



SEEC Virtual Forum: Webinar #5

July 8, 2020 | 11:00 AM – 12:30 PM PST

Extreme Heat Resilience Among Disadvantaged Communities in Stockton



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Identifying, Prioritizing, Financing Projects


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SEEC Bingo

Connect, Network, and Win a Prize!

<p>OWNS AN ELECTRIC VEHICLE</p> <p>NAME: _____</p>	<p>IS A CCA CUSTOMER</p> <p>NAME: _____</p>	<p>HOUSEHOLD HAS MOSTLY LED BULBS INSTALLED</p> <p>NAME: _____</p>	<p>HAS COOKED FOOD IN A SOLAR OVEN</p> <p>NAME: _____</p>	<p>WORKS IN THE SIERRA NEVADA REGION</p> <p>NAME: _____</p>
<p>HAS SOLAR PANELS ON THEIR PROPERTY</p> <p>NAME: _____</p>	<p>HAS AN EV CHARGER AT THEIR HOME OR APARTMENT COMPLEX</p> <p>NAME: _____</p>	<p>HAS AT LEAST ONE ENERGY STAR® APPLIANCE AT HOME</p> <p>NAME: _____</p>	<p>IS AN ELECTED OFFICIAL</p> <p>NAME: _____</p>	<p>WORKED IN THE ENERGY FIELD IN A STATE BESIDES CALIFORNIA</p> <p>NAME: _____</p>
<p>WORKS FOR OR HAS WORKED FOR THE CEC</p> <p>NAME: _____</p>	<p>TAKES PUBLIC TRANSIT TO THEIR WORK OFFICE</p> <p>NAME: _____</p>		<p>PLAYS A MUSICAL INSTRUMENT</p> <p>NAME: _____</p>	<p>HAS THE SAME JOB TITLE THAT YOU HAVE</p> <p>NAME: _____</p>
<p>HAS DROUGHT-RESISTANT LANDSCAPING</p> <p>NAME: _____</p>	<p>BIKES OR WALKS TO THEIR WORK OFFICE</p> <p>NAME: _____</p>	<p>IS A VEGETARIAN OR VEGAN</p> <p>NAME: _____</p>	<p>LIVES OR WORKS IN A ZERO NET ENERGY (ZNE) BUILDING</p> <p>NAME: _____</p>	<p>WORKS FOR A COMMUNITY BASED ORGANIZATION</p> <p>NAME: _____</p>
<p>WORKS IN THE SAN JOAQUIN VALLEY REGION</p> <p>NAME: _____</p>	<p>COMPLETED AN ENERGY AUDIT</p> <p>NAME: _____</p>	<p>HAS RUN FOR OFFICE</p> <p>NAME: _____</p>	<p>HAS SUCCESSFULLY CREATED SOIL FROM COMPOST</p> <p>NAME: _____</p>	<p>HAS BACKYARD CHICKENS</p> <p>NAME: _____</p>



Q&A

- Submit questions for panelists through the Q&A module at any point during the webinar.
- Upvote questions that you are interested in hearing responses to.

Audio Settings ^



Chat



Raise Hand



Q&A

Leave Meeting

Chat

- Engage in a dialogue with your peers – share resources, case studies, and best practices
- Reach out to LGC staff if you encounter technical issues or have questions about the SEEC Forum.



Susan Mazur-Stommen Ph.D.

Cultural
Anthropologist,
Founder and Principal
INDICIA Consulting



Haley Gilbert

Program Director
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Darren Kumar

Senior Regional
Manager
*Rising Sun Center For
Opportunity*

Introducing Today's Panelists



Stockton Heat Risk Assessment

Using Rising Sun
Green House Call data

Dr. Susan Mazur-Stommen

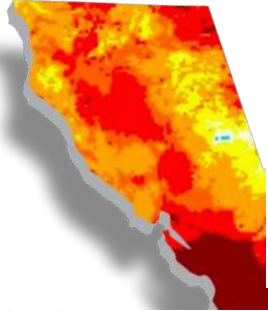
Haley Gilbert

Darren Kumar

July 8 2020



Extreme heat is a problem in California



CALIFORNIA HEAT WAVE, WILDFIRES RAGE ON WITH NO RELIEF IN SIGHT

BY NEWSWEEK STAFF ON 8/9/18 AT 3:56 PM EDT

A dangerous heat wave threatens millions of people in California and the Southwest



By Nicole Chavez, CNN

Updated 2034 GMT (0434 HKT) July 6, 2018



New Heat Wave Hits Southern California Among the Hottest Days of the Year

BY ZACH LI

August 6, 2018 Updated: August 6, 2018

Share      

California power grid urges consumers to conserve energy in heat wave

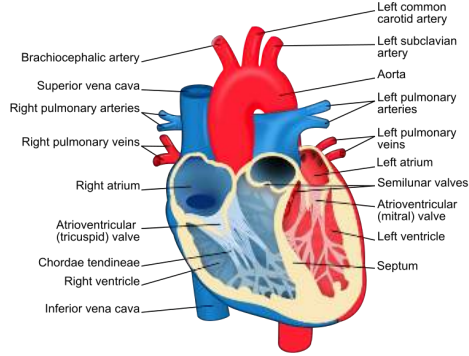
3 MIN READ



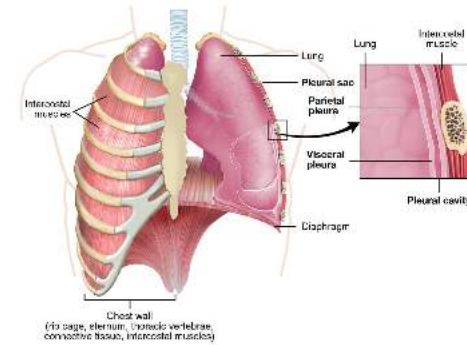
April 25, 2019

Death Valley hits 109 as scorching temperatures sweep across southwestern US

Extreme heat has negative consequences on health



Cardiovascular



Respiratory



Preterm births & birth defects

Some populations are more vulnerable to extreme heat



These populations are vulnerable to heat even when they are home

Lack air conditioning

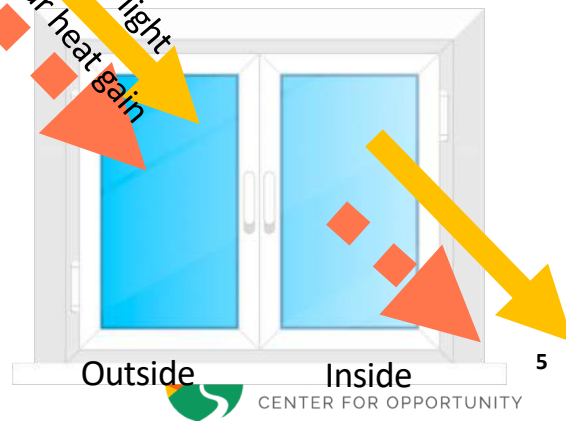
Do not operate air conditioning

Insufficient air conditioning

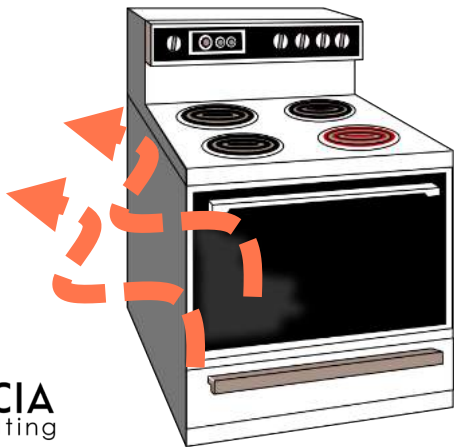


Heat enters house from environment (air, sun)

