

## **San Joaquin County Supervisorial Redistricting What is the "Minimum Majority" Measure?**

### Background:

The overall goal of redistricting is to establish well-balanced districts with nearly equal populations, ensuring that each citizen is equally represented by a Board member.

There are a number of statistical tests to measure the population balance. The most straightforward measure is to consider the deviation from an "ideal" population. Given the total population of the County, and given a fixed number of 5 Supervisorial Districts, the "ideal" population per Supervisorial District is simply:  $TotalPopulation/5$ .

The difference between any individual District's population and that ideal population may be measured as a percentage.

The difference in population between the largest and smallest District may also be measured as a percentage against the ideal population.

The criteria historically used by San Joaquin County is:

- any individual district *should not* deviate by >1% from ideal
- overall range *should not* deviate by >5% from ideal
- overall range *must not* deviate by >10% from ideal

*(note that local redistricting criteria are not required to be as stringent as federal)*

### Minimum Majority:

"Minimum Majority" is just another measure of the equal distribution of population.

What it aims to ensure: Since any three Supervisorial Districts constitute a voting majority of the Board, any three Supervisorial Districts should also represent a voting majority of the population.

In practical terms this means that the sum of populations from the smallest three districts must account for >50% of the total population.

Imagine, for the sake of simplicity, a total population of 500000. The ideal population per District would thus be 100000. If all Districts were able to perfectly attain the ideal population, then the smallest sum of any three Districts would be 300000 - which exceeds 250000 (50% of 500000).

Now imagine a poor match to the ideal population - by allowing the overall range to deviate by a full 10% from ideal. Imagine District populations of 95000, 95000, 100000, 105000, 105000. The total range, the difference between largest 105000 and smallest 95000 is 10000, or 10% of ideal. The sum of the three smallest Districts is 290000, which still exceeds 250000 (50% of 500000).

The Minimum Majority criteria is essentially impossible to violate in cases where the total number of Districts is small, as with the 5 Supervisorial Districts in SJC, unless drastically large deviations from ideal are allowed. (It is of more concern where a large numbers of Districts are involved - for example, with California's 80 current Assembly Districts.)

***So... Note that if all of the initial criteria limiting the deviation from ideal are followed, then it will be impossible to violate the Minimum Majority criteria, and it may be safely ignored as a separate concern.***