



**2015**

## **Climate Change Vulnerability in Contra Costa County: A Focus on Heat**

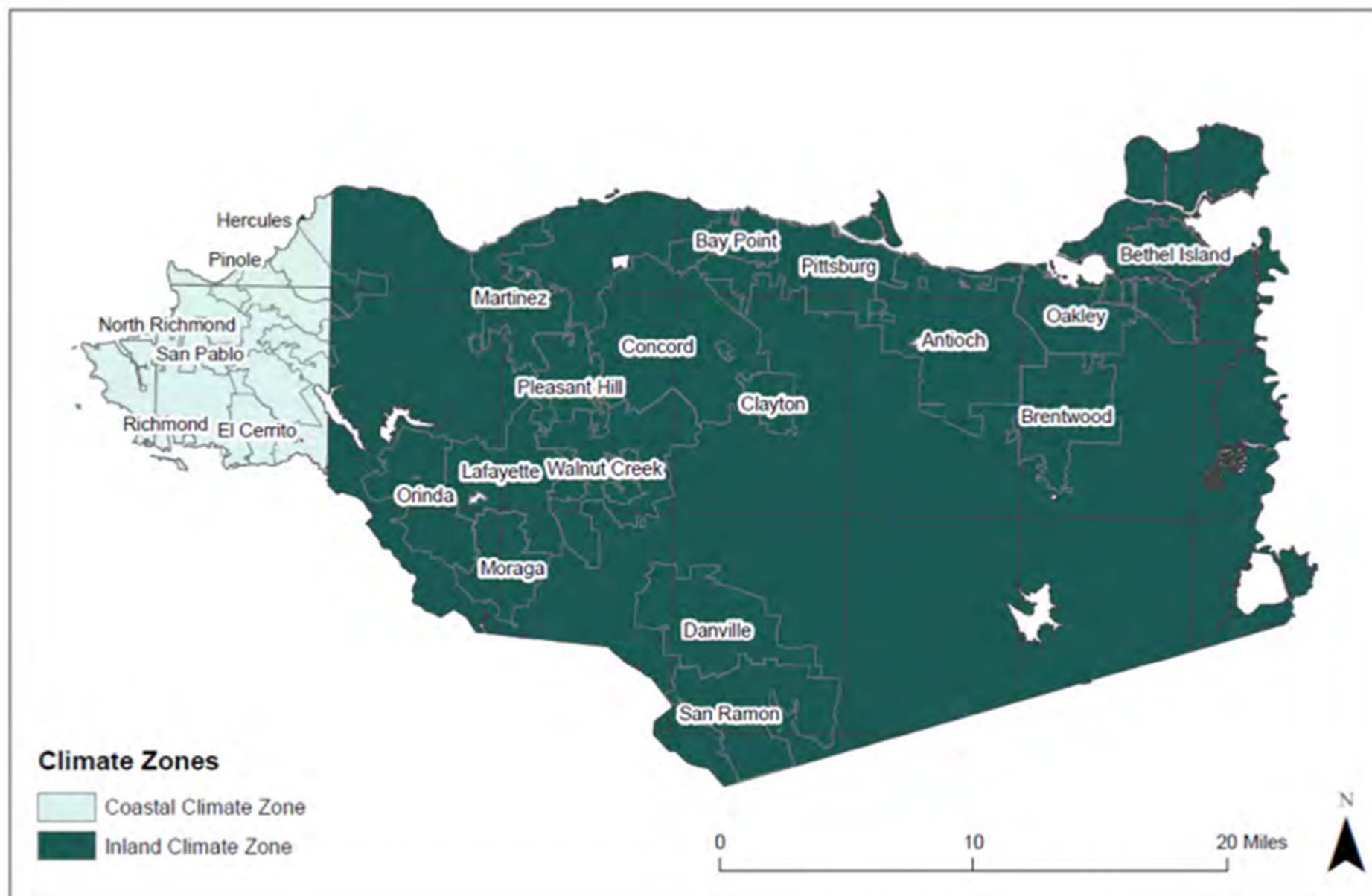
# Impacts of Climate Change

- Sea Level Rise & Flooding
- Rising Temperatures & Extreme Heat
- Air Quality
  - Ground Level Ozone
  - Allergens
- Wildfire
- Infectious Disease
  - West Nile Virus
  - Coccidioides species
  - Vibrio

