

Exhibit 33

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF SOUTH CAROLINA
COLUMBIA DIVISION**

THE SOUTH CAROLINA STATE
CONFERENCE OF THE NAACP, *et al.*,

Plaintiffs,

v.

HENRY D. MCMASTER, *et al.*,

Defendants.

Case No. 3:21-cv-03302-JMC-TJH-RMG

Rebuttal Report of Sean P. Trende

I. Response to Dr. Imai

I have been asked by counsel to respond to the Expert Report of Kosuke Imai, Ph.D., dated April 4, 2022 (“Imai Report”). Dr. Imai runs three sets of simulations. The first set of simulations utilizes all of the precincts, or portions of precincts, contained in Districts 1 and 6 in the Enacted Plan (the “Districts 1 and 6 Ensemble”). The second set of simulations utilizes only the precincts in Charleston County, after “freezing” the precincts outside of Charleston County into Districts 1 and 6 (the “Charleston Ensemble”). The final set of simulations utilizes all statewide precincts, requires that the Sixth District have a BVAP of between 45% and 50%, and creates statewide seven-district maps (the “Statewide Ensemble”). The 10,000 alternative maps produced contain districts that are contiguous, avoid incumbency pairing, achieve, on average, the same compactness as the Enacted Plan, and on average result in no more municipal and county splits than the corresponding number under the Enacted Plan.

Dr. Imai concludes as follows:

- None of his simulations of Districts 1 and 6 place the Black Voting Age Population (BVAP) as low as 17.4%, which is District 1’s BVAP in the Enacted Plan. The BVAP of the Enacted Plan is 3.1 standard deviations from the average BVAP of the Districts 1 and 6 Ensemble.
- For the Charleston simulations, only 0.2% of the plans assign a lower BVAP to District 1 than the simulated plans. District 1’s BVAP of the Enacted Plan is 2.9 standard deviations from the average BVAP of the Charleston Ensemble.
- For the statewide simulations, the BVAP of the First District is about 4.5 standard deviations lower than that found in the average Statewide Ensemble plan. The BVAP of the Second District is about 4.8 standard deviations lower than that found in the average Statewide Ensemble plan. Dr. Imai further shows that almost none of his plans split Sumter County between District 5 and District 6. Dr. Imai concludes that the boundaries in the Enacted Plan “can neither be explained by compliance with the VRA constraint nor the traditional redistricting criteria.” Imai Report ¶¶ 38, 42, 45.

Dr. Imai’s simulations, however, do not support his conclusions and inferences because Dr. Imai does not adequately control for all of the traditional redistricting criteria. As detailed in the Expert Report of Sean P. Trende (“Trende Report”), this Court (in *Colleton County* and

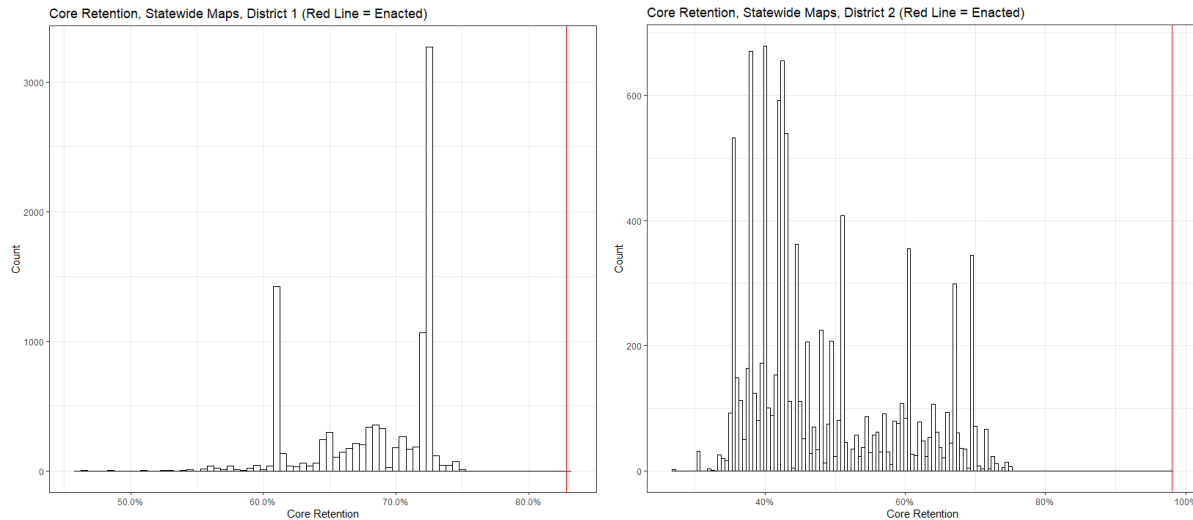
Backus), the Senate Guidelines, and the House Guidelines all recognize many traditional criteria that the General Assembly may follow in drawing redistricting plans. Dr. Imai's simulations, however, do not address, much less control for, several such criteria. His conclusions regarding the purported use of race in the Enacted Plan, therefore, are not adequately supported.

