county for air quality in the Boston-Worcester-Providence metro area. Received an F for high ozone days (American Lung Association)
- Rates of asthma are 33% higher than national average

Environmental burden is not equal

Tree canopy by neighborhood



Kindergarten-aged children with elevated blood-lead levels, 2014



Statewide average = 12.4%

Source: Rhode Island Department of Health Lead Elimination Surveillance System, Rhode Island GIS

Note: The population includes the total number of children eligible to enter school in fall 2014 (born between 9/1/08 and 8/31/09) with at least one confirmed lead test. Elevated blood lead levels are defined as at least one confirmed lead test of 5 micrograms/deciliter or higher in the child's lifetime.

Providence, RI: 2007 Tree Canopy, Historic Redlining Maps

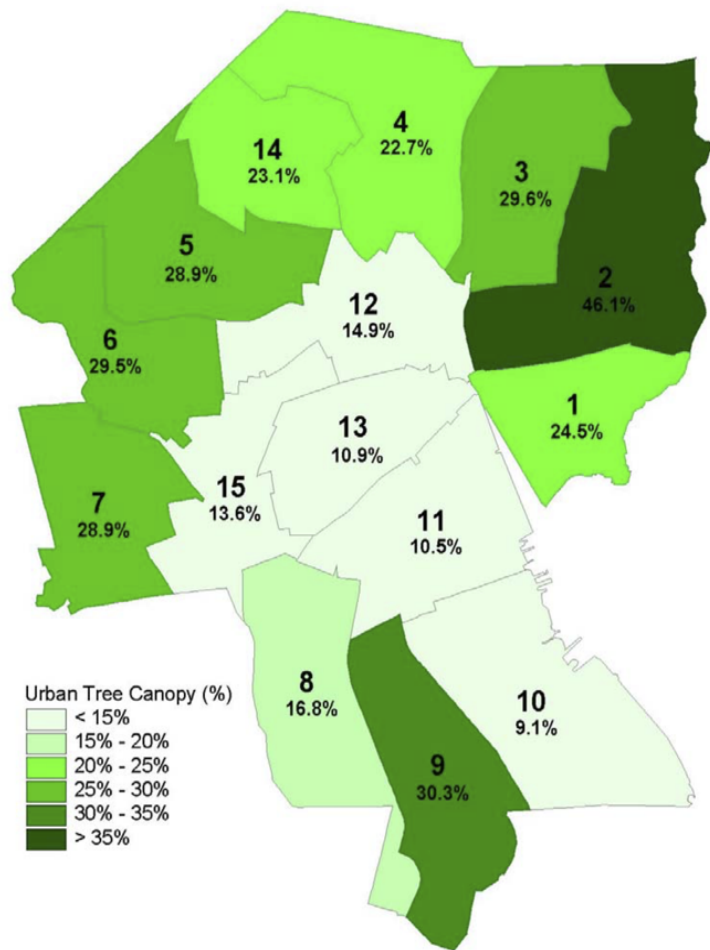


Figure 16. UTC by Ward (provided by Provstat, City of Providence)



