COMPACTNESS

POLSBY-POPPER

the ratio of the **area of the district** to the area of a **circle whose circumference is equal to the perimeter of the district**. A district's Polsby-Popper score falls with the range of [0,1] and a score closer to 1 indicates a more compact district.

Polsby-Popper

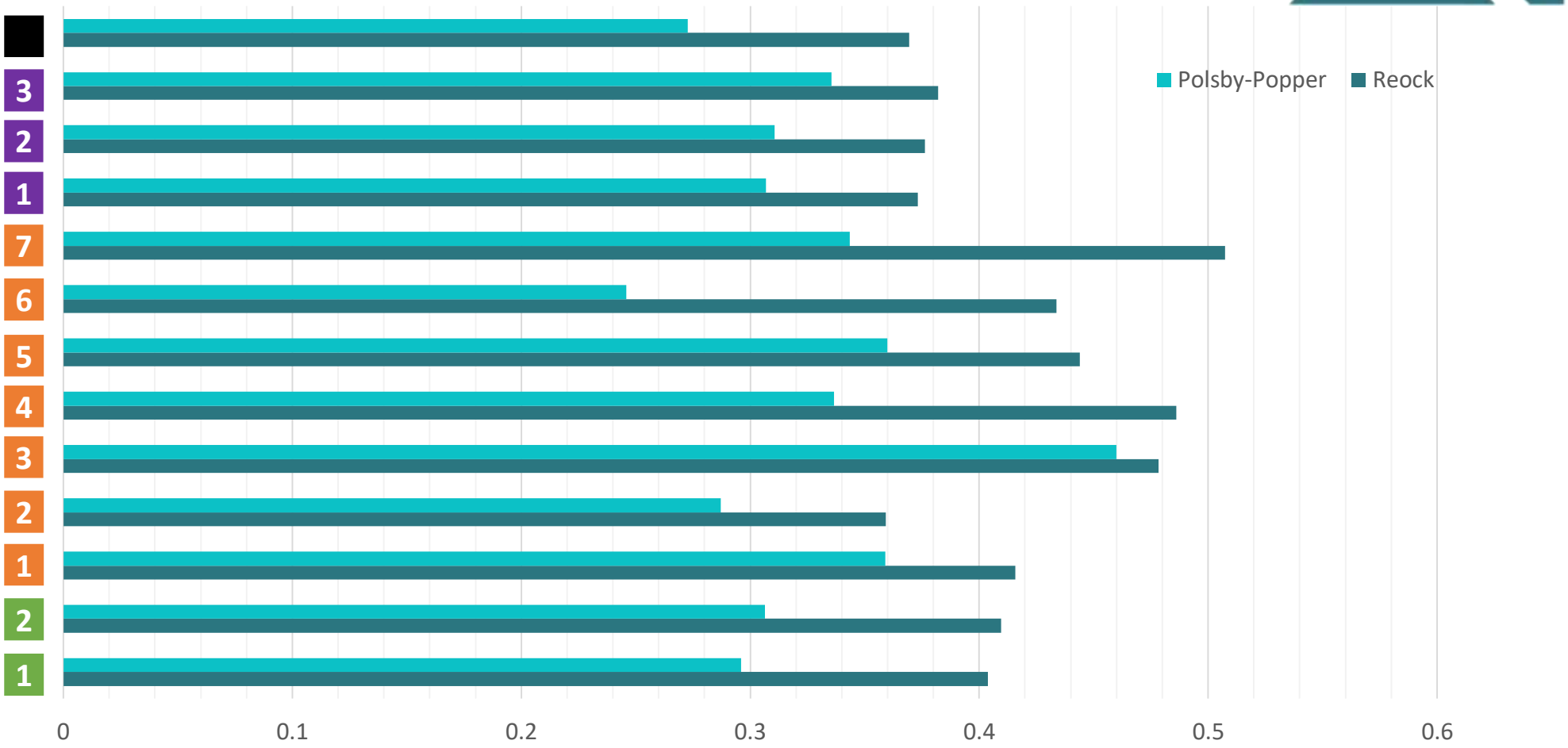
REOCK

is the ratio of the **area of the district** to the **area of a minimum bounding circle that encloses the district's geometry**. A district's Reock score falls within the range of [0,1] and a score closer to 1 indicates a more compact district.