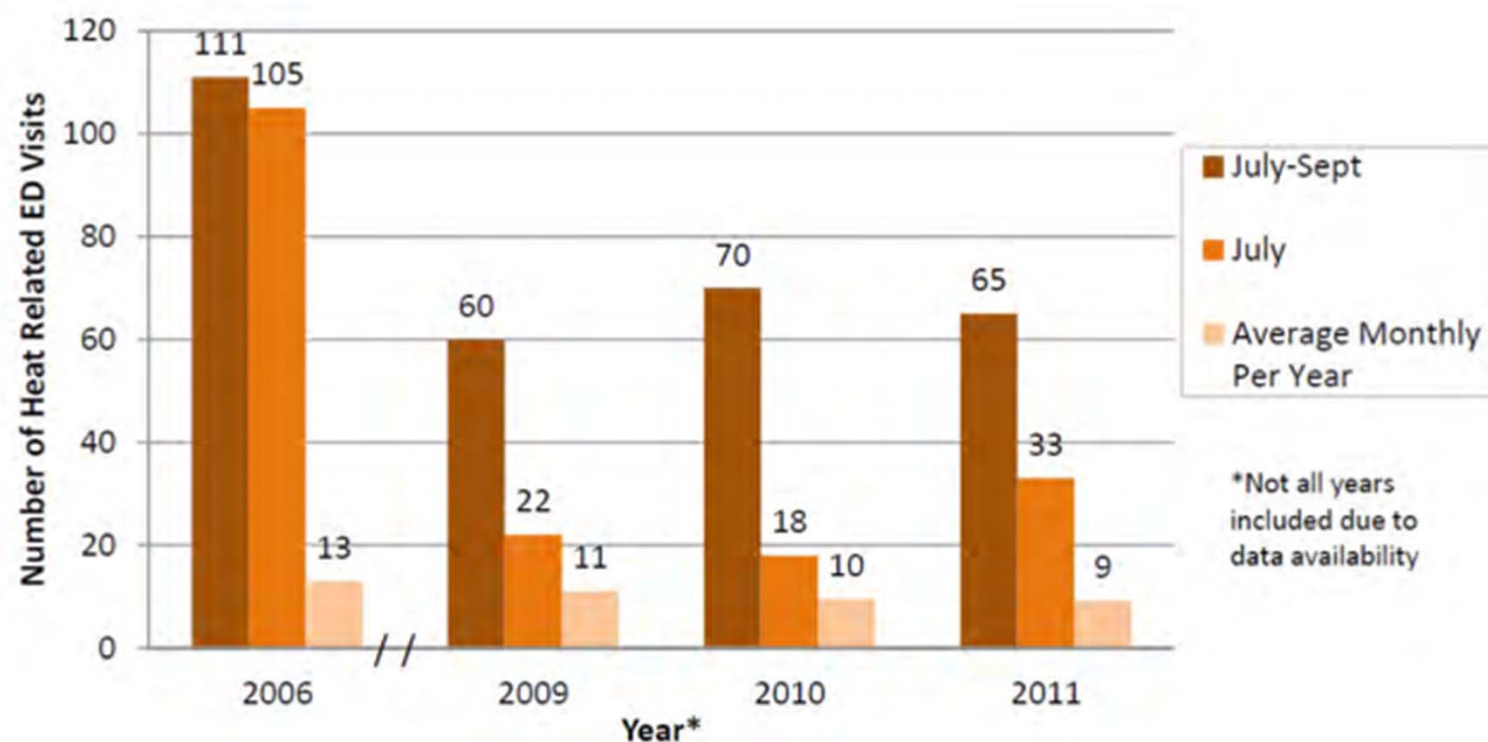
# Planning for Climate Change in Contra Costa County

- Climate Change Planning should emphasize health and health equity outcomes
- Vulnerable populations should be a cornerstone of any plan
- Health co-benefits should be considered for mitigation and adaptation efforts.

*Figure 1: Approximation Of Climate Zones In Contra Costa County*



*Figure 6: Heat Related Emergency Department Visits In Contra Costa County, 2006 & 2009–2011*



