Using CASPER as a Tool to Identify Community Needs for Climate Change-Related Issues in East Palo Alto, San Mateo County, 2022

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BACKGROUND

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What is CASPER?

- Community Assessment for Public Health Emergency Response
- Rapid needs assessment of household-level information
- Door-to-door survey
- Anonymous
- Conducted in either disaster or non-disaster situation
- Information can be used to:
  - Identify community needs and acknowledge gaps
  - Facilitate disaster planning, response, and recovery activities
  - Make decisions on resource allocation
  - Spur public health action

CASPER examples in the US

- Disasters
  - Hurricane Ivan (FL) - 2004
  - Deepwater Horizon oil spill (Gulf of Mexico) – 2010
  - Earthquake (Napa, CA) - 2014
- Non-disaster
  - Drought (OR) – 2017
  - Community assessment (TX) - 2018

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And a local example!

- Local transmission of Zika virus reported in the US in 2016
- Long Beach developed Zika response plan in preparation (2017) in order to:
  - Identify whether *Aedes aegypti* mosquitoes were in Long Beach
  - Educate/prepare public in case of local transmission of Zika virus
- Conducted CASPER to assess the utility of the Zika response – mainly asking about knowledge, attitude, and behaviours

JULY 2017

Long Beach Department of Health and Human Services

Long Beach Zika Community Assessment for Public Health Emergency Response (CASPER)

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CASPER in East Palo Alto

- CASPER conducted in East Palo Alto - October 17-19, 2022
- Topics:
  - Emergency preparedness
  - Pests/vectors
  - Extreme weather events
- Identify evidence-based health priorities for the city

- Conducted by San Mateo County Health and San Mateo County Mosquito and Vector Control District in collaboration with other partners

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Collaboration

- San Mateo County Mosquito and Vector Control District
  - Understand community perspective to inform outreach and services
- Nuestra Casa
  - Community partner
- California Department of Public Health
  - Experts in CASPER – guidance and support
- San Mateo County
  - Office of Epidemiology and Evaluation
  - Emergency Preparedness
  - Emergency Medical Services
  - Department of Emergency Management
  - Communication

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Characteristics of East Palo Alto

- More than half the city is a flood plain
  - Thread of flooding
- Greater social, economical, and health vulnerabilities compared to the county
  - Lower income levels
  - Lower access to healthcare
  - Higher rates of COVID, asthma, ED visits
- Higher proportion of minority residents – Latino (60%), Black (11%), NHPI (6%)
- Resilient community with a strong sense of unity and pride

Created by Heather Eastwood, San Mateo County Health

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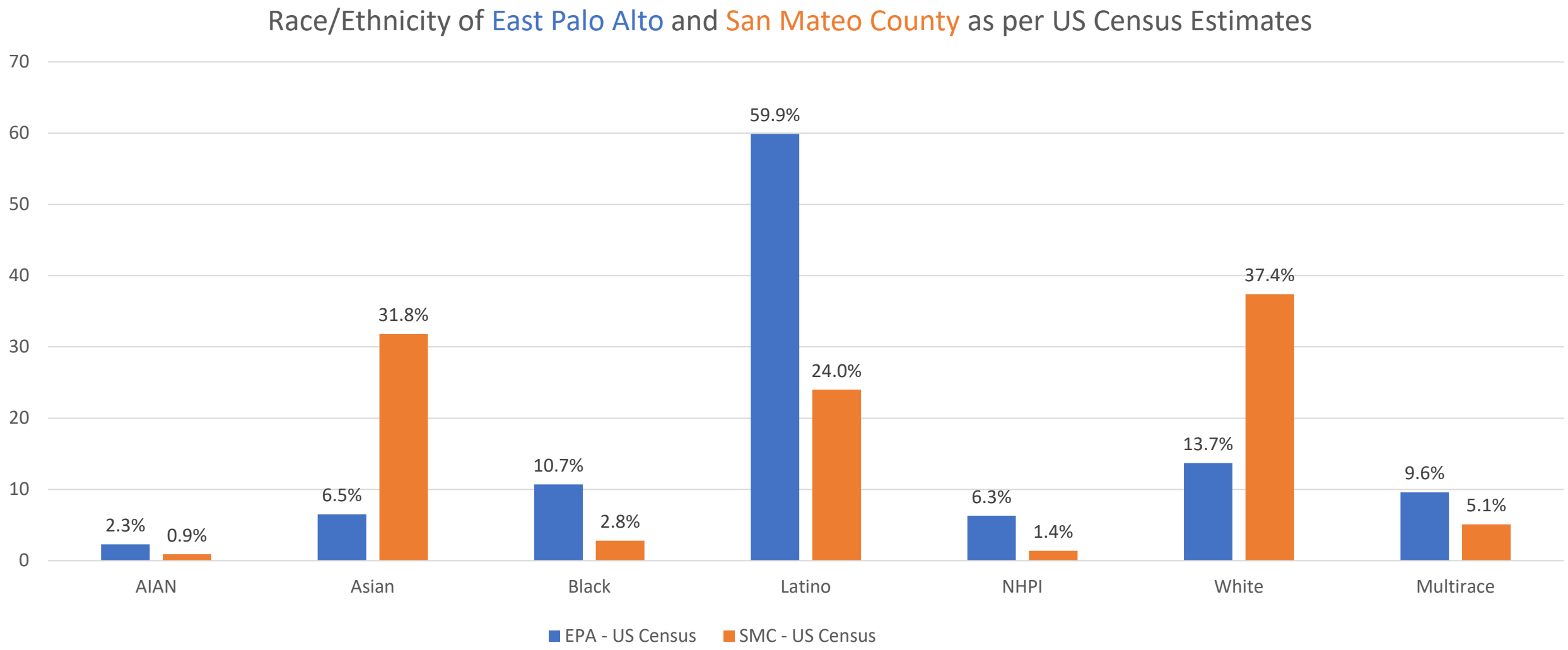
Race/ethnicity – EPA vs SMC (US Census)