Health Equity Zones

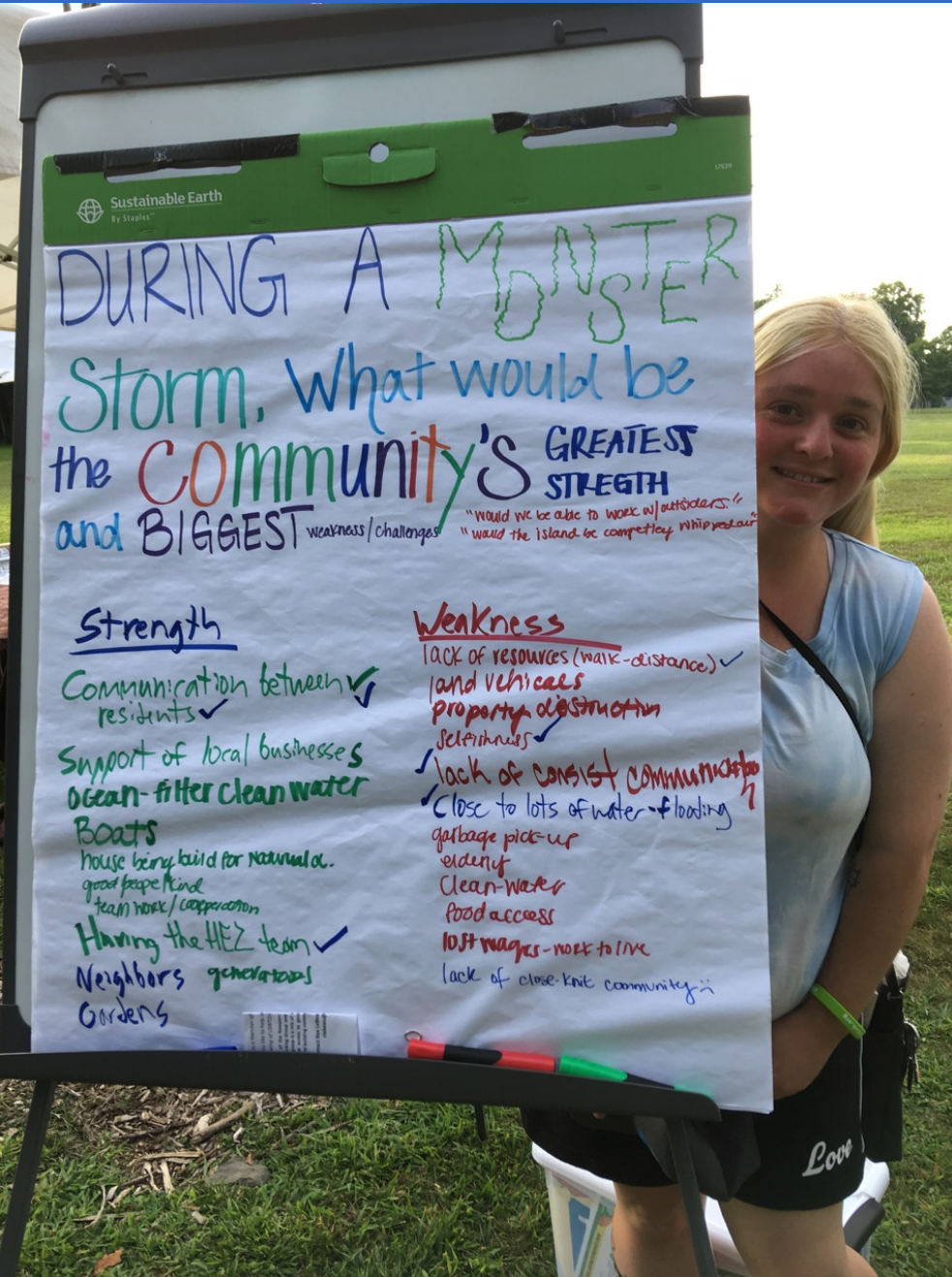


Rhode Island's Health Equity Zones

A Model for Building
Healthy, Resilient
Communities



Health Equity Zone Community Resiliency



COMMUNITY REPORT-BACK

2019 NEWPORT GAS OUTAGE STUDY



WHAT WE LEARNED FROM YOU

WE HEARD ABOUT **GAPS** AND **BARRIERS** IN THE CITY'S ABILITY TO SERVE COMMUNITY RESIDENTS AND TO MEET THEIR BASIC HUMAN NEEDS FOR...

SHELTER



FOOD



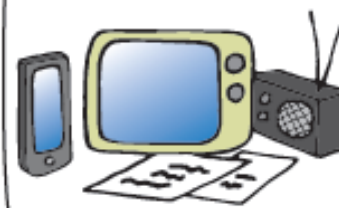
TRANSPORTATION



CHILDCARE



And most importantly,
INFORMATION



Many of you told us that it was hard to pay for extra expenses, even waiting to be reimbursed by National Grid, and some of you — especially Spanish-speaking residents — didn't know about reimbursement.

You also said that some hotel staff were unwelcoming and even hostile to community members when they needed safety and support during a crisis.

WE HEARD YOU DESCRIBE THE **ASSETS** WITHIN THE COMMUNITY DURING THE EMERGENCY...

DEEP LOCAL KNOWLEDGE

SOLIDARITY

FLORENCE GRAY CENTER

SKILL SETS

Getting information out to people quickly

Organizing people

Creative problem-solving



Community hub for information and resources

The HEZ office: an information hub

The only place in the North End for residents to seek help

In the future: A Resilience Hub — a place for residents to prepare for and find resources before, during, and after emergencies

WHAT WE CAN DO:

