

Please refer to Ex. 29-36

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NORTH CAROLINA GENERAL ASSEMBLY
SENATE REDISTRICTING COMMITTEE
    NOVEMBER 2, }202
    Transcribed by:
Denise Myers Byrd, CSR 8340, RPR
    Discovery Court Reporters and
        Legal Videographers, LLC
            4 2 0 8 ~ S i x ~ F o r k s ~ R o a d
                    Suite 1000
Raleigh, North Carolina 27609
            (919) 424-8242
        denise@discoverydepo.com
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(Transcription from YouTube started at 1:00:15.)

CHAIRMAN NEWTON: All right. Good morning, everyone. Welcome to the Senate Committee on Redistricting. We're going to go ahead and get started this morning.

I want to begin by thanking our sergeant-at-arms for helping us today. We've got Michael Cavness. Michael, thank you. Thanks for being here. Rod Fuller is here. Hey, Rod. Jim Hamilton. Jim. Mike Harris and Sherrie Hedrick, thank you so much for being here and being a part of this team.

We are going to hear Senate Bill 739 this morning. Senator Hise is going to present that. Shortly thereafter, we are going to take a break. There are a number of amendments -proposed amendments that Senator Blue and Senator Clark are going to be offering this morning. Those are in process. So we're going to take a little bit of a recess, then we will get our arms around those amendments, come back, do the $Q$ and $A$ around the map and do the amendments and Q and A around the amendments.
So with that, Senator Hise, the floor
is yours.
CHAIRMAN HISE: Thank you, all members.
I'm going to present Senate Bill 739. You should have the map and the bill in front of you. I want to go through an explanation of the 50 districts and, once again, be thankful I'm not in the House. That's for coming in.

So Senate District 1 is created by county groupings chosen in northeast North Carolina. The chairs chose the configuration that makes SD 1 out of the following whole counties: Bertie, Camden, Currituck, Dare, Gates, Hartford, Northampton, Pasquotank, Perquimans, and Tyrrell.

The configuration leaves four of the five finger counties in the northeast in one district. We had some public comments about keeping these counties together or the northern Outer Banks together. Seven of the ten counties and 81 percent of the population in $S D 1$ are in the Norfolk media market, Camden, Currituck, Dare, Gates Hertford, Pasquotank, and Perquimans, while others are divided between Greenville and Raleigh containing 19 percent of the district's population.

All North Carolina counties in the Norfolk media market are in SD 1 except for Chowan county, this being a whole county district. There are no split VTDs or split municipalities within the counties in SD 1. The incumbent for this district is Senator Bazemore.

Senate District 2 follows the Roanoke River from Warren county to Albemarle Sound in Washington county, Chowan county directly across from the Albemarle Sound from Washington county. It is also grouped -- is also grouped in this district. Hyde county, also on the Albemarle Sound, is in this district as is Pamlico county. Along the Pamlico River and the Pamlico, five of the eight counties in the district are in the Greenville media market with the others being split between the Raleigh media market and the Norfolk media market. Two-thirds of the population of this district live in the Greenville media market. This being a whole county district, there are no split VTDs or split municipalities. In Senate District 2, there are two incumbents in this district: Senator Sanderson and Senator Steinburg.

Senate District 3 is created by the
base county grouping map: Beaufort, Craven, and Lenoir counties. This being a whole county district, there are no split VTDs or split municipalities. The incumbent is Senator Perry.

Senate District 4 is created by the base county grouping map: Green, Wayne, and Wilson counties. This being a whole county district, there are no split VTDs or split municipalities. The incumbent in Senate District 4 is Senator Fitch.

Senate District 5 is created by the base county grouping map: Edgecombe and Pitt counties. This being a whole county district, no split VTDs or split municipalities within counties. The incumbent for Senate District 5 is Senator Davis of Pitt county.

Senate District 6 is created by the base county grouping map: Onslow county. This is a single county district; no split VTDs or split municipalities.

Senate District 7 [unintelligible] together comprise Brunswick, Columbus, and New Hanover counties. Senate District 7 is created by the county grouping choice in southeastern North Carolina. New Hanover county
is slightly larger than the maximum senate district, therefore the chairs chose to move three whole precincts out of Senate District 7 into Senate District 8.

Senate District 7 is thus New Hanover county minus these three precincts: CFO-1, CFO-6 and HO-1. These precincts were selected to keep all the municipalities in New Hanover county whole and to keep as much of the population in the county as possible in Senate District 7. The district based in the county, there are no split VTDs or split municipalities within New Hanover county. The incumbent for Senate District 7 is Senator Lee.

Senate District 8 includes Brunswick and Columbus county plus the previously mentioned precincts in New Hanover county. There are no split VTDs or split municipalities within the counties of the district. The incumbent is Senator Rabon.

Senate District 9 and 12 make a two-district, seven-county cluster also created by the county grouping decision in southeastern North Carolina. Bladen, Duplin, Jones, and Pender counties are whole in Senate District 9.

Sampson county is split between the two districts. The chair chose to leave as much of Sampson county whole in Senate District 9 as possible. They had the choice of moving one precinct from northern Sampson county into Senate District 12; however, this would have split two municipalities and removed more residents from Sampson county into Senate District 12 than the alternative which they selected, which was to split the two precincts leaving the town of Plain View intact in Senate District 12 and the town of Spivey's Corner and the rest of Sampson county intact in Senate District 9. There are two split VTDs and no split municipalities within the counties in the district. The incumbent for Senate District 9 is Senator Jackson.

Senate District 12 is made up of
Harnett and Lee county plus the municipalities of Plain View and Sampson county as described above. There are two split VTDs shared within Senate District 9 as previously mentioned and no split municipalities within the counties in the district. The incumbent for Senate District 12 is Senator Berger.

Senate District 10 is created by the base grouping map Johnston county. It's a single county district. There are no split VTDs or municipalities.

Senate District 11 is created by the base grouping map: Franklin, Nash, and Vance. Being whole county district, there are no split VTDs or split municipalities. The incumbent for Senate District 11 is Senator Barnes.

Granville and Wake counties form a six-district, two-county grouping in the base senate map. Within this grouping, the chairs are attempting to keep municipalities whole while splitting as few precincts as possible to accomplish this task and comply with the one person, one vote. The overall population when this -- within this county grouping is 1,190,402, meaning the ideal population for each of the six districts is 198,400 , which is only 52 people above the minus 5 percent deviation minimum for senate districts in the state. In other words, all six districts were incredibly close to the minus 5 deviation minimum and some VTDs had to be split to the comply with the one person, one vote within Wake county.

Raleigh is too large for one senate district and, therefore, must be split. The chairs were unable to keep Cary or Apex whole within a district due to the populations and geography. However, all other municipalities --Fuquay-Varina, Garner, Holly Springs, Knightdale, Morrisville, Rolesville, Wake Forest, Wendell, and Zebulon -- were kept whole. Ten percent were split in Wake county to keep the municipalities whole and balance populations between the districts. Ten precincts were split to keep the populations whole.

Senate District 13 includes Granville county and unincorporated areas in northern Wake county plus the north wake towns of Rolesville, Wake Forest, Zebulon -- and Zebulon. Raleigh, the second largest city in North Carolina, again is too large for a senate district and was, therefore, contained in four senate districts. Over 98 percent of Raleigh is in three senate districts. Senate District 13 has the smallest portion of the population, less than 2 percent. The towns of Rolesville, Wake Forest, and Zebulon are left whole and 100 percent of their

Wake county populations are within Senate District 13.

One precinct was split with Senate District 18 to keep Wake Forest whole. Two precincts were split with Senate District 14 to keep Wendell whole. In the district, there are no incumbents in Senate District 13.

Senate District 14 includes Garner,
Knightdale, Wendell, southeast Raleigh and parts of downtown Raleigh. 21 percent of the population of Raleigh is in Senate District 14. There are no split municipalities in the district other than Raleigh. 100 percent of the populations of Garner, Knightdale, and Wendell are in the district. As mentioned, two of the precincts are split with Senate District 13 to keep Wendell whole in Senate District 14. Three precincts are split along the southern edge of the district to keep Garner whole. Two precincts are split in east Raleigh to balance its population with the districts within the deviation range. The incumbent in Senate District 14 is Senator Blue.

Senate District 15 is in west Raleigh downtown and contains a portion of eastern Cary.

36 percent of the population of Raleigh is in Senate District 15. Within the district, 85 percent of the population is in Raleigh and

12 percent is in Cary. Senate District 15 splits two precincts with other districts to balance population. The incumbent in this district is Senator Chaudhuri.