METHODS

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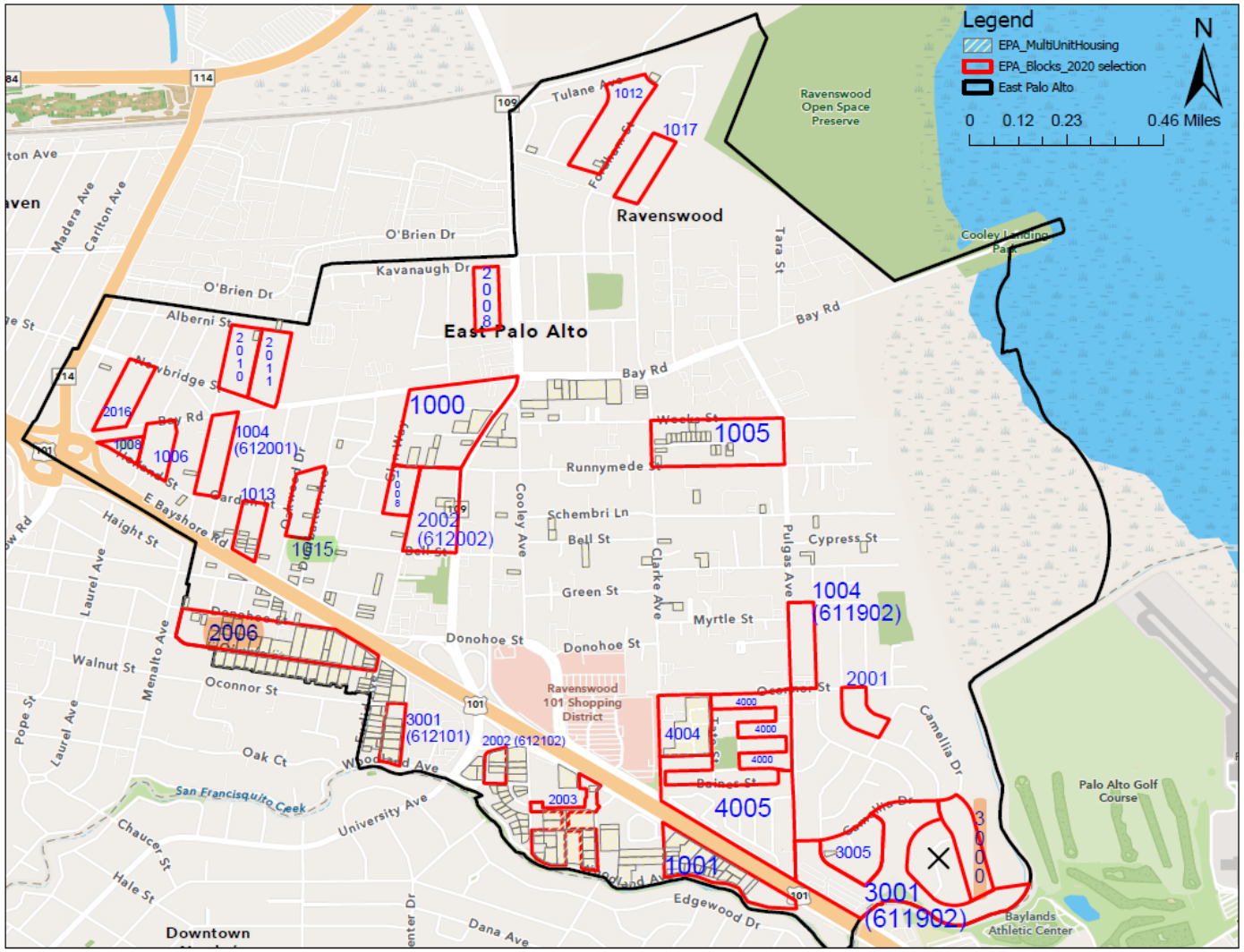
2 stage cluster sampling – 1st stage