Visible light
Solar heat gain



Household routines produce unwanted heat

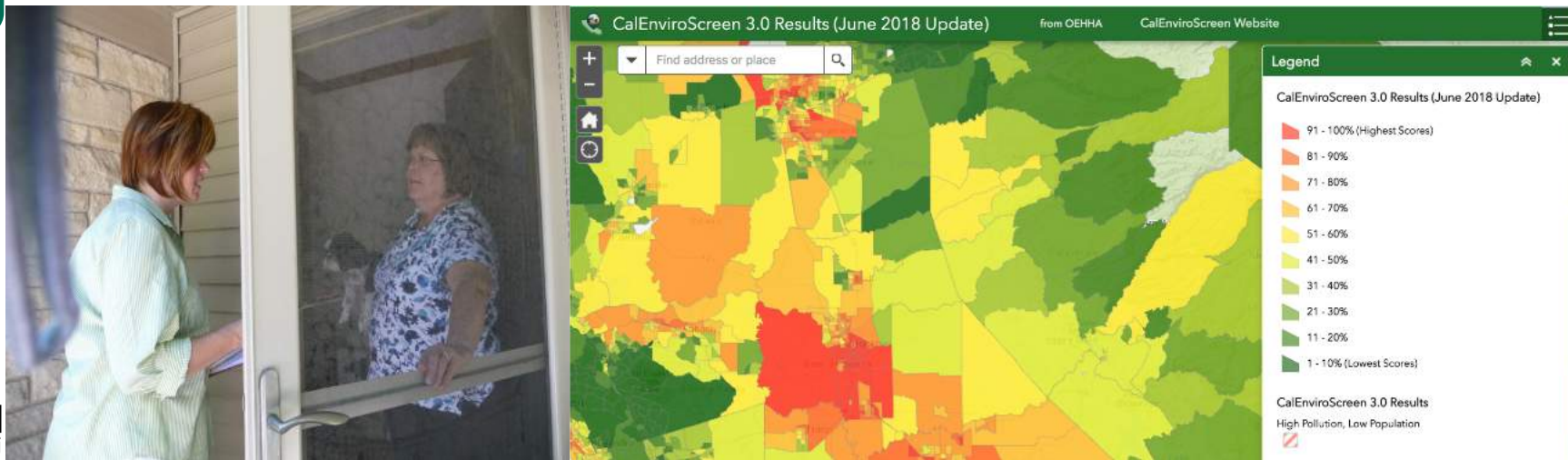


There are actions we can take to reduce the risks of these vulnerable populations to extreme heat

SHORT TERM

1. Spread the word! Increase awareness of heat-related vulnerability
2. Identify communities that are vulnerable to extreme heat events

Source: Cal-heat.org



There is a gap in data to accurately identify high heat risk households

- Data is often presented at the community-level (census tract)
- Lack of sources to understand home heat risks (adaptive capacity)

To get better information, we found a creative solution

- collect data at the household level and
- for building/home characteristics

by collaborating with Rising Sun's Climate Careers Youth Program

WIN-WIN

Increase awareness of youth who completed the training & households where they visited



RISING SUN

CENTER FOR OPPORTUNITY

Introduction



Our mission



RISING SUN
CENTER FOR OPPORTUNITY



Sustainability:
Environmental and
Economic

Creating Positive
Cycles

Climate Careers: Youth Program

Program giving young people work experience through delivering no-cost energy & water saving services to homes

Youth Development:

- Job Experience
- Career Pathway Exploration
- Professional Skill-building

1,842 youth employed since 2000

Energy & Water Services

- Green House Calls
- Energy Coaching

46,691 homes served since 2000

Green House Calls

- 3 energy and water-saving elements:
 - Basic home assessment
 - Installation of efficiency devices
 - Customer pledge and resource sharing



Community Outreach

- Outreach carried out at community gathering places and events
- Residents can sign up via a online platform or to receive a [Green House Call](#)
- Focus on hard-to-reach populations:
 - Low-moderate income populations
 - Renters
 - Senior Citizens
 - People who don't speak English or are more comfortable speaking another language



Youth Statistics: 2019

YOUTH IMPACT

2018 PROGRAM - WIDE



93%

..... reported an increase in overall skill development

68%
said their future plans were positively impacted by CYES



71%

..... reported an increase in their environmental sustainability knowledge

YOUTH DEMOGRAPHICS

2018 PROGRAM - WIDE



53%

..... said CYES was their first job

91%
said CYES was their first green job



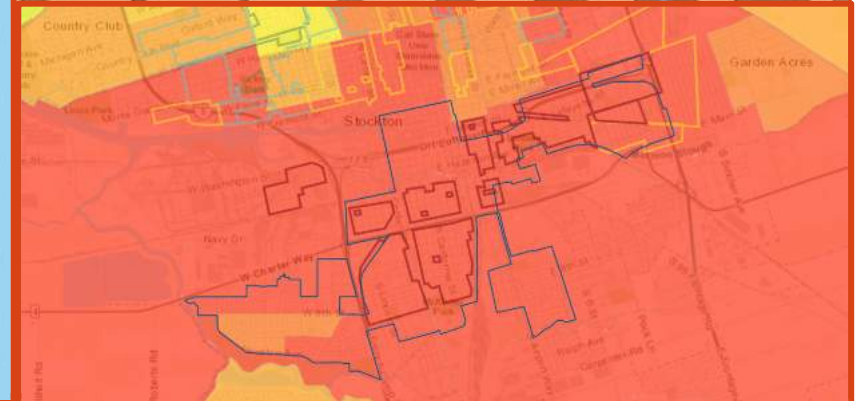
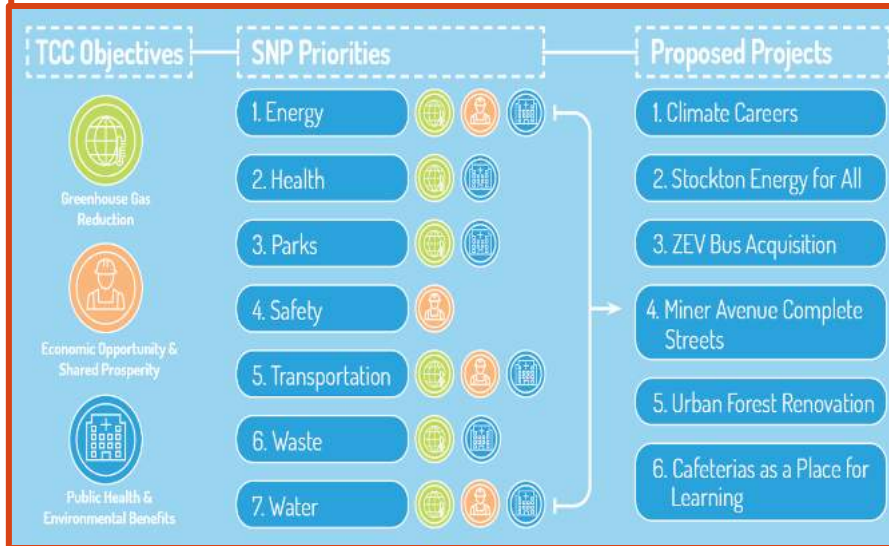
39%

..... reported experiencing barriers to employment before CYES

Transformative Climate Communities

Overview:

- Stockton Awarded 10.8 Million Under TCC
- Climate Careers Project, Utilizing Heat Mitigation Data
- South Stockton Planning Zone Area, Top 10% Per CalEnviroScreen 3.0



Rise Stockton - Ongoing Community Outreach Initiative



Overview:

- Collective Green Focused Group, Sparked From Mayor Tubbs Office
- Heat Mitigation Findings, To Fuel Learnings & Formulate Initiatives
- Community Education From Community Organizations