Senate District 16 is centered in Cary and western Wake. 80 percent of the population of Cary is in Senate District 16. 45 percent of the population of Apex is in the district. The town of Morrisville is kept whole within Senate District 16. Of the population of the district, 69 percent is Cary, 15 percent is Morrisville, and 13 percent is Apex. There are two split precincts to balance population. One was Senate District 15 and one was Senate District 17. The incumbent for Senate District 16 is Senator Nickel.

And Senate District 17 includes Holly Springs, Fuquay-Varina, 55 percent of Apex, and 6.5 percent of Cary. Three VTDs were split to keep Garner whole in Senate District 13, and another VTD was split to balance population between 17 and 16 . The
incumbent in this district is Senator Batch.
To recap, the Wake county senate map, the chairs decided to split ten VTDs to balance the population of the districts and to make as many of the municipalities as whole as possible. Apex, Cary, and Raleigh were each split into more than one district, and Fuquay-Varina, Garner, Holly Springs, Knightdale, Morrisville, Rolesville, Wake Forest, Wendell, and Zebulon were each left whole within one district.

Cumberland and Moore county form a two-county, two-district grouping in the base map. Senate District 19 was drawn to keep as much of Fayetteville as whole as possible. The city of Fayetteville has an irregular shape and many satellite annexations and shares precincts with other municipalities such as Hope Mills, and the chairs were not able to leave it whole. The result is a district that includes over 88 percent of the population of Fayetteville and nearly 15 percent of the population of

Hope Mills. There are no split VTDs in the district. The incumbent in Senate District 9 is Senator deViere.

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\text { Senate District } 21 \text { was drawn keeping }
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Moore county whole in part with the remaining rural areas of Cumberland county. As stated above, the irregular shapes of municipalities and precincts containing more than one municipality in them made it difficult to keep all municipalities whole.

Senate District 21 includes 85 percent of the population of Hope Mills and 12 percent of the population of Fayetteville. There are no split VTDs in Senate District 21, and there is no incumbent in the district.

Chatham and Durham counties form a two-county, two-district grouping in the base senate map. Senate District 20 includes all of Chatham county, any unincorporated Durham county, and the peripheral Durham city precincts. The town of Chapel Hill has some territory in two Durham county precincts. The chairs decided to keep the town of Chapel Hill whole and place both the precincts in Senate District 20. Most of the City of Durham is in Senate District 20 and Senate District 22, but SD 20 includes 30 percent of the city's population. There are no split VTDs in the district, and the incumbent is Senator Murdock.

Senate District 22 was drawn within the city of Durham. The city is larger than a senate district and is, therefore, split between Senate District 22 and Senate District 20. 70 percent of the population of Durham will reside in Senate District 22. There are no split VTDs in Senate District 22. Senator Woodard is the incumbent in the district.

Senate District 23 is created by the base county grouping map: Caswell, Orange, and Person counties. This being a whole county district, there are no split VTDs or split municipalities. The incumbent in Senate District 23 is Senator Foushee.

Senate District 24 is also created by the base county grouping map: Hoke, Robeson, and Scotland counties. This being a whole county district, there are no split VTDs or split municipalities. There are two incumbents in this district, Senator Clark and Senator Robins -- Senator Britt from Robeson. Sorry.

Alamance, Anson, Cabarrus, Montgomery, Randolph, Richmond, and Union counties comprise a seven-county, four-district grouping with the Senate Seats 25, 29, 34, and 35. The county
grouping is the base group in the senate map. Because of how the counties are aligned and the populations that live there, the counties must be split between districts are Cabarrus,

Randolph, and Union. Alamance, Anson, Montgomery, and Richmond counties were left whole within the district.

Senate District 25 comprises Alamance county and eastern Randolph county. The chairs opted to keep as many precincts whole in Randolph as possible while also keeping municipalities whole. One precinct was split to keep all of Asheboro whole in Senate District 29 and to keep all of Randleman whole in Senate District 25. All other precincts in Randolph county are left whole as are municipalities in the county. Senator Galey is the incumbent for Senate District 25.

CHAIRMAN NEWTON: Senator Hise.
CHAIRMAN HISE: Yes.
CHAIRMAN NEWTON: I just want to congratulate you for being halfway through.

CHAIRMAN HISE: Actually, it's a little more than that, but that's good.

Senate District 29 comprises the rest
of Randolph county, including all of Asheboro and the eastern side of the county, all of Anson, Montgomery, and Richmond, and eastern and southern portions of Union county. Within Union county, the district line was drawn to keep all precincts and municipalities whole. Senate District 29 shares one split precinct with Senate District 25 in Randolph county to keep the city of Asheboro whole. There are no split municipalities within counties in the district. There are two incumbents in Senate District 29: Senator Craven and Senator McInnis.

Senate District 35 comprises of the rest of Union county and parts of the southernmost VTDs in Cabarrus county. The chairs opted to not take the entire VTD, leaving the blocks north of the town of Midland in Senate District 34 to leave as much of the population of Cabarrus county in the district base there as possible, that being Senate District 34, and to make the populations of the districts within the pod fall within the plus or minus 5 percent range. All the districts in this county grouping are above the ideal population number with Senate District 34 and 35
above 218,000 people, just below the limit of 219, 227 .

A second VTD was split in Senate District 34 to keep the entire municipality of Midland within 30 -- within Senate District 34. The chairs were able to leave the municipalities of Locust whole in Cabarrus county. Most of the town is in Stanly county, but there are portions in Cabarrus. The Cabarrus county portion of Locust is, therefore, split between Senate District 34 and Senate District 35. The incumbent in Senate District 35 is Senator Johnson.

Senate District 34 comprises most of Cabarrus county. There are two split VTDs, as mentioned before, and one split municipality. The Cabarrus county portion of Locust, the incumbent in Senate District 34 is Senator Newton.

Guilford and Rockingham counties form a two-county, three-district grouping in the senate base map. Rockingham county is left whole in Senate District 26. Senate District 26 includes the unincorporated and bedroom community areas of Guilford county along with

Rockingham county. Greensboro is too large to be contained in one senate district and is, therefore, split.

Senate District 26 does not contain any G precincts, Greensboro [unintelligible] that begin with the letter $G$, but it does include 4 percent of the city's population. One VTD was split, SDRI, in western Guilford county to keep the population of Kernersville, the Guilford county portion, most of the municipalities in Forsyth county but within Senate District 26, therefore in total there is one split municipality, Greensboro, and one split VTD in Guilford county. The incumbent in Senate District 26 is Senator Berger.

Senate District 28 is drawn respecting the city limits of Greensboro as much as possible. The city's too large for one senate district, so Senate District 28 is situated in the northern two-thirds of the city. 68 percent of Greensboro's population is in Senate District 28. There are two incumbents in the district: Senator Robinson and Senator Garrett.

Senate District 27 includes most of the rest of Greensboro, specifically the southern
sections of the city and the city of High Point, leaving the Guilford portion of the municipalities whole. There is no incumbent in Senate District 27.

Senate District 30 is created by the base county grouping map: Davie and Davidson counties. This being a whole county district, there are no split precincts or split municipalities. Senator Jarvis is the incumbent in Senate District 30. 30, 32. Sorry.

Senate District 31 and 32 are in a two-county pod that includes Stokes and Forsyth counties. The chairs opted to pair Forsyth and Stokes instead of Forsyth with Yadkin because the resulting districts both within Forsyth-Stokes county groupings and the Alexander-Wilkes-Surry-Yadkin groupings are more compact and because its configuration leaves two more municipalities whole spanning the two counties Germantown and King which span Forsyth-Stokes county line.

Senate District 31 is drawn to keep Stokes county whole and to keep as many municipalities whole within Forsyth as possible. Senate District 31 keeps the suburban towns
around Winston-Salem whole: Bethania, Clemmons, Germantown, Kernersville, King, Lewis, Rural Hall, Tobaccoville, and Walkertown. This configuration keeps the municipalities King and Germantown whole across the Forsyth-Stokes counties. There are no municipalities that span the Yadkin-Forsyth county line, the alternative option for the two-county groupings, therefore selecting the Forsyth-Stokes county grouping option creates more compact districts and keeps two more municipalities whole across the counties.

Senate District 31 also includes parts of Winston-Salem that are in shared precincts with these two towns. The populations of Winston-Salem is too large for one senate district, therefore it is split between Senate District 31 and Senate District 32.

