



Background

- The size of the population within the 500-year floodplain influences the degree to which lives and property are vulnerable to flood damages.¹
- The 500-year floodplain is:
 - An area with a 0.2% annual chance of being flooded;² and
 - Used by the National Flood Insurance Program and others to indicate risk in flood hazard areas on a local scale (e.g., municipality) or for assessments of vulnerability to floods at the national scale.¹
- Indicator values were projected into future epochs using EPA's Integrated Climate and Land Use Scenarios (ICLUS).³
- Higher values suggest higher vulnerability relative to other watersheds.

THIS INDICATOR MEASURES THE POPULATION WITHIN THE 500-YEAR FLOODPLAIN.

Data Sources

Data Source	Description	Spatial Resolution	Temporal Resolution
FEMA – Census Block Group Flood Zones and Population, Housing Units and Policies in 0.2% Floodplain Areas	Area of block group within 500-year floodplain	Block group	N/A
U.S. Census Bureau – 2000 Decennial Census – Total Population	Number of people by block group	Block group	Every 10 years
U.S. Census Bureau – Block Group	Shapefiles of Census 2000 block groups	Block group	Every 10 years; minor revisions yearly
EPA – ICLUS Version 1.3, 2010	Population projections by county for years 2005, 2010, 2050, and 2090 from A1 scenario	1 km x 1 km	2000-2100; data available at 5-year intervals

This Indicator Was Used to Assess the Vulnerability of One of USACE's Eight Business Lines

Business Line	Importance Weight (Varies from 1 to 2 for USACE)
Emergency Management	2

Calculation

- Identify which block groups are within which 4-digit hydrologic unit code (HUC-4) watersheds (i.e., spatially link block groups to the coincident HUC-4 watersheds within a GIS).
- When portions of a block group fall within multiple HUC-4 watersheds, weight population by the area of each block group.
- Sum population in the 500-year floodplain within each HUC-4 watershed.

¹ Hurd, B., Leary, N., Jones, R., and J. Smith. 1999. Relative Regional Vulnerability of Water Resources to Climate Change. Journal of the American Water Resources Association. 35(6): 1399-1409.

² Harris County Flood Control District. 2014. Glossary. Available online at: <https://www.hcfcfd.org/glossary/>

³ This indicator uses population projections generated by ICLUS, which models population distributions using demographic and land cover data.

LOW



LOW INDICATOR VALUE
An uninhabited area in Arkansas is inundated.

HIGH INDICATOR VALUE
Flood waters enter a suburban neighborhood in Wisconsin.

HIGH



Spring Green, WI - Courtesy of FEMA

Northeastern AR - Courtesy of FEMA