Reock

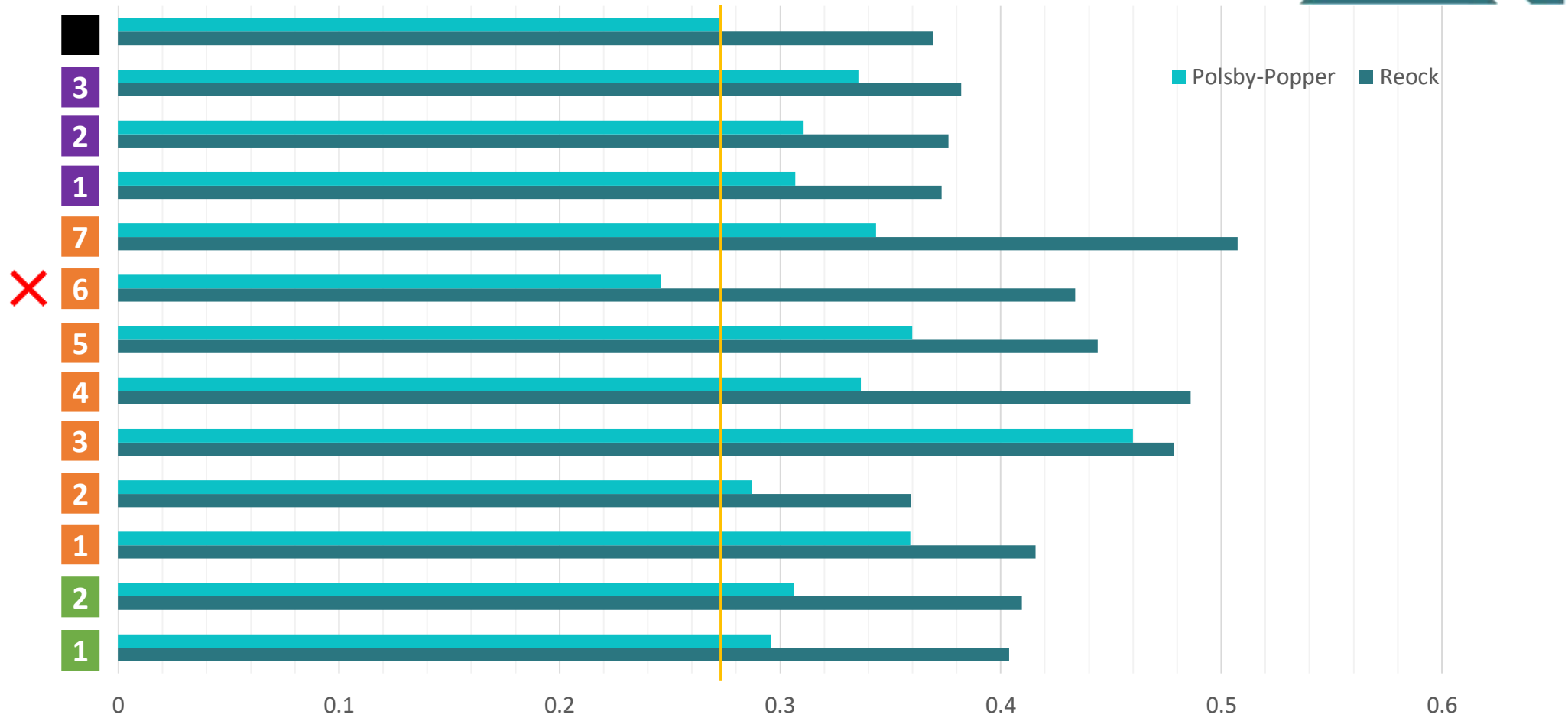
Images and definitions: Zachary Fisher, "Measuring Compactness", via GitHub