Senate District 31 contains 16 percent of the city's population. There are no split VTDs in the district. The incumbent in Senate District 31 is Senator Krawiec.

Senate District 32 is drawn within the city of Winston-Salem since it's larger than the population range for a senate district. Senate

District 32 contains 84 percent of the population of Winston-Salem. All VTDs were left whole in Forsyth county. The incumbent for Senate District 31 is Senator Lowe.

Senate District 36 is created by the same grouping choice in northwestern

North Carolina: Alexander, Surry, Wilkes, and Yadkin counties. The alternative configuration for this district follows the Stephenson criteria, and Alexander, Surry, Wilkes, and Stokes trading Yadkin for Stokes. The chairs opted for the configuration that includes Yadkin because the district is more compact and leaves two more municipalities whole that span the border of Forsyth and Stokes. There are no split VTDs or split municipalities within this district, and there is no incumbent for Senate District 36.

Senate District 33 is created by the base county grouping map: Rowan and Stanly counties. This being a whole county district, there are no split VTDs or split municipalities within the counties in the district. Senator Ford is the incumbent in Senate District 33.
Six senate districts are contained in
the two-county grouping of Iredell and Mecklenburg county. Senate District 37, 38, 39, 40, 41, and 42. The county grouping is created by the base map.

Senate District 37 keeps Iredell whole and contains the northmost precincts of Mecklenburg county. The municipality of Davidson spans Iredell and Mecklenburg county, so Senate District 37 includes the Mecklenburg precincts containing Davidson, keeping the Mecklenburg and Iredell portions of that municipality whole. Part of Davidson is in Cabarrus county, but that piece of the municipality is in Senate District 34.

The town of Cornelius is too large to also fit in Senate District 37, and a split municipality is unavoidable. Senate District 37 includes 33 percent of the population of Cornelius. This is the only split municipality in the district. There are no split precincts. The incumbents in Senate District 37 are Senator Sawyer and Senator Marcus.

I would like to note that the Senate Democrats' amendment for Mecklenburg and Iredell county contains this same district, Senate

District 37, exactly the same way, creating the same double-bunking.

Senate District 38 is in northern Mecklenburg county, directly south of Senate District 37. This includes the town of Huntersville, 67 percent of the town of Cornelius, and 14 percent of the city of Charlotte. Charlotte, the largest city in the state, has over 857,000 people and is therefore contained in the five Mecklenburg base senate districts. Senate District 38 includes about a dozen north Charlotte precincts. There are no split precincts in this district, and the incumbent is Senator Mohammed.

Senate District 39 is in western Mecklenburg county and includes the unincorporated areas along with the Gaston county along and the South Carolina border along with parts of uptown, west Charlotte, Still Creek and the town of Pineville and southern Mecklenburg county. Of the population in the district, 81 percent is in Charlotte, 5 percent is in Pineville, and 14 percent is in the unincorporated areas of the state. Of the total population of Charlotte, Senate District

39 contains about 20 percent of the population. There are no split VTDs in this district. Senator Salvador is the incumbent in Senate District 39.

Senate District 40 is in northeastern Charlotte and includes 24 percent of the city's population. Of the population in the district, 96 percent is in Charlotte and 4 percent is in unincorporated areas of Mecklenburg along the eastern edge of the county bordering Cabarrus. There is no split precincts in the district. Senator Waddell is the incumbent in Senate District 40.

Senate District 41 includes south Charlotte and the towns of Matthews and Mint Hill. They're unincorporated areas in the district. Of the population in the district, 71 percent is Charlotte, 14 percent is Matthews, 12 percent is Mint Hill, and the remaining 4 percent is Union county base municipalities with territories in southern Mecklenburg and unincorporated areas. Approximately 18 percent of the population of Charlotte is in this district. There are no split precincts, and there is no incumbent in Senate District 41.

Senate District 42 includes parts of uptown Charlotte, south Charlotte, and east Charlotte. 100 percent of the district's population is in the city of Charlotte. The district includes 25 percent of Charlotte's population. There are no split precincts in Senate District 42, and the incumbent in the district is Senator Jackson.

There are two options for county groupings in the southwest part of the state. The chairs selected the county group configuration that combines Cleveland, Gaston, and Lincoln counties in a 3-2 district pod, Henderson, Polk, and Rutherford counties in a 3-1 district pod, and Buncombe, Burke, and McDowell in a three-county, two-district pod. The chairs selected this because the resulting districts are the most compact.

Senate District 43 is drawn within Gaston county and keeps all the precincts and municipalities whole. Five VTDs were pulled out of the Gaston county district, the three Cherryville VTDs, Landers Chapel, and Tryon, to stay within the correct population range. The incumbent in District 45 is Senator Harrington.

Senate District 44 is comprised of the five VTDs from Gaston county and Cleveland and Lincoln counties. There are no split precincts or municipalities within the counties in Senate District 44. The incumbent in this district is Senator Alexander.

Senate District 48 is combined of three county groupings: Henderson, Polk, and Rutherford counties. This being a whole county district, there are no split municipalities or precincts. The incumbent for Senate District 48 is Senator Edwards.

Senate District 46 includes all of Burke and McDowell county plus unincorporated precincts and small towns in Buncombe county. One VTD is split to keep the municipality of Woodfin whole within Senate District 49. There is no split municipalities in the district. The incumbent for District 47 is Senator -- 46 is Senator Daniel.

Senate District 49 includes the rest of Buncombe county, including Asheville, Biltmore Forest, Weaverville, Woodfin -- and Woodfin. This splits one VTD mentioned above to keep Woodfin whole. There are no split
municipalities in the district. The incumbent for District 48 is Senator Mayfield.

The senate based map includes a western North Carolina county grouping comprising three districts, 45, 47, and 50, and 17 counties, Alleghany, Ashe, Avery, Caldwell, Catawba, Cherokee, Clay, Graham, Haywood, Jackson, Macon, Madison, Mitchell, Swain, Transylvania, Watauga, and Yancey. Because of how these counties are aligned and the populations, the counties must be split between districts are Caldwell and Haywood.

Senate District 45 contains all of Catawba county and a portion of Caldwell county. The chairs kept the municipalities in Caldwell whole as Lenoir -- with Lenoir going to Senate District 47 and the small towns in the southeast of Lenoir in Senate District 45. There are two split precincts in Caldwell to keep the municipalities of Lenoir whole. There are no split municipalities within the district.

Senator Proctor is the incumbent in Senate District 45 .

Senate District 47 includes the rest of Caldwell county, all of Alleghany, Ashe, Avery,

Madison, Mitchell, Watauga, and Yancey counties and a portion of Haywood county. The chairs kept all municipalities and VTDs whole within Haywood county. In Haywood county, Senate District 47 includes the town of Canton. The larger municipality of Waynesville is left whole in Senate District 50. There are no split municipalities in the district, and only the two split precincts shared with Senate District 45 to keep Lenoir whole. There are two incumbents in Senate District 47, myself and Senator Ballard.

Senate District 50 includes the rest of Haywood county, includes all of Cherokee, Clay, Graham, Jackson, Macon, Swain, and Transylvania. There are no split precincts or municipalities in the district. Senator Corbin is the incumbent for Senate District 50 .

CHAIRMAN NEWTON: Senator Hise, thank you. That's a lot of work, especially for a math guy. Very well done.
[Applause.]
CHAIRMAN NEWTON: Yeah, give him a hand. Well done.

So, Members, where we're going to go
from here is I'm going to be making a statement of the chairs. We have a number of amendments that are being pulled together that I think will answer or go to many of the questions that you may have for Senator Hise.

So what we're going to do, I'm going to provide you the statement of the chairs, we're going to then pause, go into recess for enough time to get our arms around these amendments, see what we've got, then we'll reconvene and you'll be able to ask Senator Hise any questions you have about the map and then follow that with your amendment if you think that cures a concern that you have.

So, Senator Hise, you're welcome to take a seat at this point because you're not going to have to be asked any questions until a little bit later.

So the chairs wanted to be direct and address an issue that's being raised by some, and that is whether the General Assembly is required to draw districts using racial data. We've also received a lawsuit already from -- against the General Assembly filed before the plan has even passed. This interest
group activity litigated against the General Assembly this past decade and succeeded in developing some of the strict limits on permissible racial consideration -- racial considerations it now asks us to defy. I want to explain at the outset why we cannot do that. So just to be clear, they litigated to limit our ability to use racial data, we're choosing, as we did in 2019, not to use racial data, and now they're litigating, saying we should have used racial data.