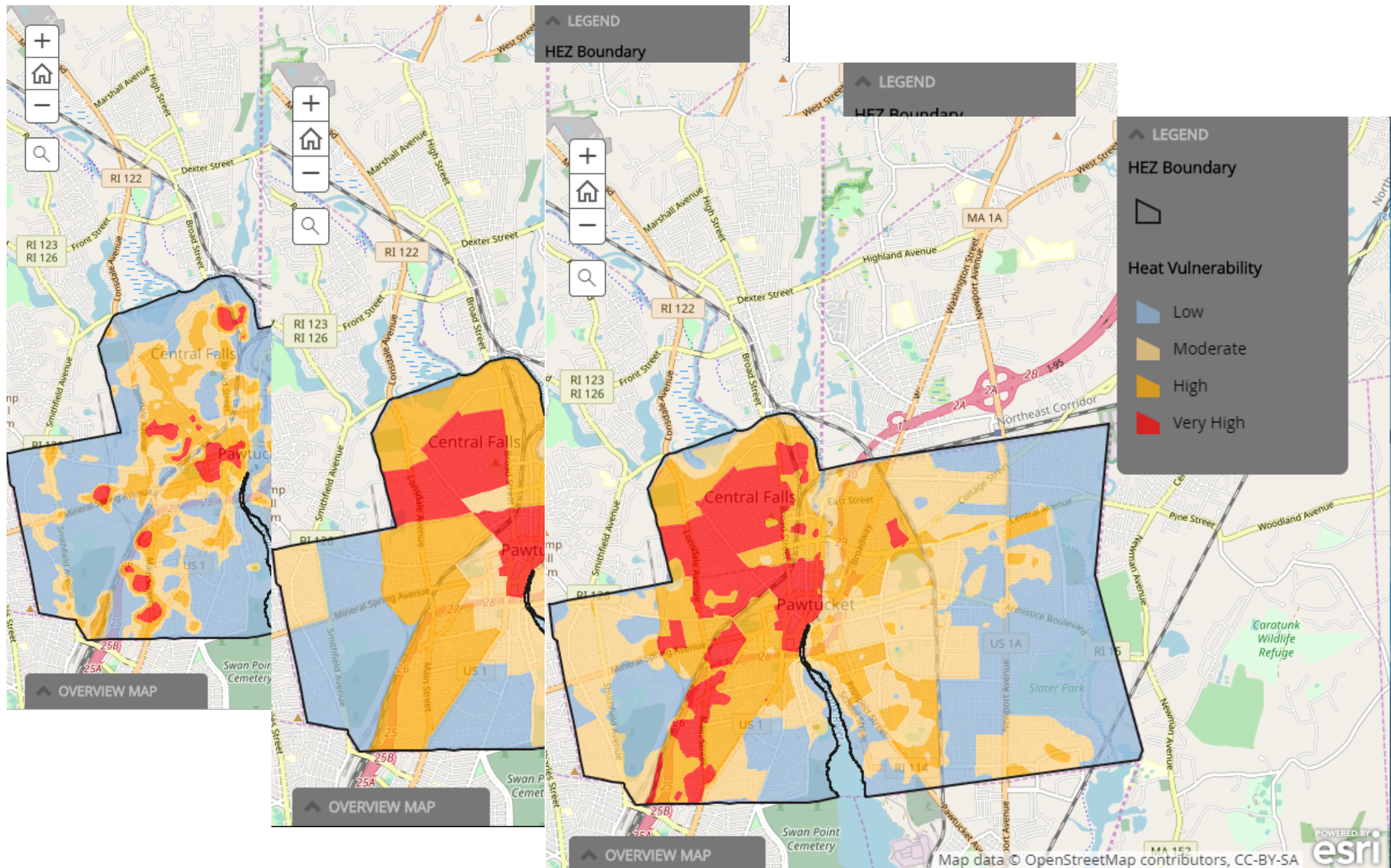
- Prepare to take care of ourselves and our community in an emergency
- Advocate for the resources we need before, during, and after an emergency
- Tell our public officials to plan **WITH** us, not **WITHOUT** us

For more information:

Newport HEZ Office
Florence Gray Center
1 York St., Newport, RI

jriesman@wrenbc.org
(401) 236-8344

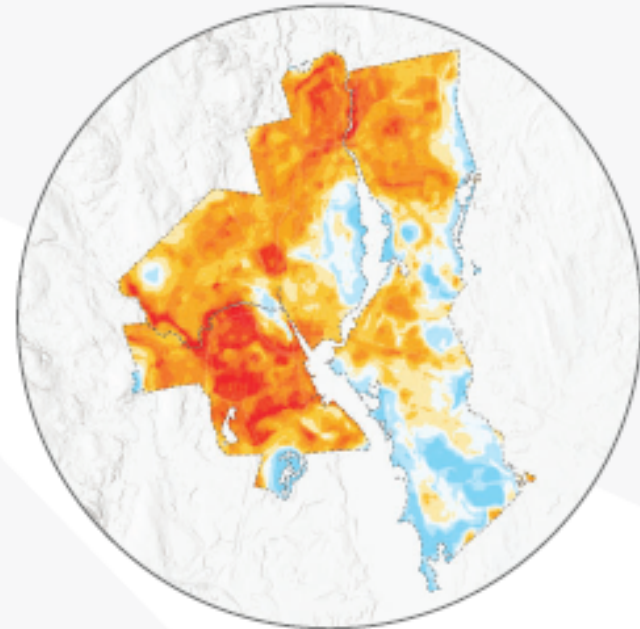
Exposure + Vulnerability = Risk



CAPA Heat Watch



Point temperature
traverse period



Area-wide heat maps, displaying either the modeled temperature or heat index across the entire study area at each traverse period.