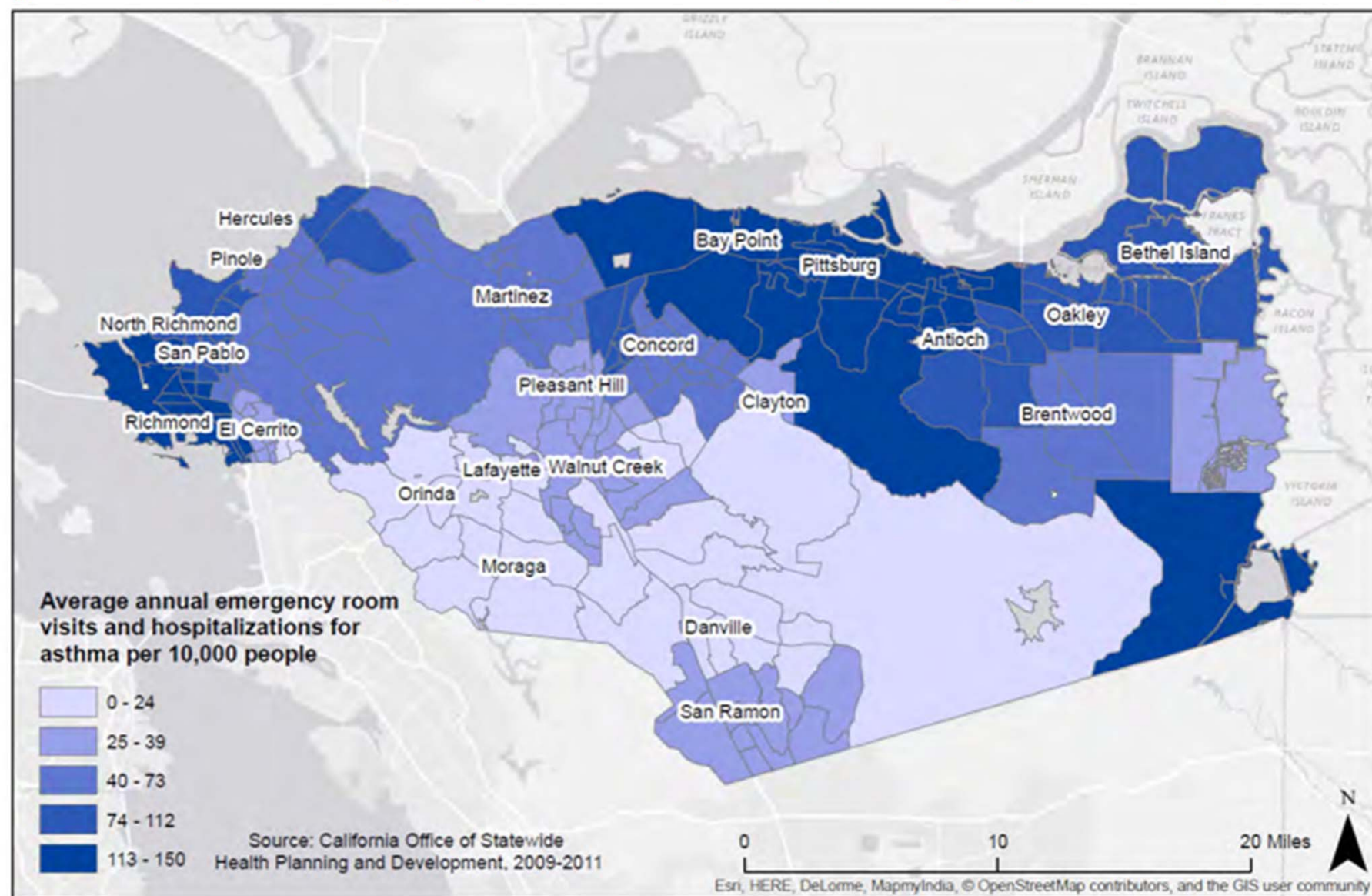
Source: California Statewide Office of Planning Health and Development



<b>Category</b>	<b>Vulnerability Factor</b>	<b>Data Source</b>
<b>Biological</b>	Percent of population under 5	US Census, 2007–2011 American Community Survey
	Percent of population over 65	US Census, 2007–2011 American Community Survey
<b>Social &amp; Economic</b>	Percent of population below 200% of the Federal Poverty Line	US Census, 2007–2011 American Community Survey
	Percent of population living alone	US Census, 2007–2011 American Community Survey
	Percent of population African-American	US Census, 2007–2011 American Community Survey
	Percent of households linguistically isolated	US Census, 2007–2011 American Community Survey

