

EXHIBIT 2.1 Statistical Terminology for Redistricting

This table provides information on formulas for statistical terminology used in the redistricting process.

REDISTRICTING GOAL		
Ideal district population	= state population / number of districts	EXAMPLE: 10,000 population/10 districts = 1,000 ideal district population
INDIVIDUAL DISTRICTS		
Absolute deviation (sometimes referred to as “raw deviation”)	= district population – ideal population	EXAMPLE: 975 district population-1,000 ideal population = -25 absolute deviation
Relative deviation (sometimes referred to as “percent deviation”)	= absolute deviation / ideal population	EXAMPLE: -25 absolute deviation/1,000 ideal population = -0.025 or -2.5% relative deviation
ALL DISTRICTS		
Mean deviation* (also called “average deviation”)	= sum of all deviations / number of districts	EXAMPLE: -2.5 deviation + 1.5 deviation + 1.0 deviation = 5.0/3 districts = 1.67 mean deviation
Deviation range* (also called “overall range”)	= largest positive deviation and largest negative deviation in a plan	EXAMPLE: -2.5% largest negative deviation and 1.5% largest positive deviation = deviation range
Overall range* (also called “total deviation”)	= largest positive deviation + largest negative deviation (ignoring + or – signs)	EXAMPLE: -2.5 largest negative deviation + 1.5 largest positive deviation = 4.0% total deviation

*Can be “absolute” (“raw number”) or “relative” (percentage)

Source: NCSL 2019

Mean deviation. The “absolute mean deviation” of a set of districts from the ideal is equal to the sum of the absolute deviations of all the districts divided by the total number of districts. The “relative mean deviation” is equal to the sum of the individual district relative deviations divided by the total number of districts.

Overall range. Perhaps the most commonly used measure of population equality or inequality of all districts in a plan is “overall range,” which again can be expressed in absolute or relative terms. The “range” is a statement of the population deviations of the most populous district and the least populous district, expressed in either absolute or relative terms. The “overall range” is the difference in population between the largest and the smallest districts, expressed either as a percentage or as the number of people. Although courts normally measure a plan using the statistician’s “overall range,” they almost always call it something else, such as “maximum deviation.”¹⁷

None of the foregoing measures provides a complete picture of the degree of population equality or inequality, and perhaps several measures should be used in evaluating any set of districts. (For example,