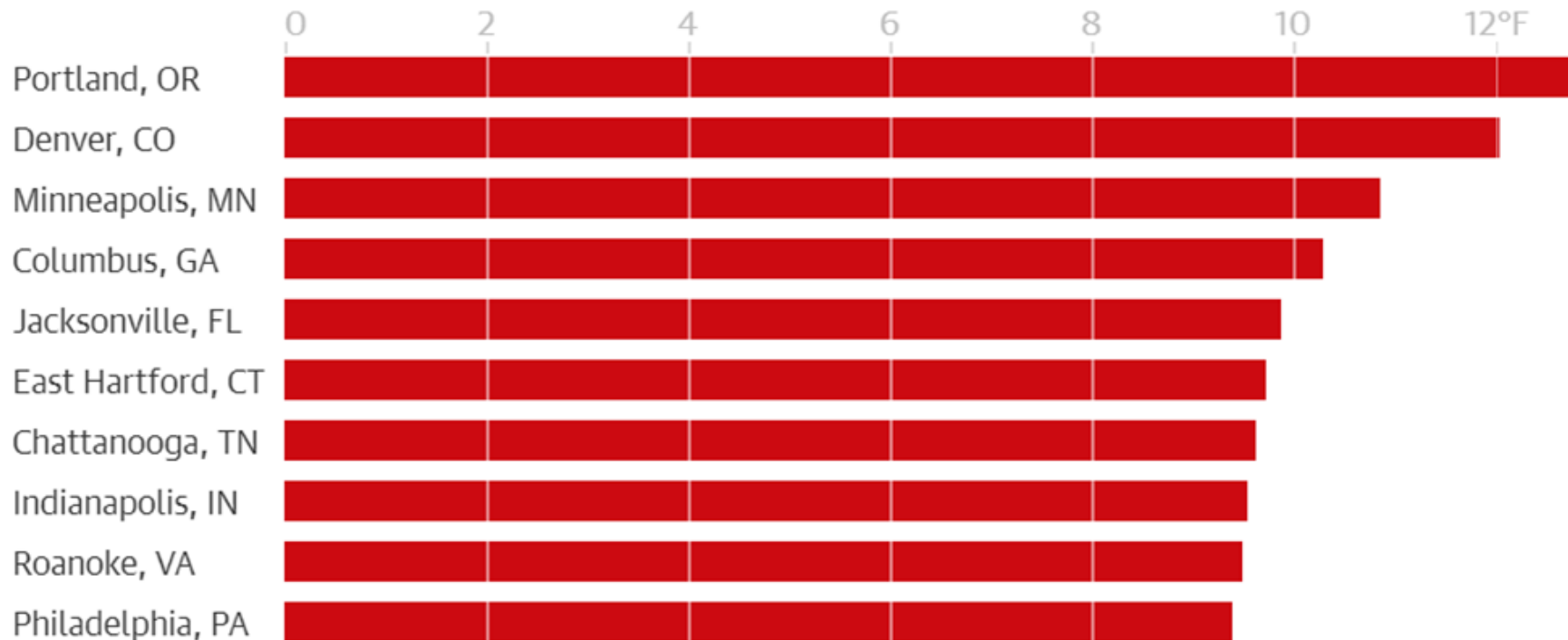


CAPA Heat Watch



A new study found that temperatures in formerly redlined and non-redlined neighborhoods within cities differ by up to 12.6°F

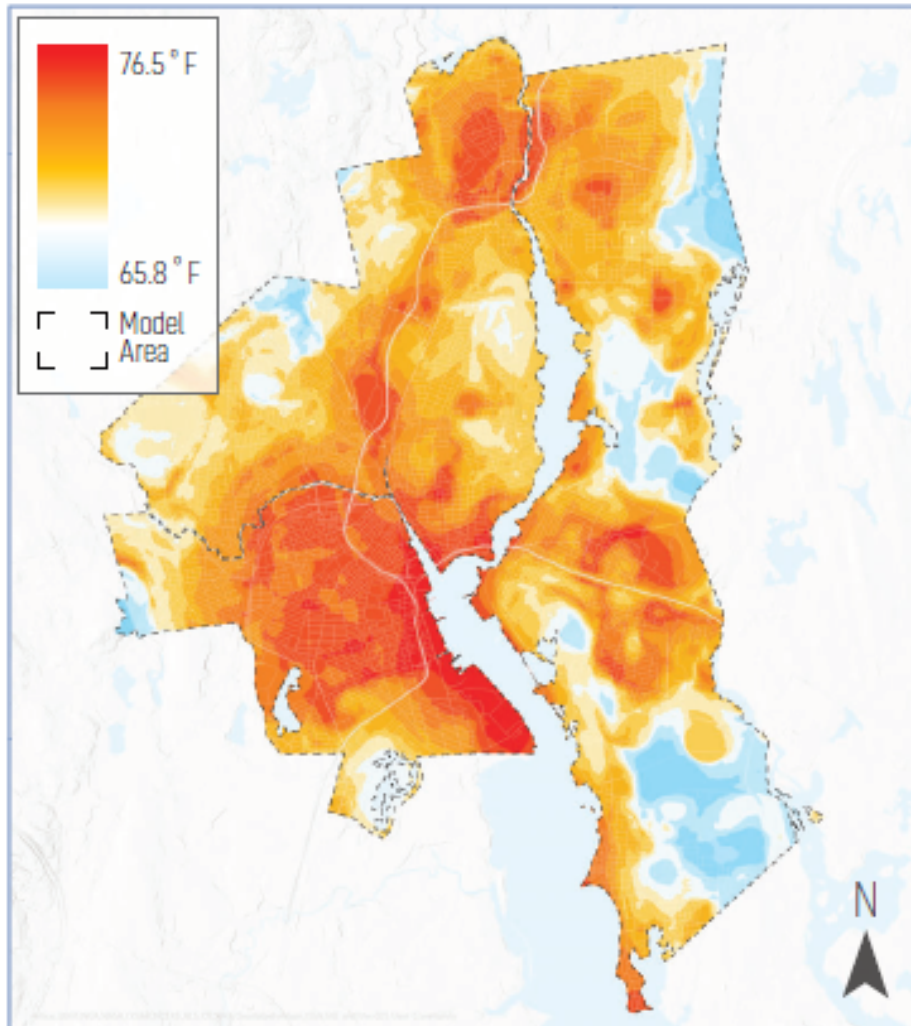
Heat differences between redline and non-redlined neighborhoods (fahrenheit)