COMPACTNESS



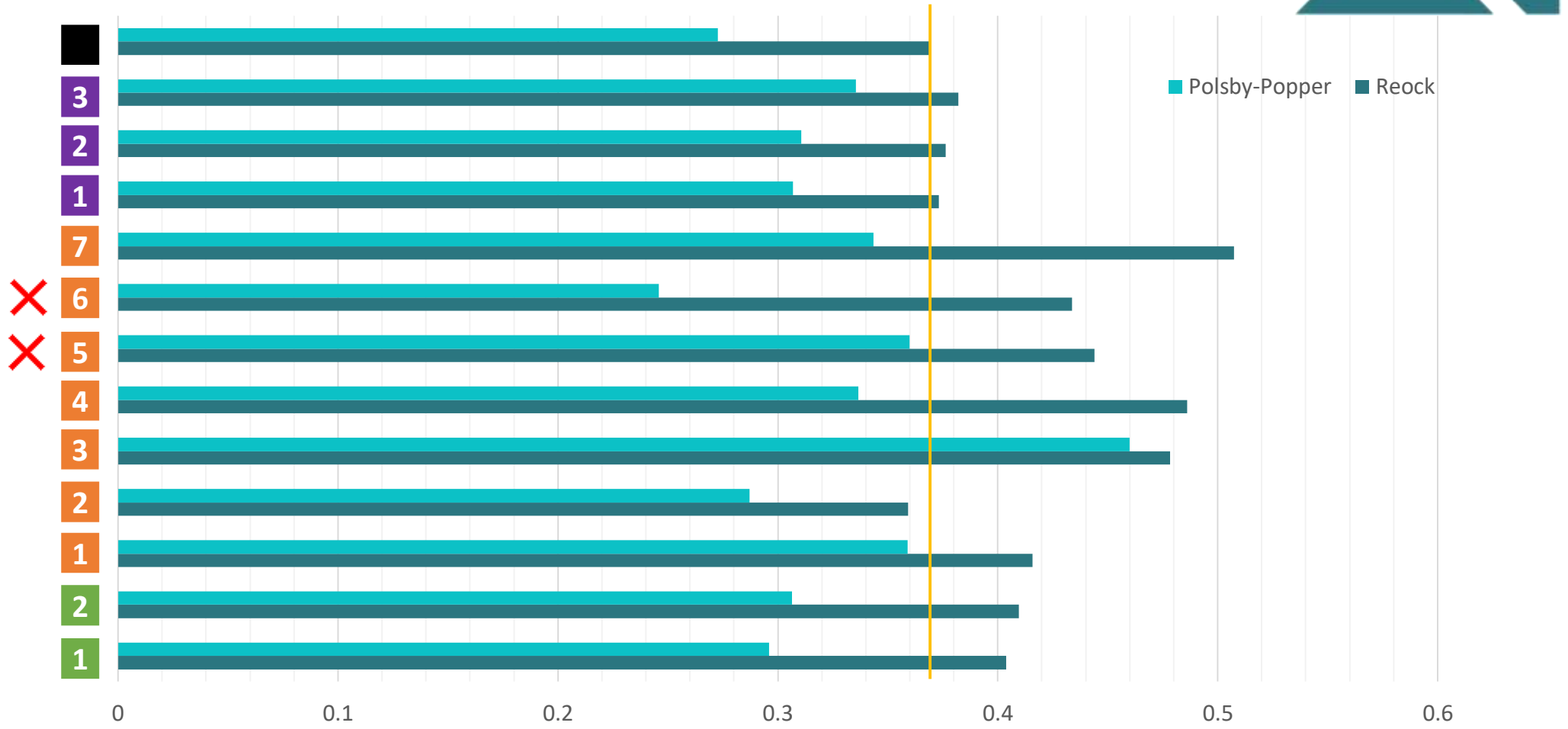
UTAH INDEPENDENT
REDISTRICTING COMMISSION

COMPACTNESS



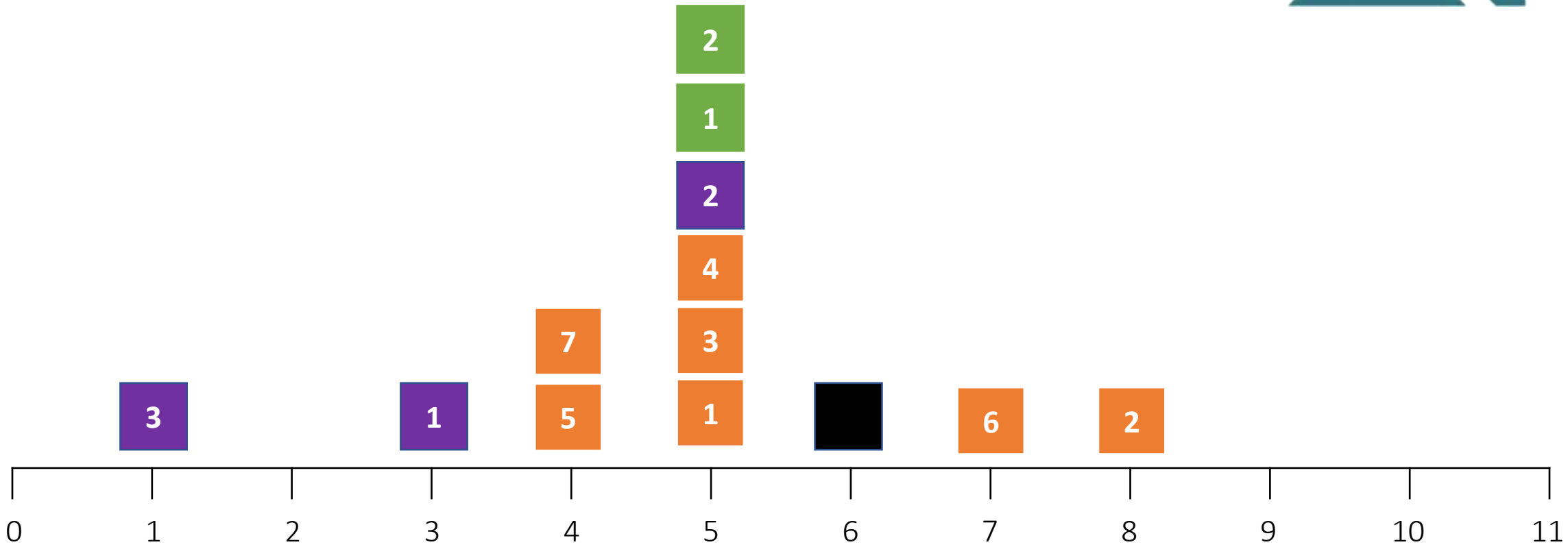
UTAH INDEPENDENT
REDISTRICTING COMMISSION

COMPACTNESS



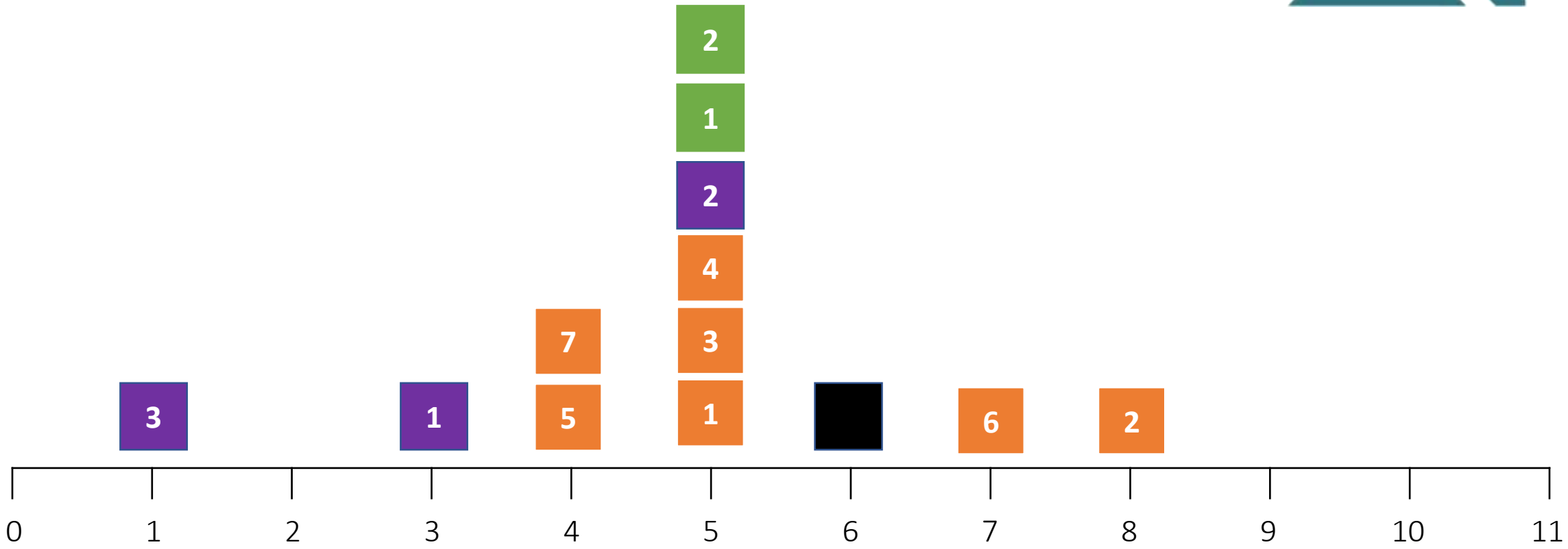
UTAH INDEPENDENT
REDISTRICTING COMMISSION

COUNTY SPLITS - CONGRESSIONAL