Assessing Green House Call data

What was collected and analyzed



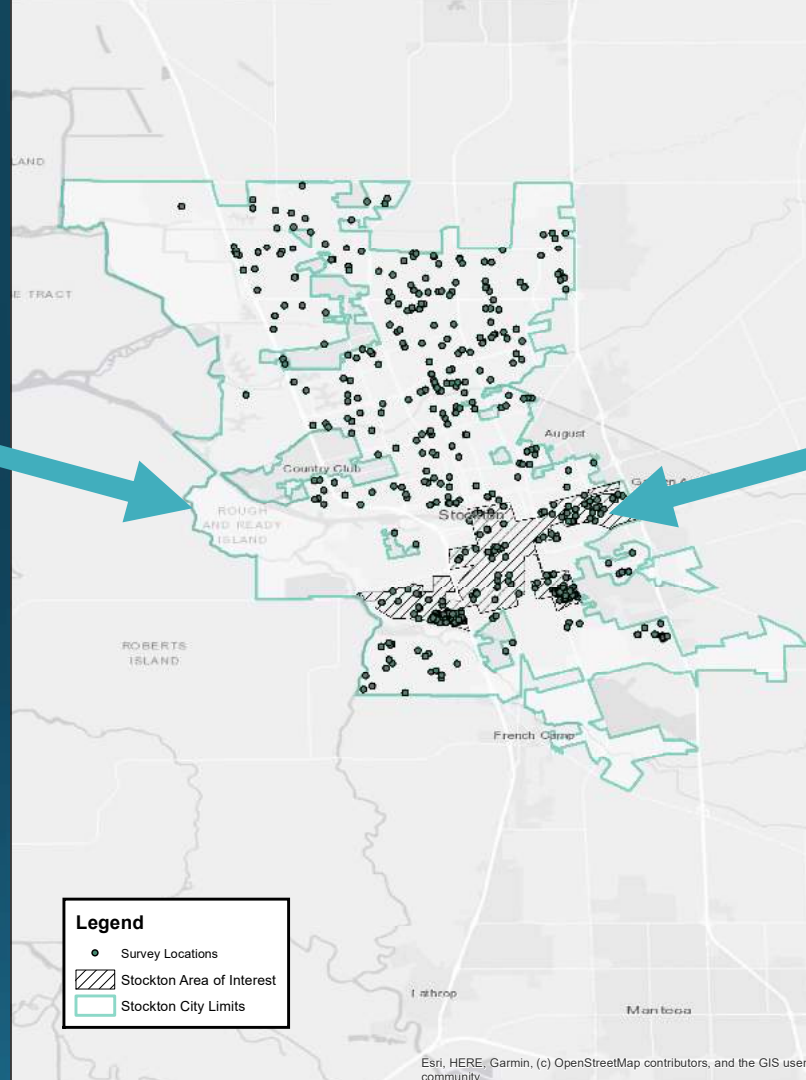
Utilized the data collected from
823 green house calls during
Summer and Fall 2019



We utilized existing RS questions
and developed additional
questions to investigate this topic

**City of
Stockton
limits**

**Transformative
Climate
Community
project area**



What we learned from Green House Call data

We developed composite scores to better understand vulnerability and risks



- **Household Vulnerability Score:**

- Disabled household members
- Seniors in household
- Household with children less than or equal to 2 years of age
- Household ethnicity is Hispanic/Latino or African or African American
- Non-English language spoken in household
- Household income is less than \$55,000*

*Household income was missing for the majority of participants



- **Home Heat Risk Score:**

- No Exterior shade on building
- No Access to AC
- Dark Exterior wall color
- If has AC, has Portable or Window AC
- If has AC, operates AC 4 hours or less
- Lack of quality windows
- Lack of window coverings

Why composite scores?

Many attempts to segment populations use singular attributes such as income or below poverty level to establish a household's propensity for risk/vulnerability

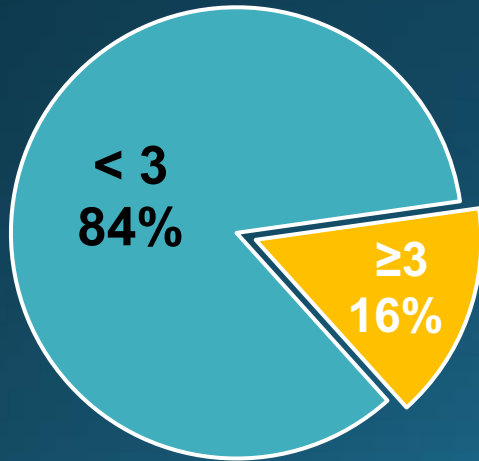
Our research has shown that, due to the complex nature of how social, cultural, and economic capitals intertwine, such 'gross' measures of risk/vulnerability are inadequate

These composite scores take into account a variety of demographic attributes known to correlate with risk/vulnerability and also traits in the built environment similarly known to correlate with risk/vulnerability

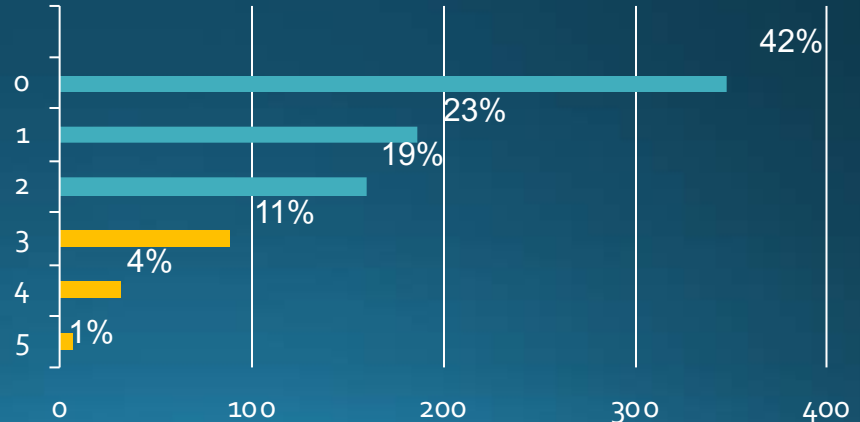
Household Vulnerability score

- Out of 822 households: 128 or 16% have a household vulnerability score greater than or equal to 3

Household Vulnerability Scores



Household Vulnerability Score Breakdown



Household Vulnerability score is linked to several compounding factors



65% of respondents had household vulnerability scores of 1 or less



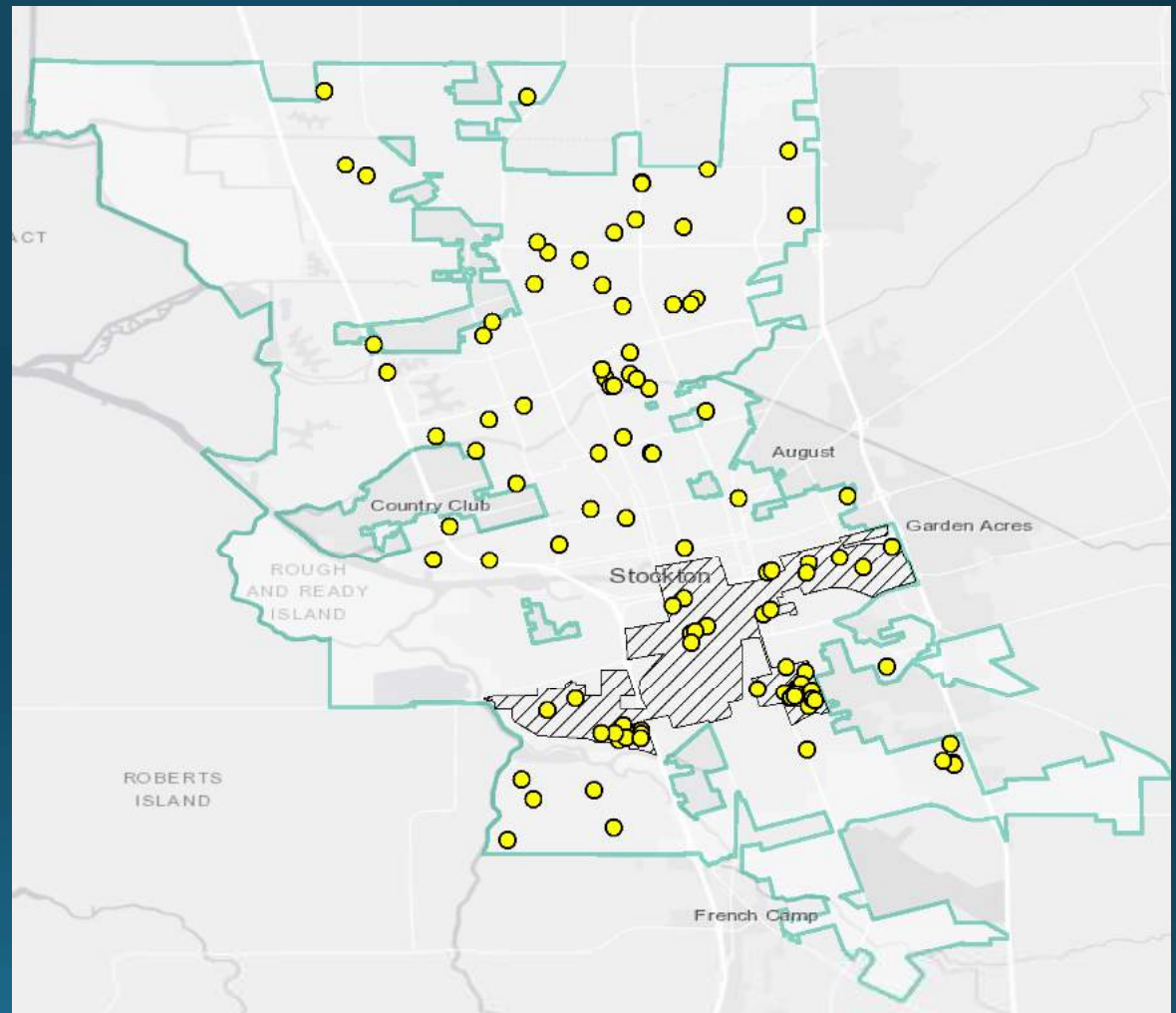
58% of households with seniors had scores ≤ 3 (56 of 97 senior households)



