

Vulnerable Communities

Asset Description

Certain characteristics of individuals and households may affect ability to prepare for, respond to, and recover from a flood or other hazard event. When preparing for and understanding hazards, it is important to recognize that natural events are not the only factor. Social, political, and economic factors play a role, and considering these factors can be an opportunity to address the root causes of inequities.

In the ART and Association of Bay Area Governments Resilience Program Stronger Housing, Safer Communities project, an advisory committee of recognized experts, including community advocates, selected indicators based on experiential and professional experience, local knowledge, and consultation of academic and federally-sponsored research. Community-based organizations including the Bay Area Regional Health Inequities Initiative and the Resilient Communities Initiative reviewed the data and methodology in its second phase of the research.

The resulting 10 indicators serve as a regional screening tool to help identify locations where community members may be at greater risk. Each indicator is counted in Block Groups which have a significant concentration relative to rates in the Bay Area. Indicators include population or households which are:

1. Renters
2. Under 5
3. 75 and over
4. Very low income
5. Without a vehicle
6. Communities of Color
7. Housing cost burdened
8. Limited English speaking
9. Transportation cost burdened
10. Without a high school degree



Initial Findings of Vulnerability

In one initial analysis of vulnerable communities, Block Groups which contained 5 or more of the 10 characteristics were identified, and then geographically intersected with water levels raised by 12, 36, and 66 inches above mean higher high water. Several cities contain Block Groups exposed at only 12 inches of water, which is within the range of a 1-year storm surge event—meaning a probability of occurring every year. The specific neighborhoods of Bayview-Hunter’s Point in San Francisco, Canal District in San Rafael, and East Oakland are vulnerable to only 12 inches of elevated water.

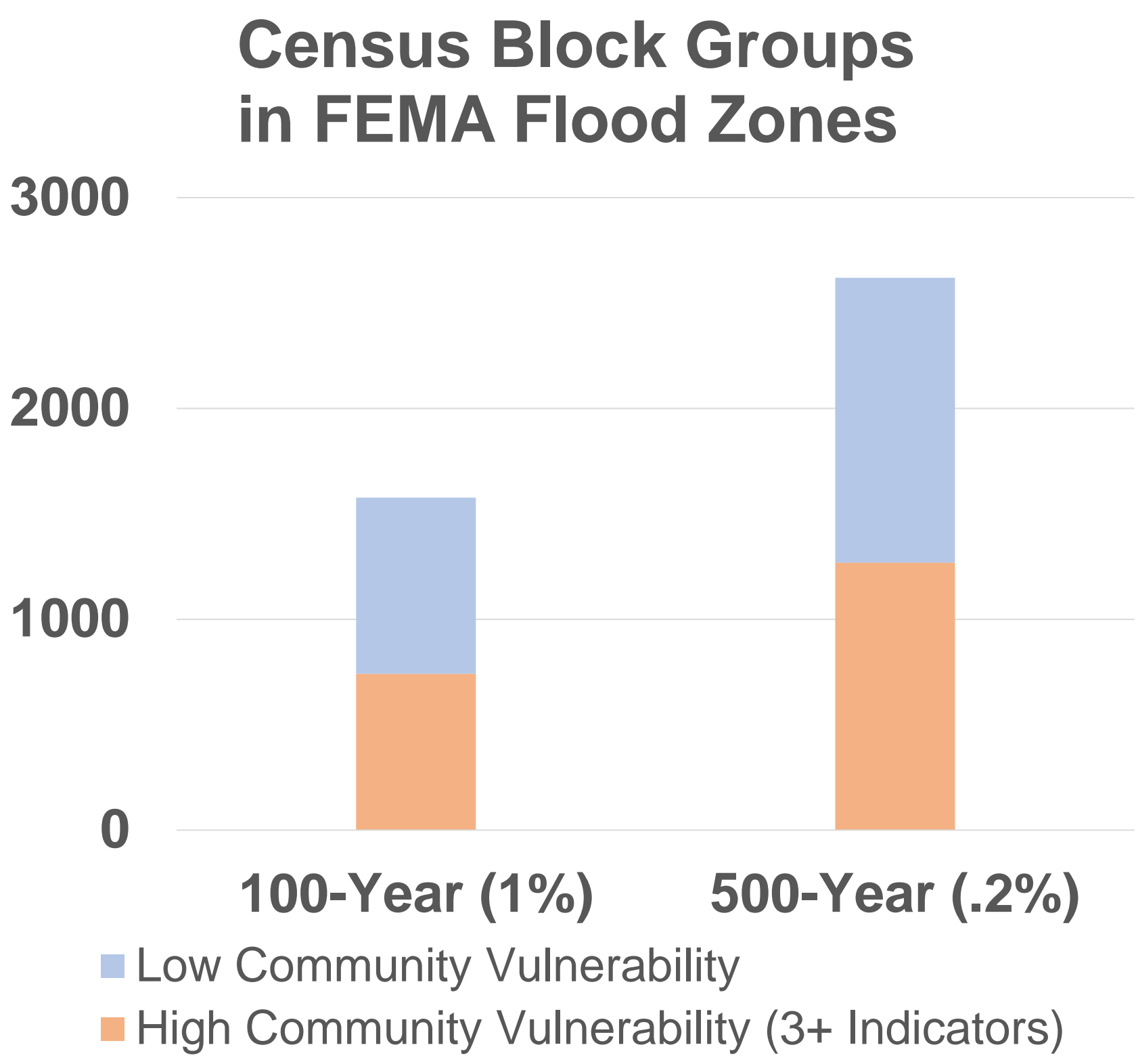
Cities and places with Block Groups exposed to water levels above MHHW 12” (orange), 36” (yellow), 66” (green)