So first, the General Assembly, the allegation is, cannot draw districts using race -- well, no, this is the law. Apologies.

First, the General Assembly cannot draw districts using race under the Voting Rights Act unless we satisfy the three Gingles preconditions. They are, one, a reasonably compact majority-minority VAP district; two, a politically cohesive minority community; and three, white bloc voting usually defeating that community's candidate of choice.

To draw VRA districts according to Covington and other recent court cases, the General Assembly would need a strong basis in
evidence -- quote, a strong basis in evidence, for each of those three factors. Specific evidence would come in the form of reliable racial bloc voting analysis by an expert in the field. Spreadsheets and argument based on inadequate data do not create the strong basis in evidence the General Assembly would need to overcome a constitutional challenge.

Second, if we draw districts using race and we do not satisfy the Gingles preconditions, we risk violating the Equal Protection Clause of the 14 th Amendment to the United States Constitution. In short, making one districting choice over another for racially predominant reasons will be subjected to strict scrutiny by the courts.

Our present record and most recent litigation does not provide a yes answer to any of the Gingles factors. Our two most recent redistricting efforts, overseen and approved by the courts, in the Covington case and the Lewis case did not consider race. In fact, in Lewis, a three-judge panel analyzed all regions of the state last year, last year, and found no region where the Gingles factors were met. Some have
asked about whether the Stephenson case require that race be used in redistricting. Stephenson says VRA districts must be drawn first only if there are VRA districts. Stephenson does not require VRA districts be drawn independent of the requirements of federal law. Stephenson assumed there would be VRA districts because Section 5 of the VRA then applied here which meant VRA districts would need to be preserved independent of the Gingles factors I just discussed, but the US Supreme Court has held that VRA Section 5 no longer applies which means it no longer protects the General Assembly from racial gerrymandering claims.

Now, I'll discuss district-specific issues several members have asked us about.

In the Wilson-Wayne area, we do not have any proposed plan from any member of this body that includes a reasonably compact majority-minority district in that area. If you have one, and we mean a complete plan with a majority-minority VAP district in that area, please provide it. If no such district can be drawn, then there is no need to continue the Gingles analysis. Creating such a district
would violate the 14 th Amendment's Equal Protection Clause.

In addition, the General Assembly cannot justify departure from the whole county rule for expressly and predominantly racial reasons without a strong basis in evidence of the type I described earlier. Under current law, only majority-minority districts required under Section 2 of the VRA can be formed prior to other districts in a plan under Stephenson. Following this request would put the map squarely in conflict with the 14 th Amendment.

Some members of this committee have also expressed concern about the grouping decision we made for $S D 1$ in the northeastern part of the state. The General Assembly is not in a position to create so-called crossover districts in this map. First, Section 2 of the VRA does not require such districts.

Second, if the General Assembly were to engage in such race-predominant drawing, they would run into claims of racial gerrymandering under the 14 th Amendment and they would be without the protection of the VRA to survive strict scrutiny.

Finally, no one has given the General Assembly the data necessary to develop a strong basis in evidence for engaging in such drawing. That district was drawn with neutral criteria predominating as just explained when going over the map.

In short, we take our role and the legal precedence that guide it seriously. We reject the notion that we should flout binding precedent and clear guidance from the courts even when facing a lawsuit from a litigious group that developed some of the very guidance it now asks us to ignore.

Now we'll take a short recess in order to see these proposed amendments, and after that we will open the floor for the committee to ask questions of Senator Hise and to consider those amendments. So let's take a break. We will recess until -- what time is it, about ten till. Let's go till quarter after, and if that's not enough time we may have to go back and recess for a few more minutes. Thank you. So we recess now until 10:15. Thank you.
(Transcription from YouTube ended at 1:40:34 and started again at 2:21:59.)

CHAIRMAN NEWTON: We are going to conclude our 15-, 20-minute recess now, and we're at the point in the agenda where we are going to open the floor to members to ask any questions of Senator Hise that you might have but also to offer any amendments that you may have. So, members of the committee, the floor is open for either questions or for amendments.

Senator Clark.
SENATOR CLARK: I'd like to send forth an amendment.

CHAIRMAN NEWTON: Thank you.
Senator Clark's sending forth an amendment.
Do the members have that already,
Senator Clark? Not yet. Okay. So they'll need to be passed out.

CHAIRMAN HISE: Which one is it?
SENATOR CLARK: SCG-3.
CHAIRMAN NEWTON: Question for staff. Are we going to hand out all the amendments to the --

UNIDENTIFIED SPEAKER: Do you want to do that? Are all the amendments --

CHAIRMAN NEWTON: I'd rather go ahead and hand them all out. Members, we'll try to
give them to you in order so you can minimize the shuffling, but that way you've got them and we won't have to pause for distribution for every -- because there's a bunch of amendments being offered here, so let's go ahead and send them all out.

CHAIRMAN HISE: Do we want to put them in packets and hand them out that way?
[Unintelligible.]
CHAIRMAN NEWTON: Members, just FYI. There are going to be 12-ish proposed amendments. And again, we're going to try to give those to you in order.

So, Members, they're coming to you in reverse order to make your life a little bit easier.

I'm now going to remove my guarantee that they're in reverse order. They may not be. We'll figure it out.

Members, you should be receiving SBVA Amend-3 is the last map you're handed, but it will be the first map we discuss -- or amendment.

Members, we're almost ready to go. We are going to go out of order, just to make
things interesting as we get started here.
SCH Amendment 1 is going to be the first amendment to be discussed. If you want to go ahead and shuffle your packet, it should be the second one down in your packet.

All right. Members, we are going to go ahead and get started again. And at this point I'm opening the floor to members for amendments or questions of Senator Hise.

Senator Clark.
SENATOR CLARK: I'd like to send forth an amendment, Mr. Chair.

CHAIRMAN NEWTON: Okay. Thank you, Senator Clark. Which amendment are you sending forth?

SENATOR CLARK: SCH Amendment 1, Cumberland county and Moore county cluster.

CHAIRMAN NEWTON: All right. Thank you. Senator Clark, are you moving for the amendment, or you just want to explain it at this point?

SENATOR CLARK: I will explain and ask that it be accepted.

CHAIRMAN NEWTON: Thank you. You have the floor.

SENATOR CLARK: Okay. Thank you,
Mr. Chair. I appreciate y'all's effort to do a grouping -- or should I say separation within the group of a senate district between Moore and Cumberland counties. However, I think I have an option that will probably serve the communities of that -- those two counties a little bit better.

As you come down from Moore county, which is numbered Senate District 21 in this particular iteration, the first thing you see essentially is Fort Bragg, which is that large block Manchester precinct that is there, and adjacent to it in the top right-hand corner you will find the Spring Lake precinct, and then this little knob down at the bottom is what we call west area. Essentially, they provide for a very tight community of interest within the Fort Bragg community that is also associated with this lower tier in Moore county which much of it has been designated as a protection for the military training environment.

But instead of coming down and forming a block such as you all do, I connect this Manchester precinct with some of the
northwestern precincts in Cumberland county as well as Hope Mills. So essentially it is splitting the same municipalities as your plan, both of them split Fayetteville and both of them split Hope Mills, but I believe this supports the community of interest concept much better. And for one thing, like the -- I guess you can say the top portion of this, what looks like a C beneath the Manchester precinct, that is a part of what we call the big bang expansion in Cumberland county, when Fayetteville expanded out from its original boundaries, and it picked that area up. And then to the south of that you have Hope Mills, so we have all of the Hope Mills precincts.

But as you indicated, because of the irregularities in the VTDs within Cumberland county, invariably you're going to, you know, possibly split a municipality, and that's why we split a little bit of Hope Mills, just as your plan does, in addition to splitting Fayetteville.

So that being said, Mr. Chair, I recommend to the committee that we adopt this version of the cluster.

CHAIRMAN NEWTON: Thank you,
Senator Clark.
So Senator Clark is moving that we adopt this amendment. First, are there any questions by members before we take that vote? Any questions of Senator Clark on his amendment?

All right. If not, those in favor of Senator Clark's adopting this amendment to the map say aye.

COMMITTEE MEMBERS: Aye.
CHAIRMAN NEWTON: Those opposed.
COMMITTEE MEMBERS: No.
CHAIRMAN NEWTON: All right. The nos have it.

So thank you, Senator Clark. Are you up next as well?