48% of disabled households had scores ≤ 3 (64 of 134 households)

***52 households disabled & senior**

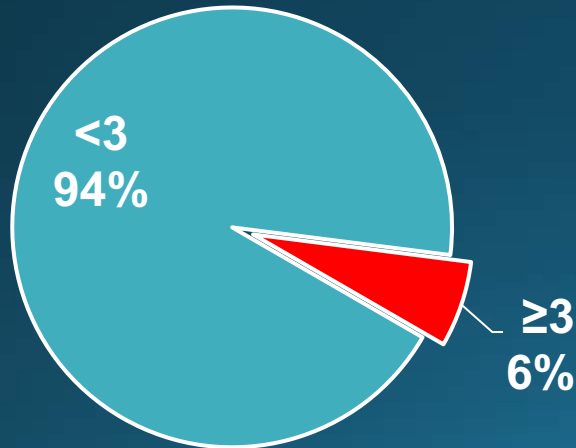
Household Vulnerability Score ≥ 3



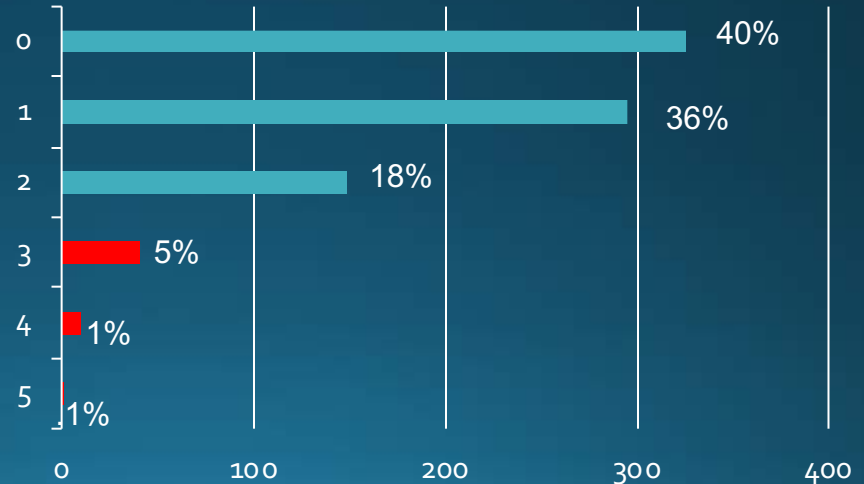
Home Heat Risk Score

- Out of 822 households: 52 or 6% have home heat risk score greater than or equal to 3

Home Heat Risk Score



Home Heat Risk Score



Home Heat Risk



76% of respondents had home heat risk score of 1 or less



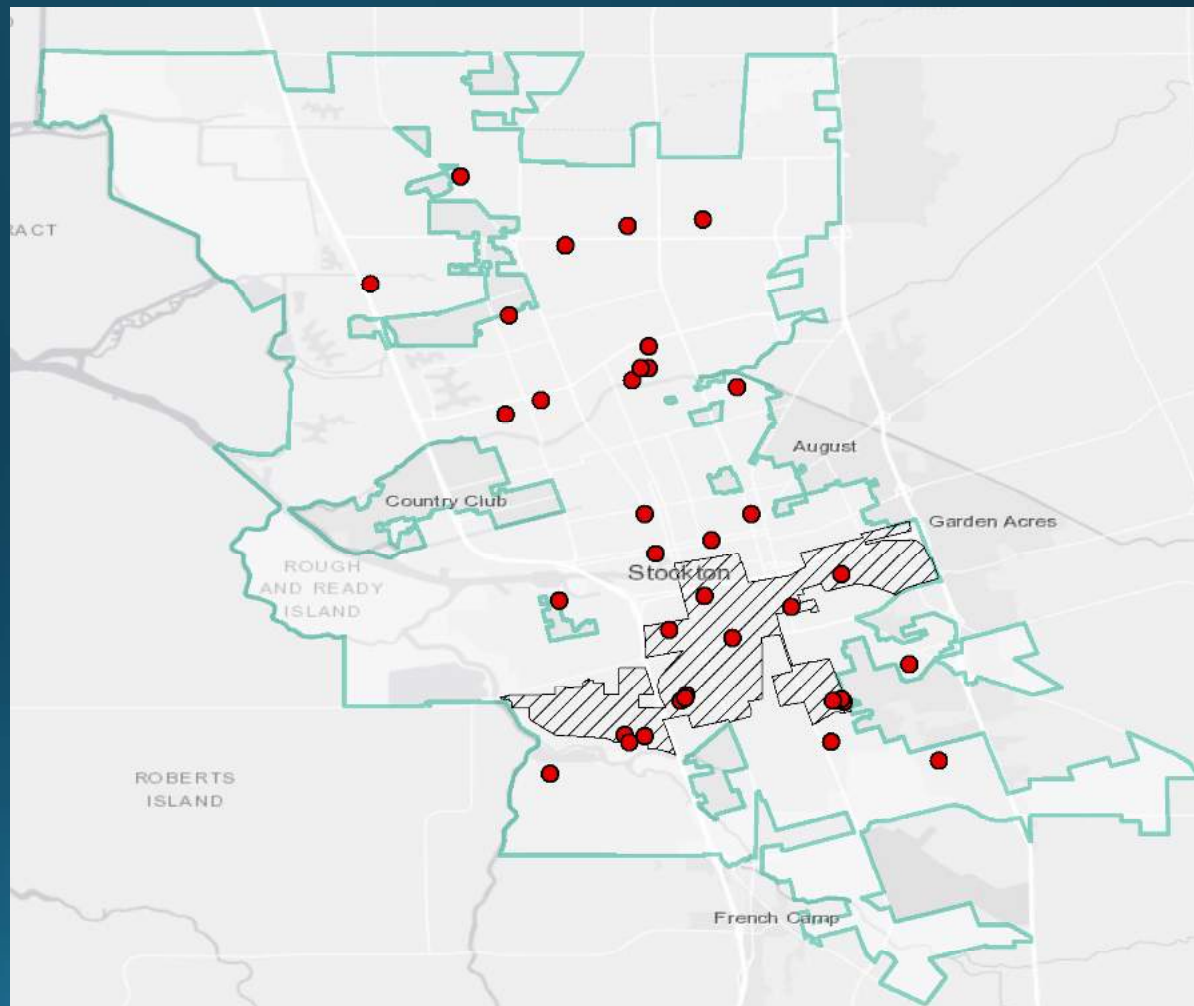
5% of households with seniors had scores ≤ 3 (5 of 97 senior households)



10% of disabled households had scores ≤ 3 (14 of 134 households)

