**Background**

- This indicator represents the number of people below the poverty line. People below the poverty line have very limited financial resources available to address hardships from the effects of climate change (e.g., heat waves and other extreme weather events).¹
- Poverty thresholds are determined annually by the US Census Bureau and are based on the annual amount of cash income required to support families of various sizes.²
- Indicator values are projected into future epochs using EPA’s Integrated Climate and Land Use Scenarios (ICLUS).³
- Higher values suggest higher vulnerability relative to other watersheds.

**Data Sources**

<table>
<thead>
<tr>
<th>Data Source</th>
<th>Description</th>
<th>Spatial Resolution</th>
<th>Temporal Resolution</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. Census Bureau – 2012 American Community Survey 5-year Estimates, Poverty Status</td>
<td>Number of people under poverty by Census tract</td>
<td>Census block group</td>
<td>Previously every 10 years; now updated annually*</td>
</tr>
<tr>
<td>U.S. Census Bureau – Census block groups</td>
<td>Shapefiles of Census 2010 Census block groups</td>
<td>Census block group</td>
<td>Every 10 years; minor revisions yearly</td>
</tr>
</tbody>
</table>

* At the time these metrics were produced, the Decennial Census was the only source that provided these data for all U.S. Census tracts.

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

<table>
<thead>
<tr>
<th>Business Line</th>
<th>Importance Weight (Varies from 1 to 2 for USACE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emergency Management</td>
<td>1.4</td>
</tr>
</tbody>
</table>

**Calculation**

- Within a GIS, join the poverty population data table to the Census block group boundaries.
- For the base epoch, tabulate the number of people living in poverty within each HUC-4 watershed using counts from Census block groups within the watershed. For Census block groups which cross multiple HUC-4 watersheds, poverty populations were allocated proportionally to the intersecting HUC-4 watersheds based on area.
- For future epochs, ICLUS population projections were used to project the number of people living in poverty in 2050 and 2090.
  - For each US county, a population coefficient was calculated for 2050 and 2090. This coefficient projected the ratio of population increase (or decrease) from 2010 to 2050, and 2010 to 2090.
  - The 2008-2012 ACS poverty data (at the Census block group level) was multiplied by the 2050 and 2090 population coefficients.
  - The projected 2050 and 2090 population living in poverty was aggregated to the HUC-4 level, similarly to the base epoch.

2 National Poverty Center. 2014. Poverty in the United States FAQ. Available online at: http://wwwnpc.umich.edu/poverty/²
3 This indicator uses population projections generated by ICLUS, which models population distributions using demographic and land cover data.