- Planning stage
- Randomly select 30 clusters (census block groups)
- Probability proportional to number of housing units within cluster

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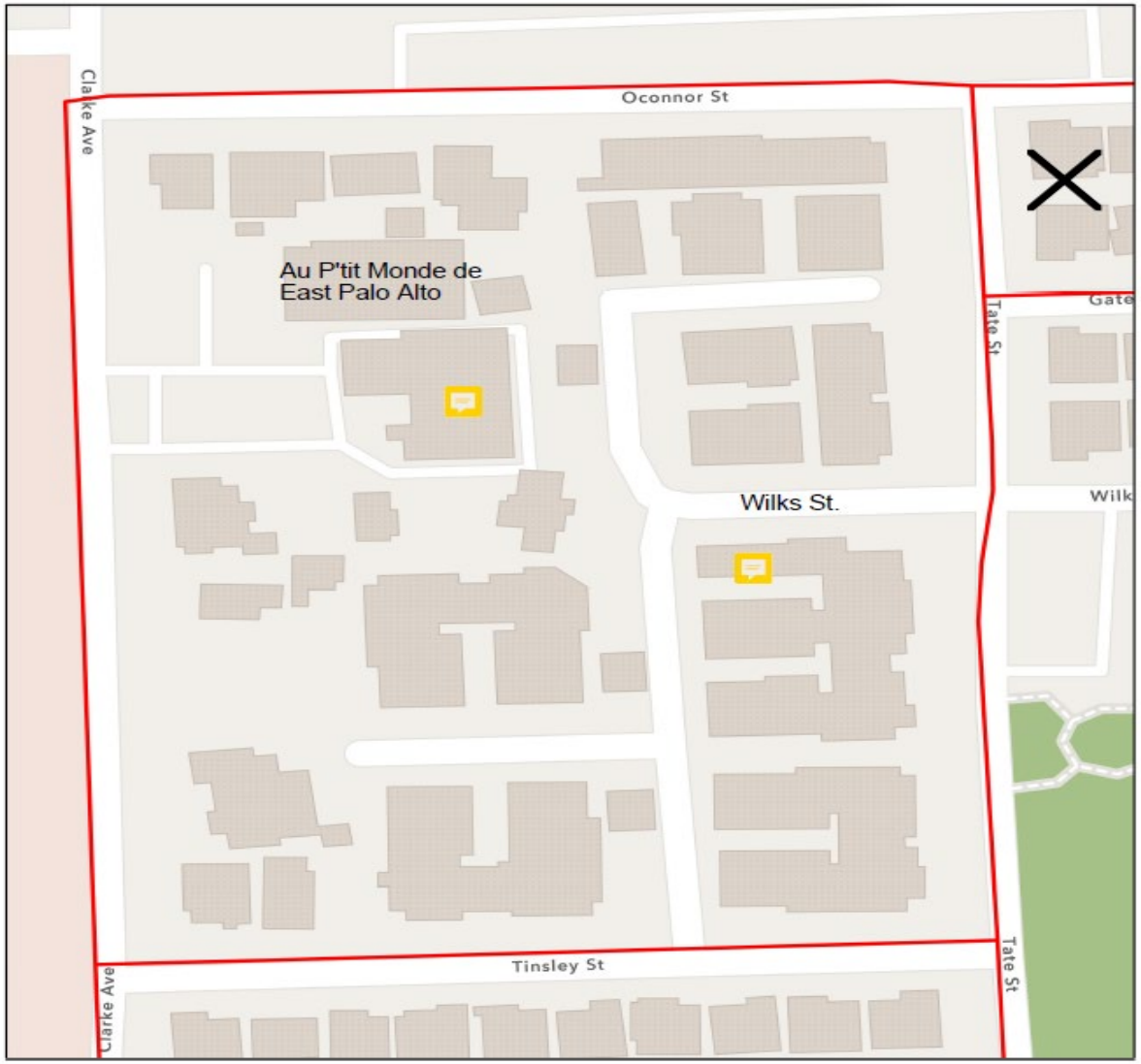
2 stage cluster sampling – 2nd stage



- In the field (by interviewers)
- Randomly select 7 households within each cluster
- In total, 210 households selected to participate in survey