***52 households disabled & senior**

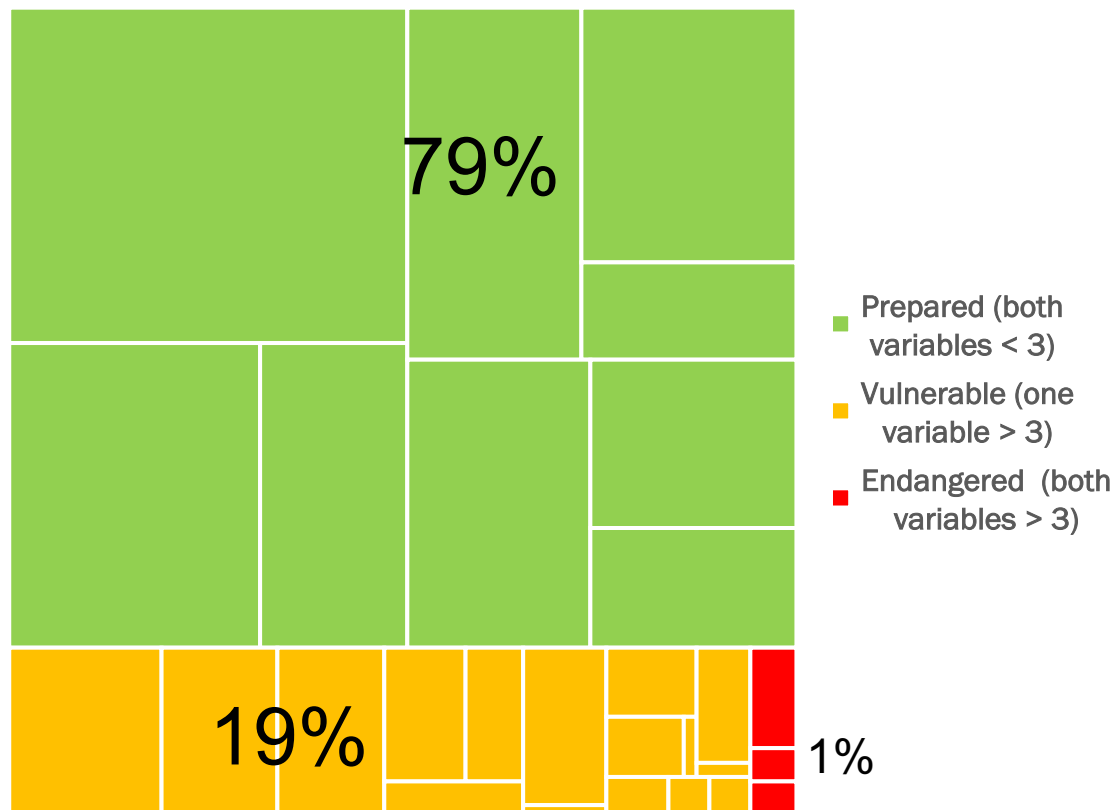
Home Heat Risk Score ≥ 3



Household Vulnerability & Home Heat Risk

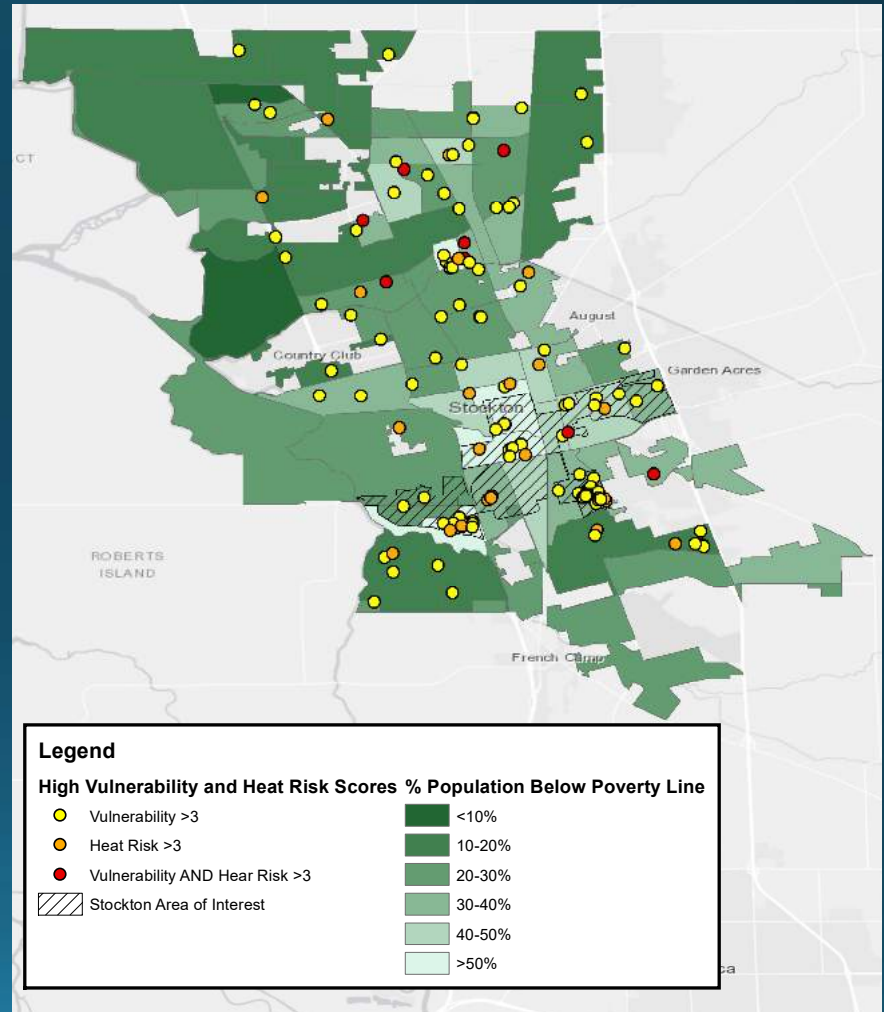
- 10 households (1%) have both a household vulnerability score greater than or equal to 3 and an home heat risk score greater than or equal to 3
- These are the truly endangered households

Household Vulnerability x Home Heat Risk



Household Vulnerability, Home Heat Risk & Heat Endangerment with income data

- Income alone was not indicative of risk and vulnerability



Heat Endangered households



Heat Endangered households = **vulnerability** score ≥ 3 + **home heat risk** score ≥ 3 = **1% participants**

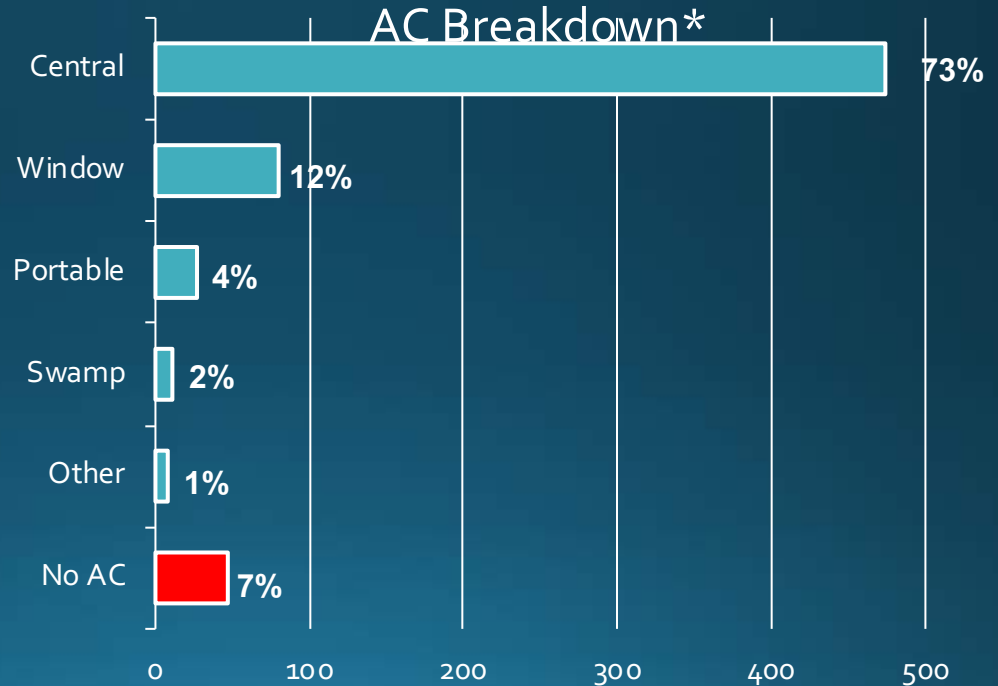
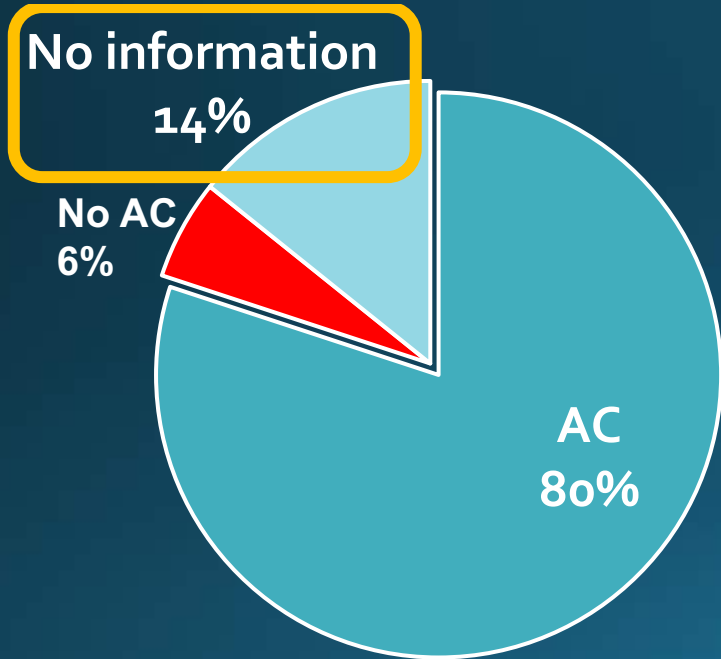