SENATOR CLARK: I'm not up next. Senator Blue is up next.

CHAIRMAN NEWTON: All right. So just so the record is clear, SCH Amendment 1 was voted nay, and now we have SBV Amendment 3; is that correct?

SENATOR BLUE: Is that the first one? I'm sorry, I'm out of order here. I'm trying to -- is that the northeast one?

CHAIRMAN NEWTON: I have -- we took Senator Clark's out of order at his request.

SENATOR BLUE: I want the northeast cluster.

CHAIRMAN NEWTON: Okay. Senator Blue is asking to go to the northeast cluster which is SBA Amend-2. Is that what you'd like?

SENATOR BLUE: Yes, that's it. It was initially SST 10.

CHAIRMAN NEWTON: It should be the next to last map in your packet, Members, SBA Amend-2. And this is -- Senator Blue is offering this amendment.

SENATOR BLUE: Yes. Thank you,
Mr. Chairman. If everybody has gotten it, I'll comment.

CHAIRMAN NEWTON: Okay. Senator Blue, you have the floor.

SENATOR BLUE: Thank you, Senator Newton.

First, I'd like to sort of follow up and explain in this district what the comments that the chair ably stated just before we took a recess, and that is whether the General Assembly is required to draw districts regarding race.

And I simply go back to the Stephenson decision that said that before you do any clusters or do any kind of redistricting, you first must determine the VRA districts. And I say it against this context. At least as I understand it -- and I don't hold myself out to be an expert in this area and haven't litigated in it in 40 years, but let me simply say that if you look at Senate District Number 1 and Number 2, there are two clusters up there, and there was a choice of clusters that the committee made.

I heard Senator Hise explain the historic reason of putting certain counties together in that area, but history indicates just the opposite has happened.

There are seven or eight counties along the North Carolina-Virginia border that historically I'll call the black belt of North Carolina because they're majority black counties, and you don't need to consider race or statistics to know that. If you -- again, I go back to eighth grade geography. It's one of the lessons you learned. And if you go to the efforts in the 1960s, voter registration efforts
and all that, you got it reinforced, and when I was in college in the '70s you got it reinforced again. And those counties have not significantly changed population percentages. They're losing populations like all of the other counties -- almost all of the other counties in that region.

> Starting in 1980, after the census, starting in '81, when the districts were drawn, there was no minority district drawn up there. There was one black House member who had gotten elected in 1980, the first African American from that area, that entire area of the state to be elected since 1900 -- either 1898 or 1900. And so following that is what led to the Gingles decision. A lawsuit was filed. It was originally Gingles versus Edmisten, because Rufus Edmisten was the attorney general. A lawsuit was filed. It was a Section 5 lawsuit, meaning that the counties had to be pre-cleared. There were 42 counties in North Carolina under Section 5 of the Voting Rights Act that had to be pre-cleared. You couldn't change them without getting the justice department's permission.

The justice department objected. Went back, tried to fix them again. A district was drawn up there in 1984, after the Gingles decision, and that's where the doctrine that you just recited came from. And the Gingles decision, later changed to Gingles versus -- the successor to Rufus Edmisten as attorney general and later on another name. But anyhow, the court in that case decided that you had to, because of history in that area, and that history was a history of polarized voting, that you had to draw certain districts in there if as -- again, using your criteria, if they were reasonably compact, if there were politically cohesive, meaning they voted primarily, minorities in that area, as a bloc, and you could show racially polarized voting, that is, you could show that whites tended not to vote for African Americans in that district.

The districts were drawn, it later evolved in the mid '80s to a senate district drawn pretty much along that same area, with those seven counties in it.

What you have here is -- and in Senate District 1, with the amendment that I'm
offering, is putting those counties back together naturally, because that's how they've been, and they have elected a minority from that district $I$ think since it was created. That became the case in the 1990 s in the various lawsuits that came about. Even when the justice department wasn't sure what they were requiring with congressional districts, they required that one up there. That was the case in 2000, the district was drawn with those counties together, and it was the case in 2011.

Now, an interesting thing happened in America during that time and particularly in North Carolina. Initially, Guilford county and Cumberland county and Mecklenburg county were affected counties because of their voting patterns, and you can show all of these Gingles factors.

Over the course of the last almost 40 years, since the Gingles decision by the United States Supreme Court, areas of the state are less polarized in their voting patterns. Wake county never was a Section 5 county, neither was Durham county. And in fact, in the Gingles decision, the court pointed out that

Durham was not a Voting Rights district because you could not show polarized voting, although you could show the other aspects of it. Durham, as Wake county, had elected African Americans countywide, the judgeships, county commission races, and various other races, so you could not show polarized voting and, consequently, you couldn't create majority-minority districts.

The problem -- and I think the way it was described, and I know that folk interpret this different ways -- is that Rucho -- the case Rucho in 2011 that was filed was because even in places that you had not had -- you could not prove racially polarized voting, this General Assembly took the number of minority voters in every district in the urban areas, in every district that African Americans represented with the exception of Orange county, took them up to 50 percent plus one minority voters, voting age population and minority voters. That way all of the districts that were represented by African Americans were placed in the category of Voting Rights Act districts, they weren't, but what that case brought to the forefront was a doctrine called packing which meant that you
would put all of the African Americans, or the minorities, in as few districts as possible, and that's what you did when -- this assembly did, you were not here so you didn't do it.

So when you took all of these districts up to 50 percent plus, the court did not make the specific determination that they were -- the determination was not made that you could justify 50 percent certainly in non-VRA districts but even more so in VRA districts such as this district was. And it said now because the idea behind the Voting Rights Act was overtime to ameliorate the effects of polarized voting and the inability of blacks to get whites to vote for them, and all of the counties in eastern North Carolina were part of the 42 that were covered by Section 5 of the Voting Rights Act.

Section 2 of the Voting Rights Act covered the entire country, not just this -- the way Section 5 affected 42 counties out of 100 in North Carolina. But the court said in Rucho that what you have done in taking all of these districts above 50 percent is in violation of the Voting Rights Act. First, you haven't shown
the Gingles measurements, and it is possible to have VRA districts that are not 50 percent plus. Justice Kennedy said in his ruling that if in fact you try to dismantle a VRA district where you can create one, then that raises serious questions under the 14 th Amendment and the Voting Rights Act, the Equal Protection Clause of the 14 th Amendment.

So when you say that you haven't shown any VRA violations, it begs the question that you don't have to show 50 percent in the district for it to be an operating VRA district.

The point that I've been trying to make all along is if you can show that you can draw a VRA district that meets these criteria, you don't have to draw that district because you can analyze what's been going on over time, and you can take that number down because ideally, all of us want that number to disappear, but you gradually take it down without doing it abruptly. And when you do it abruptly, you dismantle districts where you've shown a history of polarized voting.

And that's what the letters to the chairs and to all of the members were trying to
get at; that the preliminary evidence shows that you have a responsibility to inquire as to whether or not there is further need for a Voting Rights Act district. The burden of making the inquiry is on the legislature, not on citizens out here because when citizens do it, they sue you because you haven't done it. And Stephenson says that you will make that analysis before you do all of the clustering and all of the other things.

What becomes obvious here in this cluster -- and mind you, the Voting Rights Act trumps the clustering, and that's why Stephenson says you first make the inquiry as to whether you can create -- or you must create VRA districts. You can show up in the northeast that you can create a VRA district, and you can show that you can -- look, I will tell you, it probably would take four hours to get from one end of the district that you've recommended down to Carteret county. No direct way to do it. You might have to catch boats, planes, and cars to get there. But the point is that there have been districts drawn down there that have been determined to be compact, now, even if they
meander through 8 or 10 or 12 counties and they dip into counties, affecting counties that ought not be affected in it you can draw, because we've drawn in the past, and the population is still there to support a VRA district.

What I've offered in this amendment is a solution to that problem, a simple solution. The fact of the matter is, as pointed out in the communications that have come to the chair, is that this district, as appears up here, that was created by the clustering, not by any drawing that I've done, all whole counties, are certainly much more compact than the two districts that the committee is recommending. But what I've shown is is that you can adopt that cluster and you got a functioning VRA district just by accepting this top cluster with those counties in it.