A. Dr. Imai's Simulations Do Not Control For Core Retention.

The first traditional principle recognized by this Court, the Senate Guidelines, and the House Guidelines for which Dr. Imai does not control is core retention. As noted in the Trende Report, the cores of the districts have been surprisingly consistent in South Carolina for over 100 years. The unusual boundaries of which Dr. Imai's Report complains, such as the "hook" shape in Richland County, the split of Sumter County, and the divvying up of Charleston and some of its suburbs, have been features of the South Carolina map for 40 years. The Enacted Plan continues this tradition: it preserves over 94% of the cores of five districts, including almost 100% of District 7's core, as well as nearly 90% of District 6's core and over 80% of District 1's core, even though those two districts had significant population deviations under the 2020 Census results.

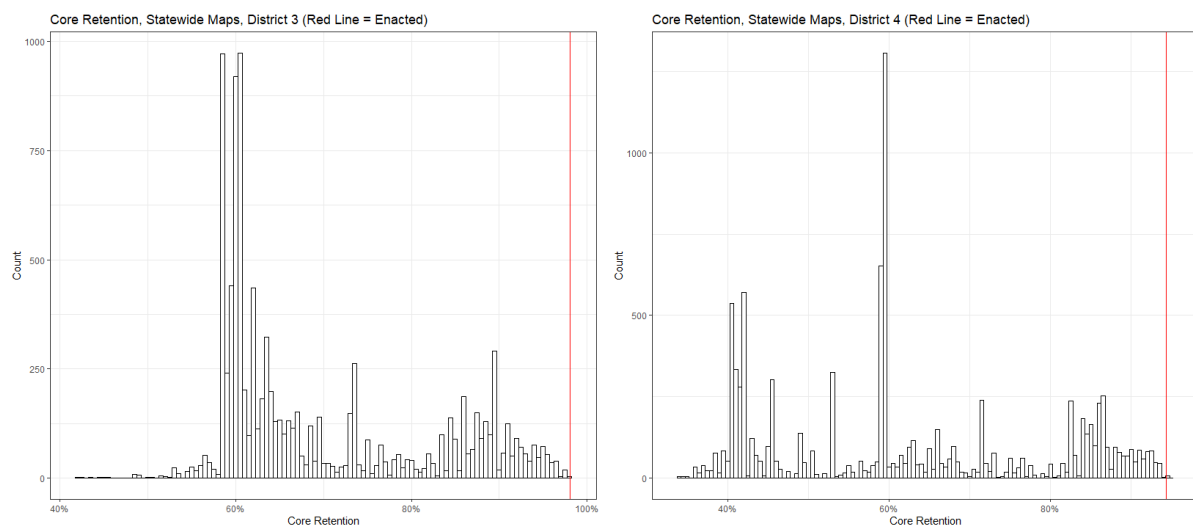
Dr. Imai provided his code and the results of his simulations to counsel, which I then executed on my computer. Using his maps, I was able to extract the districts to which each precinct was assigned in every map in Dr. Imai's Statewide Ensemble, as well as their populations. Next, I matched the precincts to their district assignment under the Benchmark Plan. From this data, it was a simple task to determine to which "ensemble district" residents of each district in the Benchmark Plan were assigned in Dr. Imai's Statewide Ensemble plans. I treated the district with the largest proportion of residents of each Benchmark Plan district as the "core" district for the Statewide Ensemble maps. I created histograms of the core retention rates in each of the Statewide Ensemble maps.

