

Building a Colorado Specific Poverty Measure

A Tool for Understanding Economic Need and Informing Policy

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1 INTRODUCTION

Poverty is a central measure of economic wellbeing and has been measured consistently at the national level for decades. Over time, poverty measurement has evolved to better reflect the resources available to families, changes in living standards, and differences in housing costs across the country. Although poverty measurement has become more comprehensive, it remains difficult to produce a timely and nuanced picture of poverty at the state and local level. This limitation highlights a potentially consequential mismatch. Many of the policy decisions that affect family economic wellbeing are made or implemented by states and local governments, while the best information available to guide those decisions is often produced at the national level.

State specific poverty measures can help address this challenge by adapting accepted national measurement approaches to reflect the data, policy rules, and conditions within a particular state. By design, state-specific measures capture local economic conditions that national data and estimates may overlook. They provide a framework for understanding current economic need and serve as a tool for assessing the likely effects of policy choices under consideration. While other poverty and wellbeing measures can help determine whether policies improve economic circumstances, customized, state-specific poverty measures can show how multiple programs interact, how policy changes affect different types of families, and whether specific design choices have meaningful consequences. These insights are particularly useful for policymakers who must make decisions under a range of budgetary and administrative constraints.

Poverty measurement efforts in California, Wisconsin, and New York City show how such work can be put into practice. By adapting national poverty measurement approaches, these subnational measures better reflect economic conditions in, for example, high-cost places and show how local policies interact with existing state and federal programs. Their value lies in providing a more informed picture of wellbeing and a context-specific tool for answering questions that matter for state and local policy.

This paper describes the development of a Colorado-specific poverty measure designed to support state-level policy analysis. The measure adapts the logic of the national Supplemental Poverty Measure to Colorado's context and enhances publicly available individual level survey

data with external data sources that better reflect the state's social safety net. The goal of this project is not to replace existing measures, but to provide an additional tool, grounded in research and methods commonly used at the national level, that complements other measures of hardship, self-sufficiency, and financial security.

Through this project, we (i) develop a state-specific poverty measure that takes advantage of the larger sample size and statistical power of the Census Bureau's American Community Survey (ACS), (ii) align the microdata with known administrative benchmarks to better capture the impact of safety net programs on poverty, and (iii) create a data asset that can be used to quantify the role of these programs in program evaluation and policy design. By adding this measure to the state's measurement toolkit, Colorado can build a more complete picture of economic need and better support the evaluation, comparison, and refinement of proposals intended to improve wellbeing across the state. The measure can also be used by policymakers and other stakeholders to assess the impacts of policies—both existing and proposed—on economic well-being and poverty reduction. As such, the measure can be an important tool giving policymakers the evidence they need on how changing policies will impact the lives of Coloradans.

The sections that follow describe how the Colorado Poverty Measure is constructed, how it can be used to support policy analysis, and where its limitations remain. Section 2 describes the data and measurement framework, including the role of survey data and administrative benchmarks. Section 3 describes the major components of the measure, including the poverty universe, poverty thresholds, resources, expenses, and taxes. Section 4 presents initial estimates from the Colorado Poverty Measure. Section 5 discusses the measure's applications, scope, and relationship to other measures of economic need. Section 6 describes limitations and areas for future refinement. The paper concludes by summarizing how the Colorado Poverty Measure contributes to the measurement literature and can serve as an ongoing data asset for understanding economic need, evaluating policy choices, and informing future decisions in Colorado.

2 DATA AND MEASUREMENT FRAMEWORK

The objective of this project was to develop a Colorado-specific poverty measure that could serve as a transparent and reproducible data asset. Rather than relying solely on existing public use data, the project sought to build a measure calibrated to Colorado's policy environment, public spending, and available administrative data sources. The resulting measure was thus designed to support analyses of current economic need and proposed changes by stakeholders, including policymakers, state and local agencies, and researchers.

2.1 Foundation of the Measure

The Colorado Poverty Measure builds on the logic of the Supplemental Poverty Measure (SPM), which offers a broader accounting of family resources and needs than the Official Poverty Measure (OPM). The SPM includes cash income, tax credits, and the value of in-kind benefits,

while subtracting taxes and necessary expenses that reduce the resources available to families. The measure also uses a broader definition of need. Poverty thresholds are designed to reflect relative changes in living standards over time and are adjusted based on family size, number of children, geographic location, and housing tenure. Together, these features provide a more comprehensive framework for assessing whether families fall below the poverty line.

2.2 Current Data Limitations

A central challenge in developing a Colorado-specific poverty measure is that no single public data source contains all of the needed information. The American Community Survey (ACS) provides the best foundation for this work because its sample size is large enough to reliably produce estimates both across states and within communities in states. However, the ACS does not collect much of the detailed information on income, social safety net participation, taxes, or necessary expenses that is needed to accurately determine poverty status under an SPM style framework.

Traditionally, the Supplemental Poverty Measure is estimated using the Current Population Survey Annual Social and Economic Supplement (CPS ASEC), which collects more detailed information on income, health insurance coverage, public benefit receipt, taxes, and expenses. This detail makes it possible to more fully account for all resources families have available to meet their needs. However, the CPS ASEC is designed primarily to support national estimates, and its sample is too small to reliably produce any annual state-level analyses.

2.3 Combining Data Sources

The Colorado Poverty Measure addresses the tradeoff between statistical power and measurement detail by combining the strengths of the CPS ASEC and the ACS. Following prior work by the Census Bureau and academic research teams in California and Wisconsin, we use the richer information available in the CPS ASEC to estimate SPM components that are missing or incompletely measured in the ACS. These estimates are then incorporated into the larger ACS sample through the addition of estimated values for in-kind benefits, taxes, necessary expenses, and other resources that are essential to SPM style poverty measurement. This substantially enhances the publicly available ACS data and makes it possible to construct a measure of poverty for Colorado.

The Colorado Poverty Measure also incorporates external administrative and policy data to better align the measure with the state's program rules, participation patterns, and spending. For several safety net programs, survey-based estimates of participation and benefit receipt fall short of known administrative totals. To address this, we compare ACS-based estimates with external benchmarks from state administrative data and identify where survey estimates appear to understate participation or benefit values, both statewide and within key groups or geographies.

We then use statistical models to help determine which families in the ACS are most likely to receive additional benefits. These models estimate the probability of program participation based on individual and family characteristics, such as income, family structure, age, and other relevant characteristics. Additional recipients are then systematically assigned by prioritizing people with higher predicted probabilities of receiving benefits until the survey data more closely approximate administrative benchmarks. This calibration procedure helps the Colorado Poverty Measure better reflect the reach and value of programs such as SNAP, TANF, WIC, school meals, and energy assistance. These adjustments are not intended to reproduce administrative records exactly but do bring survey-based estimates closer to known patterns of program participation and spending. Calibrating the ACS to known aggregate totals also helps correct for the underreporting of public benefit receipt that is common in household survey data.

3 BUILDING A COLORADO POVERTY MEASURE INTRO

The Colorado Poverty measure developed through this project serves two key purposes. First, the measure provides a more complete estimate of current economic need in the state. Second, it creates a framework for policy simulation. Once the baseline measure is constructed, analysts can modify program rules, benefit levels, eligibility thresholds, tax credit designs, or participation assumptions to estimate how proposed policy changes may affect poverty, family resources, and public costs.

Part of the value of this data asset lies in making the accounting of family resources more accurate, transparent, and reproducible. This section therefore describes each major component of the Colorado Poverty Measure. For each component, we describe what information is available in the original ACS data, how the component is estimated, where the Colorado Poverty Measure follows the SPM methodology (or where it departs from or refines that method), what administrative data are available, and how those data are used to better align the measure with Colorado's safety net.

Like any poverty measure, the Colorado Poverty Measure requires choices about how to define need and how to estimate the resources families have available to meet those needs. It does not perfectly capture every family's circumstances, nor does it eliminate all uncertainty from the underlying survey data. Instead, the measure improves the accounting framework used to assess whether families have enough resources to surpass their poverty threshold. In doing so, the measure gives Colorado stakeholders a consistent way to quantify and assess how resources, costs, and policy choices affect poverty.

3.1 Poverty Universe and Units

Before estimating poverty status or accounting for family resources, the Colorado Poverty Measure first defines the poverty universe, or who is included in the measure, and how individuals are grouped together when poverty is assessed. We follow established choices in the poverty measurement literature to better capture Colorado families and the resources they

share, while also refining the universe of potential safety net recipients to reflect program eligibility rules. These decisions help ensure that the measure represents Colorado families as accurately as possible and does not assign benefits to individuals who are not eligible under program rules.

