



for immediate release

Study: U.S. affordable housing exposed to coastal flood risk projected to triple by 2050

Fully open online mapping tool shows risks by location, with prompts in English and Spanish

Princeton, NJ--Dec. 1, 2020--As climate change causes sea levels to rise, the number of affordable housing units in the U.S. at risk of coastal flooding is projected to more than triple to nearly 25,000 nationwide (24,518 units) over the next 30 years, according to a Climate Central study [published today in *Environmental Research Letters*](#).

Key Points

- This is the first nationwide assessment of affordable housing stock's vulnerability to rising seas, conducted with the National Housing Trust.
- New Jersey (6,825 units), New York (5,293 units), and Massachusetts (4,818 units) have the highest numbers of affordable housing units projected to be at risk of coastal flooding at least once in a typical year by 2050.
- Cities with the most affordable housing units expected to be exposed to coastal flooding in 2050 include New York City (4,774 units), Atlantic City (3,167 units), and Boston (3,042 units).
- Several states are projected to see steep percentage increases in the affordable housing exposed to coastal flooding by 2050, including Virginia (273% increase to 1,473 units), Florida (774% increase to 963 units), and Connecticut (344% increase to 695 units).
- Cities projected to see steep percentage increases in the affordable housing exposed to coastal flood risk include Norfolk, VA (523% increase to 710 units), Charleston, SC (546% increase to 349 units), and Miami Beach (1074% increase to 317 units).
- In a few cities, most of the existing affordable housing stock is projected to be exposed to coastal flooding by 2050, including Crisfield, MD (92% or 283 units), Hoquiam, WA (72% or 220 units), and Atlantic City, NJ (52% or 3,167 units).
- Projections are available at coastal.climatecentral.org (select Affordable Housing from the Map Menu).

About these findings

- This analysis identifies areas at risk of coastal flooding from 2000-2050 using lidar-derived elevation data from NOAA and localized sea level rise projections and coastal flood risk statistics from widely-cited peer-reviewed research (Kopp et al. (2014) and Tebaldi et al. (2012), respectively).

- Affordable housing units (individual homes within multi-family structures--like apartment buildings--or single-family houses) within those areas were identified using two sources:
 - analysis by National Housing Trust of the National Housing Preservation Database to identify federally subsidized properties (and some state-subsidized properties listed in the database); and
 - CoStar Building Rating System data to identify non-subsidized housing likely to rent for below-market rates, based on 1- and 2-star ratings.
 - Not all affordable housing units in a given place can be identified using these sources.

- The Microsoft U.S. Building Footprints database was used to determine all identified buildings' precise locations within flood zones. If the analysis determined any part of the building's footprint to be at risk of flooding, all units within it were considered at risk. (Units within one building commonly share access routes and building infrastructure such as electric, water, and ventilation systems.)

- The main sea level rise projections used in this analysis were based on RCP 8.5, essentially an unchecked carbon emissions scenario. Although the analysis also includes projections based on reduced emissions, they made relatively little difference in expected exposure by 2050.

- The analysis was based on quantifying coastal flood-risk events for each building, defined as days when -- because of some combination of sea level rise, tides, and storm surge -- nearby coastal water levels rise higher than the elevation of the lowest part of the footprint of the building, and there is an unobstructed pathway for the water to reach the building. (This combination of factors poses a clear risk but is neither necessary nor sufficient to cause actual flooding, which may also be influenced by rainfall, river runoff, building distance from the coast, roughness of the intervening terrain, wind, and other factors.)

- The numbers of flood-risk events statistically expected in each year for each building and its units were tallied to develop overall estimates of Expected Annual Exposure from city to state levels, the main results reported in the study. Additionally, the analysis assessed the number of units expected to face at least two or at least four flood-risk events in a given year--more frequent exposure.

About Climate Central

Climate Central is an independent organization of leading scientists and journalists researching and reporting the facts about our changing climate and its impact on the public. Climate Central's Program on Sea Level Rise provides accurate, clear, and granular information about sea level rise and coastal flood hazards both locally and globally, today and tomorrow. We offer user-friendly maps and tools, datasets, and high-quality visual presentations.

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