30 x 7 = 210

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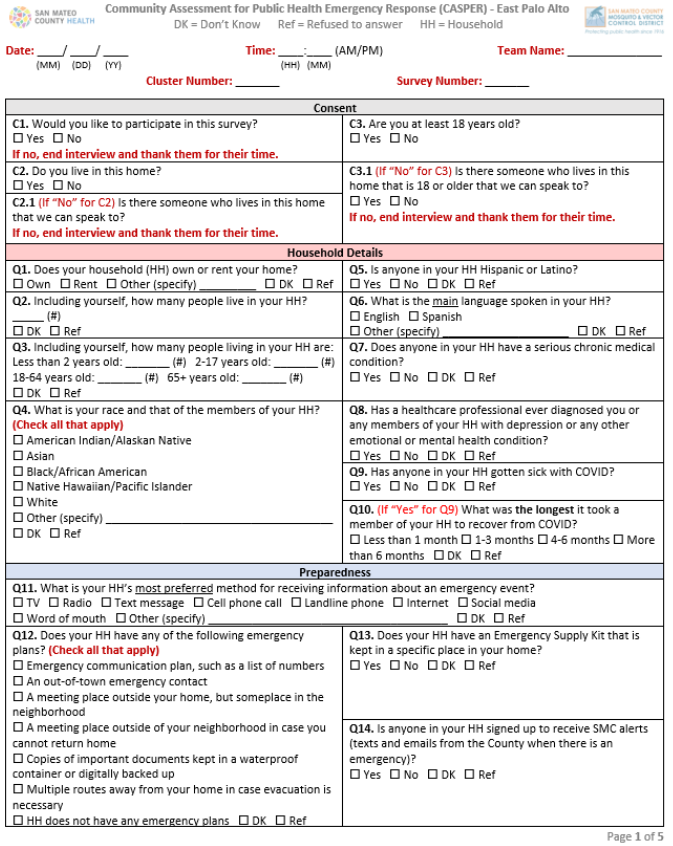
SYSTEMATIC
RANDOM SAMPLING
IN THE FIELD
0:03 / 5:20

Questionnaire

- Sections:
  - Household details
  - Preparedness
  - Vectors and pests
  - Extreme heat
  - Fire and smoke
  - Flooding and sea level rise
- Predominantly administered by interviewer online (and physical survey provided as backup)
- Provided both in English and Spanish



Community Assessment for Public Health Emergency Response (CASPER) - East Palo Alto

DK = Don't Know Ref = Refused to answer HH = Household

Date: ___/___/___ (MM) (DD) (YY) Time: ___:___ (AM/PM) (HH) (MM) Team Name: _____

Cluster Number: _____ Survey Number: _____

Consent

C1. Would you like to participate in this survey?
☐ Yes ☐ No
If no, end interview and thank them for their time.

C2. Do you live in this home?
☐ Yes ☐ No

C2.1 (If "No" for C2) Is there someone who lives in this home that we can speak to?
If no, end interview and thank them for their time.

C3. Are you at least 18 years old?
☐ Yes ☐ No

C3.1 (If "No" for C3) Is there someone who lives in this home that is 18 or older that we can speak to?
☐ Yes ☐ No
If no, end interview and thank them for their time.

Household Details

Q1. Does your household (HH) own or rent your home?
☐ Own ☐ Rent ☐ Other (specify) _____ ☐ DK ☐ Ref

Q2. Including yourself, how many people live in your HH?
_____ (#)
☐ DK ☐ Ref

Q3. Including yourself, how many people living in your HH are:
Less than 2 years old: _____ (#) 2-17 years old: _____ (#)
18-64 years old: _____ (#) 65+ years old: _____ (#)
☐ DK ☐ Ref

Q4. What is your race and that of the members of your HH?
(Check all that apply)
☐ American Indian/Alaskan Native
☐ Asian
☐ Black/African American
☐ Native Hawaiian/Pacific Islander
☐ White
☐ Other (specify) _____
☐ DK ☐ Ref

Q5. Is anyone in your HH Hispanic or Latino?
☐ Yes ☐ No ☐ DK ☐ Ref

Q6. What is the main language spoken in your HH?
☐ English ☐ Spanish
☐ Other (specify) _____ ☐ DK ☐ Ref

Q7. Does anyone in your HH have a serious chronic medical condition?
☐ Yes ☐ No ☐ DK ☐ Ref

Q8. Has a healthcare professional ever diagnosed you or any members of your HH with depression or any other emotional or mental health condition?
☐ Yes ☐ No ☐ DK ☐ Ref

Q9. Has anyone in your HH gotten sick with COVID?
☐ Yes ☐ No ☐ DK ☐ Ref

Q10. (If "Yes" for Q9) What was **the longest** it took a member of your HH to recover from COVID?
☐ Less than 1 month ☐ 1-3 months ☐ 4-6 months ☐ More than 6 months ☐ DK ☐ Ref

Preparedness

Q11. What is your HH's most preferred method for receiving information about an emergency event?
☐ TV ☐ Radio ☐ Text message ☐ Cell phone call ☐ Landline phone ☐ Internet ☐ Social media
☐ Word of mouth ☐ Other (specify) _____ ☐ DK ☐ Ref

Q12. Does your HH have any of the following emergency plans? **(Check all that apply)**
☐ Emergency communication plan, such as a list of numbers
☐ An out-of-town emergency contact
☐ A meeting place outside your home, but someplace in the neighborhood
☐ A meeting place outside of your neighborhood in case you cannot return home
☐ Copies of important documents kept in a waterproof container or digitally backed up
☐ Multiple routes away from your home in case evacuation is necessary
☐ HH does not have any emergency plans ☐ DK ☐ Ref