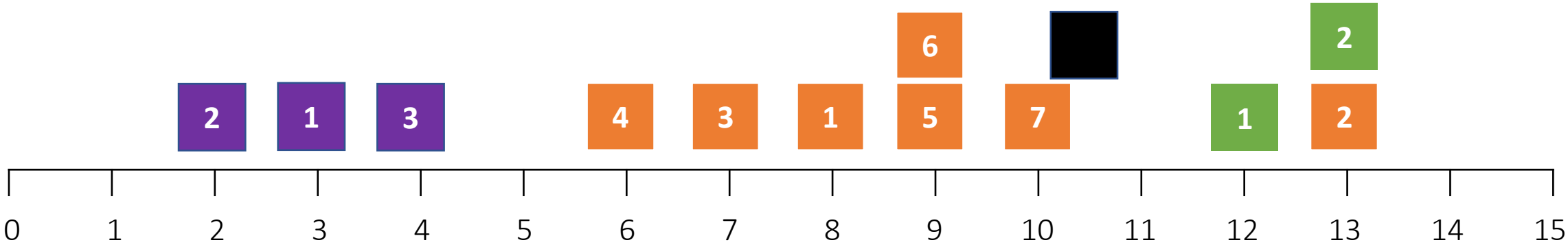
UTAH INDEPENDENT
REDISTRICTING COMMISSION

COUNTY SPLITS - CONGRESSIONAL



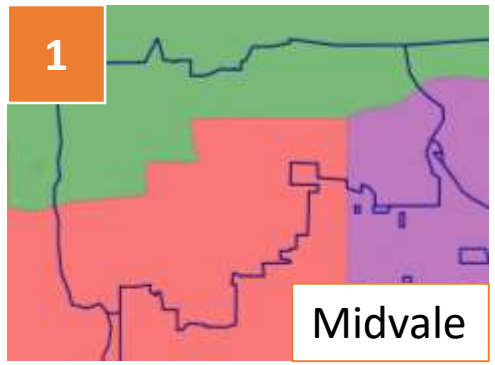
UTAH INDEPENDENT
REDISTRICTING COMMISSION

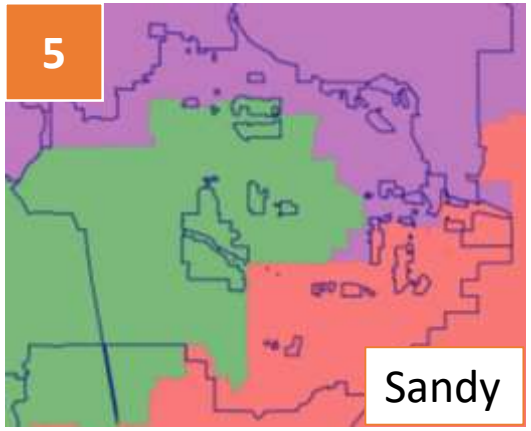
CITY SPLITS - CONGRESSIONAL

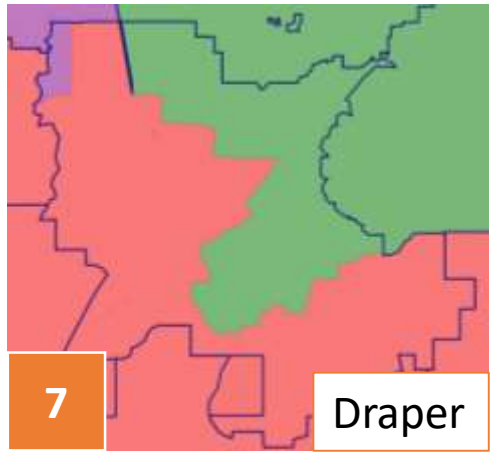


UTAH INDEPENDENT