3.1.1 Poverty Units

The Colorado Poverty Measure follows the SPM by using a broader definition of the poverty unit, or the group of individuals assumed to share resources with one another. Unlike the OPM, which groups individuals based on relationships defined by blood, marriage, or adoption, the SPM uses a broader and more nuanced definition of family. This definition includes unmarried partners and their relatives, foster children, and unrelated children under age 15, who are excluded from the OPM poverty universe completely. This broader definition better captures nontraditional families that share resources and needs.

3.1.2 College Students

In addition to using SPM-based poverty units, we follow the Wisconsin Poverty Measure by excluding select college students from the measure entirely. College students who live off campus or away from home while taking classes represent a distinct group that cannot be directly linked to their families in survey data, even when those families provide financial support. Research by Benson and Bishaw (2017) shows that college students can significantly influence poverty rates, particularly in smaller communities and counties with prominent colleges. To avoid overstating poverty among students whose full family resources are not observed, we exclude a small subset of college students aged 18 to 23 who: (1) earned less than \$7,000 in the past year and who work less than 20 hours in a typical week; (2) work less than 13 weeks in the past year; and (3) do not live with any relatives, partners, or children.¹ In 2024, fewer than 4,000 college² students met these criteria and were dropped, 85 percent of whom were in poverty according to the Official Poverty Measure. The exclusion of these college students is consistent with state poverty measures developed for California and Wisconsin (Bohn et al., 2015; Chung et al., 2012).

3.1.3 Unauthorized Immigrants

Finally, we refine the universe of potential safety net recipients by identifying likely unauthorized immigrants in the ACS sample. We follow the California Poverty Measure's approach for identifying these individuals and determining benefit eligibility at the individual and family level. We do not exclude unauthorized immigrants from the poverty measure but identify likely

¹ Less than 1.5 percent of all college students met all criteria and were subsequently dropped. This accounts for approximately 6.0 percent of all college students that live in Colorado but not with any family.

² These 4,000 college students refer not to 4,000 college students in the ACS sample, but 4,000 college students residing in the state of Colorado.

immigration status to avoid incorrectly assigning benefits to ineligible individuals, overstating family resources, and understating poverty among this demographic subgroup.

To identify likely unauthorized immigrants, we apply the commonly used residual method described (Passel and Cohn, 2018; Warren et al., 2025), which is also the procedure used by Kimberlin et al. (2023) in the California Poverty Measure. This method first identifies foreign-born individuals whose immigration status can be inferred from observed characteristics. These include, for example, individuals who are naturalized citizens, people employed in occupations that generally require citizenship or legal authorization, foreign students, and those who have served in the armed forces. The remaining foreign-born individuals whose authorization status cannot be inferred from observed characteristics, such as year of entry or occupation, form the “residual” group and are potentially unauthorized. We then randomly select individuals from the residual group as likely unauthorized until the weighted total number matches annual aggregate estimates from the Center for Migration Studies (2026).

We use likely unauthorized immigrants for benefit eligibility modeling, but do not remove them from the poverty universe. For benefits such as SNAP, where eligibility depends on the characteristics and income of the poverty unit, likely unauthorized members are treated as ineligible for benefits, but their income is still considered when determining the unit's eligibility. However, if all members of a unit are identified as likely unauthorized, we do not assign or impute benefits to any members.

3.2 Poverty Thresholds

The Colorado Poverty Measure compares each poverty unit's resources to a poverty threshold that reflects family size, number of children, housing tenure, and local housing costs. Following the SPM methodology, poverty thresholds are specific to each poverty unit but begin with a base threshold for a two adult, two child poverty unit. These base thresholds vary by housing tenure, distinguishing between renters, owners with a mortgage, and owners without a mortgage. These base thresholds are then adjusted by (i) the size and composition of each SPM unit, so that larger families have higher poverty thresholds, and (ii) geographic variation in housing costs.

National SPM thresholds account for geographic variation in housing costs by applying adjustment factors based on metropolitan area, metropolitan status, and state. For state-level poverty measures, however, more local geographic adjustments may be needed to capture variation within a state. If the Colorado Poverty Measure relied only on the geographic adjustments used in the national SPM, it would overlook meaningful differences in housing costs across counties and within metropolitan and nonmetropolitan areas. We therefore construct a county-level geographic adjustment that allows poverty thresholds to vary across Colorado in a way that better reflects differences in local housing markets. Counties are used to define within state variation in poverty thresholds because they are policy-relevant jurisdictions,

and local costs, including those shaped by property taxes and county policies, often vary at this level. The resulting county-level poverty thresholds can be found in Appendix Table 1.

To construct county-based geographic adjustments, we use the latest five years of ACS data to estimate median gross rent for two bedroom rental units across Colorado and within each public use microdata area (PUMA). PUMAs are the smallest geography available in the ACS public use microdata and are the only substate geography consistently observed in the microdata. For each PUMA, we calculate median gross rent using ACS household weights and compare that value to the statewide median rent for comparable units. This produces a PUMA level ratio that captures how rental costs in each PUMA compare to rental costs statewide. We then use a PUMA to county crosswalk, or a file that shows how PUMAs and counties overlap, to translate PUMA-level ratios into county-level adjustment factors. Using allocation weights from the Missouri Census Data Center's Geocorr application, we calculate county-level ratios as weighted averages of the PUMA ratios for all PUMAs that intersect each county. These weights allow us to assign each county a housing cost adjustment using the public use data available in the ACS.

To reduce volatility in annual estimates, geographic adjustment ratios are calculated using five years of ACS data for Colorado. Median rents from earlier years are inflated to current year dollars and averaged across the five year period. The resulting county-level ratio is incorporated into the final poverty threshold along with the tenure-specific base threshold and equivalence scale. The Colorado Poverty Measure therefore preserves the SPM approach to constructing thresholds while accounting for local and substate variation in housing costs that is not otherwise captured by traditional geographic cost of living adjustments.

3.3 Resources

The Colorado Poverty Measure follows the SPM by comparing each poverty unit's threshold to the sum of total resources, which includes cash income, cash transfers, and the value of in-kind benefits. Cash income includes earnings and other reported income sources, many of which are directly observed in the ACS. However, several noncash and in-kind benefits must be estimated or imputed using additional data. The following subsections focus on the resource components that we estimate because they are needed for the poverty measure but do not exist in the original data. Certain cash benefits, such as Social Security and Supplemental Security Income, are reported in the survey and we use reported amounts as provided in the survey data. Taxes, including state-specific tax credits, are discussed in the next section.

3.3.1 WIC

The Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) provides food assistance to low income pregnant and postpartum women, infants, and young children. The ACS does not directly collect information on WIC participation or benefits received. We therefore estimate likely WIC receipt in the ACS using information from the CPS ASEC and then calibrate these estimates to Colorado administrative data.

Colorado's Department of Public Health and Environment provides estimates of WIC participation by race and Hispanic origin, age, gender among children, maternal education, and language spoken at home. For the Colorado Poverty Measure, we use county-level participation by race and Hispanic origin and by recipient age group, specifically infants, children, and mothers.

To use these county-level data in the ACS, we first convert county-level participation totals to approximate PUMA-level totals using allocation factors from the Missouri Census Data Center's Geocorr application. These allocation factors are used to distribute county-level WIC enrollment estimates across all PUMAs that intersect each county, producing PUMA-level WIC benchmarks by race, Hispanic origin, and age group.

To apply PUMA-level benchmarks, we first identify likely WIC-eligible individuals in the ACS. Eligible individuals include children under age six and women of childbearing age in families with income below 200 percent of the official poverty threshold. Although the federal income limit for WIC is generally 185 percent of the federal poverty guidelines, we follow the California Poverty Measure and use a 200 percent cutoff to avoid being overly restrictive, since income-based eligibility may vary across months during the calendar year.

We then use a score-based assignment procedure to determine which eligible individuals should be assigned WIC receipt. The score combines the estimated probability of receiving WIC with information on whether a person belongs to a demographic group or PUMA where ACS based estimates fall short of administrative benchmarks. We estimate the probability of WIC receipt using a statistical model based on observed WIC participation in the CPS ASEC, and then apply those predicted probabilities to potentially eligible individuals in the ACS based on characteristics associated with receipt. Eligible individuals are ranked higher if they are predicted to be more likely to receive WIC and if they belong to a group or area where administrative benchmarks indicate additional recipients should be assigned. We systematically assign WIC to eligible individuals in ranked order until the weighted totals in the microdata align with state administrative benchmarks.

Finally, we use USDA data to assign average monthly per person benefits to WIC recipients. Individual WIC benefits are annualized and then summed to the poverty unit level so that WIC is included as a resource when determining poverty status.

3.3.2 Energy Assistance

Energy assistance, provided through the Low-Income Energy Assistance Program (LEAP) in Colorado, helps households pay home energy costs and is included as an in-kind resource in the Colorado Poverty Measure. The ACS does not directly collect information on energy assistance receipt. We therefore estimate the likely receipt of this benefit and calibrate these estimates to Colorado administrative data.