As noted in the Trende Report, the Enacted Plan retains 82.8% of District 1's core. None of the Statewide Ensemble maps has this rate of core retention. Likewise, District 2 has a core retention rate of 98.01% under the Enacted Plan. None of the Statewide Ensemble maps even approaches this rate of core retention.



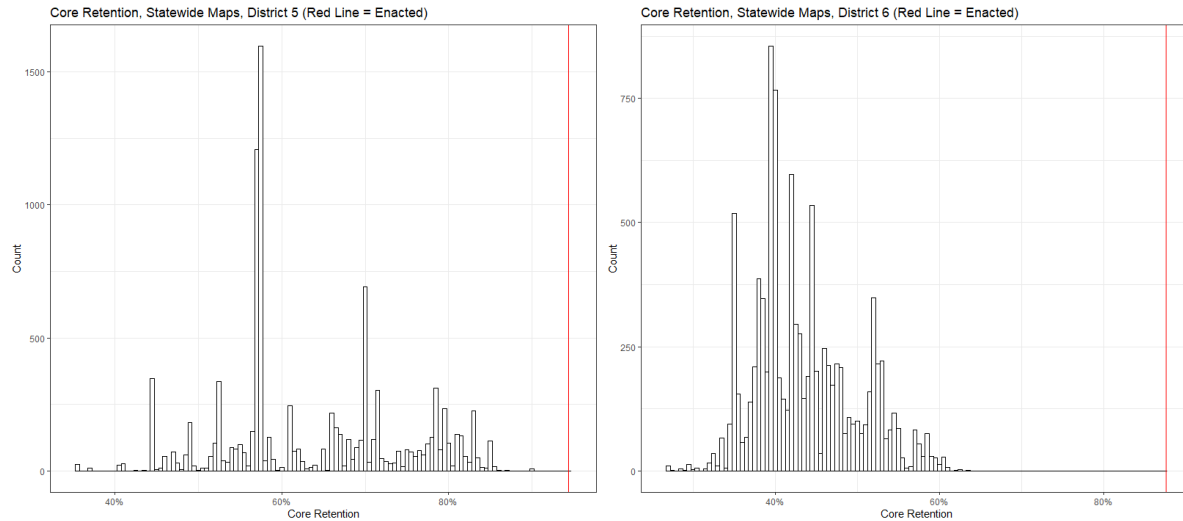
In fact, in the Statewide Ensemble, District 1 features a mean core retention rate of 68.5%. The Enacted Plan's core retention rate in District 1 is three standard deviations above that. In the Statewide Ensemble, District 2 features a mean core retention rate of 48%. The Enacted Plan's core retention rate in District 2 is 4.68 standard deviations above that.

Districts 3 and 4 show similar results. The Statewide Ensemble features a mean core retention rate of 69.5% in District 3. The Enacted Plan's retention of 98.02% of District 3's core is 2.34 standard deviations above that. The Statewide Ensemble features a mean core retention rate of 62.1% in District 4. The Enacted Plan's retention of 94.34% of District 4's core is 1.88 standard deviations above that.