It is currently represented by an
African American woman, and it would still be -- she would still be residing in that district. You're not looking at race figures in the district, but the communication that you got indicated that black candidates, African American candidates had consistently scored

50 percent of the vote -- 50 plus percent of the vote, so you don't have polarization to the extent that whites are not voting for African Americans, and they point out that in those districts, 53 percent of the vote went to these African American statewide candidates. And that's how they suggest that there's enough information that would make you inquire whether or not you can create a functioning district without having 50 plus percent in that district. Because you can create the district without the disruption that creating a full VRA district would require, it seems the choice would be to create that district because then would you not tear into all of those counties, ferreting out the black vote in all of those counties the way the 1980s, 1990s, and 2000 district initially did before the whole county provision was reactivated in 2003. And prior to that time, I might add, that for 20 years plus, the state was districted without regard to the whole county provision in the state constitution because folk had assumed that it was repealed by the Voting Rights Act.
So that's why I'm offering this
district. The two groups that have communicated with the chair and with this committee have made it plain to you that this is a VRA district. You have all the tools at your disposal to inquire as to whether you can create it, how you would create it, but they point out to you that based on this anecdotal evidence you clearly still have a degree of racially polarized voting. I believe, and I think you believe too, that it's not to the degree that it was in the 1980s or 1990s, but it hasn't gotten to the point that it is in these urban areas which are no longer -- which no longer have the degree of polarized voting that existed, those areas that were covered by Section 5 and, again, all of us by Section 2.

One of the things -- and I'll point this out because I've been asked about it. Gingles, the decision, and you can read it in black and white, points out, and they point it out in Gingles itself, and we've referred to it in many cases since then, that you can do, as far as drawing, whatever you need to in Durham county now, in Wake county, in Mecklenburg county, and in Guilford county, and that on its
face is not violating the Voting Rights Act unless you can show packing again in Guilford county or Cumberland county. But with respect to the others, there is no Voting Rights Act violation unless you unreasonably take the black vote beyond the level where it is functioning effectively, but that doesn't say that you can go 50 percent plus without justification because that was Gingles -- I mean, that was Rucho. And Rucho did not say you no longer look for Voting Rights Act districts and that there are none any more. Rucho just said you hadn't done the study that supports your taking these districts to 50 percent plus. And the case was finally resolved when this legislature redrew the districts, took them down in the 30 s and 40 s. There are African Americans representing senate districts with 20 some percent African American population that went up to 50 plus. Rucho said you got to bring that back down. There were districts such as mine that went back into the low 30 s and had not been in the 40 s.

And I'll just make one comment and I'll shut up on this amendment. There were nine senate districts represented by African

Americans prior to 2011. Nine. None of them except this one -- I believe this was the only one. There were three districts in the east, but none of them, I believe except one, had a VRA greater than 50 percent, yet all of them had elected African Americans which showed that the Voting Rights Act was working and you were bringing the polarization down and we were all getting to the point that $I$ hope all of us aspire to.

So I'm suggesting to you that this district, this district recognizes the progress that's been made, but it does not dismantle a district without at least doing the baseline study which has a burden on the General Assembly to do. You indicated you had not done it, you did not plan to do it, and this morning, Senator Newton, you indicated you were not doing it because you didn't see any need to do it because the people who litigated it to the limit -- to limit it now want to make you look at it. The people who litigated it litigated it because you had packed all of these other districts and said you got to unpack and make sure that the Voting Rights Act is working, not that you're going
back to pre-1965 practices.
So this district in the northeast,
District 1, whatever it is officially, would -- it's reasonably compact, because it's a cluster; it's politically cohesive, because that's what the information from these various groups have told you that it is; and there is racially polarized voting in it to some extent but not to the degree -- not to the degree that you got to create a district that's 50 percent plus African American minority.

Now, you say that there's no expert evidence available. The burden is on this General Assembly to have the experts tell you that there's no need for it, not on the citizenry to tell you that there is a need. But if you're looking for that, the public hearings tell you that the citizens in this district think you ought to preserve the district as it is and keep those counties together.

What you've done in choosing one option over the other with these two -- and again, they're two clusters. You can choose one cluster over the other. Senator Hise explained why you chose the first cluster. Well, the
first cluster hasn't been like that over the years. It hasn't been like that in the earlier cluster, and it should not present an excuse to you to do it like that when you know that you're dismantling a functioning VRA district.

So I'll answer any questions, but I would move the adoption of the amendment, Mr. Chair, because I believe -- I sincerely believe that in this map that you've presented there are two viable Voting Rights Act claims that would survive in this action.

Now, the theory might be -- and I don't know what the lawyers' strategies may be on this. The theory might be that maybe you want to tee it up and let the supreme court decide further what Section 2 means or what the Voting Rights Act means, but what you do is put the burden of doing that on the taxpayers of North Carolina. And again, we spend tens of millions of dollars litigating something that at the end of the day we're going to lose unless the United States Supreme Court significantly changes the law on it. And we go back up to a fourth circuit that issued some of the harshest rulings in the last cycle about North Carolina's
redistricting than it did of any other redistricting in the country from any of the circuit courts -- or any of the three-judge panels. I'm sorry.

And so I would ask you to really look seriously at this. And I will offer one more amendment so that you can absolve the state of Voting Rights Act violations and litigate whatever else you have done in the context of whether it is political gerrymandering because those are the choices. You had two issues in 2010 decade: Racial gerrymandering, which I have just described to you why the court reversed it, but the court didn't say you didn't have to look at it. And secondly, political gerrymandering. The issues that might remain in Guilford county and Cumberland county or the other urban counties are issues of political gerrymandering unless you far exceed what the court said in 2015 or '16 you had to do with respect to creating minority districts within those areas if you were going to create them, and no requirement that you create them, but you can't unreasonably -- I don't think there's a requirement except maybe again in Greensboro and

Fayetteville because it was covered -- as long as you don't unreasonably discriminate against minorities.

But what I am trying to offer to you is a way to stay clear of federal court with respect to the racial gerrymander and leave open these issues of the political gerrymander, because that's the only thing that I've seen the letters about, these two districts, and those clearly are racial gerrymander issues that bring in other parts of the state that don't have to be involved in we fix them here without leaving it to the courts to send it back and involving a much broader swath of the state.

CHAIRMAN NEWTON: Thank you,
Senator Blue.
Senator Hise, or any other members that may have comments or questions.

CHAIRMAN HISE: I'd like to respond.
Members, I think it is clear with what we have here that this is not a consideration under the Voting Rights Act. I think

Senator Blue has made it clear several times that that is a separate consideration that must be done first and considered prior to the
consideration of county pods, if it's necessary. We may disagree on the concept of whether those standards have been met, whether the anecdotal evidence proves those standards have been met.

But this decision is clearly about
Stephenson groupings in the two districts. We have moved on -- Stephenson requires, says ten counties are grouped in one manner and eight counties are grouped in another, there are two options for doing so. And so his amendment presents one of those options, our amendment presents -- our bill presents a different option chosen. Both meet the Stephenson criteria. Both are drawn under the Stephenson criteria. As I have said previously, the chairs looked at this extensively and made a decision as to which of those best conformed communities of interest. We looked at compactness. The map you currently have -- not the amendment. District 1 is the most compact of the four districts that are created in the map. The fingerling counties and [unintelligible] are most contained within this map. Four of the five are placed together in the current map. It moves it to a $3 / 2$ split in the other map.

Particularly looking at the northern Outer Banks region, the map that you have contains all of those counties together in a more compact district. So I would ask that the committee reject the amendment and consider the map as is. SENATOR BLUE: Mr. Chairman, can I ask Senator Hise a question.

CHAIRMAN NEWTON: Thank you, Senator
Hise.
Yes, you may. Senator Hise.
SENATOR BLUE: Senator Hise, you
indicate that your map is more compact. How do you determine that having a map that runs from Warren county down to Carteret county is more compact than what we see on the board up here. CHAIRMAN HISE: Senator Blue, I'll be clear on what I said, not transpose what I said. There are four districts that can be created. District 1 in the map that we currently have is the most compact of the four districts.

SENATOR BLUE: Let me ask another question --
CHAIRMAN NEWTON: Follow-up. Sure,

Senator Blue.

SENATOR BLUE: And so it's your
testimony that you chose -- you chose the district in your map because it is more compact than the other two?

CHAIRMAN HISE: I can repeat my answer.
SENATOR BLUE: Please do.
CHAIRMAN HISE: District 1 that is
created is the most compact of the districts formed. I also stated that it keeps more of the finger counties, which we heard from both comments and others that are community of interest, keeps more of those counties together within that map and keeps the northern Outer Banks region together within a map.