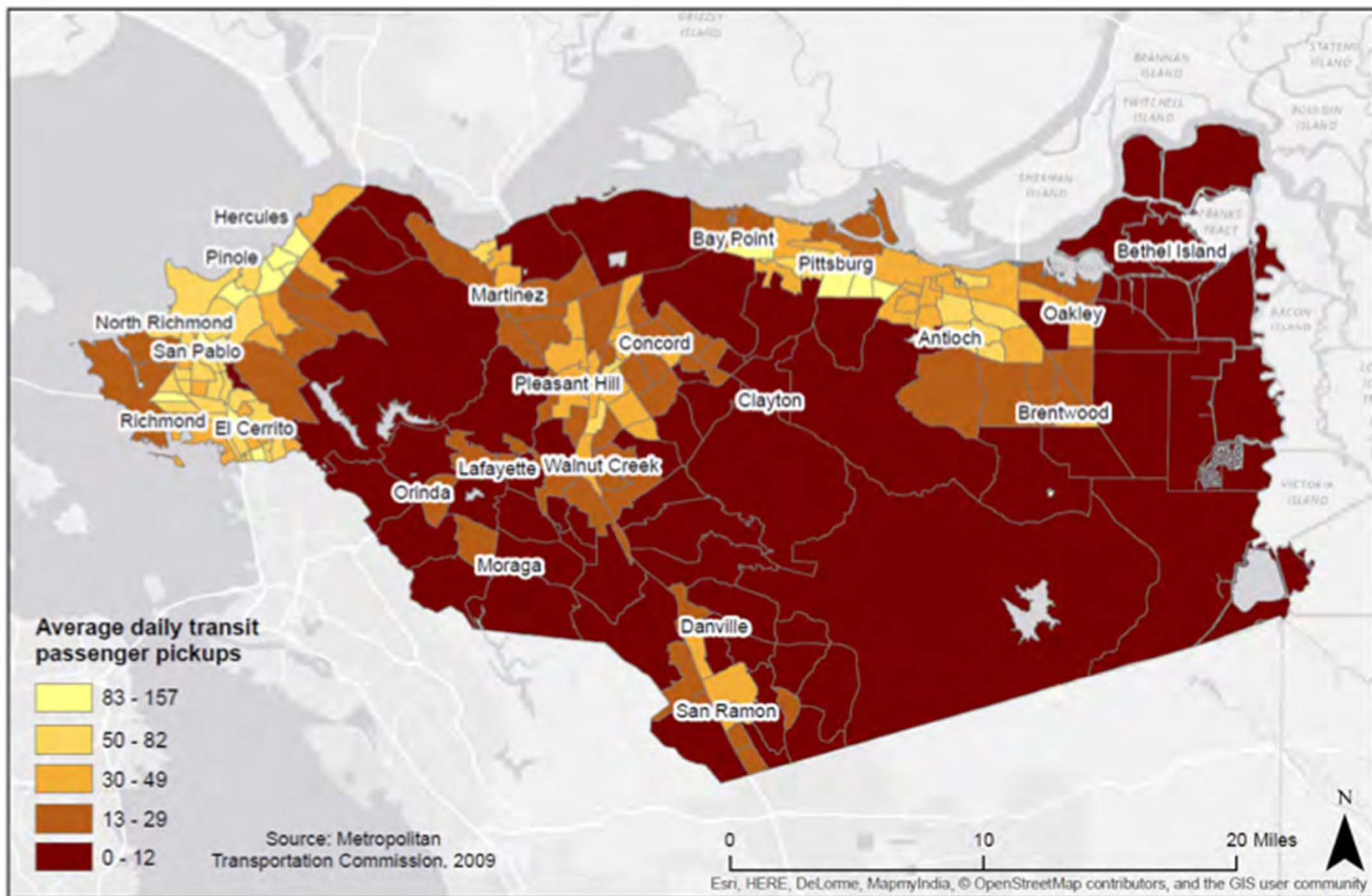
<b>Category</b>	<b>Vulnerability Factor</b>	<b>Data Source</b>
<b>Medical</b>	Asthma hospitalization and ED visit rate	California Office of Statewide Health Planning and Development, 2009–2011
<b>Living Conditions</b>	Percent of households without access to a vehicle	US Census, 2007–2011 American Community Survey
	Average daily transit pickups	Metropolitan Transportation Commission, 2009
	Percent treeless area	US Department of the Interior, National Land Cover Database, 2001
	Percent impervious surface	US Department of the Interior, National Land Cover Database, 2006
	Percent households without air conditioning	CA Department of Public Health, 2009 California Energy Survey, provided by Pacific Institute
	Portion of daily maximum 8 hour ozone concentration over federal standard	CalEnviroScreen analysis of CA Air Resources Board, 2007–2009

*Figure 15: ED Visits & Hospitalizations For Asthma Per 10,000 People By Census Tract, 2009–2011*