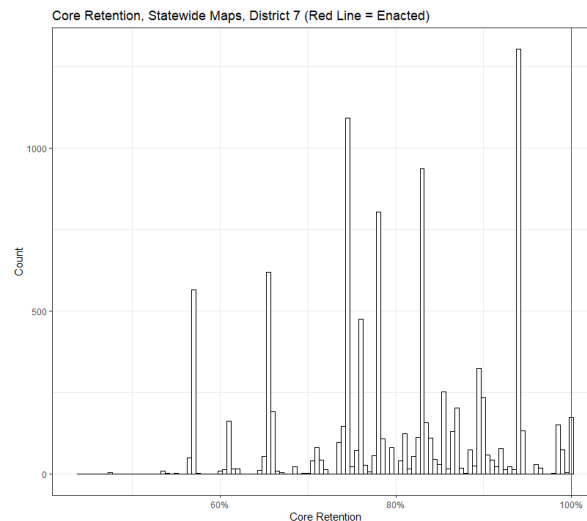


Districts 5 and 6 show even more pronounced effects. The Statewide Ensemble has a mean core retention rate of 63.8% in District 5. The Enacted Plan's retention of 94.38% of District 5's

core is 2.8 standard deviations above that. The Statewide Ensemble has a mean core retention rate of only 43.6% in District 6. The Enacted Plan's retention of 87.55% of District 6's core is 7.06 standard deviations above that. In fact, over half of Congressman Jim Clyburn's constituents would be new to him in 80.9% of the Statewide Ensemble's plans.

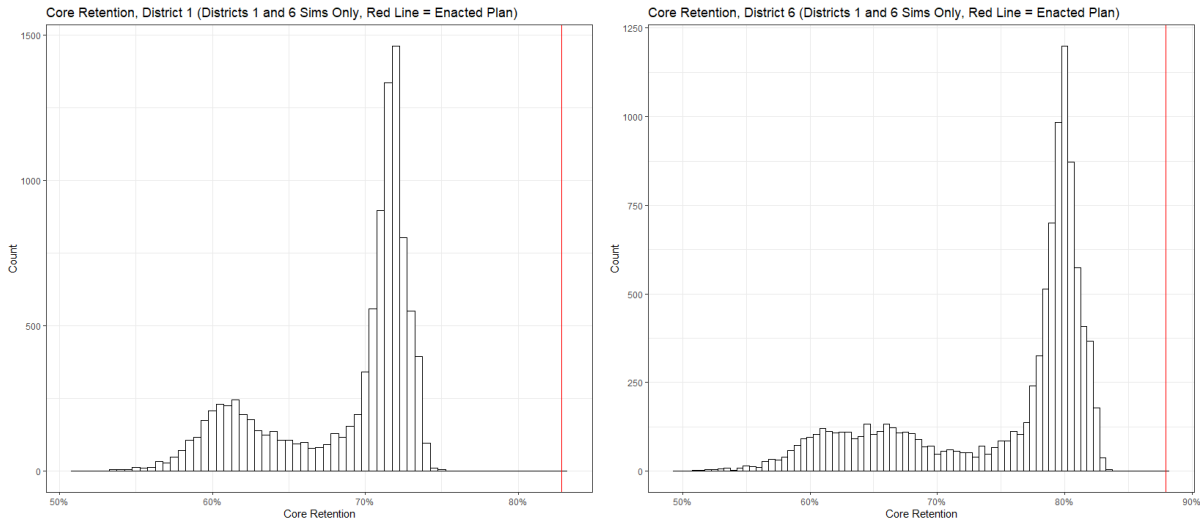


The Statewide Ensemble has a mean core retention rate of 80.1% in District 7. Some of the ensemble districts even reach the Enacted Map's core retention of almost 100%. Nevertheless, the average ensemble plan's core retention is 1.76 standard deviations below the Enacted Map's retention of 99.96% of District 7's core.



The Districts 1 and 6 Ensemble plans also retain less of the core of districts than the Enacted Plan on average. In District 1, the Districts 1 and 6 Ensemble achieves an average core retention 2.97 standard deviations lower than the Enacted Plan's core retention. In District 6, the Districts 1

and 6 Ensemble achieves an average core retention one standard deviation lower than the Enacted Plan's core retention.