REDISTRICTING COMMISSION

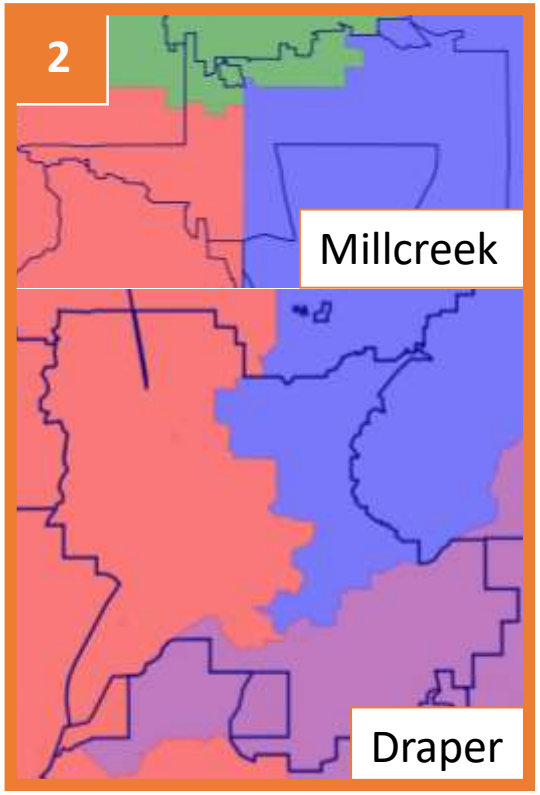
MAPS THAT HAVE CITIES CONTAINING THREE DISTRICTS

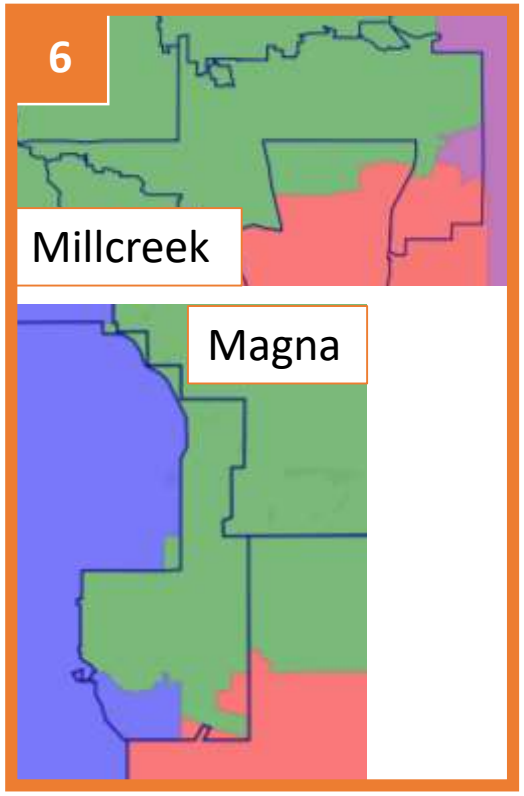






PLANS WITH ONE CITY CONTAINING THREE DISTRICTS

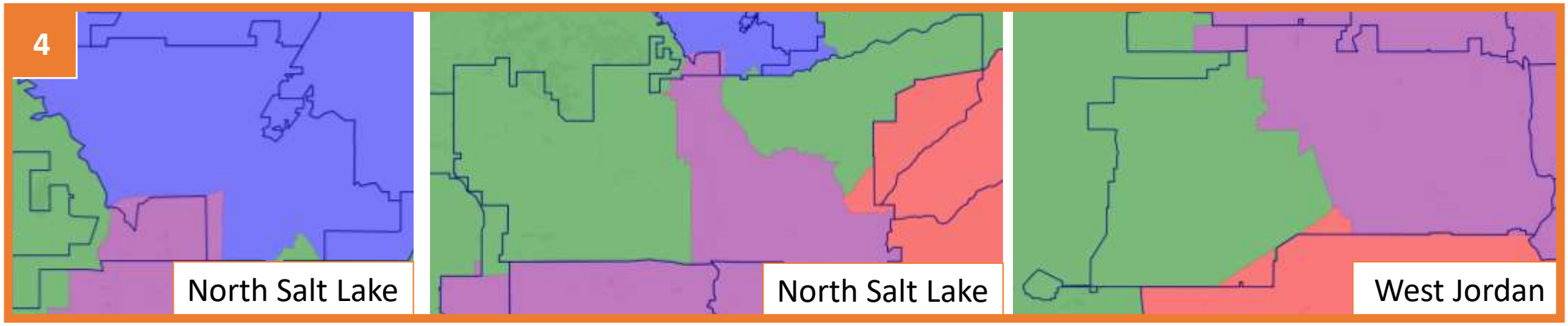




PLANS WITH TWO CITIES CONTAINING THREE DISTRICTS

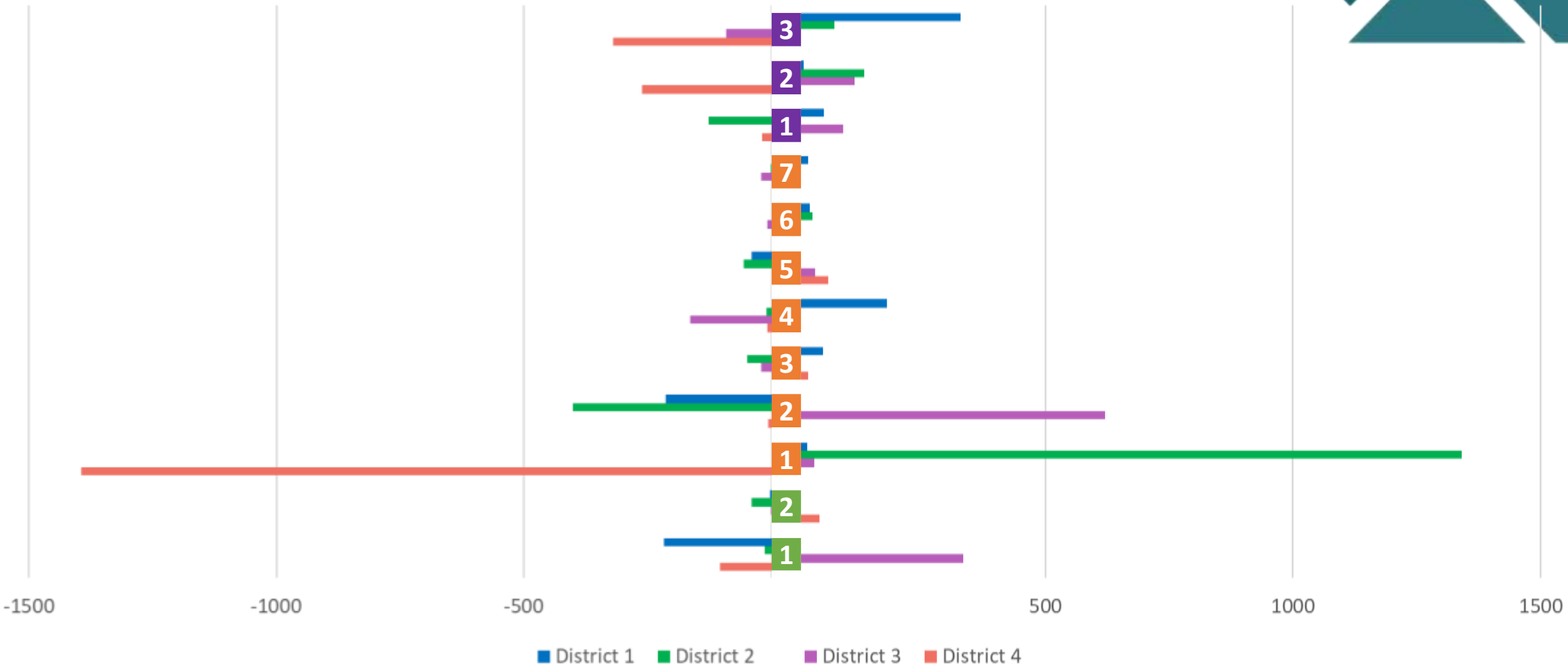
