

National Poverty Plan Standards (NPPS) Background and Methodology

The Shared Humanity Project has developed a new approach to measuring and counting the number of people who need assistance. To provide an official estimate of the number of families and people living in poverty, the United States uses a national threshold, commonly called the poverty line. This threshold inadequately represents the level of income needed to live for a sustained period of time without assistance. We have calculated new relative income standards that are based on 50% of median income for every county in the country. These locally-based income standards reflect the resources required to live within a community.

We chose an anchored, relative income standard rather than an absolute threshold like the MIT Living Wage calculator and other self-sufficiency standards because we wanted our income standards to be simple to calculate and replicate. Rather than enter the discussion about how to best define minimum needs and self-sufficiency, The Shared Humanity Project wants to be a steward in developing solutions to poverty and coalitions to implement the solutions.

Using our National Poverty Plan Income Standards (NPPS), The Shared Humanity Project estimates that more than 75 million Americans fell below that level in 2019. By way of comparison, the Census Bureau estimates that 38 million Americans were poor that year.

Background

At The Shared Humanity Project, we conceptualize poverty as living without the most basic needs. It is the state of being deprived of adequate shelter, food, and health

care. Poverty, however, is more than a lack of economic resources. Families living in poverty face the strain and stress of living in unsafe and insecure environments, tenuous labor force attachment, poor educational opportunities and multiple barriers to employment. Poverty is a state that people want to avoid and, once in it, wish to escape.

For over half a century we have devoted resources to counting and reducing the number of people in poverty. These efforts have been only moderately successful. The official poverty rate in 1967 was 14.2 percent, with 27.8 million individuals living below the official poverty line. In 2019 the poverty rate was 10.5 percent, with 34.0 million individuals living in poverty (Semega, et al 2020).

Unfortunately, the official poverty line does not truly capture the number of people living without the most basic needs. The US poverty thresholds were derived in the 1960s by multiplying a subsistence food budget by a factor of three. These thresholds, based on consumption data from the mid-1950s, have been adjusted only for inflation since they were established. In 2019, the poverty threshold for a family with two adults and two children was \$25,750. In contrast, using more recent consumption data, the MIT living wage calculator estimates that the same family living in the District of Columbia would require nearly \$81,000 to purchase basic needs and the same family living in Smith County, Kansas would require more than \$61,000 (Glasmeier, 2021).

The National Poverty Plan Income Standards

Our primary goal is to develop an action plan to end poverty. To do so, however, we must first quantify the scope of the problem. The official poverty thresholds are extremely low and do not account for local variations in cost of living, making them inadequate for our purpose. Self-sufficiency and basic needs standards, such as the MIT living wage threshold, the University of Washington Self-Sufficiency Standard, and the Economic Policy Institute's Family Budget Calculator require many assumptions

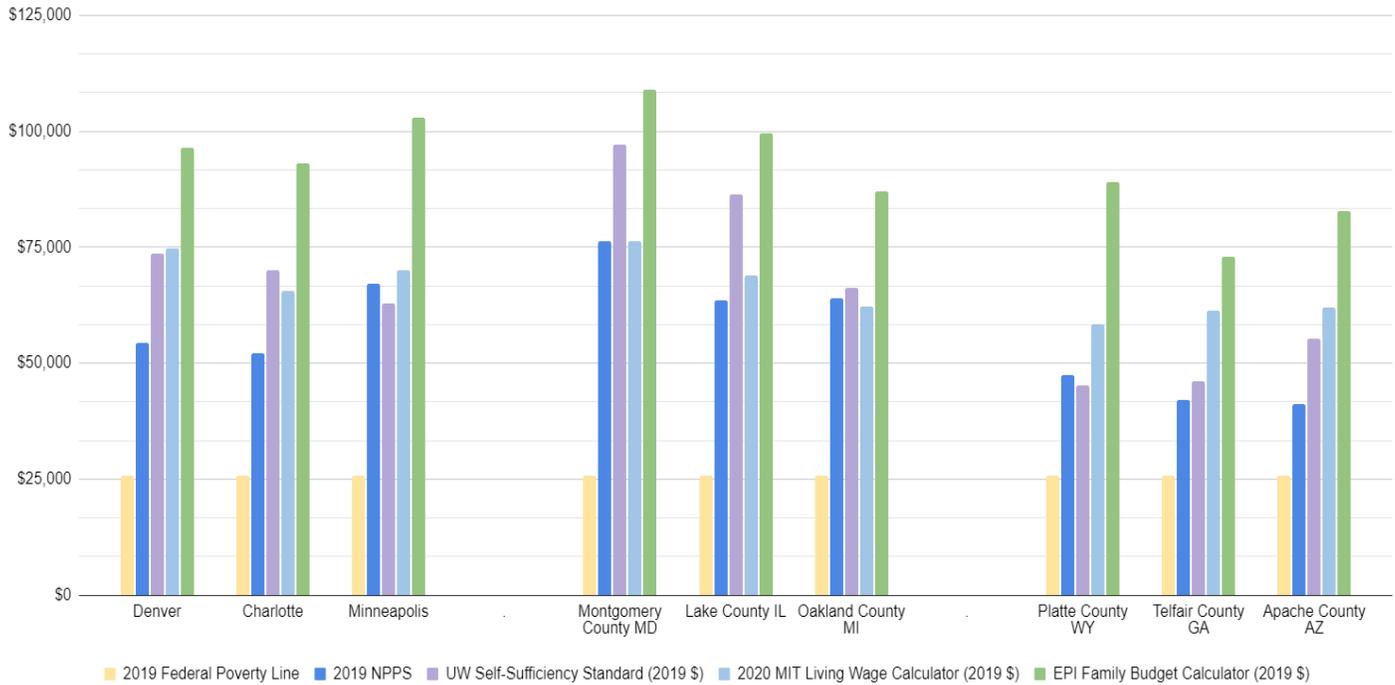
about what “minimum needs” are. For example, how do we define adequate shelter, food and health care? How can we quantify educational resources? What are “basic needs”? Furthermore, if we want to count the number of people in poverty on a regular basis, we need readily available and reliable data that can measure minimum needs.