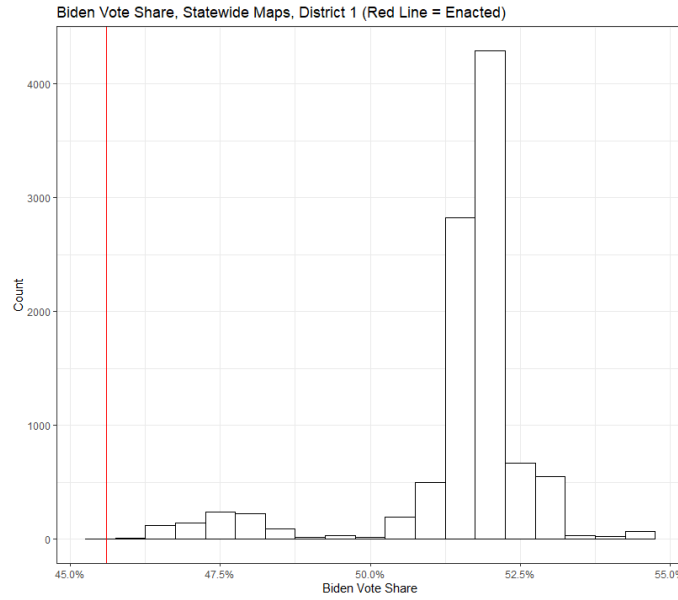


B. Dr. Imai's Simulations Do Not Address Partisanship Or Politics

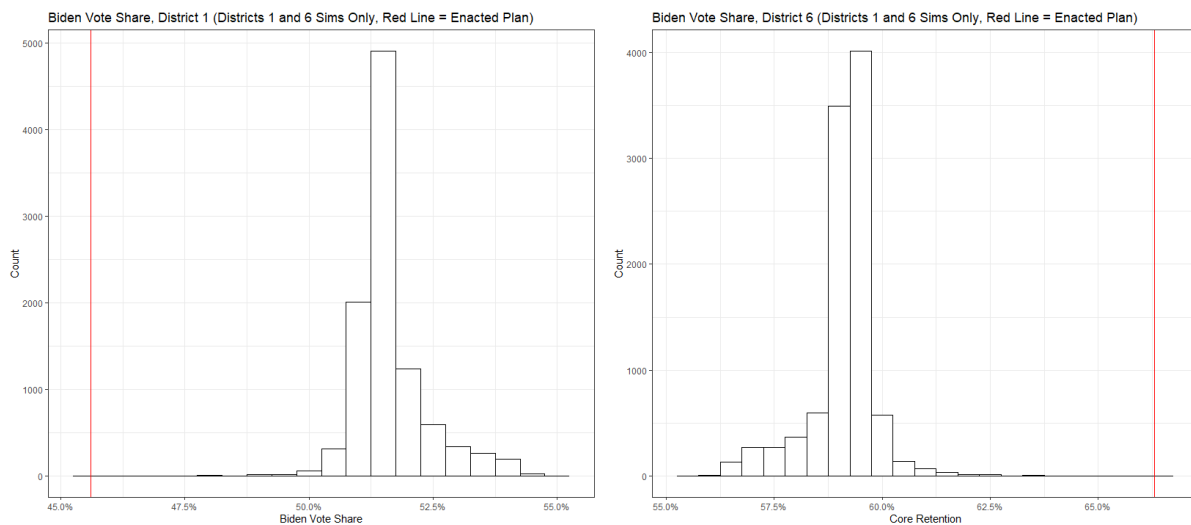
Dr. Imai admits that he did not use partisan information in his simulations. He therefore offers no analysis to show that race rather than politics motivated the General Assembly's drawing of the Enacted Plan.

As explained in the Trende Report, by the end of the 2010s, the First District was increasingly marginal territory for Republicans; a Democrat had won election in District 1 in 2018; and Republican Rep. Nancy Mace was vulnerable in a year that was unfavorable for Republicans. Under the Enacted Plan, the Democratic vote share in this district decreased by 1.4%, while the BVAP increased by only 0.2%. The Democratic vote share in Enacted District 1 is 45.6% on the Biden 2020 number.