These households need assistance across several axis, whether it is having very young, or elderly household members, language barriers, and at the same time a lack of home measures to reduce home heat risks



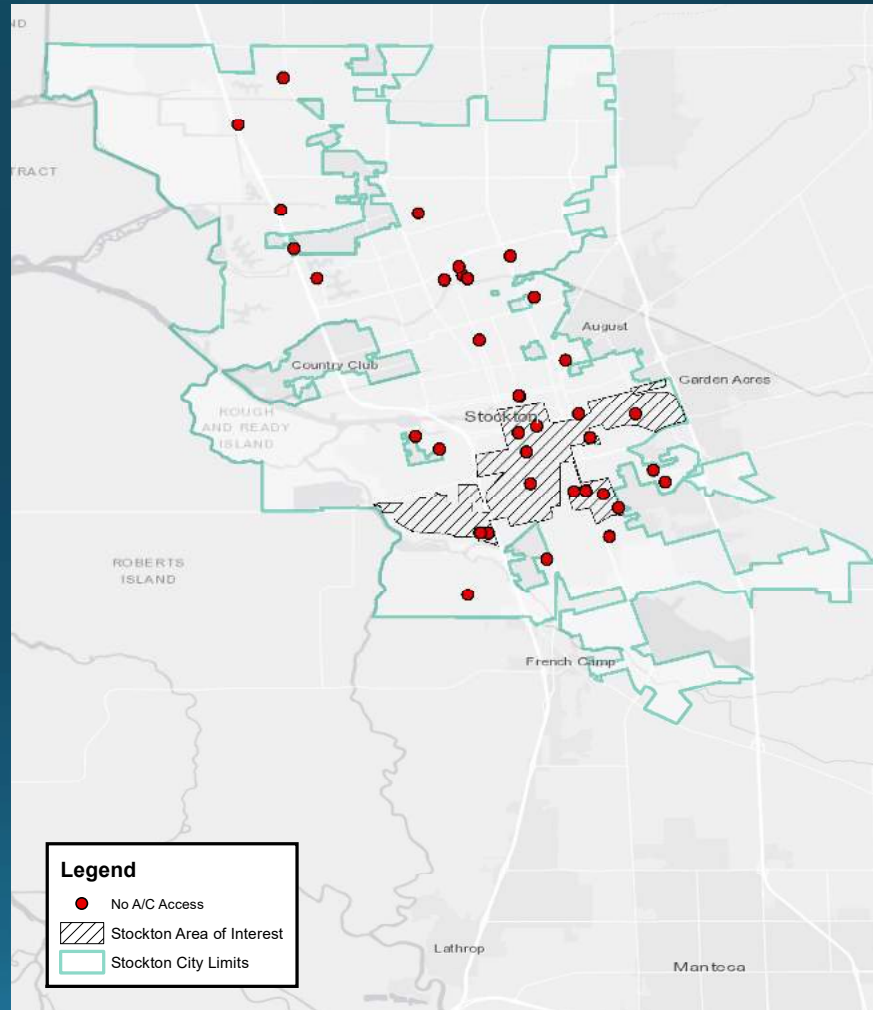
There were a lot of missing responses to individual questions so these composites could be underreporting

Air conditioning is very important for reducing heat risk



*Count excludes "no information" responses

Homes without access to AC



Good news!



Data can identify
these households



City of Stockton can target these
households with programs

Need to sort out HOW we can do this to be sensitive to residents



Identify spatial clusters (blocks or neighborhoods) the City of Stockton could target for programs & resources



Work through Rising Sun's relationship with these households to share resources

Takeaway/Messaging



Moderate use of AC improves health



Encourage moderate use AC on the hottest of days



Encourage higher AC set temperatures (e.g. 78 degrees Fahrenheit) for maximum efficiency



Encourage proper maintenance on AC (regularly change the filter & checked by a qualified technician)



Should NOT be encouraged to 'skimp' on A/C!

Participants signed up for our heat pledge



1

Pledge to keep my windows covered during daylight hours to reduce heat from entering my home



2

Pledge to head to a local cooling center or stay cool indoors during 11am-6pm

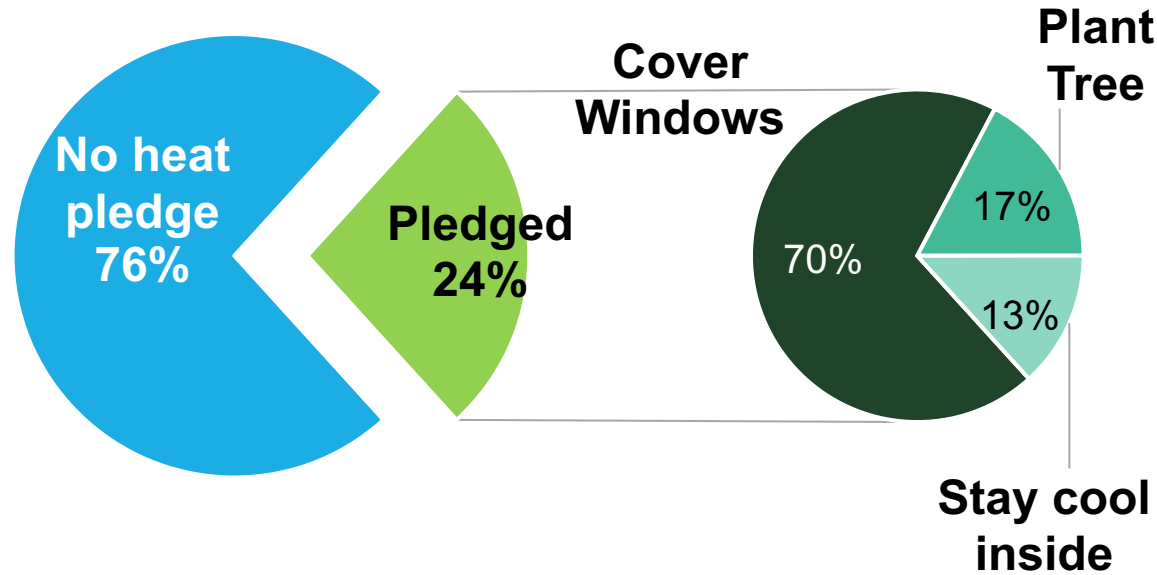


3

Pledge to plant a tree (or request a tree to be planted) to shade my home from the sun

Heat pledge participation

- 196 total pledgers (24%)



**Overwhelming
majority of
pledge-takers
chose**

**To keep my windows covered during
daylight hours to reduce heat from
entering my home**

This is in-line with other research we are conducting in Fresno, where most focus group respondents reported investing in blackout curtains