Alameda	Hayward	North Fair Oaks	Richmond	San Mateo
Albany	Marin City	North Richmond	Rodeo	San Rafael
Bay Point	Menlo Park	Oakland	San Francisco	Suisun City
East Palo Alto	Milpitas	Pittsburg	San Leandro	Union City
Fairfield	Napa	Redwood City	San Lorenzo	Vallejo

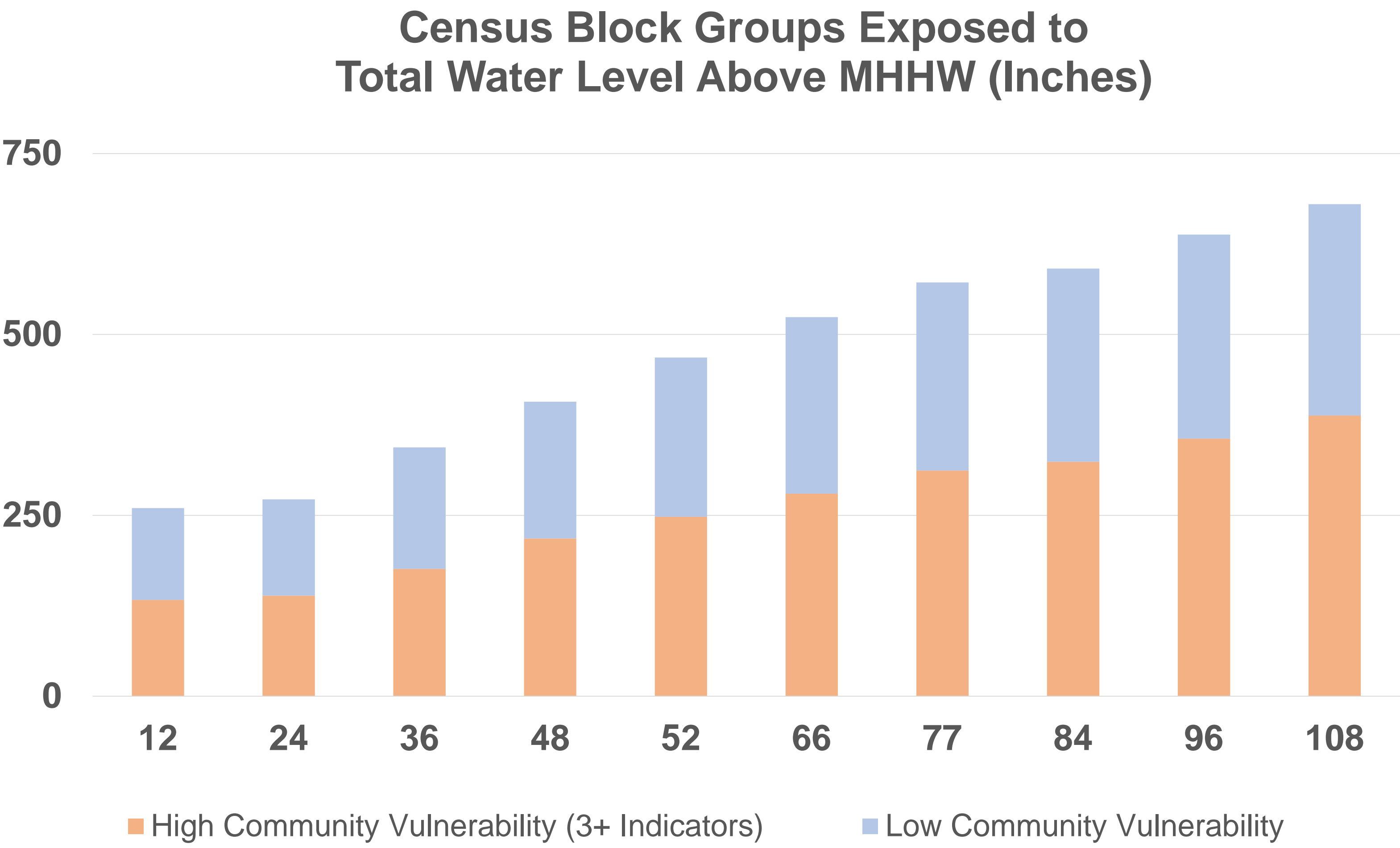
Quick Facts

(ACS 2011-2015 estimates)

- ✧ Approximately half of all renters in the Bay Area spend more than 30% of income on housing, and approximately 1 out of 4 renters spend more than 50% of income on housing
- ✧ Over 1.2 million Bay Area residents identify as speaking English less than “very well;” among these populations the most common languages are: Spanish: 530,000; Chinese (both Cantonese and Mandarin): 280,000; Vietnamese: 100,000; Tagalog: 90,000
- ✧ While rates are underreported, around 10% of the noninstitutionalized population of the Bay Area declared disability status (includes hearing, vision, cognitive, self-care, and independent living difficulties)



An intersection of all Census Block Groups in the Bay Area with ART sea level rise data revealed that at every water level, Block Groups with 3 or more indicators represent 50-60% of all affected (refer to figure below). In the FEMA 100- and 500-year flood zones, Block Groups with 3 or more indicators represent about half of all affected (see figure to left).



Methodology: Community indicators represent characteristics that may reduce ability to prepare for, respond to, or recover from a flood or seismic event. Indicators are counted in Census Block Groups which have a significant concentration (greater than mean + 1/2 standard deviation) relative to the nine county Bay Area. This dataset was first developed as part of the ABAG and BCDC Stronger Housing, Safer Communities Project.

Data: ART Bay Area Sea Level Rise Analysis and Mapping Project 2017 BCDC, MTC, AECOM
American Community Survey 2010-2014; Center for Neighborhood Technology 2016 ; Esri