The Statewide Ensemble, by contrast, consistently produces more Democratic districts for Rep. Mace. In fact, 91% of the Statewide Ensemble districts in which Mace was placed were carried by President Joe Biden in 2020. President Biden's vote share in the Enacted Plan's First District is almost six points lower than his average vote share in the Statewide Ensemble district where Rep. Mace is placed, or 4.5 standard deviations lower. Notably, this is the only district where the Enacted Map diverges from the Statewide Ensemble substantially in terms of partisanship.

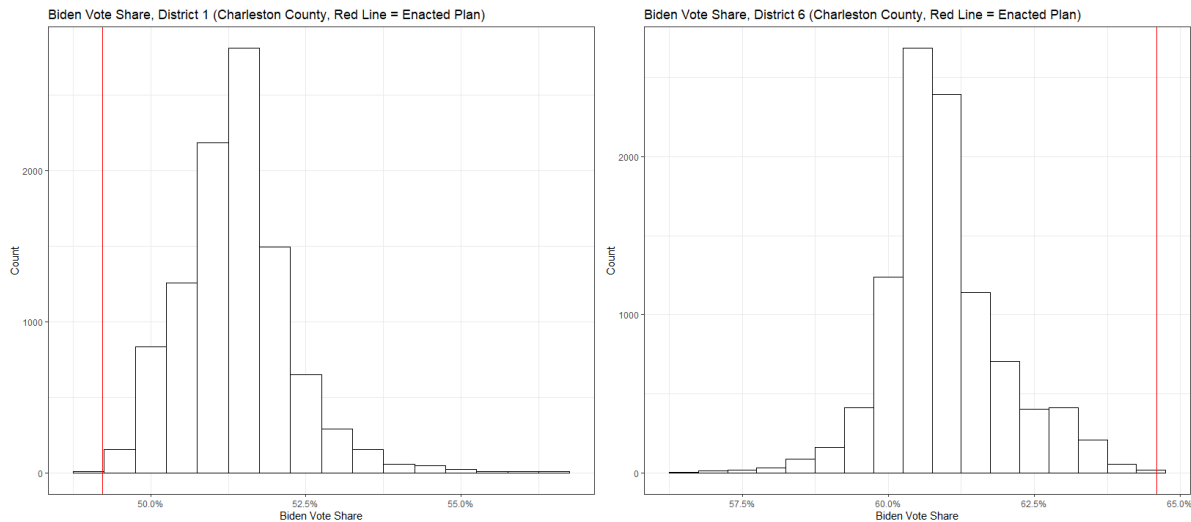


Likewise, the Districts 1 and 6 Ensemble consistently produces districts that increase President Biden's vote share in the district assigned to Rep. Mace (District 1). In every Districts 1 and 6 Ensemble map, President Biden's vote share increased over the Benchmark Plan. President Biden's vote share in Enacted District 1 is eight standard deviations lower than the average District 1 in the Districts 1 and 6 Ensemble. At the same time, President Biden's vote share in Enacted District 6 is 9.7 standard deviations higher than the average District 6 in the Districts 1 and 6 Ensemble.

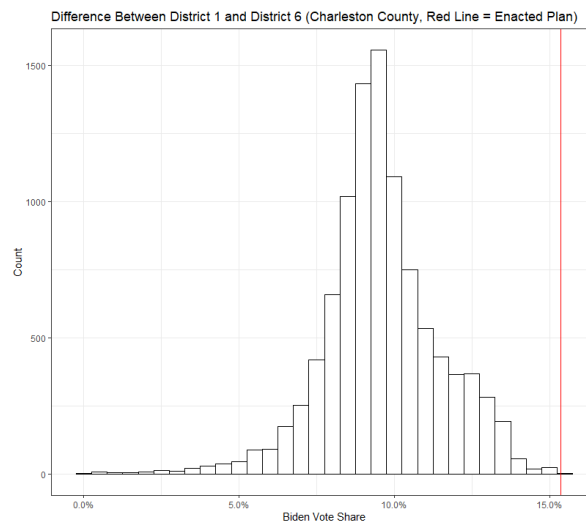


In the Charleston Ensemble, President Biden's vote share is almost always higher in the Charleston portion of District 1 (defined as the district with the lower Democratic vote share) than in the Charleston portion of Enacted District 1, and almost always lower in the Charleston portion

