

Nebraska Legislative and Congressional District Population Analysis

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1 Summary and Conclusion

Population distribution changes since 2021 have magnified the malapportionment between urban and rural Nebraska Legislative Districts present in the 2021 legislative redistricting. According to the most recent Census Bureau population estimates, 22 of 25 urban districts are over equal apportionment while 16 of 24 rural districts are under equal apportionment.

Population distribution changes since 2021 have changed the equal apportionment among the 3 congressional districts to unequal apportionment with District 1 and District 2 approaching the allowable +2% deviation from equal apportionment.

The goal of this summary is to call attention to the malapportionment between urban and rural Nebraska Legislative Districts present in the 2021 legislative redistricting which is now becoming even more pronounced. The motive behind the report is to promote proactive equality and fairness in any further redistricting, including the next scheduled cycle in 2030 and even before.

2 Nebraska Legislative District 2023 Population Analysis

This analysis is based on the May 14, 2024 Census Bureau population estimates for 2023.

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- The 2020 population census for Nebraska is 1,961,965
- The 2023 population *estimate* for Nebraska is 1,978,379
- The population gain from the 2020 Census to the 2023 estimate is 16,414.

3 Urban and Rural Legislative Districts

The analysis considers Legislative Districts with a population density greater than 500 persons per square mile to be urban districts. Legislative Districts with a population density less than 500 persons per square mile are considered as rural districts.

1. Then there are 25 urban districts for this analysis
 - (a) There are 14 urban districts within the boundary of Douglas County 4,5,6,7,8,9,10,11,12,13,18, 20, 31, 39
 - (b) There are 4 urban districts within the boundaries of Sarpy County 3, 14, 45, 49
 - (c) There are 6 urban districts within the city of Lincoln 25, 26, 27, 28, 29, 46
 - (d) There is the single district comprising the city of Grand Island 35
2. There are 24 rural districts
3. Why 500 persons per square mile? The population density of at least 500 persons per square is chosen because it neatly captures exactly the Nebraska Legislative Districts in Douglas, Lancaster and Sarpy Counties, along with the district for Grand Island. Common usage refers to these districts as urban districts. The official Census Bureau definition of an urban area means that the area has a population density of at least 1000 persons per square mile.

However, that Census Bureau definition of 1000 person per square mile would exclude some districts like District 13 in north Omaha. This clearly urban area has a population density of about 793 persons per square mile. The land area of District 13 includes the Omaha water

and power utilities, industrial and warehouse sites, and the Omaha airport which reduce the calculated population density below the Census Bureau figure. Using instead 500 persons per square mile characterizes this district as urban, as common usage would indicate.

4 Population Gains and Losses for Districts

1. From the 2020 Census to the 2023 Estimate
 - (a) 13 rural districts gained population
 - (b) 11 rural districts lost population
 - (c) The net population gain for the 24 rural districts was 1,183 persons
 - (d) 24 urban districts gained population
 - (e) 1 urban district lost population (District 35, Grand Island)
 - (f) The net population gain for the 25 urban districts was 15,238 persons

5 Equal Apportionment

The equal apportionment value for Legislative Districts based on 2023 population is 40,435

1. 19 of the Legislative Districts are under equal apportionment
 - (a) 3 of the districts under equal apportionment are Urban
 - (b) 16 of the districts under equal apportionment are Rural
2. As of the 2023 population estimates, 30 Legislative Districts are over equal apportionment
 - (a) 22 of the districts over equal apportionment are Urban
 - (b) 8 of the districts over equal apportionment are Rural
3. One district, specifically District 14 (Sen. Arch) in Sarpy County, has 42,848 persons This is approximately 6% above the equal apportionment value of 40435. This is greater than the intended 5% deviation from equal apportionment.

6 Congressional District Populations

The following table gives the 2020 and estimated 2023 populations of the 3 Nebraska Congressional Districts, along with the estimated population change over the 3 year period. The final column gives the percentage by which the Congressional District differs from equal apportionment.