Q13. Does your HH have an Emergency Supply Kit that is kept in a specific place in your home?
☐ Yes ☐ No ☐ DK ☐ Ref

Q14. Is anyone in your HH signed up to receive SMC alerts (texts and emails from the County when there is an emergency)?
☐ Yes ☐ No ☐ DK ☐ Ref

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Field interviews

- Half day dedicated to training field interviewers (Just-in-Time training)
- 13 interview teams (pairs of two)
- Process:
  - Read out consent script
  - Screen for eligibility
  - Conduct interview
  - Provide respondent with a “goody” bag which included community resources and COVID-19 test kits

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Weighting

- In combination with random sampling, makes results generalizable to the population of East Palo Alto
- To control for different households having different probabilities of being selected
- Each interviewed household assigned a weight

RESULTS

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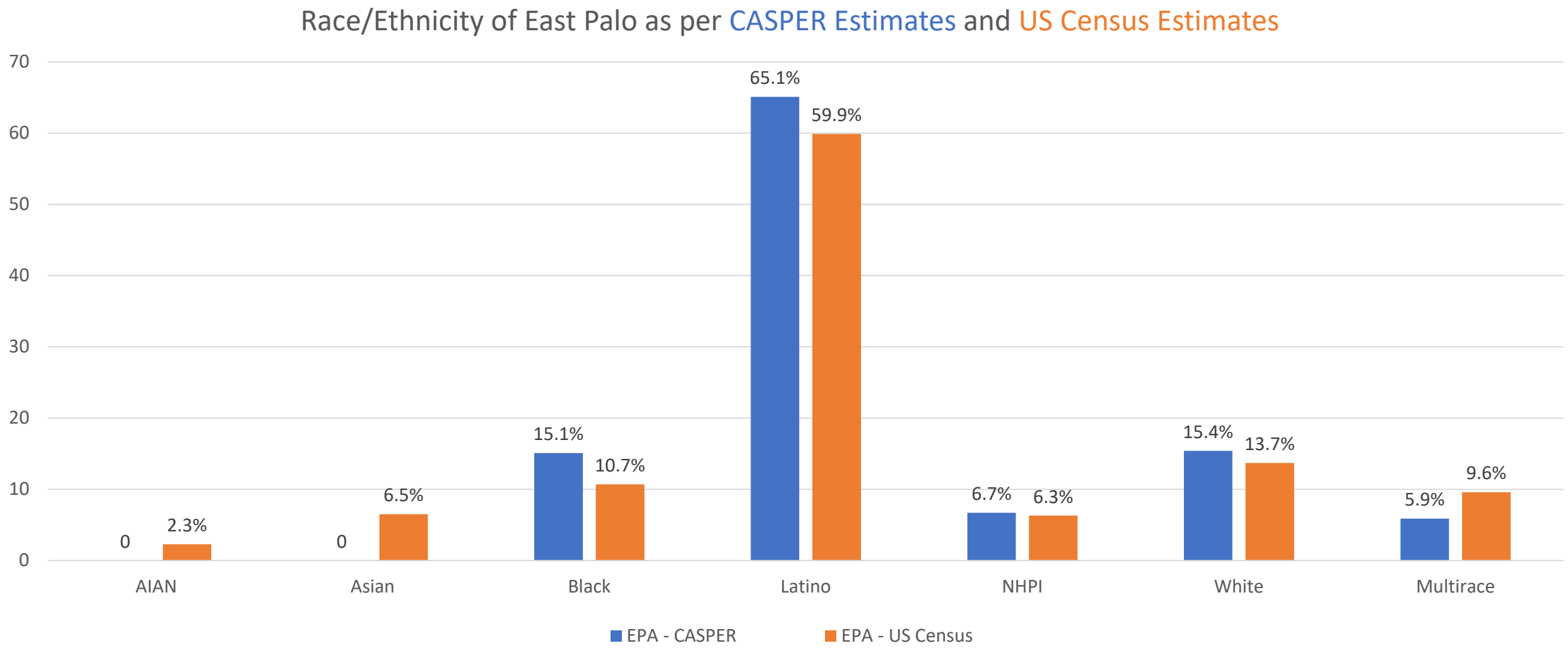
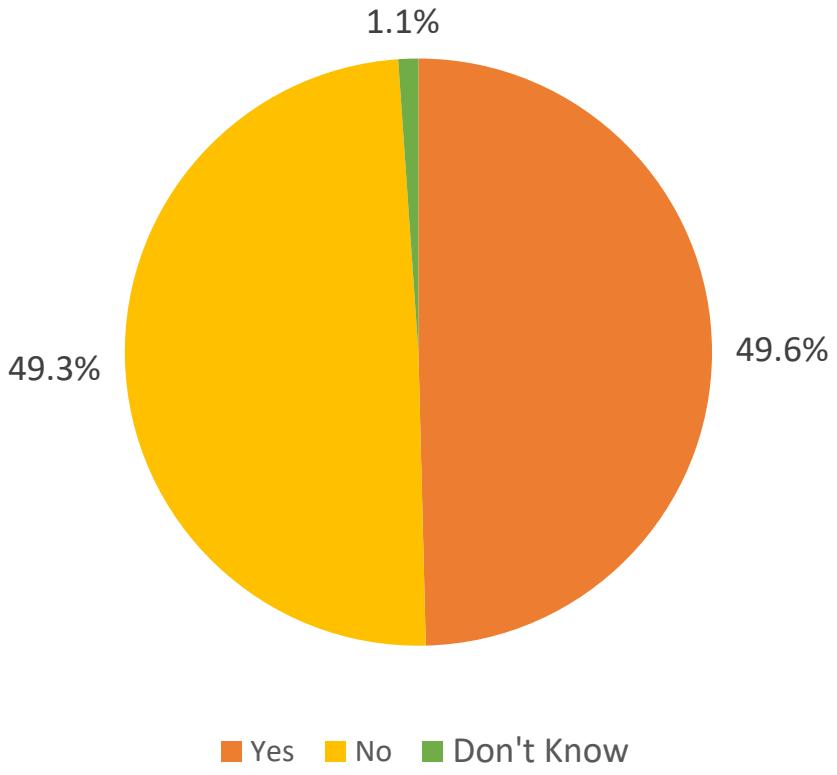
Race/ethnicity – EPA (CASPER vs US Census)