The Colorado Department of Human Services provides county-level LEAP data, including the number of households that applied for assistance, the number of approved cases, and total

benefit amounts. Because LEAP data are reported by program season rather than calendar year, we combine two adjacent program seasons to approximate calendar year participation and benefits. Specifically, we weight the earlier season by four sixths and the later season by two sixths to reflect the portion of the heating season that falls within the target calendar year.

To use the county-level LEAP data in the ACS, we first convert county-level participation totals to approximate PUMA-level benchmarks for program participation using allocation factors from Geocorr.

Because LEAP is assigned to households, we estimate receipt of this benefit at the household level rather than the poverty unit level. We estimate the probability of energy assistance receipt using a statistical model based on observed participation in the CPS ASEC and then apply those estimated probabilities to households in the ACS based on predictive characteristics. Households are ranked higher if they are predicted to be more likely to receive energy assistance and if they reside in areas where administrative benchmarks indicate higher participation. We then assign energy assistance to households in ranked order until weighted totals in the microdata more closely align with PUMA level administrative benchmarks.

Finally, we estimate the value of energy assistance using another predictive model based on observed benefit amounts in the CPS ASEC. The household level benefit is then prorated to the poverty unit level based on the fraction of household members in each poverty unit. The prorated value of energy assistance is added to the poverty unit's total resources.

3.3.3 TANF

Temporary Assistance for Needy Families (TANF) provides cash assistance to low-income families with children. Unlike WIC and energy assistance, TANF is not an in-kind benefit. It is cash income and is included in a poverty unit's total resources when determining poverty status.

The ACS captures receipt of cash public assistance income (i.e., "welfare") but it does not identify the specific program providing that income. Reported welfare income may consequently include benefits from TANF as well as other cash assistance programs. We therefore follow the general approach used by the California Poverty Measure and first classify reported public assistance income into likely TANF and non-TANF benefits using the characteristics of the receiving unit. Reported public assistance income is treated as TANF when it is received by a unit with eligible children and is considered general assistance when received by a unit without eligible children or by individuals who are not eligible for TANF (e.g., unauthorized immigrants). Because the ACS includes this broad public assistance income category, the Colorado Poverty Measure begins with a preliminary estimate of likely TANF receipt in Colorado before correcting for the underreporting of this benefit relative to administrative totals.

To correct for underreporting of TANF income, we first define TANF units, which are more restrictive than poverty units, and identify a reference person within each unit. We then count the number of eligible children in each TANF unit, identify likely child only units, and distinguish

between one-parent and two-parent units. Child-only units are units in which children are eligible for TANF but no adult is eligible.

We then estimate the probability of TANF receipt using a statistical model based on observed public assistance income in the CPS ASEC. The estimated probabilities are applied to TANF units in the ACS based on characteristics associated with receipt. The Colorado Poverty Measure then uses the resulting ACS based estimates to assign TANF receipt to additional likely recipients so that the microdata more closely align with Colorado administrative targets.

The Colorado administrative data provide information on total TANF cases by county, case composition, and characteristics of the TANF unit reference person. These characteristics include whether the unit is a one-parent, two-parent, or child-only case, as well as the gender, race, and Hispanic origin of the reference person. To use county-level administrative data in the ACS, we convert county-level case counts to approximate PUMA-level benchmarks using allocation factors from Geocorr.

We similarly use a score-based assignment procedure to determine which TANF units should be assigned receipt beyond those already identified through reported public assistance income. Child-only cases are assigned first because ACS income questions are asked of people age 15 or older, thereby limiting the extent to which these cases can be captured through reported public assistance income. The remaining TANF units are then ranked using a score that combines the estimated probability of TANF receipt with information on unit type, demographic characteristics, and geography. Units are ranked higher if they are predicted to be more likely to receive TANF and if they belong to a case type, demographic group, or area where administrative benchmarks suggest higher participation. TANF receipt is then systematically assigned using these rankings until weighted totals in the microdata more closely align with administrative benchmarks.

Finally, TANF benefit amounts are assigned to units with imputed receipt through the underreporting correction. For units with reported TANF income, we retain the reported amount from the ACS. For newly assigned recipients, we draw benefit amounts from the empirical distribution of reported benefits among observed recipients. The resulting TANF amounts are then scaled so that aggregate TANF dollars align with administrative totals. TANF amounts are aggregated to the poverty unit levels so that benefits can be appropriately included in total resources.

3.3.4 SNAP

The Supplemental Nutrition Assistance Program (SNAP) provides food assistance to low-income households and is included in the SPM as an in-kind resource. Unlike several other benefit programs, the ACS explicitly asks whether anyone in the surveyed household received SNAP during the previous 12 months. However, the survey does not identify which household members received the benefit, the number of people included in the SNAP unit, or the value of benefits received. We therefore begin with observed SNAP receipt in the ACS, compare reported

receipt with administrative totals, correct for underreporting of participation where needed, and estimate benefit values using the number of eligible recipients in the SNAP unit.

Colorado administrative SNAP data include county-level information on average monthly cases, average monthly clients, and total issuance amounts. The data also distinguish between public assistance and non-public assistance SNAP cases. To use these data with the ACS, we convert county-level totals into approximate PUMA-level benchmarks using allocation factors from Geocorr. These factors distribute each county's SNAP caseload and issuance estimates across the PUMAs that intersect the county.

We measure SNAP participation at the SNAP-unit level, rather than for the household as a whole. SNAP units are constructed within households using the same unit definition applied to TANF, reflecting similar eligibility rules for related individuals living together. Reported household SNAP receipt is therefore assigned to eligible SNAP units only, while ineligible individuals or units in the same household are not treated as recipients.

We compare SNAP participation estimates using survey data to administrative average monthly case counts. Between 2022 and 2024, reported SNAP participation in Colorado was not lower than the state monthly averages reported in the administrative data. Consequently, the Colorado Poverty Measure does not add additional SNAP recipients in this step to correct for underreporting, as is done for other components such as WIC.

One important data limitation is that average monthly administrative caseloads do not capture the total number of unique SNAP recipients over the course of a year. SNAP participation can vary from month to month as families enter and exit the program in response to changes in circumstances and eligibility. Consequently, the number of unique SNAP cases over a twelve-month period is higher than what the average monthly caseload suggests. Without additional information on the number of unique annual cases relative to average monthly cases, or survey information on the number of months recipients participated in SNAP during the prior year, it is difficult to fully capture SNAP participation across the state over the course of a year. This remains an area for future work, particularly as national research increasingly emphasizes the importance of distinguishing average monthly participation from annual program reach.

Even though reported SNAP participation in the ACS aligns with average monthly administrative totals, the value of SNAP benefits received is not observed. We estimate benefit values by first identifying the number of eligible recipients within each SNAP unit. Individual eligibility depends on unauthorized status, status as an able-bodied adult without dependents (ABAWD), and exemptions from general work and ABAWD requirements. We then estimate SNAP benefit amounts using the observed empirical distribution of SNAP dollars in the CPS ASEC, conditional on SNAP unit characteristics such as unit size and number of eligible adults and children.

We compare estimated SNAP dollars statewide and within the state to Colorado administrative issuance data. Following the approach used for other resource components, county-level issuance totals are converted to PUMA-level benchmarks using Geocorr allocation factors so that administrative issuance estimates can be compared to local ACS SNAP estimates. SNAP

benefits are then conditionally scaled to better align with administrative issuance totals. In PUMAs where reported participation in the ACS is below the administrative case count, we do not scale benefit values upward. This conditional scaling avoids treating total SNAP issuance gaps as benefit underestimation in PUMAs where reported participation is below the estimated administrative case count. This approach also prevents SNAP benefit amounts from being overestimated, reducing the risk of overstating the local poverty-reducing effect of SNAP in areas where the spending gap may instead reflect missing recipients. SNAP benefits are then aggregated to the poverty unit levels so that benefits can be appropriately included in total resources.

3.3.5 School Lunch

School lunch benefits are included in the SPM as an in-kind resource because they reduce the amount families need to spend on food. The Colorado Poverty Measure assigns a dollar value to school lunch participants and specifically accounts for state policy changes affecting school meal benefits, particularly expanded access to free school meals beginning in the 2023 to 2024 school year through the Healthy School Meals for All program.

The ACS does not directly collect information on whether children receive free, reduced-price, or paid school lunch. We therefore estimate school lunch receipt in the ACS using predicted probabilities of school lunch participation and then align the distribution of free and reduced-price lunch receipt with Colorado administrative data on student eligibility. Unlike several other resource components, the Colorado Department of Education data used for this adjustment identify the number of students eligible for free lunch, reduced-price lunch, or neither free nor reduced-price lunch by school district or county, depending on the school year.