**These are relatively inexpensive
options that can be generally
encouraged, and possibly
subsidized**

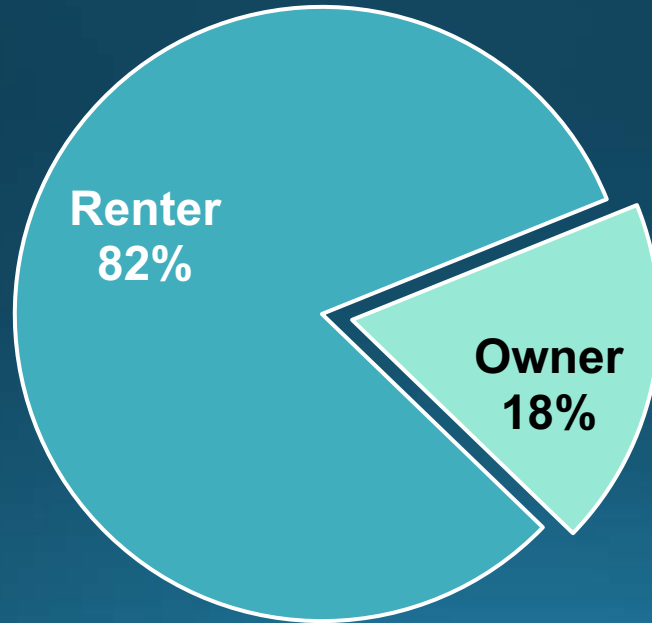
Heat pledge – no access to ac

- Out of 196 total pledgers, 8 or 4% reported having no AC.
- Out of 47 total people who reported no AC, 8 or 17% pledged.

No AC Participation in Heat Pledge

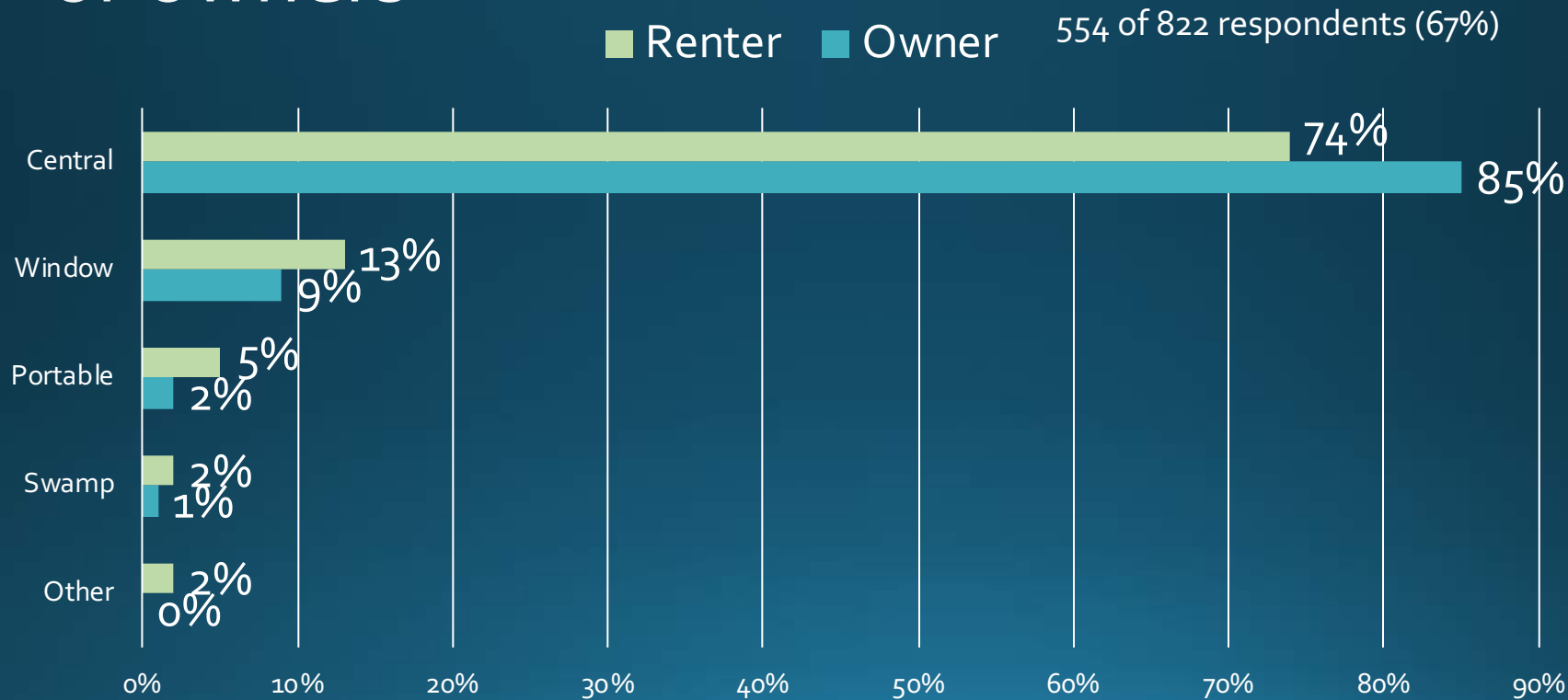


Homeownership



726 of 822 respondents (88%)

AC type does not vary between renters or owners



A/C Type and operation



41% of homes with central units, and 38% of homes with window units, claim to run them between 4-7 hours a day.

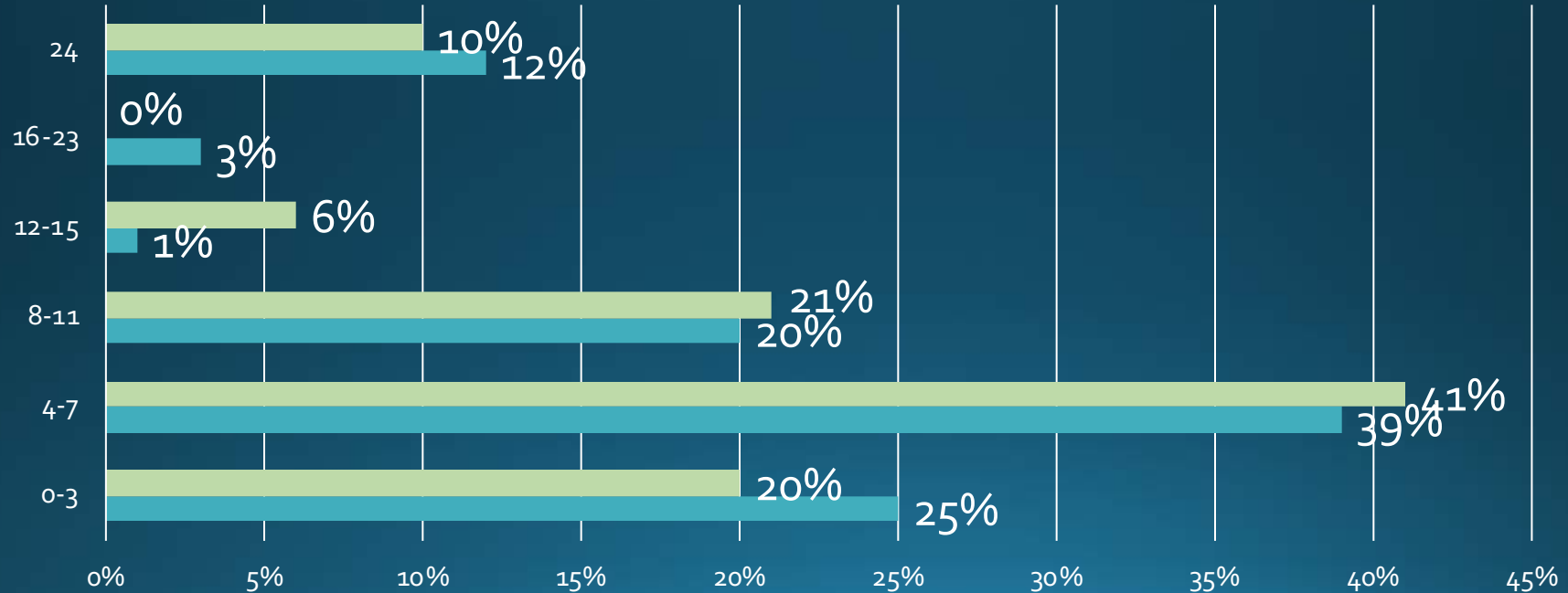


Participants who claimed to run their AC most hours of the day, 90% were using central A/C units