I also talked about in the choice for the districts comparing the media markets that the two were in versus which ones are in the Norfolk media markets and which ones are in the Raleigh or Greenville media markets for those considerations. All of that went into those considerations for determining communities of interest as well as looking at the compactness. CHAIRMAN NEWTON: Follow-up,

Senator Blue.
SENATOR BLUE: Follow-up.

So that I understand, then, compactness is the dominant issue in this choice of districts.

CHAIRMAN HISE: I never said that. I said it is one of the issues.

SENATOR BLUE: What are the other issues that --

CHAIRMAN HISE: Considering communities of interest, and that included a consideration of the fingerling counties, that included a consideration of the media markets that the counties are in and the northern Outer Banks region.

SENATOR BLUE: Follow-up.
CHAIRMAN NEWTON: Follow-up.
SENATOR BLUE: So the media market is in your opinion a legitimate community of interest?

CHAIRMAN HISE: It identifies -- it would help identify a community of interest, yes.

SENATOR BLUE: Follow-up.
CHAIRMAN NEWTON: Yes, sir.
SENATOR BLUE: Did you examine the community of interest of all of these
traditionally African American counties and agricultural counties as opposed to aquacultural counties or various other things that the coastal counties might entail?

CHAIRMAN HISE: Senator, we looked at as many considerations as we could to identify which of these two choices were the better choice to make between the grouping -- the 10/8 groupings of the counties, and from what we concluded, with keeping the fingerling counties whole as well as the northern Outer Banks region together that this better met the needs of that region.

SENATOR BLUE: Further question. CHAIRMAN NEWTON: Yes, Senator Blue. SENATOR BLUE: Did you consider the community of interest of the northern border counties?

CHAIRMAN HISE: I would say that with the exception of inland to Halifax or Warren, so -- and the only one of those that happens to be different would be Warren, all the northern border counties are the same -- with the exception of Warren county are in the same district in both maps.

CHAIRMAN NEWTON: Follow-up,
Senator Blue?
SENATOR BLUE: Yeah, further question.
CHAIRMAN NEWTON: Yes.
SENATOR BLUE: In looking at the map that's displayed on the screen, could you tell me what the communities of interest are if you start in the northeast at Warren county, which is the extreme -- northwest, rather, in the pink and go all the way down to Carteret county which is in -- below the south central eastern part of North Carolina.

CHAIRMAN HISE: Senator Blue, I did not determine the two possible groupings for the counties. We were just in a position to make a choice between the two possible groupings.

SENATOR BLUE: Further follow-up.
CHAIRMAN NEWTON: Another follow-up.
SENATOR BLUE: My question is what is a community of interest if $I$ flow through them from Warren county, then looks like is it Halifax, Northampton and then down a couple hundred miles or so to Carteret county which is a coastal county?

CHAIRMAN HISE: Other than looking at
what I've said previously about a similar media market for those counties, I would say that we have identified and mentioned the communities we were trying to keep whole and keep together, and when choosing between two groupings of counties, there was only one grouping of counties that did that.

SENATOR BLUE: I think one last question, if I could, Mr. Chairman.

CHAIRMAN NEWTON: Yes, sir.
SENATOR BLUE: Senator Daniel pointed out yesterday, when we were considering the congressional map, that one of the things that you had considered or that you thought about was the travel time. One of the congressional maps caused him some hiccups with respect to travel time. I think it may have been from Forsyth county down to Lincoln county.

Did you have an idea of what the travel time is from Warren county down to Morehead City?

CHAIRMAN HISE: I don't. I'm sure that's a number we could get you on what the travel time is.

I will tell you that it is clear that
when you're doing congressional maps, you are not drawing predetermined poddings of counties that you choose between. So congressional maps are open. There -- we did the analysis. There are no poddings of counties in congressional maps. In this manner, we had two choices of podding between two groups of poddings to choose from.

SENATOR BLUE: So -- and one last one.
CHAIRMAN NEWTON: One last, last one.
SENATOR BLUE: As I understand it -- as
I understand it, in this grouping, the only thing that mattered was compactness.

CHAIRMAN HISE: I never said that. I said we looked at a lot of considerations, and what we -- and I could go through them all again, which communities were important to stay as together as possible, what media markets they were in and others and made the choice for the other podding different than this amendment.

SENATOR BLUE: Well, that does call for one last question.

CHAIRMAN NEWTON: Okay.
SENATOR BLUE: And as I understand it, the media market in Warren county, what's that
media market? Is it Raleigh?
CHAIRMAN HISE: I can go back through and see if I've got --

CHAIRMAN NEWTON: Senator Blue, we're hearing someone in the gallery saying, yes, it is in fact Raleigh.

SENATOR BLUE: What about Carteret county?

CHAIRMAN HISE: Bertie, Tyrrell, Northampton, Raleigh.

So I have that the Greenville media market is Carteret, Hyde, Martin, Pamlico, and Washington that's coming in. The Raleigh media market will be Halifax and Warren. The Norfolk media market will be Chowan. The Greenville media market would also be Bertie and Tyrrell in the northern, and Raleigh would be in the Northampton media market. The rest, Camden, Currituck, Dare, Gates, Hertford, Pasquotank, Perquimans, in the Norfolk market.

SENATOR BLUE: Would Carteret --
CHAIRMAN NEWTON: Senator Blue, you have a last, last, last, last, last question.

SENATOR BLUE: Yeah, just a follow-up because I'm intrigued by this media market
element.
CHAIRMAN NEWTON: Sure.
SENATOR BLUE: But is it fair to say, and I'll put multiple ones together, there's a New Bern media market that would be affecting this district, there's a Wilmington media market that would be affecting this district as well as a Greenville media market?

CHAIRMAN HISE: We have identified a Greenville media market. I'm assuming the others --

SENATOR BLUE: Well, there are TV stations in all of those towns.

CHAIRMAN HISE: I come from the mountains so we're all pretty consistent on where WLOS or those go to, but they identify -those areas identify their media markets.

SENATOR BLUE: Thank you.
CHAIRMAN NEWTON: Thank you,
Senator Blue.
Senator Marcus, no, your question has been answered.

Seeing no -- Senator Nickel.
SENATOR NICKEL: Yeah. I just kind of did a double take with the distance and looked
on my phone to try to figure out how long it would take someone to go from Emerald Isle in Carteret county all the way up to -- I found Wise, North Carolina, right along the Virginia border. And Senator Blue is about right, if you stop for a rest break, it's about 4 hours, 177 miles, and that's if you're cutting through Senator Perry, Senator Davis, Senator Barnes' districts to get there.

You know, so my question just is what does somebody living in Emerald Isle, all the way on the bottom there on the coast, have in common with someone living in Wise,

North Carolina, way on the Virginia border, up there, in Warren county.

CHAIRMAN NEWTON: So, Senator Nickel, I'll allow Senator Hise to answer that question, but I think it's essentially asked and answered multiple times with Senator Blue, but Senator Hise.

CHAIRMAN HISE: Having served for 10 years in a district that's over a three-hour drive from Marshall to Tryon, about three and a half, if you do that, I understand the complexities of doing so, but that is in a lot
of ways the geographics of the map and the county pods that formed.

CHAIRMAN NEWTON: Thank you.
Anything else, Senator Nickel?
Okay. Well, with that, Senator Blue has moved for the adoption of SBA Amendment 2. All those in favor say aye.

COMMITTEE MEMBERS: Aye.
CHAIRMAN NEWTON: All those opposed, no.

COMMITTEE MEMBERS: No.
CHAIRMAN NEWTON: The nos have it.
So the next amendment -- I'll ask the proponent. The next one that I have on my list is actually right back up to the top which is SBV Amendment 3. Is that what you would like to pursue next?

UNIDENTIFIED SPEAKER: Just Buncombe county.

CHAIRMAN HISE: Buncombe, McDowell, Burke. It's red and pink. It's on the screen as well.

CHAIRMAN NEWTON: It's up to the sponsor what order you'd like to take these in. I've done my best.
[Unintelligible.]
CHAIRMAN NEWTON: Okay. Not that one.
Members.
SCH Amendment 2. Is that the Moore, Cumberland 21, 19 districts. Okay, very good. All right. And who is going to be offering these?

SENATOR BLUE: I'll talk about it. I want to first ask Senator Hise a couple questions since this is before us, but I want to ask Senator Hise a couple questions.

CHAIRMAN NEWTON: Okay. Go ahead.
SENATOR BLUE: Yes. Senator Hise, I'm trying to get straight in my mind these criteria that the committee adopted, and they were all listed with specific statement by you, I believe, that you couldn't rank order them, but you could consider all of them depending on what you were looking at at the time.