The Colorado Department of Education also provides data on the monthly number of meals served. However, we do not use meal counts to benchmark school lunch participation. Meal counts are useful for program administration, but translating the number of meals served into the number of unique children receiving school lunch requires strong assumptions about how often each child eats a school meal. To avoid imposing these assumptions and potentially underestimating participation, the Colorado Poverty Measure instead uses free and reduced-price lunch eligibility counts to construct PUMA-level benchmarks for the share of school lunch recipients classified as free or reduced-price recipients. Because the administrative data are reported by school year rather than calendar year, we combine adjacent school year files to approximate calendar year estimates.

In the ACS, we first identify school-age children and begin with (i) estimated school lunch receipt and (ii) estimated free or reduced-price lunch receipt (a subset of the first group). Because the ACS does not directly observe school lunch participation, these estimates are based on reported participation and predictive characteristics in the CPS ASEC. We assign school lunch take-up by prioritizing children with higher predicted probabilities of participation until the ACS approximates the PUMA level benchmarks constructed from administrative eligibility data. Among children assigned to receive school lunch, we then assign free or reduced-price lunch receipt using a similar probability-based approach.

Receipt of free versus reduced-price lunch is then determined using program rules, particularly the child's family income as a percentage of the federal poverty line. Children in families with income below 130 percent of the federal poverty line are assigned receipt of free lunch. The remaining children assigned to receive subsidized school lunch are assigned receipt of reduced-price lunch. We then estimate the dollar value of school lunch benefits following the SPM methodology and using USDA school lunch reimbursement rates. See Shrider (2023) for additional details on this valuation.

Colorado's Healthy School Meals for All program expanded access to free school meals by allowing participating public School Food Authorities to provide meals at no cost to all students, regardless of family income. The program was approved in 2022 and launched with the 2023-2024 school year. The Colorado Poverty Measure accounts for this policy change beginning in calendar year 2023. The policy is not applied in 2022, applies only partially in calendar year 2023, and applies fully in calendar year 2024. For public school children covered by the expansion, the value of school lunch meals during the academic year is added to family resources. Although actual take-up of this expanded benefit is not easily observed, we include its value for eligible school-age children given that free school meals are made available as an in-kind resource to families.

3.3.6 Housing Assistance

The SPM adds the value of any type of housing assistance provided by the federal, state or local government to resources. We follow the approach of the California Poverty Measure to estimate the likelihood of receiving any type of housing assistance using data from the CPS ASEC. Receipt of this benefit is estimated at the household level because it is designed to individual households as opposed to individual families. Following the California Poverty Measure (Bohn et al., 2015), this likelihood is estimated separately for three mutually exclusive types of households; these are households whose reference person is: of working age (18-64) with no children, of working age with children, or who is 65 years or older. The value of imputed housing subsidies is estimated as the difference between the household's expected rental contribution to the subsidized unit (30% of household income) and the "market value" of the unit. The market value is estimated as the lower of either the Fair Market Rent in the respondent's area of residence or the shelter and utilities portion of the Colorado Poverty Measure poverty threshold. This mirrors the Census' Supplemental Poverty Measure approach to assigning a monetary value to housing subsidies.

3.4 Tax Liabilities and Credits

The Colorado Poverty Measure accounts for income-based taxes and tax credits, which are important for measuring family resources and are of particular interest to policymakers. We use TAXSIM, a tax calculator provided by the National Bureau of Economic Research (NBER), to estimate federal and state income tax liabilities and credits. For 2024, TAXSIM combines the Colorado Child Tax Credit and Family Affordability Tax Credit into a single amount. We therefore

simulate these two credits separately so that they can be identified individually in the measure, replacing the combined TAXSIM amount rather than adding to it.

See Table 1 for a full list of tax credits considered in the Colorado Poverty Measure from 2022 through 2024. The measure does not account for taxes on capital or property at the federal or state level. By including income-based taxes and credits, the measure captures policies delivered through the tax system and can be used to estimate how changes to credit design would affect public cost and poverty.

Before applying TAXSIM to the ACS, we construct tax units within the survey data following IRS filing rules and the procedure used by the Census Bureau for the CPS ASEC, as described in Lin (2022). This process identifies likely filers and nonfilers, assigns filing status, identifies dependents, and calculates adjusted gross income within each tax unit. Filing status categories include single filers, heads of household, and married couples filing jointly. Once taxes and credits are simulated, results are aggregated to the poverty unit level so that tax liabilities reduce family resources and refundable credits increase family resources.

Table 1. Tax liabilities and credits included in the Colorado Poverty Measure, 2022-2024

Tax or credit	2022	2023	2024
Federal income taxes	✓	✓	✓
Federal payroll taxes (FICA)	✓	✓	✓
Federal Earned Income Tax Credit (EITC)	✓	✓	✓
Federal Child Tax Credit (CTC), including refundable portion	✓	✓	✓
Colorado income taxes	✓	✓	✓
Colorado Earned Income Tax Credit	✓	✓	✓
Colorado Child Tax Credit	✓	✓	✓
Colorado Family Affordability Tax Credit	N/A	N/A	✓

Note: Federal and state income taxes and tax credits are estimated using TAXSIM 35, a tax calculator provided by the National Bureau of Economic Research (NBER), with certain Colorado-specific refundable credits simulated separately where necessary.

For 2024, we directly simulate the Colorado Child Tax Credit and Family Affordability Tax Credit using state policy rules. Eligibility is assigned to primary filers based on filing status, adjusted gross income, and the presence of qualifying dependent children. The Colorado Child Tax Credit is calculated for qualifying children under age six, with per child amounts varying by income and filing status. The Family Affordability Tax Credit is calculated separately for qualifying children under age six and qualifying children ages six through sixteen, with per-child amounts declining across income ranges. These credits are assigned to the relevant tax filer and then aggregated to the poverty unit level.

3.5 Expenses

Like the SPM, the Colorado Poverty Measure subtracts necessary expenses from family resources to better approximate what families have available to meet basic needs. The SPM defines necessary expenses as work expenses, child care expenses, and medical out of pocket expenses. These components are estimated using Colorado data from the CPS ASEC but they are not uniquely tailored to reflect any state-specific context or policy.

3.5.1 Work Expenses

Annual work expenses are estimated for working individuals based on weeks worked during the year. Weekly median work expenses are estimated using reported expenses among adults in the labor force in the SIPP. These weekly amounts are then scaled by 85 percent, multiplied by the number of weeks worked, and then aggregated across working members of the poverty unit to produce an annual expense amount that is subtracted from resources. Unlike the SPM, we reduce or eliminate work expenses for individuals who work from home or walk to work, under the assumption that they incur lower or no commuting costs.

3.5.2 Childcare Expenses

Child care expenses are imputed into the ACS using information from the CPS ASEC on whether families used paid child care and how much they spent on that care. We first estimate the probability that a poverty unit incurs child care expenses based on observed paid care use in the CPS ASEC. These probabilities are then applied to poverty units in the ACS using predictive characteristics observed in both surveys. Because child care needs and costs differ substantially for preschool and school-aged children, separate models are estimated for poverty units whose youngest child is ages 0-5 and for units whose children are all school-aged, or older than age 5. Expenses are then assigned in the ACS until the share of children in units with incurred child care costs matches corresponding CPS ASEC benchmarks.

Among poverty units with assigned expenses, the dollar amount is imputed using predictive mean matching, a statistical approach that “matches” ACS families to similar CPS ASEC families with observed child care expenses and assigns the observed CPS ASEC expense value to the comparable ACS family. This approach is used instead of a traditional regression-based estimation approach because child care expenses are highly variable and include extreme values that could otherwise skew predicted ACS amounts.

Work and child care expenses are then combined and capped to avoid subtracting expenses that exceed the parental earnings available to pay them. For two parent units, the initial imputed value of child care expenses is compared with the earnings of the lower earning parent. When child care expenses exceed that parent’s earnings, child care expenses are capped at the lower earner’s earnings, under the assumption that expenses beyond that amount are not necessary to support employment. If the cap binds, the work expenses of the other working parent are still retained. This step limits the amount of work and child care expenses treated as necessary

employment-related expenses and prevents discretionary spending from pushing families below the poverty line.

3.5.3 Medical Expenses

Medical out of pocket expenses are imputed following the approach developed by Fox et al. (2015) for the national SPM. The CPS ASEC is used to estimate typical medical spending patterns by poverty unit type, defined by the number of elderly members in the unit, whether the unit includes one or multiple adults, and whether the unit's cash income is below 200 percent of the federal poverty level. These CPS amounts are adjusted for inflation and used to create a distribution of likely medical expenses for each poverty unit type. ACS poverty units are then assigned to the same categories and given a medical expense amount drawn from the corresponding CPS-based distribution. Because the imputed amount is already defined at the poverty unit level, unlike several other components, it does not need to be reaggregated or scaled before being subtracted from total resources.

4 INITIAL ESTIMATES FROM THE COLORADO POVERTY MEASURE

In this section, we present initial estimates from the Colorado Poverty Measure to illustrate how the measure can be used to assess economic need and evaluate the role of public policies in Colorado.