of District 6 than in the Charleston portion of Enacted District 6. These are differences of 2.4 and 3.2 standard deviations, respectively.



Finally, the difference in partisanship between the portions of District 1 and District 6 contained in Charleston County is about 15.6% in the Enacted Plan; the Charleston Ensemble places that difference at around 10 points on average. This is a difference of about 3.1 standard deviations.



C. Dr. Imai's Analysis Misses the Forest for the Trees

In short, reasons unrelated to race can explain why South Carolina legislators avoided maps similar to Dr. Imai's ensemble maps. In particular, legislators were likely drawing from a different distribution of maps – ones with higher core retention rates overall and lower Democratic performances in the First District in particular – than Dr. Imai's ensembles create.

But it is also important not to lose sight of the forest for the trees here. The South Carolina General Assembly was not drawing its maps on a blank slate. The Enacted Maps are substantially similar to the Benchmark Plan. A total of 40,000 residents are swapped between Districts 2 and 6, many of whom are moved as a result of reducing the number of precinct splits. A total of 10,300 residents are swapped between Districts 5 and 6, mostly for similar reasons. The changes between Districts 1 and 6 reflect in significant part the need to equalize population in those two districts.

Perhaps most importantly, the Enacted Plan's changes result in only minimal differences in the BVAPs of the districts Plaintiffs challenge. District 1's BVAP increases from 16.6% to 16.7%. District 2's BVAP increases from 23.1% to 24.5%. District 5's BVAP decreases from 25.1% to 24%. District 6—which Plaintiffs have not challenged—experienced a decline from 51.4% to 45.9% BVAP, as it took on large numbers of voters to achieve equal population, including white Democratic voters from District 1.

II. Response to Dr. Ragusa

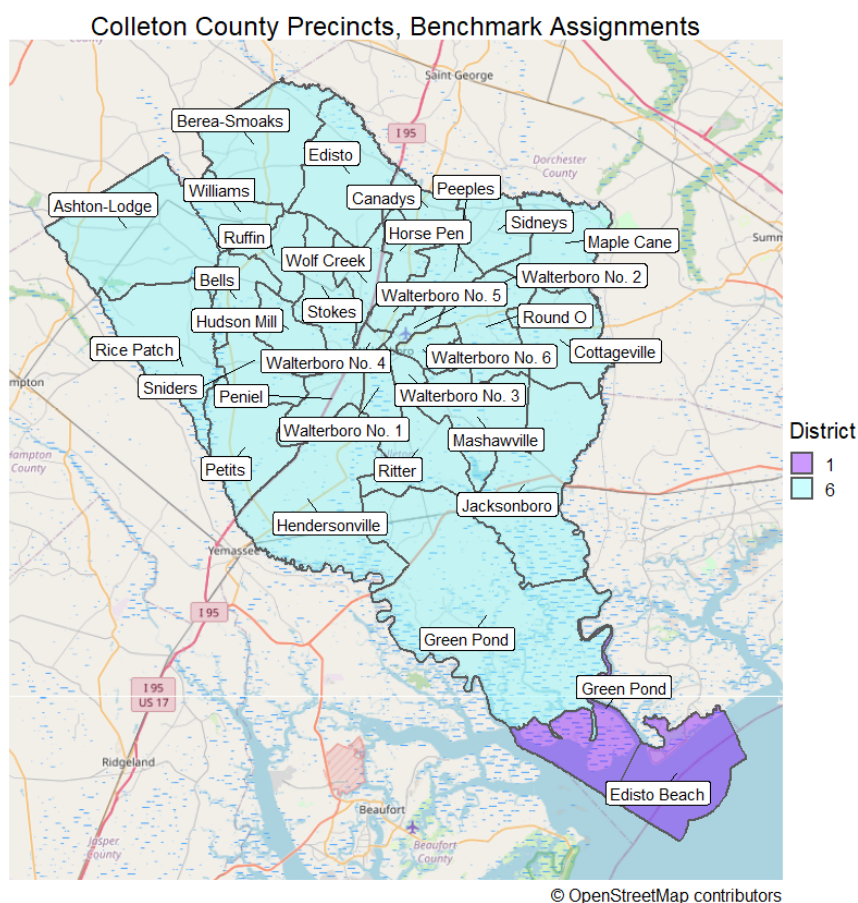
I have also been asked to respond to the Ragusa Report. Dr. Ragusa's approach is to take a district as it was previously drawn, examine the counties that this benchmark district occupied, and then examine all precincts in the counties that district traverses. He runs three tests. First, he tests whether the precincts with higher BVAPs within the given counties were more or less likely to be moved into a district than those with lower BVAPs. Second, he tests whether precincts with higher BVAPs within a district were more likely or less likely to be moved out of the district than precincts with lower BVAPs. Finally, he takes a combined approach, testing precincts moved in/kept in versus precincts moved out/kept out.