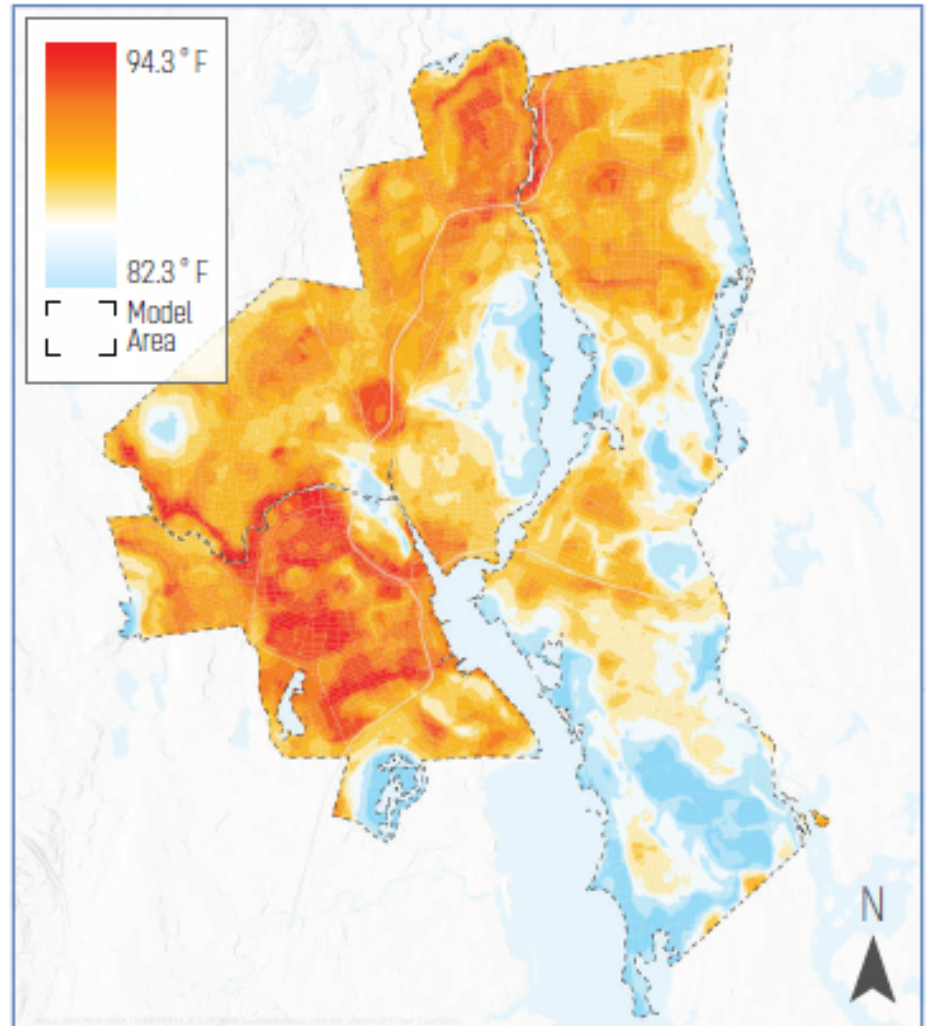
Guardian graphic | Researchers from the Science Museum of Virginia, Portland State University and Virginia Commonwealth University

CAPA Heat Watch

Morning Area-Wide Predictions (6 - 7 am)