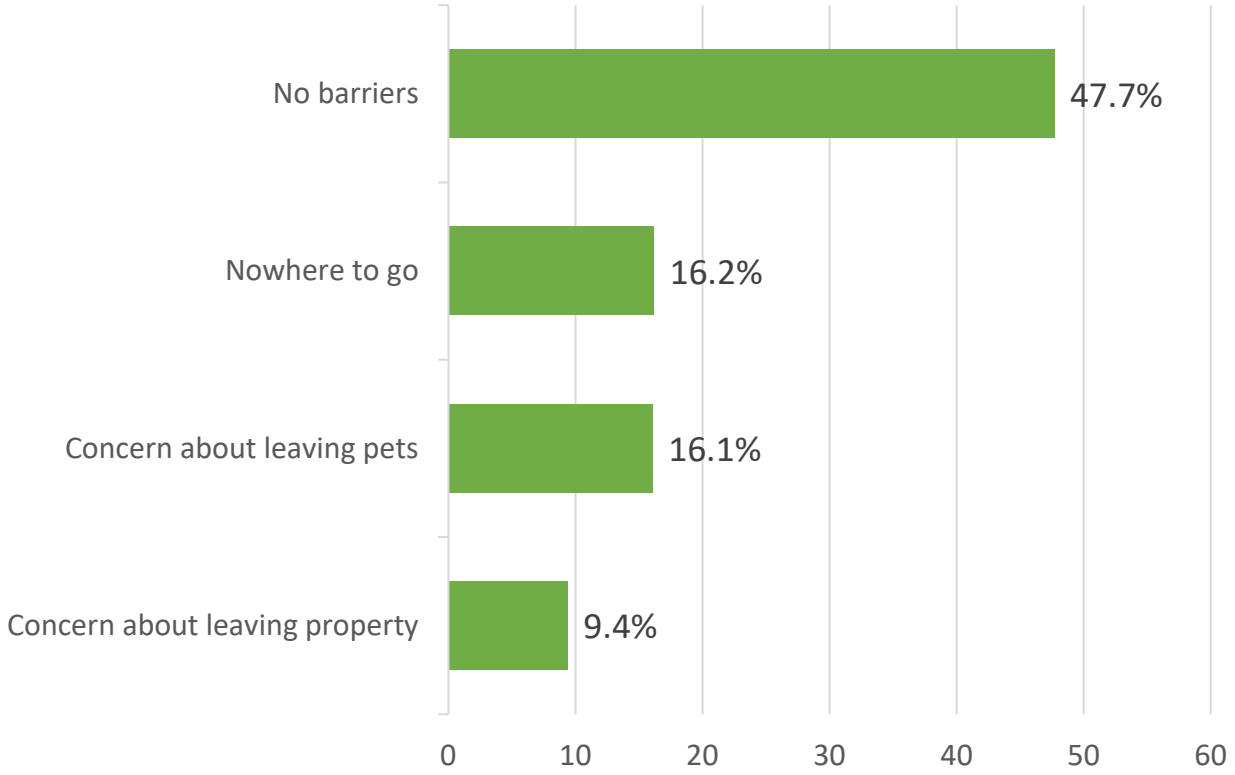


Emergency preparedness

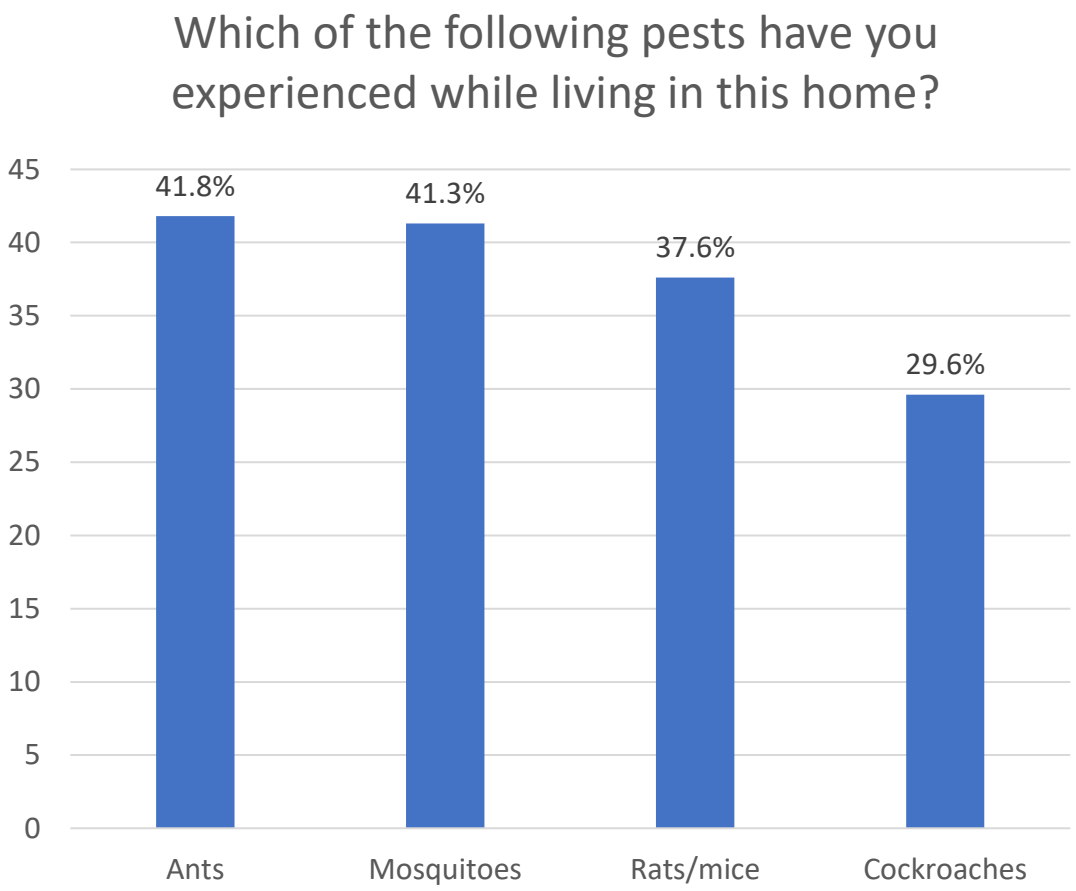
Does your HH have an emergency supply kit that is kept in a specific place in your home?



If you were told to evacuate, what would prevent your HH from doing so?