Rather than entering the debate about how to best quantify and measure minimum needs, we operationalize our definition of poverty in a simple manner. Borrowing from many comparative poverty researchers and some European agencies, we define poverty as having less than 50% of median household income relative to the area in which you live.¹ A locally-based relative standard captures local living standards to better reflect the resources required to live within a community. Until 2007, the Gallup poll asked individuals how much a family of four would need to “get along in your local community.” Median responses to the question were nearly always equal to 50% of median income, suggesting that a relative poverty threshold set at 50% of median income better represents the amount of income required to meet basic needs. Interestingly, when the US poverty threshold was first introduced in the 1960s, it was equal to nearly 50% of national median income, but has trended downward ever since (Blank, 2008).

The graph below compares The National Poverty Plan Income Standards (NPPS) for a family of four to the Federal Poverty Guideline and other absolute measures of need in urban, suburban and rural areas throughout the United States. The graph demonstrates how different assumptions and definitions of need, combined with the use of different datasets, results in very different thresholds. For more detail about the methodology for the other thresholds, see Nadeau (2021), Pearce (2020) and Gould, Mokhiper and Bryant (2018).

¹ Because the relative standard will rise and fall with median incomes, we will recalculate the standard every 5 years, adjusting it for inflation during the non-anchor years.. We will observe the elimination of poverty when the left tail of the distribution is cut off, with no change necessary to the right tail.

Comparison of 2019 NPPS to Other Economic Thresholds



Calculation of NPPS

We want to ensure that everyone has a minimum standard-of-living while accounting for the higher costs of living in counties where median income exceeds the state median. Each NPPS is set at either 50% of state median income or 50% of county median income, whichever is larger. We use state median income as a lower limit because access to many social-safety net programs is determined at the state level, rather than the county level.

NPPS varies by household size. We calculate separate standards for households with one, two, three, four and five or more residents. We chose the household rather than the family as our unit of aggregation under the assumption that households share high cost expenditures, such as housing and utilities. Furthermore, combining families

into larger households is both a social and economic decision that individual families make, and that decision may vary geographically.

To calculate NPPS for different household sizes, we first calculate half of median income for a 4-person household.² This amount is adjusted upwards or downwards by a factor designed to account for economies of scale in shared living spaces. It is a mathematical representation of the fact that while the economic needs of a household increase with each additional member, the increase is not proportional. For example, a 2-bedroom apartment typically does not cost twice as much as a 1-bedroom apartment.

NPPS adjustment factors are based on an equivalence scale equal to the square root of household size $[(np)^{0.5}]$.³ Using this equivalence scale suggests that all persons living within a household share resources and that the economies of scale increase at a decreasing rate. In other words, each additional person requires fewer additional resources than the last person added. For example, a 2-person household requires 41% more resources than a 1-person household and a 3-person household requires 73% more resources than a 1-person household. The final adjustment factor is the equivalence scale for a specific household size divided by the equivalence scale for scale for a household size of 4 $[\frac{(np)^{0.5}}{(4)^{0.5}}]$.

² We use the 4-person household as the baseline rather than calculate median incomes for each household size. In some areas, the median incomes of 2-person households exceeds the median incomes of larger households due to the presence of multiple wage earners and no dependents. We did not want our income standards to imply that 2-person households require more resources than larger households.