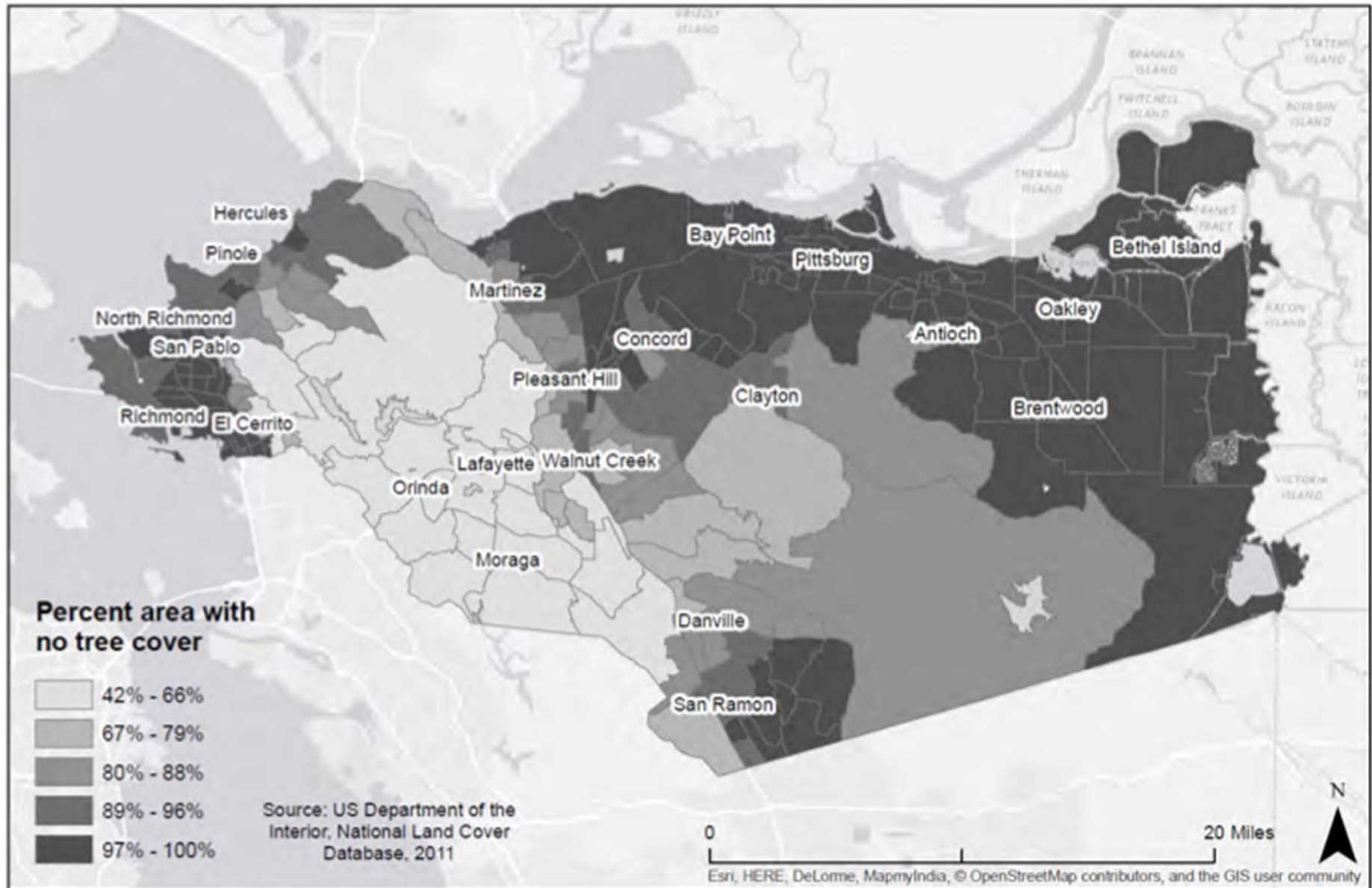




*Figure 16: Estimated Average Daily Transit (Bus, Rail, & Ferry) Pickups By Census Tract, 2009*