UTAH INDEPENDENT REDISTRICTING COMMISSION

MAPS THAT HAVE CITIES CONTAINING THREE DISTRICTS



PLANS WITH THREE CITIES CONTAINING THREE DISTRICTS

POPULATION DEVIATIONS



UTAH INDEPENDENT
REDISTRICTING COMMISSION

POPULATION DEVIATIONS

	Percent below	Percent above
3	0.0391244	0.040103
2	0.0319108	0.016383
1	0.0154052	0.011248
7	0.0024453	0.002568
6	0.0029343	0.003668
5	0.0067245	0.007458
4	0.019929	0.022007
3	0.0059909	0.006113
2	0.0490278	0.075804
1	0.1703134	0.165056
2	0.0003668	0.00538
1	0.026409	0.040836

*In this graph, 1% is notated as 1.00 instead of 0.01, since we are working on such a small scale. As such as long as a map is above -0.5 or below 0.5, it is within the appropriate threshold.

POPULATION DEVIATIONS

	Compactness	County Splits	City Splits	Does not split a city into 3 districts	Population Deviation
3	✓	✓	✓	✓	✓
2	✓	✓	✓	✓	✓
1	✓	✓	✓	✓	✓
7	✓	✓	—	✗	✓
6	✗	✗	✓	✗	✓
5	✗	✓	✓	✗	✓
4	✓	✓	✓	✗	✓
3	✓	✓	✓	✓	✓
2	✓	✗	✗	✗	✓
1	✓	✓	✓	✗	✓
2	✓	✓	✗	✓	✓
1	✓	✓	—	✓	✓