³ The constant elasticity equivalence scale of 0.5 is widely used and accepted in poverty research. See Smeeding (2016) for additional information on the use of equivalence scales.

Table 1. Adjustment Factors by Household Size

Number of Persons	Equivalence Scale	Adjustment Factor
1	1.00	0.50
2	1.41	0.71
3	1.73	0.87
4	2.00	1.00
5 or more	2.24	1.12

We multiply 50% of median income for a 4-person household by the adjustment factor to calculate the income standard for different household sizes. For example, assume the median income for a family of 4 living in County A is \$50,000. We calculate our income standard for a household of 3 as follows:

County A median income for household of 4:	\$50,000
Half of median income for household of 4:	\$25,000
Adjustment factor for household of 3 (from Table 1):	0.87
Income standard for household of 3 (\$25,000*0.87)	\$21,750

Choice of Dataset and Geographic Unit

The Shared Humanity Project uses data from the American Community Survey (ACS) to calculate its income standards and to count the number of persons below the standards. The ACS is an ongoing, annual survey administered by the Census Bureau. It provides detailed economic and demographic information about people, households and dwellings in the United States.

The ACS is available to the public in multiple formats, including online table formation at the Census Bureau website and downloadable micro datasets for custom analyses. Because we are creating income standards for small geographic areas that depend on household size, we use the Public Use Microdata Sample (PUMS) for our

analyses. The PUMS is a sample of the ACS that includes roughly two-thirds of the responses of the entire ACS. The data is processed by the Census Bureau to preserve confidentiality.⁴ The PUMS datasets are available for each state and the nation as a whole. They are also available in single-year and five-year versions. A single year PUMS data set includes responses from approximately one percent of all U.S. households and a five-year PUMS data set includes responses from about five percent.

To help preserve privacy, the smallest geographic unit in the ACS is the Public Use Microdata Area (PUMA). PUMAs can identify many cities, counties and metropolitan areas, and even smaller areas within cities. However, PUMA boundaries do not always align perfectly with standard geographic boundaries. PUMAs are statistical areas with approximately 100,000 residents. The boundaries of a PUMA must stay within one state, territory or the District of Columbia and cannot overlap. State governments draw the boundaries of each PUMA under the direction of the Census Bureau. They are based on Census Tracts and updated with the Decennial Census. States are encouraged, but not required, to use county and city boundaries when drawing their PUMAs.

For most areas we were able to combine PUMAs into county-specific areas. However, for counties with fewer than 100,000 residents, county-specific results are not available. In these cases, we calculate and present results for a combined county unit. For example, in Maryland, the results for Allegany and Garret county are combined. In other cases, a PUMA might be partially in more than one county, but not encompass either county in its entirety. In these cases, we used the Missouri Census Data Center's MABLE/Geocorr tool to determine which county contained the majority of the population for the PUMA and assigned the PUMA to that county.⁵

⁴ The Census Bureau removes information that would allow users to identify specific individuals and households, top codes extreme values for some variables, and aggregates geographic units into areas with a minimum population of 100,000. Detailed technical information about the ACS PUMS, including important instructions for calculating correct standard errors for estimates, is available online at : <https://www.census.gov/programs-surveys/acs/technical-documentation.html>

⁵ The tool can be accessed at: <http://mcdc.missouri.edu/applications/geocorr.html>.

Standards Calculations and Counts

To develop our income standards, we use the 5-year ACS PUMS data, maximizing the sample size for our estimates and smoothing out annual income shocks that might influence median incomes. Our initial income standards were calculated using the 2015-2019 ACS PUMS. We will recalculate median incomes again in 5 years from the 2020-2024 ACS PUMS. In the intervening years, we update initial income standards using the Consumer Price Index retroactive series using current methods (CPI-U-RS) for the appropriate year. By anchoring our income standards for 5 years, we will be able to capture movement above and below the NPPS that reflects changes in family economic resources rather than changes in overall living standards.

To provide the most current counts and indicators, we use the current 1-year ACS PUMS data to calculate the number of persons under NPPS and the percent of the populations with various demographic characteristics. We will update these counts annually with each new ACS release. We exclude group homes and vacant housing units from our income standard calculations, our counts and our indicators. We used a generalized variance function (GVF) method using design factors to calculate standard errors for our estimates. Margins of error are displayed at the 90% confidence interval.⁶

⁶ For a detailed explanation of the GVF method and to access the design factors for the ACS PUMS, consult the *Accuracy of the PUMS* section on the Census Bureau PUMS Documentation website <https://www.census.gov/programs-surveys/acs/microdata/documentation.html>. We used SPSS for our analyses and are happy to make our programs available to any interested researchers.

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