We begin by comparing poverty rates from the Colorado Poverty Measure with other commonly used state-level poverty estimates to highlight key differences across measures and motivate the additional insight this tool can provide. We then present estimates by year and age group, followed by county-level estimates that show variation in poverty within the state, which cannot be fully captured using the official SPM or public use microdata alone. We also present counterfactual estimates of the poverty-reducing effect of selected social safety net programs included in the Colorado Poverty Measure, with additional attention to refundable tax credits.

Because the goal of this paper is to document the construction and potential uses of the measure, the preliminary results presented here are not intended to be exhaustive. Instead, they demonstrate the types of descriptive and policy relevant analyses that the Colorado Poverty Measure can support in future work.

4.1 Comparing Poverty Rates

Table 1 compares poverty rates from the Colorado Poverty Measure with two commonly-used poverty estimates for Colorado: three-year pooled estimates from the official Supplemental Poverty Measure (SPM) using the CPS ASEC and annual Official Poverty Measure (OPM) rates from the ACS.

The official SPM provides a more comprehensive accounting of family resources than the OPM by incorporating taxes (and tax credits), in kind benefits, and necessary expenses. However,

because the CPS ASEC has a smaller state sample, official state-level SPM estimates are only produced using three years of pooled data. Pooled poverty rates are informative, but they provide a limited picture of year-to-year changes and may be affected by unusual years, such as those following the COVID 19 pandemic. Annual OPM estimates are available using the ACS, but they rely on a narrower definition of poverty and do not account for in-kind transfers, tax credits, or necessary expenses.

The Colorado Poverty Measure addresses these tradeoffs by combining the larger annual sample size of the ACS with a broader SPM style accounting of resources and needs, while also incorporating Colorado-specific refinements. Table 2 reports the resulting poverty rates from the measure alongside existing state-level estimates. OPM rates are lower than both the official SPM and Colorado Poverty Measure rates in each year, likely reflecting the lower thresholds and the absence of geographic adjustments for differences in cost of living in Colorado. The Colorado Poverty Measure rates are somewhat higher than the pooled official SPM estimates available for 2022 and 2023. Because official state-level SPM estimates pool three years of data, these estimates are affected by abnormal years after the COVID 19 pandemic. This comparison highlights the value of annual Colorado Poverty Measure estimates, which are not affected by preceding years.

Table 2. Comparing poverty rates under different measures, 2022 - 2024

Year	Annual OPM Rate in the ACS	Three-Year Pooled SPM Rate in the CPS ASEC	Annual Colorado Poverty Measure Rate
2022	8.5	9.4	10.4
2023	8.2	10.3	10.7
2024	8.1	N/A	11.0

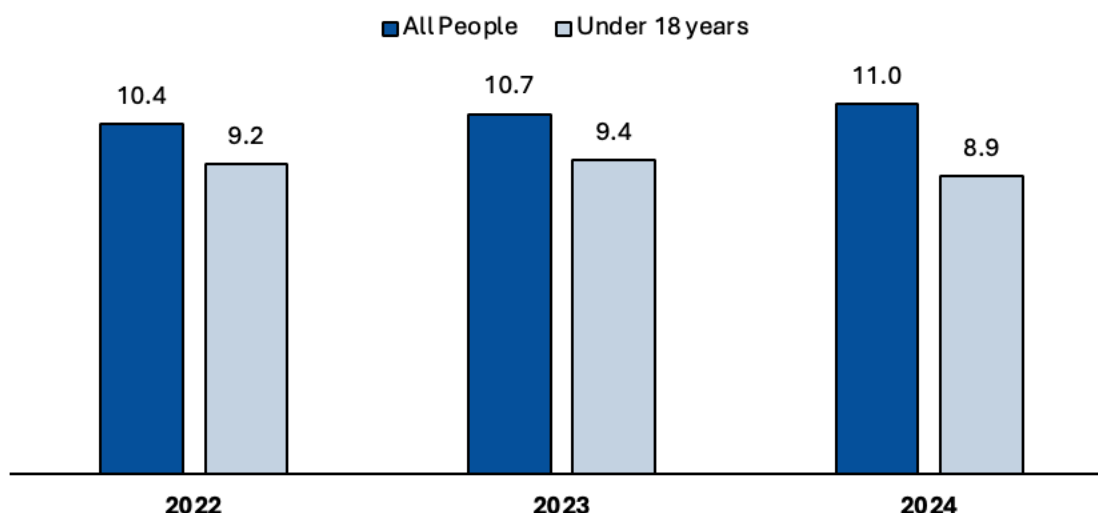
Note: Official SPM rates are three-year pooled estimates centered on the reference year. For example, the 2022 SPM rate uses data representative of 2021, 2022, and 2023. A pooled official SPM rate for 2024 is therefore not yet available because data for 2025 have not yet been released.

Source: OPM rates are estimated from American Community Survey (ACS) microdata. Official Supplemental Poverty Measure (SPM) rates are from the Census Bureau's annual Current Population Reports on poverty in the United States. Colorado Poverty Measure estimates are produced by the Center on Poverty and Social Policy using augmented ACS (U.S. Census Bureau, 2022, 2023, 2024a) and IPUMS USA data (Ruggles et al., 2025), and are subject to revision as methodological improvements are made.

4.2 Poverty Rates Over Time and Across Counties

Figure 1 presents annual Colorado Poverty Measure rates for all people and children from 2022 to 2024. Overall poverty in Colorado increased from 10.4 percent in 2022 to 11.0 percent in 2024. Table 3 provides the corresponding number of people and children in poverty over the same time period. Approximately 596,000 people were in poverty in 2022, increasing to 617,000 in 2023 and 643,000 in 2024.

Figure 1. Percent of people below poverty using the Colorado Poverty Measure, all people and children under age 18, 2022 - 2024



Note: Estimates show the percent of people below poverty using the Colorado Poverty Measure. For corresponding number estimates and estimates for additional age groups, see Appendix Table A.2.

Source: Estimates are produced by the Center on Poverty and Social Policy using augmented American Community Survey (U.S. Census Bureau, 2022, 2023, 2024a) and IPUMS USA data (Ruggles et al. 2025), and are subject to revision as methodological improvements are made.

Table 3. Number and percent of people below poverty using the Colorado Poverty Measure, 2022 - 2024

Year	All People		Under 18 years	
	Number Below Poverty	Percent Below Poverty	Number Below Poverty	Percent Below Poverty
2022	596,000	10.4	112,000	9.2
2023	617,000	10.7	113,000	9.4
2024	643,000	11.0	107,000	8.9

Note: Estimates are rounded to the nearest thousand, and percentages are rounded to one decimal place. For estimates for additional age groups, see Appendix Table A.2.

Source: Estimates are produced by the Center on Poverty and Social Policy using augmented American Community Survey (U.S. Census Bureau, 2022, 2023, 2024a) and IPUMS USA data (Ruggles et al. 2025), and are subject to revision as methodological improvements are made.

Child poverty followed a somewhat different pattern, declining from 9.2 percent in 2022 to 8.9 percent in 2024. This differs from national trends, where child poverty increased from 12.0 percent to 13.4 percent over the same period (Shrider and Bijou, 2025; Creamer, 2026)³. These diverging state and national trends highlight the potential role of state-specific policies in tempering child poverty in Colorado, further emphasizing the need for a state-specific measure that accurately accounts for the state's policy efforts.

Figure 2 presents pooled county-level Colorado Poverty Measure rates from 2022 to 2024. These estimates illustrate another key benefit of building the Colorado Poverty Measure from the ACS: the larger underlying sample makes it possible to examine variation in poverty within the state, including variation within metropolitan and nonmetropolitan regions.

The map shows meaningful geographic variation, with county poverty rates ranging from approximately 6 percent to 15 percent over the 2022 to 2024 period. Higher poverty rates appear in Denver and Boulder Counties, as well as in several mountain and southern counties, while lower rates appear in Douglas County and portions of the Front Range and Western Slope. These patterns should be interpreted with appropriate caution,⁴ particularly in smaller and less populous counties, but they demonstrate how the Colorado Poverty Measure can help identify geographic differences in economic need across the state.