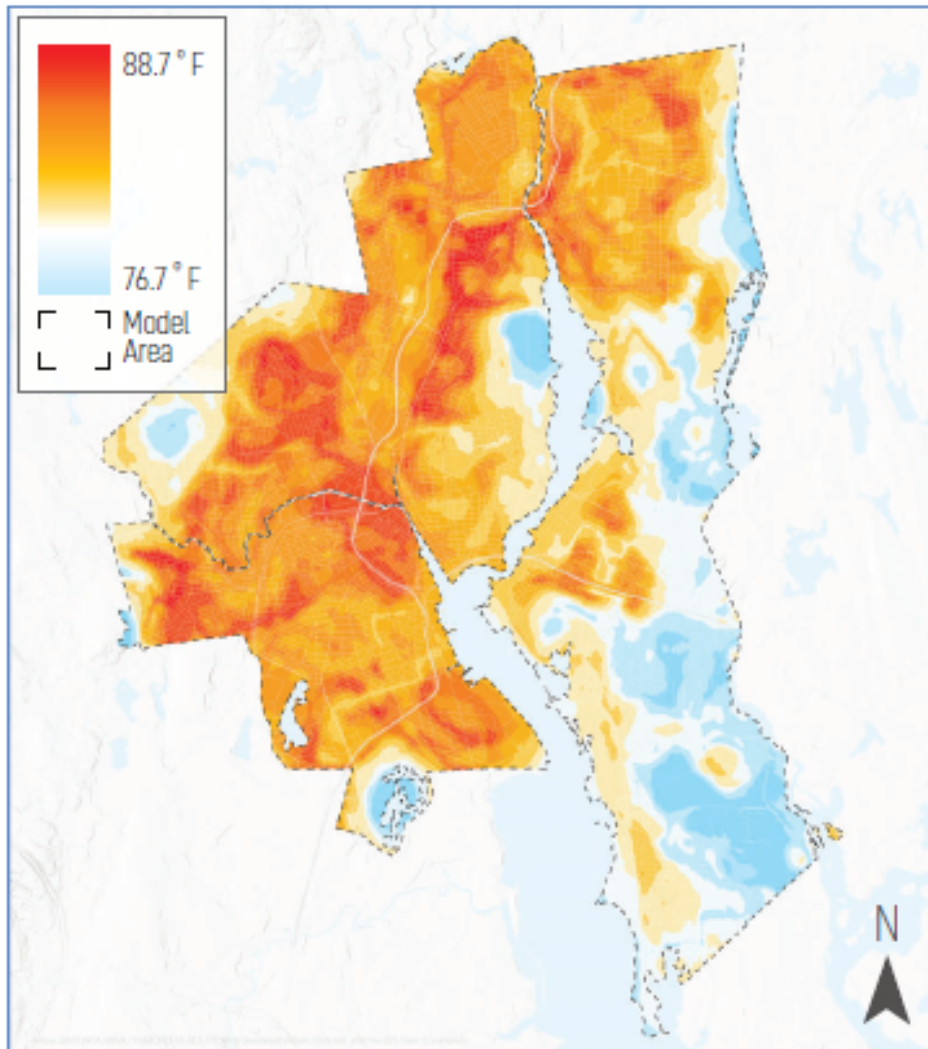


Afternoon Area-Wide Predictions (3 - 4 pm)