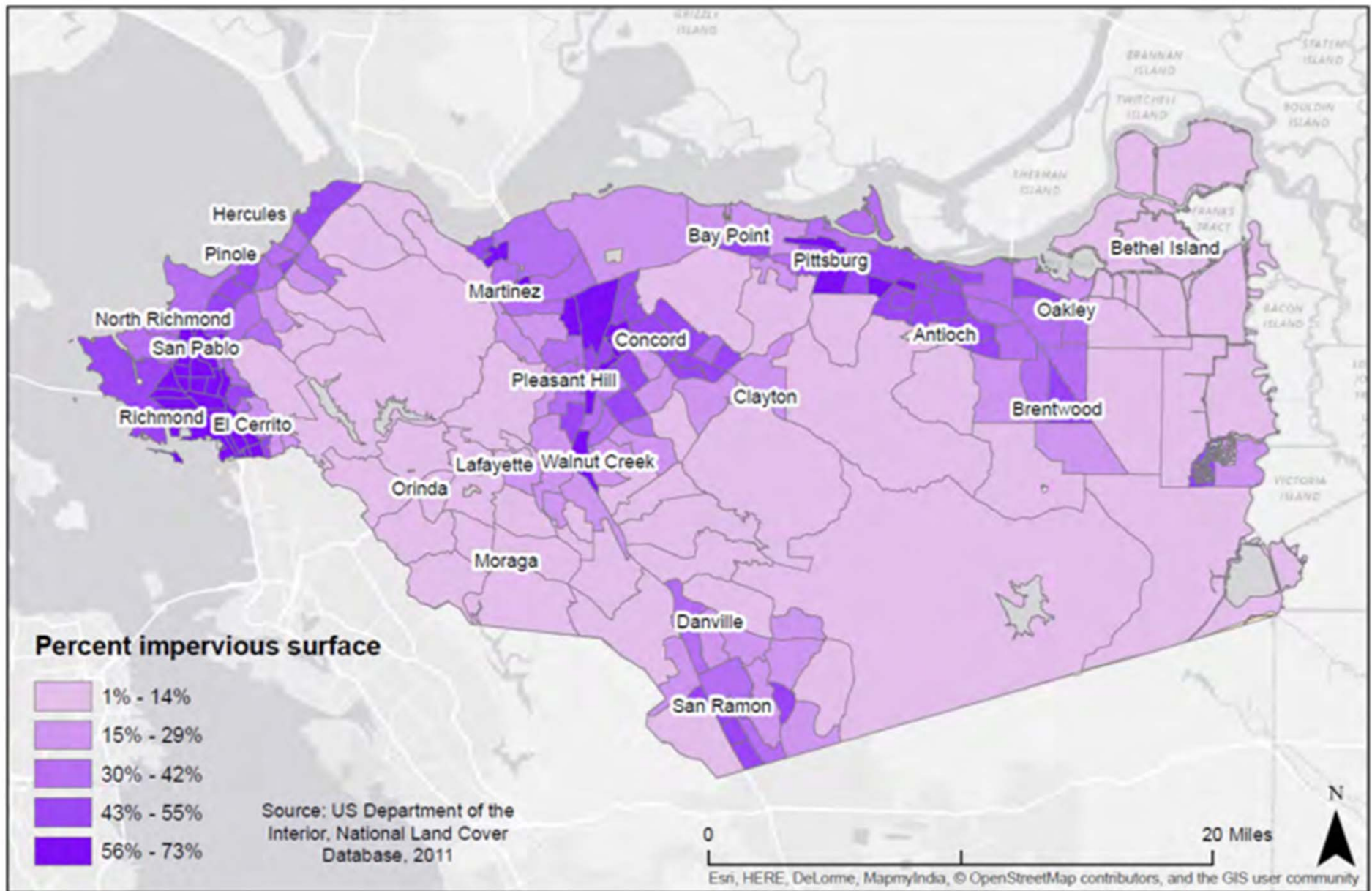


*Figure 17: Percent Area With No Tree Cover By Census Tract, 2001*

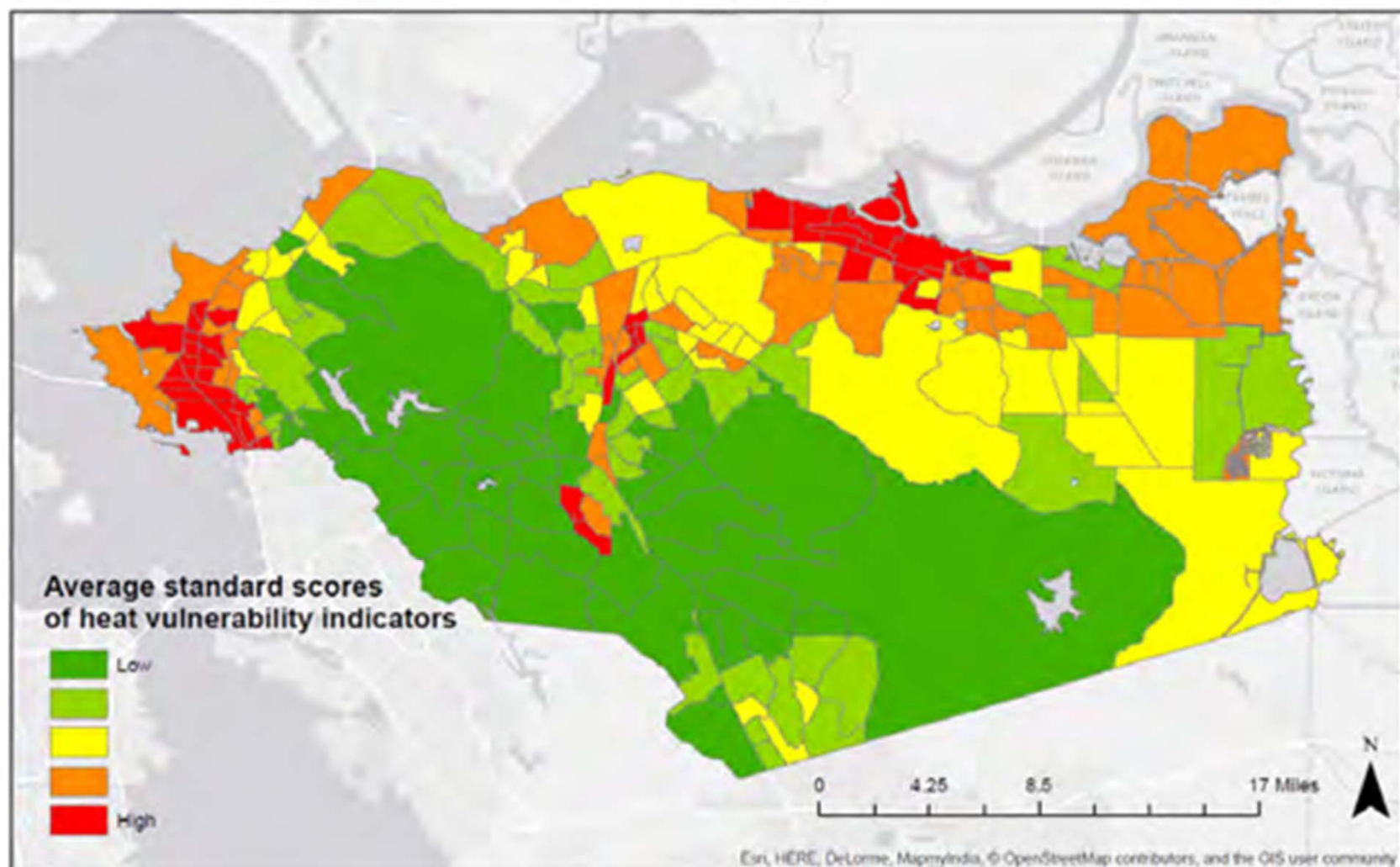




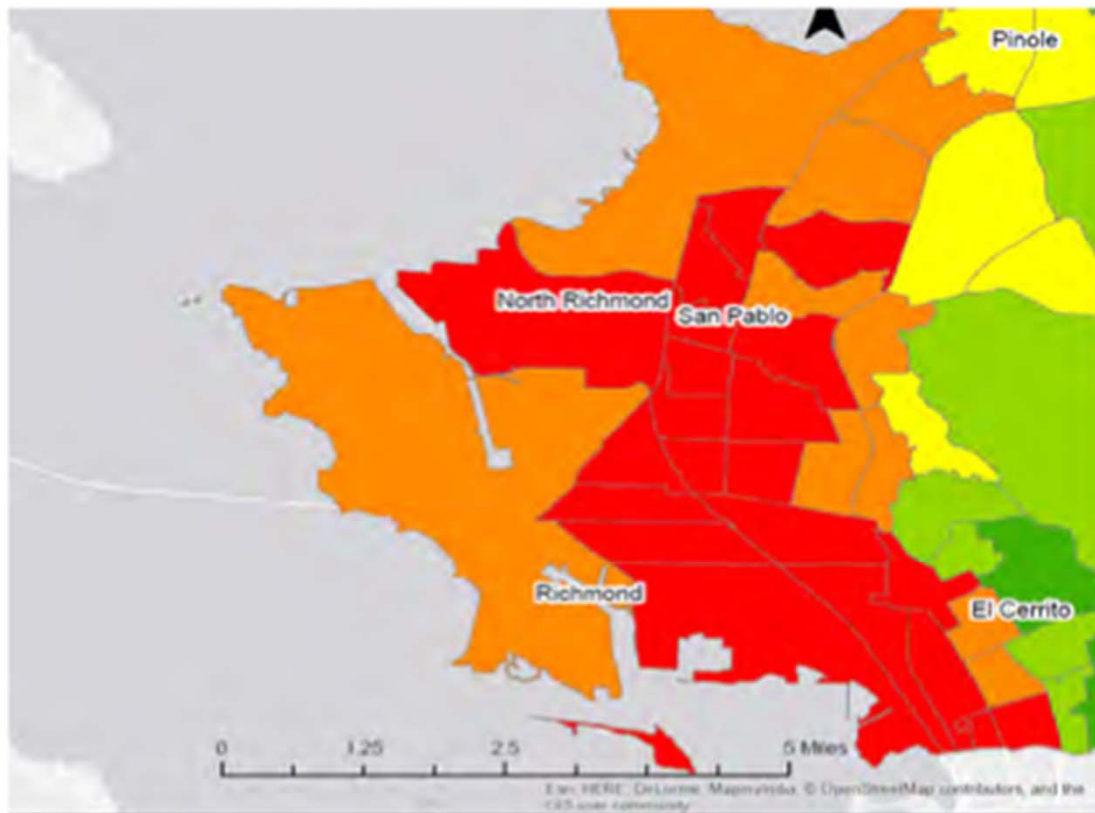
*Figure 18: Percent Impervious Surface By Census Tract, 2011*



*Figure 21: Average Z-Scores Of Heat Vulnerability Indicators By Census Tract, Showing An Equal Number Of Census Tracts In Each Category.*