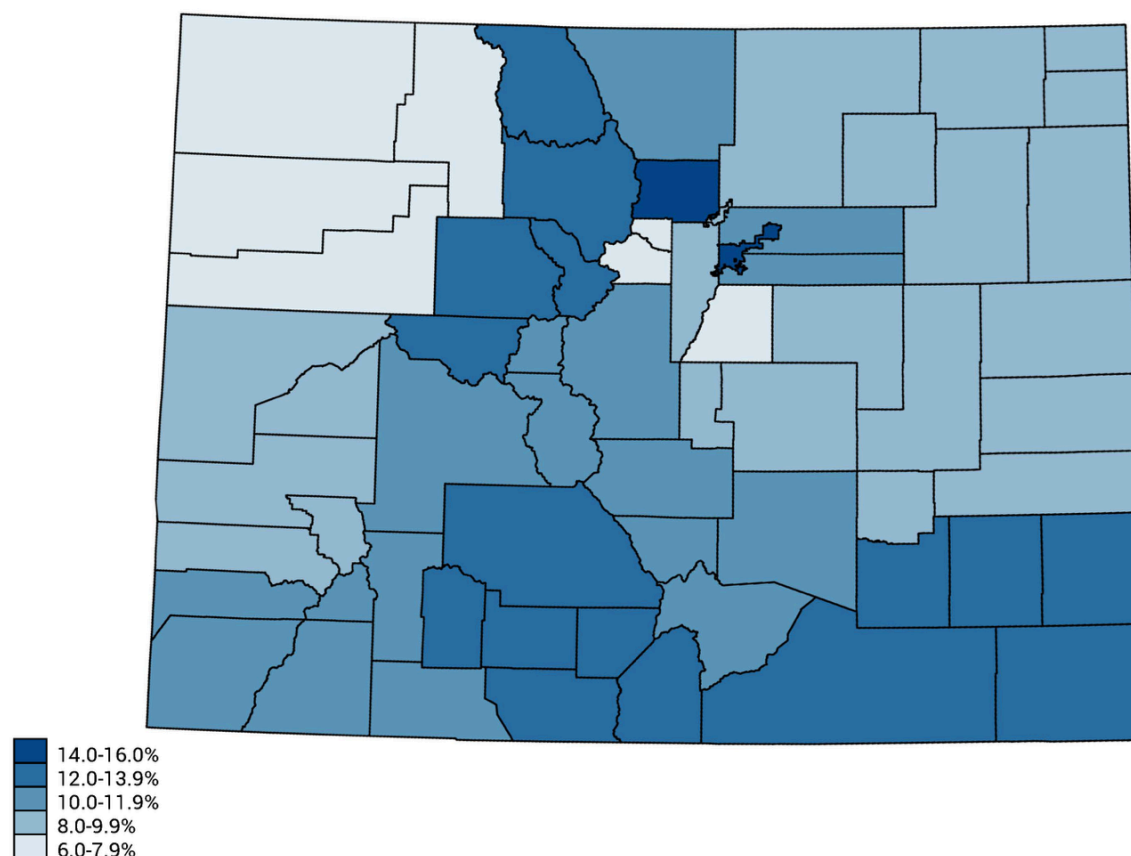
4.3 Poverty-Reducing Effect of Selected Safety Net Programs

The estimates in Table 4 isolate the marginal poverty-reducing effect of each selected program while holding all other resources in the Colorado Poverty Measure constant. In other words, each counterfactual removes one program at a time from family resources, makes no assumptions about other changes, and preserves the status quo safety net. This approach makes it possible to assess the role of each program conditional on the other programs, benefits, and tax credits families may already receive. This distinction is important because the existing safety net determines how close families are to the poverty threshold, which in turn affects the measured poverty-reducing effect of any single program.

³ Shrider and Bijou (2025) report the originally published national SPM estimates, while Creamer (2026) provides updated estimates incorporating corrected poverty thresholds released by the Bureau of Labor Statistics. Although estimates using the corrected thresholds differ from those reported in Shrider and Bijou (2025), national trends remain consistent.

⁴ As discussed in Section 3.2, counties cannot be directly observed in the ACS. County estimates are therefore produced by allocating PUMA-level observations to overlapping counties using geographic allocation factors. This limitation is particularly important for smaller counties and counties that make up only a small share of the PUMA or PUMAs with which they overlap.

Figure 2. Colorado Poverty Measure rates by county, 2022 - 2024



Note: County estimates are based on pooled 2022–2024 American Community Survey (ACS) data. The statewide Colorado Poverty Measure rate over this period was 10.7 percent. Because counties cannot be directly identified in the ACS, PUMA-level observations are allocated to counties using a geographic crosswalk from the University of Missouri’s Geocorr application (2022). See Appendix Table A.3 for county-level poverty rates and Appendix Table A.1 for poverty thresholds by county and tenure.

Source: Estimates are produced by the Center on Poverty and Social Policy using augmented American Community Survey (U.S. Census Bureau, 2022, 2023, 2024a) and IPUMS USA data (Ruggles et al. 2025), and are subject to revision as methodological improvements are made.

These estimates also illustrate the importance of the measure’s state-specific refinements. By calibrating the ACS to better approximate observed participation and spending, the Colorado Poverty Measure aligns the survey data with what is observed from administrative data. Understating or incorrectly capturing existing benefits can misstate the extent of economic need, the effect of current programs, and the likely effect of new policy proposals. Incorporating these refinements therefore provides a more accurate basis for evaluating programs as part of Colorado’s broader safety net.

Among the selected programs shown in Table 4, all of which were refined using state-level administrative data, SNAP has the largest estimated poverty-reducing effect, keeping

approximately 37,000 Coloradans out of poverty in 2024, including approximately 12,000 children. School lunch benefits, which were expanded through Colorado’s Healthy School Meals for All program, also play an important role, keeping approximately 8,000 people out of poverty, including 4,000 children. Energy subsidies, TANF, and WIC have relatively smaller aggregate effects, but remain important components of the safety net for the families who receive them.

Table 4. Poverty-reducing effect of selected social safety net programs under the Colorado Poverty Measure, 2024

Program	Number of People Kept Out of Poverty	Number of Children Kept Out of Poverty
TANF	3,000	1,000
Energy Assistance	4,000	1,000
WIC	4,000	2,000
School Lunch Benefits	8,000	4,000
SNAP	37,000	12,000

Note: Counts of people in poverty are rounded to the nearest thousand. Children are defined as individuals under age 18. In 2024, approximately 643,000 people in Colorado were in poverty under the Colorado Poverty Measure, including approximately 107,000 children. Estimates are calculated separately for each program and should not be summed across programs. Note that benefits targeted toward children may still reduce poverty for adults given that all income and resources are assumed to be shared within the poverty unit, or family.

Source: Estimates are produced by the Center on Poverty and Social Policy using augmented American Community Survey (U.S. Census Bureau, 2022, 2023, 2024a) and IPUMS USA data (Ruggles et al. 2025), and are subject to revision as methodological improvements are made.

Although some benefits, such as WIC and school lunch, are assigned to specific recipients, their poverty-reducing effect is measured at the poverty unit level. These benefits, traditionally targeted towards children, can still reduce poverty for adults given that all income and resources are assumed to be shared within the poverty unit or family.

5 APPLICATIONS, SCOPE AND RELATIONSHIPS TO OTHER MEASURES

Having described the methodological approach and the major components of the Colorado Poverty Measure, this section focuses on its practical applications. We discuss how the measure can be used to monitor economic need, simulate proposed policy changes, and inform stakeholders designing, implementing, or evaluating policies in Colorado.

5.1 What the Colorado Poverty Measure Can Do

The Colorado Poverty Measure is designed to serve as an ongoing data asset for understanding economic need and informing policy in Colorado. Rather than producing only a one-time estimate of poverty, the measure can be updated, refined, and used over time for program evaluation and policy analysis. Because the measure accounts for income, benefits, taxes,

necessary expenses, and local housing costs, it can help stakeholders understand how multiple parts of the safety net interact to shape family resources.

As a monitoring tool, the Colorado Poverty Measure can be used to track poverty over time, assess the reach and poverty-reducing effect of existing programs, and identify gaps between measured need and available support. Where sample size allows, the measure can also support geographic and subgroup analyses, helping stakeholders better understand how poverty and program effects differ across families, communities, and demographic groups. These analyses can help identify where existing supports appear most or least effective and where additional resources may be needed.

The measure can also be used as a policy simulation tool. Once a baseline measure is constructed, analysts can modify specific policy rules, benefit levels, eligibility thresholds, tax credit designs, or participation assumptions to estimate how proposed changes may affect poverty, disposable resources, and public costs. This makes it possible to compare alternative policy designs within a common framework, including how different proposals compare in terms of cost and poverty reduction. It also allows proposed reforms to be evaluated as part of Colorado's broader safety net, rather than in isolation.

In practice, this framework can help answer questions that arise during program evaluation, policy design, and assessments of public cost. For example, the measure can be used to estimate how a change in a refundable tax credit would affect poverty, how expanded eligibility for a benefit program would affect family resources, how increased participation in an existing program could change measured need, or how reduced child care costs would affect families with children. The Colorado Poverty Measure could also help identify which families would benefit from a proposed reform, whether benefits would reach families in deep poverty or families closer to the poverty line, and how alternative policy designs would compare in terms of both poverty reduction and public cost.