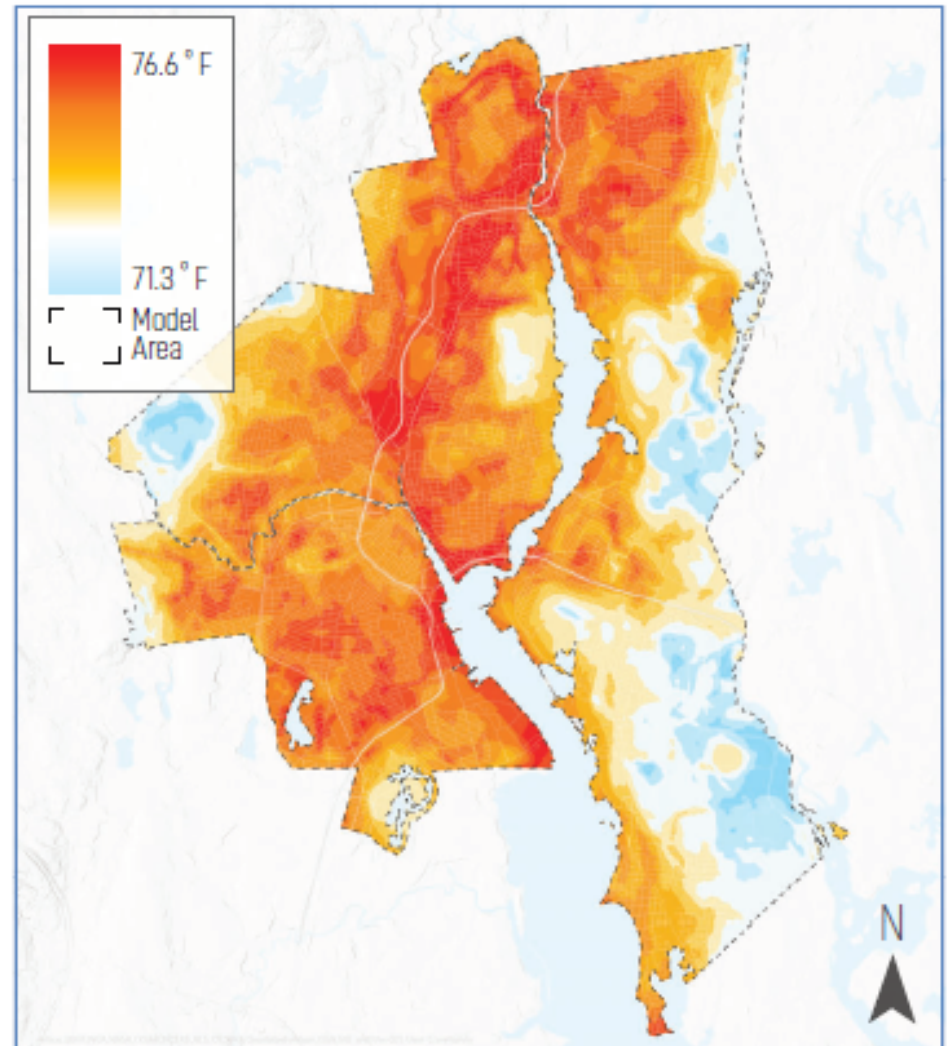


CAPA Heat Watch

Evening Area-Wide Predictions (7 - 8 pm)

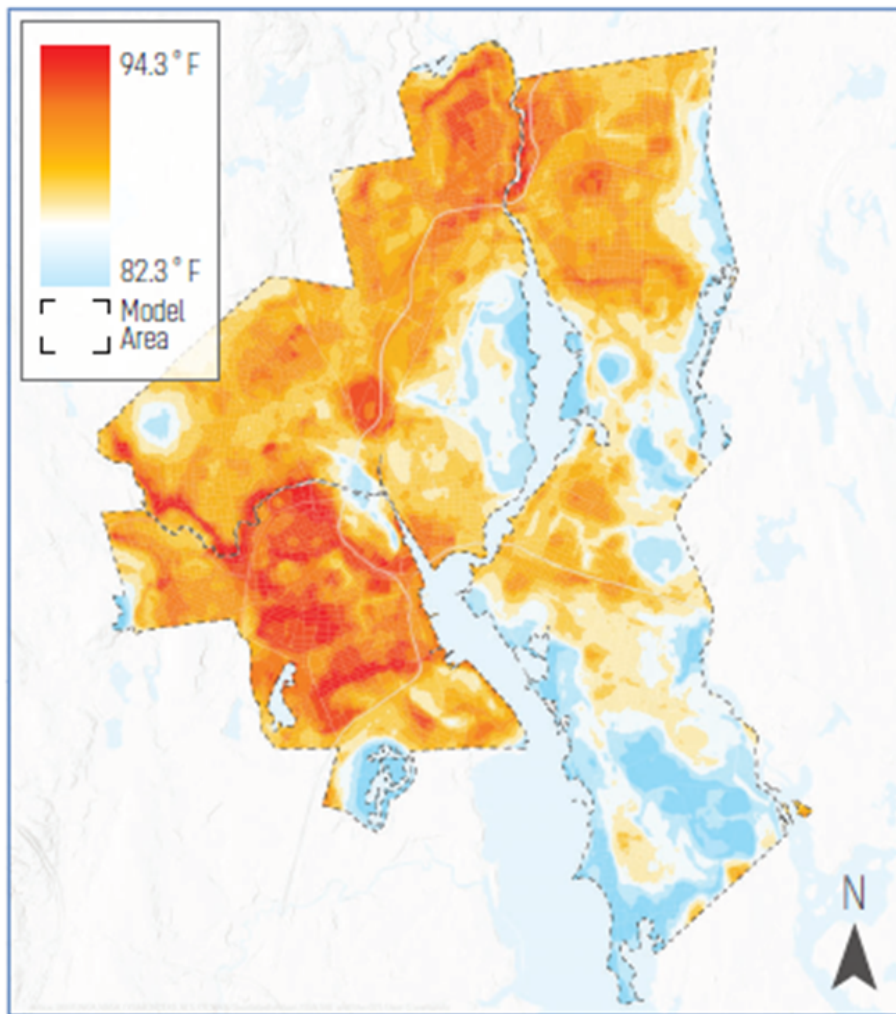


Midnight Area-Wide Predictions (12 - 1 am)



Extreme Heat

Afternoon Area-Wide Predictions (3 - 4 pm)



DATA AND PROJECTIONS



CURRENT:
90° FOR
10 DAYS

During an average Rhode Island summer, the heat index reaches 90°F for 10 days.



PROJECTED:
ABOVE 90° FOR
13-44 DAYS

Between 2020-2099, Rhode Island may experience 13-44 more days each summer that are above 90°F.



Rhode Island's average temperature has increased by more than 3°F in the past century.



Many Rhode Islanders do not have air conditioning, including at-risk groups.