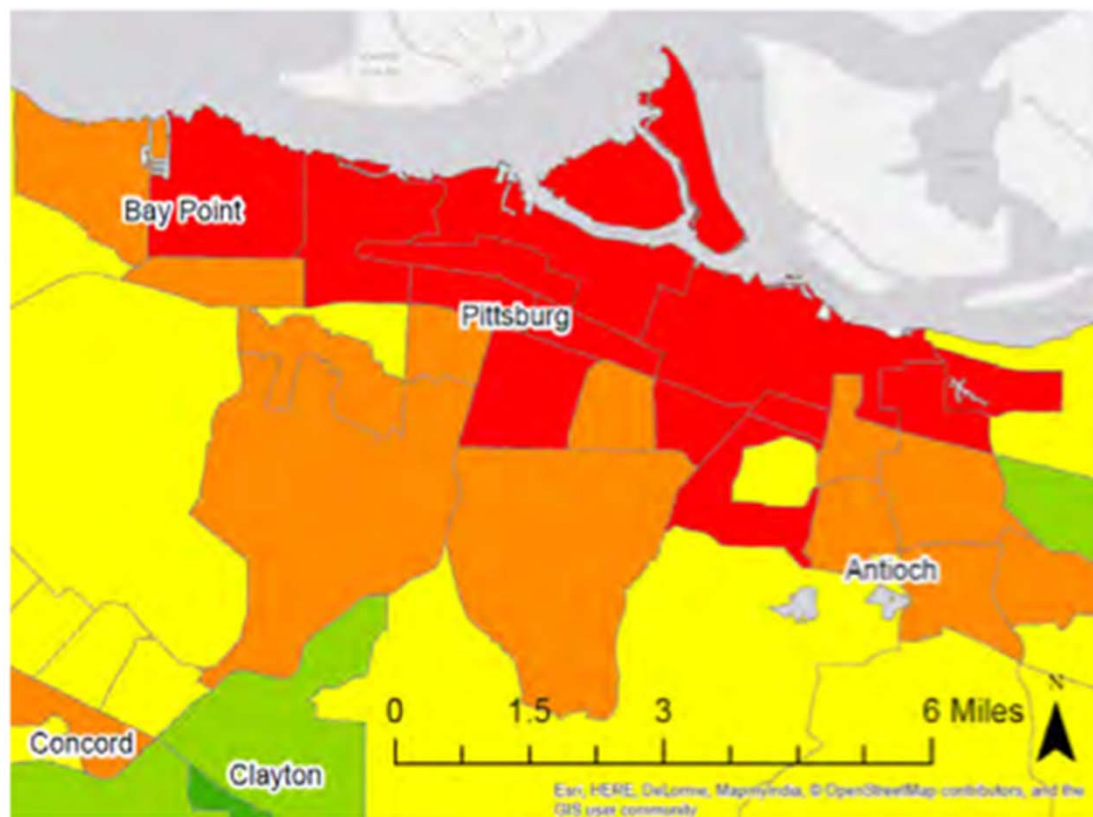






*Figure 22: West County*

- Children under 5
- Poverty
- African-American residents
- Linguistic isolation
- Asthma
- No vehicle access
- Treeless area
- Impervious surfaces
- No air conditioning



*Figure 25: East County*

- Children under 5
- Poverty
- African American residents
- Linguistic Isolation
- Asthma
- Treeless area
- Impervious surfaces
- Ozone pollution

Table 3: Vulnerabilities To Extreme Heat By Jurisdiction

	Biological		Socio-Economic				Medical	Living Conditions							
City or place name	Under 5	Over 65	Poverty	Living Alone	African-American Race	Linguistic Isolation	Asthma	Access to car	Public Transit	Treeless Area	Impervious Surfaces	Air Conditioning	Ozone	Average Standard Score	
North Richmond	Medium	Low	High	Low	High	High	High	High	Low	High	High	High	Low	High	
San Pablo	High	Low	High	Low	Medium	High	Medium	High	Low	High	High	High	Low	↑	
Richmond	High	Low	High	Medium	High	High	High	Medium	Low	Medium	Medium	High	Low		
Bay Point	High	Low	High	Low	Medium	High	High	Medium	Low	High	Medium	Low	Medium		
Pittsburg	High	Low	High	Low	Medium	Medium	High	Medium	Low	High	Medium	Low	Medium		
Bethel Island	Low	High	High	High	Low	Low	Medium	Medium	High	High	Low	Low	High		
Antioch	High	Low	High	Low	Medium	Medium	High	Medium	Low	High	Medium	Low	High		
Concord	High	Low	Medium	Medium	Low	Medium	Medium	Medium	Medium	High	Medium	Low	Medium		
El Cerrito	High	Medium	Medium	Medium	Low	Medium	Low	Medium	Low	Medium	High	High	Low		
Oakley	High	Low	Medium	Low	Low	Medium	Medium	Low	High	High	Low	Low	High		
Walnut Creek	Medium	High	Low	High	Low	Medium	Low	Medium	High	Medium	Medium	Low	Low		
Brentwood	High	Low	Medium	Low	Low	Low	Medium	Low	Medium	High	Medium	Low	High		
Pleasant Hill	Medium	Medium	Medium	Medium	Low	Medium	Low	Medium	Medium	Medium	Medium	Medium	Low		
Pinole	Medium	Medium	Medium	Low	Medium	Medium	Medium	Medium	Low	Medium	Medium	High	Low		
San Ramon	High	Low	Low	Low	Low	Medium	Low	Low	Medium	High	Medium	Low	Medium		
Martinez	Medium	Low	Medium	Medium	Low	Low	Medium	Low	Medium	Medium	Medium	Medium	Low		
Hercules	Medium	Low	Low	Low	Medium	Medium	Medium	Low	Low	Medium	Medium	Medium	Low		
Clayton	Medium	Medium	Low	Low	Low	Low	Low	Low	High	High	Medium	Low	Medium		
Danville	Medium	Medium	Low	Low	Low	Low	Low	Low	High	Medium	Low	Low	Medium		
Moraga	Medium	Medium	Low	Low	Low	Low	Low	Low	High	Medium	Low	Medium	Low		
Orinda	High	Medium	Low	Low	Low	Low	Low	Low	High	Low	Low	Medium	Low		
Lafayette	Medium	Medium	Low	Low	Low	Low	Low	Low	High	Low	Low	Low	Low	Low	

# Thank you!

- Report can be found at  
<http://cchealth.org/health-data/reports.php>
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