5.2 Relationship to Other Measures of Economic Need

The central contribution of the Colorado Poverty Measure is that it provides a clear framework for comparing current income, benefits, taxes, necessary expenses, and local costs to a defined poverty threshold. By placing families in relation to this threshold, the measure can show not only whether families are above or below the poverty line, but also the depth of poverty among families below it and the extent to which existing or proposed policies move families closer to, or above, the poverty line. The measure is therefore especially useful for evaluating and quantifying how current policies and proposed reforms affect disposable resources and, in turn, poverty.

The Colorado Poverty Measure captures the state's current economic and policy environment and can be used to simulate alternative policies that may affect the prevalence and depth of poverty. However, the measure is not designed to fully assess what it costs for families to make ends meet or to capture broader concepts of need beyond the basic necessities reflected in the

poverty threshold. The measure is also not designed to assess what families need for longer term economic security, resilience, or intergenerational mobility.

Other measures answer these different but complementary questions. For example, the Self-Sufficiency Standard for Colorado (Kucklick, Manzer, and Mast, 2022) and United Way's ALICE measure are better suited for asking what income families need to meet basic needs without public or private assistance, based on family composition and county of residence. Meanwhile, the Aspen Institute's Essential Wealth metric (Brown and Melford, 2026) is better suited for asking what level of savings and net worth families need for financial resilience, investment in appreciating assets, and longer-term security. Used alongside these tools, the Colorado Poverty Measure can help give Colorado stakeholders a richer picture of economic need than any single measure could provide on its own.

6 LIMITATIONS AND FUTURE WORK

The Colorado Poverty Measure is intended to provide a transparent and reproducible framework for measuring poverty and evaluating policy in Colorado, and the accompanying documentation is meant to make the construction of the measure clear to users. Nevertheless, like any measure built from survey data, even when supplemented with administrative data, there are limitations. These limitations do not undermine the usefulness of the measure, but they do shape how estimates should be interpreted and what refinements would be most valuable in future work.

A key measurement limitation is that the ACS does not directly observe many of the components needed to construct an SPM-style poverty measure. The Colorado Poverty Measure uses data from the CPS ASEC to inform imputations of resource components that are not available in the ACS. As a result, the quality of the measure depends in part on the quality of the source data and the assumptions used to fill these gaps. In addition, even with the larger sample size of the ACS, sample size constraints and measurement error remain, particularly for small geographic areas and narrowly defined demographic subgroups that may be imprecisely captured in the survey. Analyses focused on these smaller populations may therefore require pooling multiple years of ACS data, which provides an average picture over the pooled period rather than a single year estimate.

Another limitation concerns the administrative data used to refine estimates of safety net participation and spending in Colorado. These refinements rely on administrative benchmarks being consistently available over time and reported at a level of detail that can be aligned with the ACS. The Colorado Poverty Measure draws on administrative data from several sources across five state organizations. If these organizations are no longer able to produce or publish the estimates used in the measure, or if the level of detail changes over time, our ability to anchor the microdata to known external benchmarks becomes more limited.

Although the administrative data used in the measure help align survey estimates with known program totals, they do not capture all dimensions of participation needed to fully measure

annual family resources, including the length of benefit receipt and changes in benefit amounts over the course of the year. For example, neither the ACS nor the CPS ASEC microdata include information on the number of months a family received a benefit across all programs or the exact individuals covered by benefits. The Colorado Poverty Measure therefore relies on program rules and assumptions to define these dimensions of participation but lacks administrative benchmarks that could be used to validate or refine those assumptions.

These limitations point to valuable areas for future work. More consistent administrative benchmarks, better information on annual program participation, benefit duration, and program unit composition, and continued validation against external totals would all strengthen future versions of the measure. The structure of the Colorado Poverty Measure can easily accommodate these refinements if better administrative data become available or as Colorado's policy environment changes. However, the quality of the measure, particularly its state-specific refinements, relies on continued access and the reliable publication of administrative data. Further work could also include building stronger relationships with state agencies to support consistent data access and improve any future refinements of the measure.

7 CONCLUSION

The Colorado Poverty Measure is a nuanced, state-specific tool for measuring poverty and supporting policy analysis in Colorado. The measure adapts the logic of the national SPM to the state context by augmenting the larger annual sample size of the ACS with imputed and calibrated components of the SPM resource measure, including in kind benefits and tax credits. These components are refined by aligning survey-based estimates with state administrative benchmarks, applying Colorado-specific policy rules, and incorporating state-specific customizations.

Rather than replacing existing measures of economic wellbeing, the Colorado Poverty Measure serves as a supplementary tool for assessing how policies and local costs shape poverty across the state. It should therefore be understood as part of a broader measurement toolkit, alongside measures of self-sufficiency, economic wellbeing, resilience, and opportunity for mobility. The documentation in this paper shows how each component of the measure can be constructed using established poverty measurement methods and refined where Colorado-specific data, policies, or administrative benchmarks allow for state-specific customization.

The initial Colorado Poverty Measure estimates presented in this paper demonstrate the value of the measure as a tool for descriptive and policy analysis. The results show how the measure can be used to produce annual poverty estimates, examine poverty across specific demographic groups and counties, and quantify the poverty-reducing effect of selected safety net programs. These estimates are not intended to be exhaustive. Rather, they illustrate the types of analyses the measure can support for understanding the current social safety net and evaluating potential future policy changes.

Like any measure built from survey data and administrative benchmarks, the Colorado Poverty Measure depends on the quality, consistency, and availability of the data used to construct it. Future refinements would be strengthened by more detailed administrative benchmarks, better information on annual program participation, benefit duration, and program unit composition, and continued access to reliable administrative data. The structure of the measure is designed to accommodate improvements over time, as well as future policy simulations that could affect poverty in Colorado. The Colorado Poverty Measure should therefore be understood not only as a set of baseline estimates, but as an ongoing data asset that can help Colorado monitor economic need, evaluate existing programs, and support more informed policy decisions.

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The Center on Poverty and Social Policy at Columbia University School of Social Work produces actionable research to advance our understanding of poverty and the role of social policy in reducing poverty and promoting economic security, opportunity, and well-being in New York City and the United States. For the center's latest work and policy briefs, visit povertycenter.columbia.edu. Email at cpssp@columbia.edu. Sign up for [research updates](#). Follow on [LinkedIn](#) and [Bluesky](#).

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APPENDIX

Table A.1 County-level poverty thresholds from 2022 - 2024

County	Renters			Owners with a mortgage			Owners without a mortgage		
	2022	2023	2024	2022	2023	2024	2022	2023	2024
Adams	39,313	43,071	45,627	39,073	42,652	45,563	31,713	34,092	36,808
Alamosa	28,943	31,713	33,400	28,860	31,593	33,479	25,182	27,277	29,310
Arapahoe	40,012	43,875	45,981	39,761	43,435	45,914	32,153	34,574	37,025
Archuleta	33,332	36,736	39,428	33,182	36,484	39,436	27,946	30,291	33,006
Baca	28,943	31,713	33,400	28,860	31,593	33,479	25,182	27,277	29,310
Bent	29,751	32,121	33,339	29,655	31,991	33,418	25,691	27,522	29,273
Boulder	41,278	44,456	46,433	41,008	44,001	46,361	32,951	34,923	37,302
Broomfield	43,328	47,166	49,013	43,027	46,639	48,911	34,241	36,549	38,884
Chaffee	32,428	35,783	37,264	32,292	35,557	37,297	27,377	29,720	31,679
Cheyenne	29,703	32,245	33,584	29,608	32,111	33,660	25,660	27,597	29,423
Clear Creek	39,204	44,728	45,406	38,966	44,266	45,346	31,644	35,086	36,673
Conejos	28,943	31,713	33,400	28,860	31,593	33,479	25,182	27,277	29,310
Costilla	28,943	31,713	33,400	28,860	31,593	33,479	25,182	27,277	29,310
Crowley	29,703	32,245	33,584	29,608	32,111	33,660	25,660	27,597	29,423
Custer	32,464	35,783	37,264	32,327	35,557	37,297	27,399	29,720	31,679
Delta	31,379	34,163	34,806	31,259	33,978	34,868	26,716	28,747	30,172
Denver	40,711	44,753	46,764	40,450	44,290	46,687	32,594	35,101	37,505
Dolores	33,332	36,736	39,428	33,182	36,484	39,436	27,946	30,291	33,006
Douglas	43,026	46,535	48,732	42,730	46,025	48,633	34,052	36,170	38,712
Eagle	41,375	45,013	45,688	41,103	44,543	45,624	33,011	35,257	36,845
El Paso	36,154	39,866	42,191	35,961	39,532	42,168	29,723	32,169	34,701
Elbert	38,637	39,421	38,303	38,408	39,098	38,325	31,287	31,902	32,317
Fremont	32,428	35,783	37,264	32,292	35,557	37,297	27,377	29,720	31,679
Garfield	34,236	37,924	40,455	34,073	37,641	40,452	28,516	31,004	33,636
Gilpin	39,204	44,728	45,406	38,966	44,266	45,346	31,644	35,086	36,673
Grand	41,375	45,013	45,688	41,103	44,543	45,624	33,011	35,257	36,845
Gunnison	33,332	36,736	39,428	33,182	36,484	39,436	27,946	30,291	33,006
Hinsdale	33,332	36,736	39,428	33,182	36,484	39,436	27,946	30,291	33,006
Huerfano	32,428	35,783	37,264	32,292	35,557	37,297	27,377	29,720	31,679
Jackson	41,375	45,013	45,688	41,103	44,543	45,624	33,011	35,257	36,845
Jefferson	39,385	43,170	45,064	39,144	42,748	45,007	31,758	34,151	36,463
Kiowa	29,703	32,245	33,584	29,608	32,111	33,660	25,660	27,597	29,423
Kit Carson	29,703	32,245	33,584	29,608	32,111	33,660	25,660	27,597	29,423
La Plata	33,332	36,736	39,428	33,182	36,484	39,436	27,946	30,291	33,006
Lake	32,428	35,783	37,264	32,292	35,557	37,297	27,377	29,720	31,679
Larimer	37,396	40,547	42,215	37,184	40,194	42,192	30,505	32,577	34,716
Las Animas	28,943	31,713	33,400	28,860	31,593	33,479	25,182	27,277	29,310
Lincoln	29,703	32,245	33,584	29,608	32,111	33,660	25,660	27,597	29,423
Logan	29,703	32,245	33,584	29,608	32,111	33,660	25,660	27,597	29,423
Mesa	31,029	33,915	35,760	30,914	33,738	35,811	26,496	28,599	30,757
Mineral	28,943	31,713	33,400	28,860	31,593	33,479	25,182	27,277	29,310
Moffat	34,236	37,924	40,455	34,073	37,641	40,452	28,516	31,004	33,636
Montezuma	33,332	36,736	39,428	33,182	36,484	39,436	27,946	30,291	33,006
Montrose	31,379	34,163	34,806	31,259	33,978	34,868	26,716	28,747	30,172
Morgan	29,703	32,245	33,584	29,608	32,111	33,660	25,660	27,597	29,423