AC operation does not vary widely based on home ownership

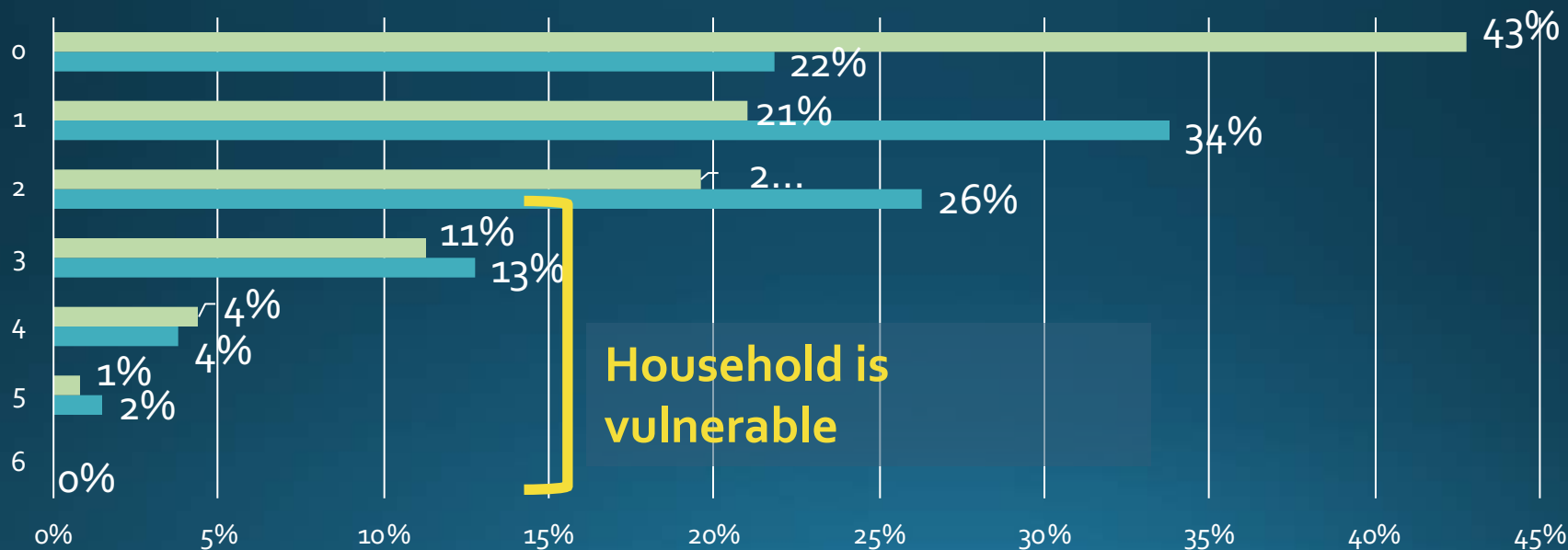
■ Renter ■ Owner

600 of 822 respondents (73%)

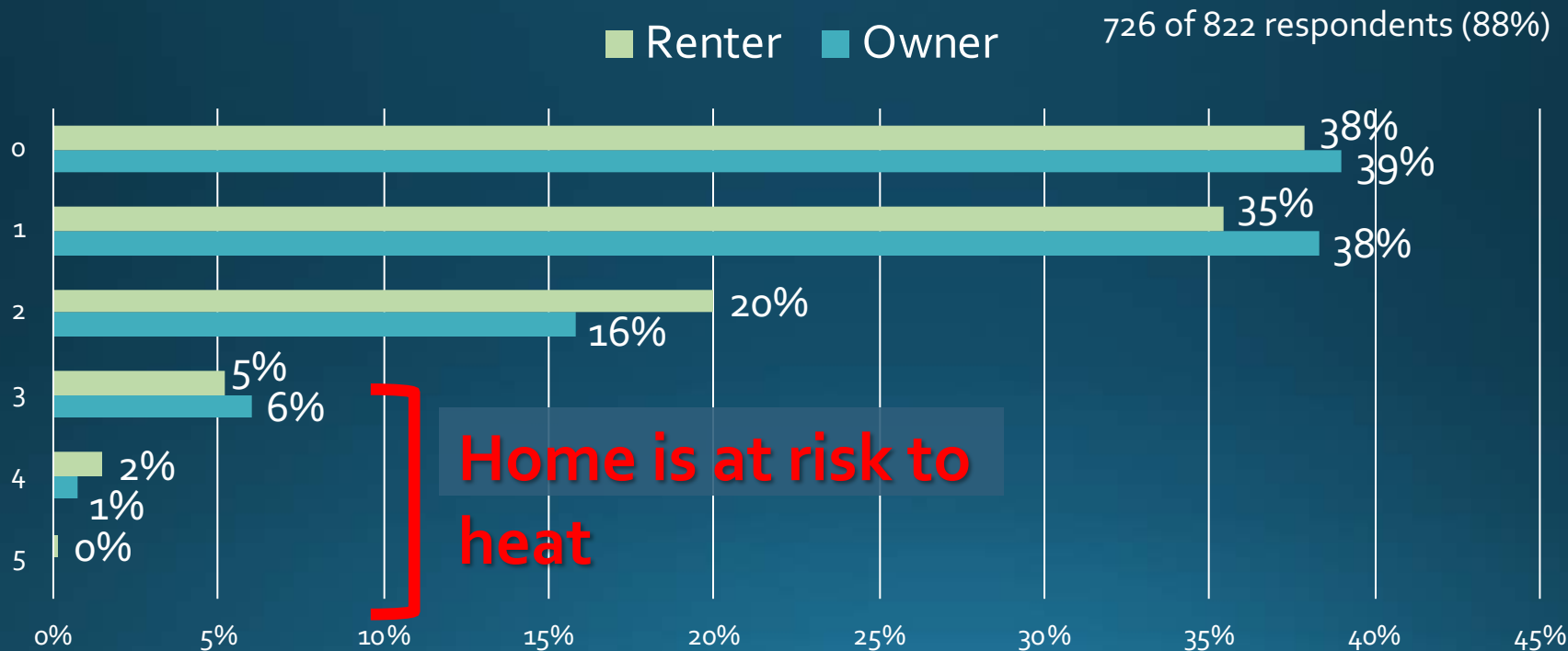


Household vulnerability does not vary by home ownership

■ Renter ■ Owner 726 of 822 respondents (88%)



Home heat risk does not vary by home ownership



In summary...



There is not a significant difference between renters and owners.



Prioritizing extremely vulnerable households for better performing AC might be one recommendation for Stockton to explore

Did heat pledge
participants remember
their pledges?



Rising Sun reached 39 of the 196 households that participated in the pledge



28 of the households (72%) contacted could recall the visit by Rising Sun



10 of 28 households (35%) recalled their heat pledge

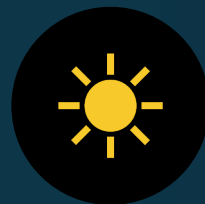


However, only 5 households (18%) correctly recalled their heat pledge

8 households followed-up on their pledge



USED
CURTAINS &
BLINDS
STRATEGICALLY
TO REDUCE
SOLAR HEAT
GAIN



OCCASIONALLY
WENT OUT
DURING PEAK
HEAT HOURS



PLANTED TREES

However, 2 households responded they turned off their A/C which was not related to a pledge & is alarming

What about pledge
participants memory of
summer heat events?

No one recalled a
heat event from
last summer

However, heat events were tied to pressing news in the area



- There was a heat event end of July 2019 that was covered in local news
- Also, there was a story in local news in June 2019 where a baby was found in a dumpster during a baby in dumpster" during a heat event

Source: <https://www.wnep.com/article/news/local/bradford-county/newborn-found-alive-in-dumpster-amid-california-heatwave/523-954c110c-9a91-461c-99fb-119e067dc788>

We asked “Did you do anything else to 'beat the heat' last summer?”



10 of 22 participants responded that they reduced their use of AC

Did not count participants who turned off AC when leaving the house

Some increased fan use in lieu of AC



This could be a health risk

AC improves health outcomes during heat events

Fans blowing hot air directly on a resident can be a health risk



Need to heed caution with messages (energy efficiency v heat health)

Promote moderate AC use for EE & heat health benefits

Thank you for
your time



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