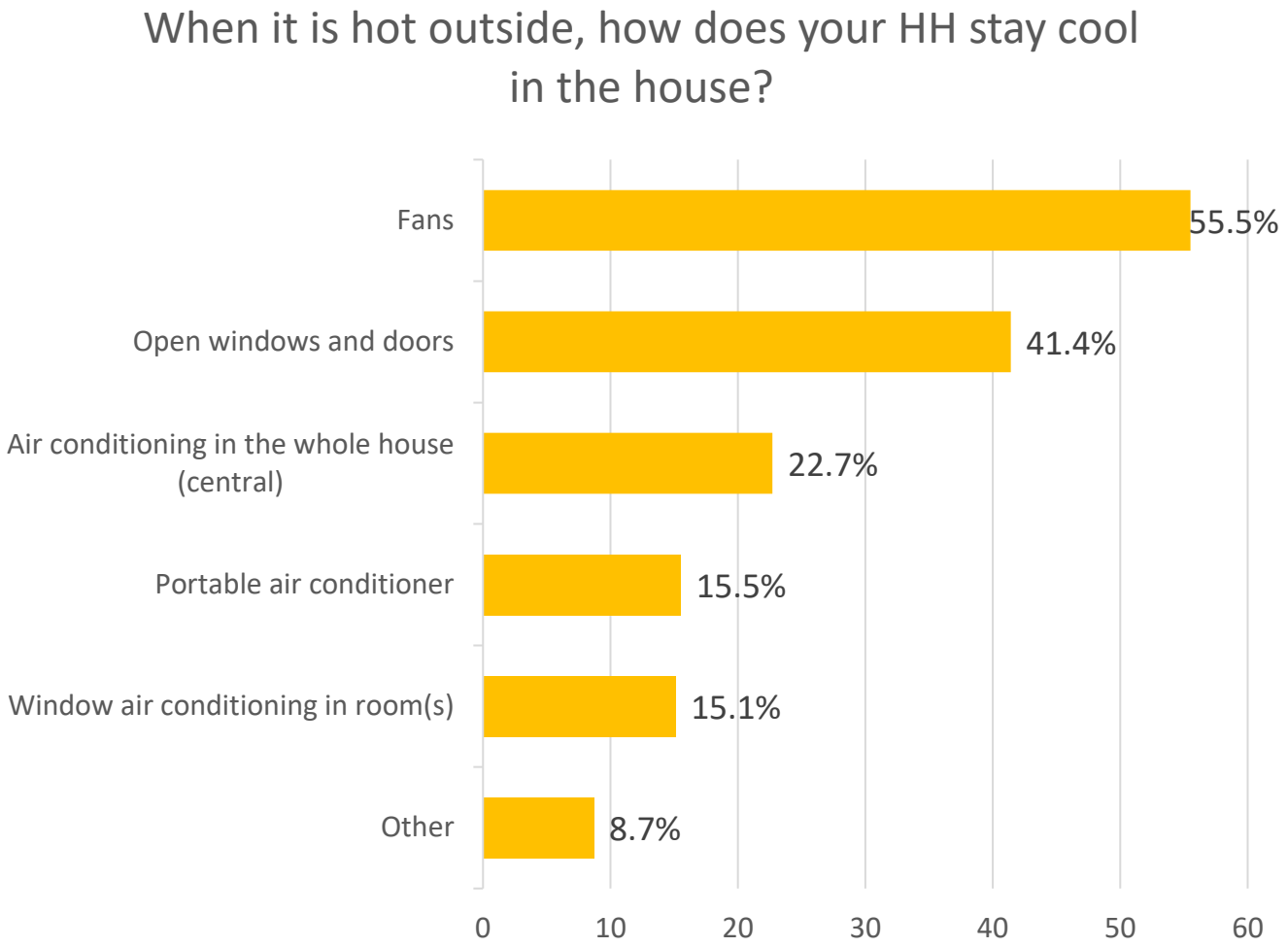


Vectors and pests



- Among those who ever experienced rats/mice in their home, 47.8% *were currently experiencing* rats/mice
- Among those who ever experienced mosquitoes biting in/around the home, 38.3% *were currently experiencing* mosquitoes biting
  - 45.6% reported having some or all the screens of their windows/doors missing or having holes/tears
  - 76.2% were not aware of no-cost mosquito control services

Extreme weather – extreme heat



- 91.0% had never used a cooling centre
  - 78.9% of households did not know where a cooling centre nearby was located
- 74.5% were not aware of utility assistance programs to support installing/maintaining AC in the house

Extreme weather – fire, smoke, flooding

- 60.5% did not have air filter and/or air purifier
  - 93.8% indicated they would use one if provided
- 90.3% had at least one working smoke alarm
- 67.9% had at least one working carbon monoxide detector

- 88.5% were not affected by flooding in the past 5 years
- 21.8% had flood insurance
  - 41.5% did not know whether they had flood insurance

Limitations

- Real-world inability to complete 30 x 7
- CASPER's methodology of replacing originally sampled households (unavoidable)
- Participant bias
  - Lack of representation from those who usually work outside of home during daytime hours when CASPER was conducted
  - E.g. more representation from seniors
- Interviewer bias
  - Training offered more so in English than in Spanish – could have resulted in differing understandings of CASPER methodology
- Race/ethnicity – household (CASPER) vs. individual (ACS); limited comparison