CD	CDPOP2020	CDPOP2023	POPCHANGE	PERCENT
1	653822	666186	12364	1.89
2	653847	662331	8484	1.3
3	653835	649409	-4426	-0.68

7 Data Analysis Method

Starting from May 14, 2024 Census Bureau county population estimates for 2023, the proportional population change for each county was distributed over the 2020 Census Blocks contained within that county. This assumes that each Census Block experienced the same proportional population change as its containing county. (Each Census Block is wholly contained within some county, so county total changes will remain the same.) Then using the split-apply-combine data analysis process, the Census Blocks were re-aggregated into the respective Legislative Districts and Congressional Districts.

8 Graphics for Legislative Districts versus Population

Two graphics illustrating legislative district versus population follow. Each illustrates the same data, but one is presented vertically, the other other horizontally. Sometimes it is easier to interpret one rather over another, the reader can choose.

- Horizontal axis is Legislative District sorted by increasing 2023 population estimate.
- Vertical axis is population.
- Orange circle markers and stems are urban districts (with population density > 500 per square mile).

- Purple circle markers and stems are rural districts.
- Green squares are 2020 population.
- Horizontal line is the 2023 equal apportionment value, 40,375 per LD.

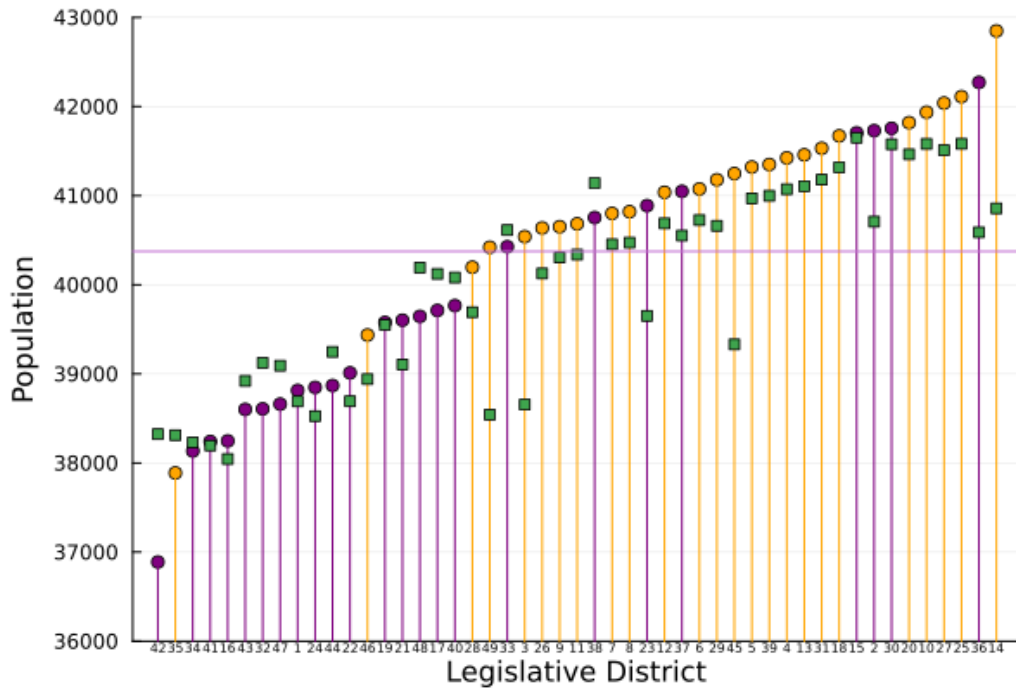


Figure 1: Legislative Districts Sorted by Increasing Population.