All three approaches suffer from the same infirmities. First, Dr. Ragusa's predictor variable is the *count* of Black residents of voting age in a precinct rather than the *percentage* of Black residents of voting age in the precinct. Counts can be misleading, however. Consider a precinct with five Black residents of voting age, with a total VAP of five. Now consider a precinct with five Black residents of voting age, with a total VAP of 500. Adding each of those precincts to a district with a BVAP of 17% would have different effects on that BVAP, but Dr. Ragusa's approach would treat the decision to add or not to add one of those precincts to a district the same as the decision to add or not to add the other.

Second, Dr. Ragusa fails to control for the myriad traditional districting criteria that have been described elsewhere in this report and the Trende Report. In other words, he doesn't control

for district core retention, reducing precinct splits, preserving communities of interests, or keeping municipalities or counties intact. For example, it makes little sense to ask why a precinct in Lexington County was kept in District 2 while a precinct in Richland County was taken out, without also considering the fact that Lexington County is kept intact in District 2, as it has been for almost 100 years, while Richland County is not.

This leads to the third, most serious problem with Dr. Ragusa's analysis: It doesn't consider contiguity. Dr. Ragusa's concept of a county envelope treats all precincts within a county equally, while some may not even be accessible to the map maker without a substantial reconfiguration of the district. Consider Colleton County:



Dr. Ragusa's approach asks "Why didn't the mapmaker include the Berea-Smoaks precinct in District 1?" Dr. Ragusa's approach suggests that there is potential racial significance to this decision because, when viewed in a vacuum, this precinct contains the third-highest BVAP in the county, and one of the higher BVAPs in the "county envelope" for District 1. But obviously the decision whether to include Berea-Smoaks precinct in District 1 requires a great many more considerations than simply the 500 Black residents of voting age of the precinct: Because districts



Dr. Ragusa's approach would consider the decision to keep the Monticello precinct in District 2 solely in terms of racial and political considerations, while overlooking the obvious: Excluding it would render District 2 non-contiguous and require a significant redraw. Likewise, the decision to exclude Olympia precinct from District 2 also keeps District 6 contiguous. Similarly, the decision to exclude the non-contiguous Hopkins 2 precinct can't be treated as equivalent to the decision to exclude contiguous Horrell Hill. Yet this is exactly what Dr. Ragusa's approach does. It is unclear what can truly be gained from an analysis that does not consider contiguity and, in fact, fails to reflect the realities of map drawing.

/s/ Sean P. Trende 5/4/2022
Sean P. Trende