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Otero	28,943	31,713	33,400	28,860	31,593	33,479	25,182	27,277	29,310
Ouray	31,379	34,163	34,806	31,259	33,978	34,868	26,716	28,747	30,172
Park	32,464	35,783	37,264	32,327	35,557	37,297	27,399	29,720	31,679
Phillips	29,703	32,245	33,584	29,608	32,111	33,660	25,660	27,597	29,423
Pitkin	41,375	45,013	45,688	41,103	44,543	45,624	33,011	35,257	36,845
Prowers	28,943	31,713	33,400	28,860	31,593	33,479	25,182	27,277	29,310
Pueblo	31,379	34,373	35,870	31,259	34,183	35,920	26,716	28,873	30,825
Rio Blanco	34,236	37,924	40,455	34,073	37,641	40,452	28,516	31,004	33,636
Rio Grande	28,943	31,713	33,400	28,860	31,593	33,479	25,182	27,277	29,310
Routt	34,236	37,924	40,455	34,073	37,641	40,452	28,516	31,004	33,636
Saguache	28,943	31,713	33,400	28,860	31,593	33,479	25,182	27,277	29,310
San Juan	33,332	36,736	39,428	33,182	36,484	39,436	27,946	30,291	33,006
San Miguel	31,379	34,163	34,806	31,259	33,978	34,868	26,716	28,747	30,172
Sedgwick	29,703	32,245	33,584	29,608	32,111	33,660	25,660	27,597	29,423
Summit	41,375	45,013	45,688	41,103	44,543	45,624	33,011	35,257	36,845
Teller	38,589	42,539	43,597	38,360	42,134	43,557	31,257	33,772	35,563
Washington	29,703	32,245	33,584	29,608	32,111	33,660	25,660	27,597	29,423
Weld	34,369	37,924	39,941	34,204	37,641	39,944	28,599	31,004	33,321
Yuma	29,703	32,245	33,584	29,608	32,111	33,660	25,660	27,597	29,423

Source: Estimates are produced by the Center on Poverty and Social Policy using augmented American Community Survey (U.S. Census Bureau, 2022, 2023, 2024a) and IPUMS USA data (Ruggles et al. 2025), and are subject to revision as methodological improvements are made. Following the SPM methodology, five-year ACS data for 2018-2022, 2019-2023, and 2020-2024 were used to calculate geographic adjustments for the 2022, 2023, and 2024 thresholds, respectively. Because Public Use Microdata Areas (PUMAs) are the smallest geographic areas identifiable in the ACS Public Use Microdata Sample, the Colorado Poverty Measure thresholds shown above were first estimated at the PUMA level and then allocated to counties using geographic crosswalks from the Missouri Census Data Center's Geocorr tool.

Table A.2. Number and percent of people below poverty using the Colorado Poverty Measure by age group, 2022 - 2024

Age Group	Year	Number Below Poverty	Percent Below Poverty
All People	2022	596,000	10.4
	2023	617,000	10.7
	2024	643,000	11.0
Under 18 years	2022	112,000	9.2
	2023	113,000	9.4
	2024	107,000	8.9
18 to 64 years	2022	374,000	10.4
	2023	372,000	10.3
	2024	402,000	11.0
65 years and older	2022	111,000	12.4
	2023	132,000	14.3
	2024	134,000	14.1

Note: Estimates are rounded to the nearest thousand, and percentages are rounded to one decimal place.

Source: Estimates are produced by the Center on Poverty and Social Policy using augmented American Community Survey (U.S. Census Bureau, 2022, 2023, 2024a) and IPUMS USA data (Ruggles et al. 2025), and are subject to revision as methodological improvements are made.

Table A.3 County poverty rates under the Colorado Poverty Measure, 2022 - 2024

County or County Group	Percent Below Poverty
Adams	11.1
Alamosa, Baca, Bent, Conejos, Costilla, Las Animas, Mineral, Otero, Prowers, Rio Grande, Saguache	13.8
Arapahoe	11.7
Archuleta, Dolores, Gunnison, Hinsdale, La Plata, Montezuma, San Juan	11.1
Boulder	14.2
Broomfield	8.4
Chaffee, Custer, Fremont, Huerfano, Lake, Park	10.8
Cheyenne, Crowley, Elbert, Kiowa, Kit Carson, Lincoln, Logan, Morgan, Phillips, Sedgwick, Washington, Yuma	9.2
Clear Creek, Gilpin	6.8
Delta, Montrose, Ouray, San Miguel	9.6
Denver	14.6
Douglas	6.3
Eagle, Grand, Jackson, Pitkin, Summit	13.8
El Paso	8.5
Garfield, Moffat, Rio Blanco, Routt	8.0
Jefferson	9.0
Larimer	11.7
Mesa	9.8
Pueblo	11.5
Teller	9.2
Weld	9.3

Note: County estimates are based on pooled 2022–2024 American Community Survey (ACS) data. Estimates are rounded to one decimal place. Because counties cannot be directly identified in the ACS, PUMA-level observations are allocated to counties using a geographic crosswalk from Geocorr (Missouri Census Data Center, 2022). As a result, some counties that are contained entirely within the same PUMA may receive the same estimated poverty rate and are grouped together in this table.

Source: Estimates are produced by the Center on Poverty and Social Policy using augmented American Community Survey (U.S. Census Bureau, 2022, 2023, 2024a) and IPUMS USA data (Ruggles et al. 2025), and are subject to revision as methodological improvements are made.

Table A.4. Poverty-reducing effect of selected social safety net programs under the Colorado Poverty Measure, 2024

Panel A. All People		
Reduction in Poverty	Percentage Point	Number
from TANF	0.1	3,000
from Energy Assistance	0.1	4,000
from WIC	0.1	4,000
from School Lunch	0.1	8,000
from SNAP	0.6	37,000
Panel B. Under 18 Years		
Reduction in Poverty	Percentage Point	Number
from TANF	0.1	1,000
from Energy Assistance	0.1	1,000
from WIC	0.2	2,000
from School Lunch	0.4	4,000
from SNAP	1.0	12,000

Note: Counts of people in poverty are rounded to the nearest thousand, and percentages are rounded to one decimal place. Children are defined as individuals under age 18. In 2024, approximately 643,000 people in Colorado were in poverty under the Colorado Poverty Measure, including approximately 107,000 children. Estimates are calculated separately for each program and should not be summed across programs. Because benefits targeted toward children, such as school meals, increase or “free up” resources available to the entire family, these programs may reduce poverty among adults living with children.

Source: Estimates are produced by the Center on Poverty and Social Policy using augmented American Community Survey (U.S. Census Bureau, 2022, 2023, 2024a) and IPUMS USA data (Ruggles et al. 2025), and are subject to revision as methodological improvements are made.