Race/Ethnicity Data Collection

- Unlike US census, CASPER asked about race/ethnicity of household
- Could select multiple categories
- Asked via two questions to align with ACS:
  - First asked about race(s) of household members – AIAN, Asian, Black, NHPI, White, Other
    - 99% of those who selected “Other” indicated they were Hispanic/Latino
  - Second asked whether household members identified as Latino
    - Those categorized as Latino in the data slides reflect those who indicated “Yes” to this question

CONCLUSION

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Take-aways

- Valuable methodology to identify current community issues and needs
- Resource-intensive effort which requires collaboration and communication between partners
- Provides a precedent for conducting a similar community health assessment as needed in the county

Next Steps

- Confidential referral forms
  - Several regarding mosquito issues which SMCMVCD followed up on
- CASPER report
  - To be published by the end of the year
  - To be made publicly available in English and Spanish
  - Includes suggestions
- Interactions with the City of EPA, community organizations, communities
  - Discussions to review the findings of the CASPER and see how needs can be addressed

Acknowledgements

SAN MATEO COUNTY MOSQUITO & VECTOR CONTROL DISTRICT

Protecting public health since 1916

Nuestra Casa

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Office of Epidemiology and Evaluation
Emergency Preparedness
Emergency Medical Services
Communication

California Department of PublicHealth

COUNTY OF SAN MATEO

Department of Emergency Management