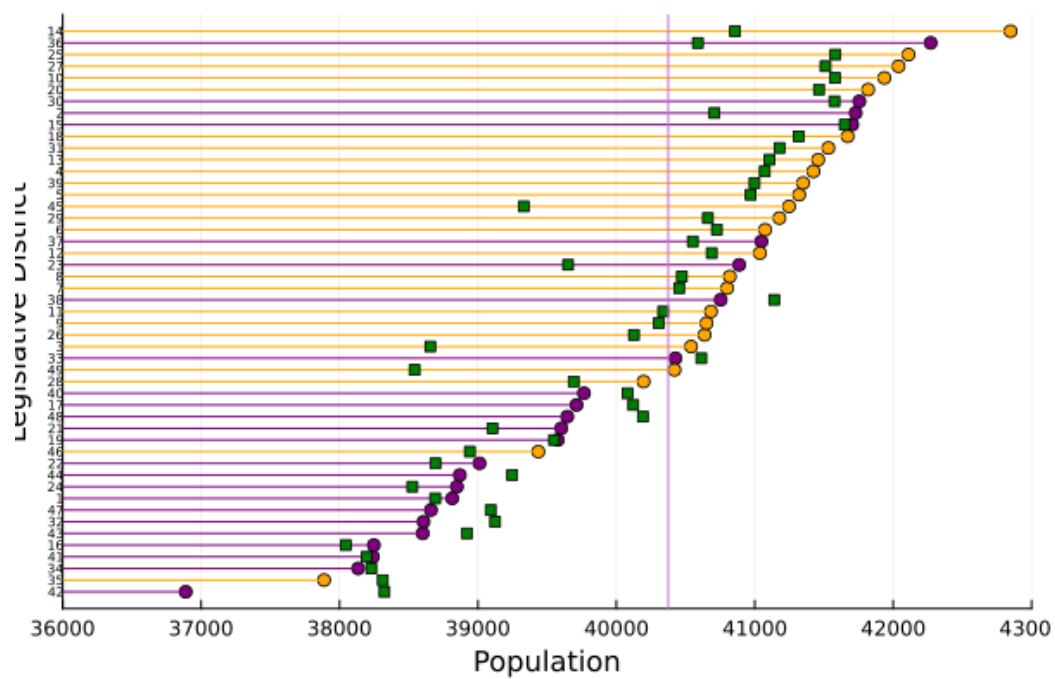


Figure 2: Legislative Districts Sorted by Increasing Population.

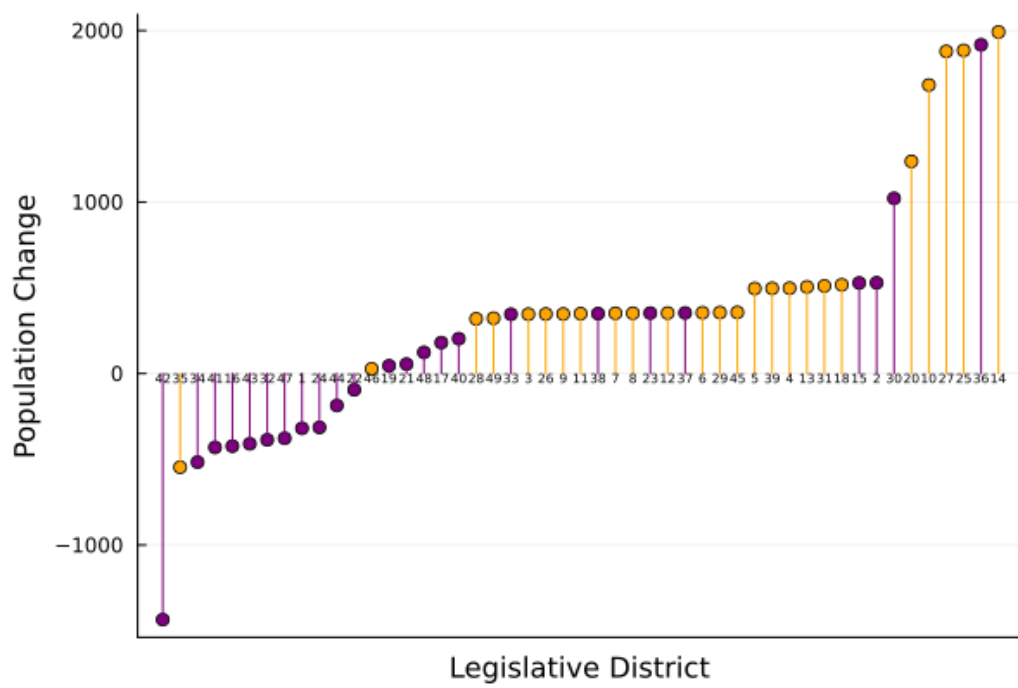


Figure 3: Legislative Districts Sorted by Population Change.