Urban Forests for Climate and Health



AMERICAN FORESTS



DORIS DUKE
CHARITABLE FOUNDATION



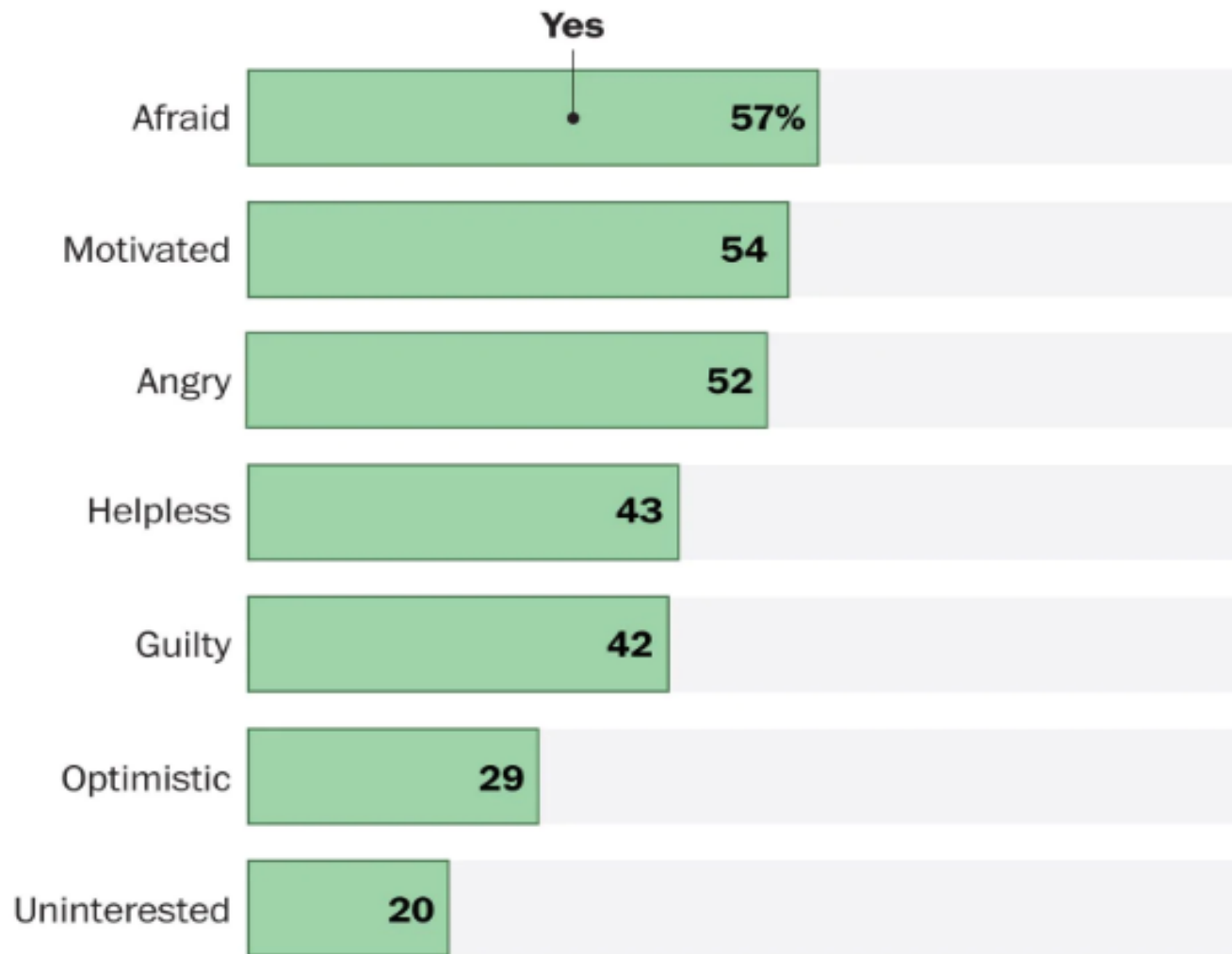
DEM
RHODE ISLAND



POLL Washington Post-Kaiser Family Foundation Poll

Majority of teens feel afraid and angry about climate change, but also motivated

Does the issue of climate change make you feel each of the following, or not?



Source: July 9 - Aug. 5, 2019, Washington Post-Kaiser Family Foundation survey of 629 teenagers aged 13-17. Results have an error margin of +/- 5 percentage points.

TALKING CLIMATE DURING COVID

A CONVERSATION WITH FRAMEWORKS & NNOCC |

NAVIGATE THOUGHTFULLY

AVOID: COST BENEFIT
WINNERS & LOSERS
NATURE WILL HEAL ITSELF

WHAT CAN OUR PUBLIC INSTITUTIONS DO?

✓ ME → WE
✓ USE SHARED VALUES

MOBILIZE ACTION BY EMPOWERING INTERCONNECTION

✓ CONNECT SOCIAL ISSUES
✓ CONNECT GROUPS OF PEOPLE
✓ AVOID OTHERING

FRAME THE FUTURE

✓ LIFT UP SPECIFIC SOLUTIONS THAT
SOLVE INTERCONNECTED PROBLEMS
✓ WE HAVE CHOICES TO MAKE

DON'T PIT CLIMATE VS. COVID

"SILVER LININGS" REINFORCE
ECONOMY VS. ENVIRONMENT

BALANCE URGENCY & EFFICACY

TEMPER POSSIBILITY WITH AN
AWARENESS OF HOW HARD THE
CHALLENGES ARE.





Rachel Calabro
Climate Change Program Manager
Rhode Island Department of Health
Rachel.calabro@health.ri.gov

health.ri.gov/programs/ (and click on “Climate Change and Health Program”)