And what I'm trying to figure out about this is you mentioned that keeping municipalities whole was one of the priorities at least in the other maps that you've drawn; is that right.

CHAIRMAN HISE: And continues to be in
both maps, yes.
SENATOR BLUE: Keeping municipalities whole. And following that, what was the next most important criteria that you think you applied?

CHAIRMAN HISE: Senator Blue, I can go through the entire list of the criteria. We have made no statements about most important or next important. These are the criteria of the committee, and we considered them when drawing maps.

SENATOR BLUE: Okay. So is it fair to say --

CHAIRMAN HISE: Each member will make their own choice.

CHAIRMAN NEWTON: Senator Blue.
SENATOR BLUE: Thank you. So is it fair to say that you got this set of criteria and no one criteria determined the outcome?

CHAIRMAN NEWTON: Senator Hise.
CHAIRMAN HISE: So, Senator Blue, I would not say that that -- I think that is true for several criteria. There are criteria in the maps that $I$ do see as absolute. We had said that -- when we said that we would comply with
the Voting Rights Act, we will comply with the Voting Rights Act. When we said that the Stephenson groupings -- so violating the Stephenson groupings would be absolutes for the committee to consider. Not using race, not using political data were absolute considerations of the committee.

Beyond that, we moved to considerations minimizing -- which is not an exact science, but minimizing, dividing counties, dividing VTDs, dividing municipalities. All of those have varying levels that maps are drawn to try to accommodate them, but there were also absolute criteria that we felt were important to comply with.

SENATOR BLUE: Another question.
CHAIRMAN NEWTON: Yes, Senator Blue. SENATOR BLUE: And what made me ask you that question, Senator Hise, is because in many of the clusters, as you explained them earlier this morning, it appears that you prioritize not splitting municipalities. For example, when you say that next door in Sampson county that you decided -- you went out of the way to split a precinct in order to keep I believe the
municipality of Plain View, one of those places next to the hollerin' capital of the world.

CHAIRMAN NEWTON: Spivey's Corner. SENATOR BLUE: Yeah, Spivey's Corner. You went out of the way not to split precincts -- or you went out of the way, rather, to split a precinct to keep the municipality whole, but in Cumberland county your map decided to split Hope Mills.

Tell me, what was your thought process in determining the split Hope Mills and not Plain View?

CHAIRMAN NEWTON: Senator Hise.
CHAIRMAN HISE: And I believe in the same map we, by necessity, also split Fayetteville. With coming in, for the way it was coming, it is a balancing factor, and in choosing to make -- you know, could we choose to split a single VTD in order to keep a municipality whole, we made that choice and could do so. Would that choice be different if it required splitting multiple VTDs that's coming in in order to keep a municipality whole would be a different consideration and decision. SENATOR BLUE: Follow-up.

CHAIRMAN NEWTON: Follow-up.
SENATOR BLUE: Now, in your map, I
believe you split Fayetteville several times; is that right?

CHAIRMAN HISE: Fayetteville is split.
SENATOR BLUE: Several times.
CHAIRMAN HISE: Fayetteville is split.
There's a portion -- I think it came to 12 percent or something like that of Fayetteville is in a different district.

SENATOR BLUE: Just for information, you had to split it because of Fort Bragg, I believe you got to split it at least once, but you split it more than once.

CHAIRMAN HISE: We did keep -- all the military installations are whole within a district.

SENATOR BLUE: And one last follow-up.
But you split Hope Mills also.
CHAIRMAN HISE: I believe we did.
SENATOR BLUE: And would you agree that a better cluster map in Cumberland county would be one where you didn't jeopardize any of the other criteria? You kept municipalities whole, you didn't split precincts, et cetera,
et cetera.
CHAIRMAN NEWTON: Senator Blue. I
mean, I'm sorry. Senator Hise.
CHAIRMAN HISE: He'll answer his own
question. That's the attorney side.
What I would say is, again, it is
weighing multiple considerations, and the challenge would be, in doing so, taking a district that was 80 percent contained in Fayetteville and trying to divide it to more of a 50/50 district would be something that would weight that decision $I$ think more towards keeping more of Fayetteville within a district.

SENATOR BLUE: Okay. Thank you,
Mr. Chairman.
Senator Hise, I offer you a district that does not split Hope Mills in Cumberland county and it splits Fayetteville only in the place that you split it. I believe it splits Fayetteville only at that place. I'm trying to remember my geography of my used-to-be next door neighboring county, but $I$ think it -- but if it splits Cumberland -- or Fayetteville, it doesn't split it more times than you do, but it keeps Hope Mills totally whole as you did the
surrounding districts up in its neighboring Sampson county.

CHAIRMAN NEWTON: Is that a question or a comment?

SENATOR BLUE: It's a statement. And with that said, unless I'm wrong on that, which I don't believe I am, I would move the adoption of the map.

CHAIRMAN NEWTON: Thank you, Senator Blue.

Senator Hise, any other comments?
CHAIRMAN HISE: I am trying to find, and I don't believe that it's in this pack, the percentage of Fayetteville that is now in the district. It now takes Fayetteville I believe to a 53/47 split between the two districts, as I had said earlier, and makes a district that was a predominant Fayetteville district and kept as much of it as whole as possible to almost an even split between the two, and I see no reason and would not support making that decision.

CHAIRMAN NEWTON: All right. Thank you.

Seeing no other comments or questions, Senator Blue has moved to amend the map

SCH Amendment 2. All those in favor say aye.
COMMITTEE MEMBERS: Aye.
CHAIRMAN NEWTON: All those opposed say no.

COMMITTEE MEMBERS: No.
CHAIRMAN NEWTON: The nos have it.
Okay. Senator Blue, which is your
next?
SENATOR BLUE: Yeah, let me get out of my own way.

CHAIRMAN NEWTON: No worries. Take your time.

SENATOR BLUE: Question of -- I'm going to introduce -- the next one I'm going to introduce is going to be SBK 3 is the number I have. I don't know what the corresponding new number for the amendment is.

CHAIRMAN NEWTON: SBA --
SENATOR BLUE: SBK. SBK 3.
CHAIRMAN NEWTON: SBA Amendment 3.
SENATOR BLUE: Is that it?
CHAIRMAN NEWTON: I don't have an SB 8.
SENATOR BLUE: No. It's -- SBK 3 was my old one.

CHAIRMAN NEWTON: SBA 3. Is this it?

SENATOR BLUE: It's a Wake county map.
CHAIRMAN NEWTON: Members, SCG
Amendment 6 we think is the -- Granville and Wake. SCH -- SCH Amendment 6? Sorry.

SENATOR BLUE: SCG Amendment 6, is that it?

CHAIRMAN NEWTON: That's it. I got it.
SENATOR BLUE: Question first of
Senator Hise. And it might -- it might help if we could have displayed the map that Senator Hise is defending.

CHAIRMAN NEWTON: So I'll ask staff if we can -- you want a split screen, if we can get that.

SENATOR BLUE: Yes.
CHAIRMAN NEWTON: So, staff, if we can -- if not, you just want Senator Hise --

SENATOR BLUE: Just Wake county portion.

CHAIRMAN NEWTON: Wake county portion.
SENATOR BLUE: With the Wake-Granville county portion of Senator Hise -- that cluster.

There it is.
CHAIRMAN NEWTON: How about that.
SENATOR BLUE: That's perfect.

CHAIRMAN NEWTON: Senator Blue, you have the floor.

SENATOR BLUE: Thank you, Mr. Chairman.
And, Senator Hise, correct me if I'm wrong, and I'll ask you because I can't keep up with all this stuff. In looking at your drawing of Wake county, if I could first go to the Granville-Wake county district.

It looks like in doing those six districts you appear to split ten precincts and split three municipalities; is that right?

CHAIRMAN HISE: I believe that is accurate.

SENATOR BLUE: I think you split Raleigh --

CHAIRMAN HISE: I don't have that report in front of me.

SENATOR BLUE: I think you split Raleigh -- Raleigh, Apex, and Cary, I believe.

CHAIRMAN HISE: Yes.
SENATOR BLUE: And did you find keeping municipalities whole to be of higher importance than splitting VTDs?

CHAIRMAN HISE: There were individual cases in which we felt like we could pick an
individual VTD and as a result not split municipalities, but again, there was no priority on the criteria that ranks one higher than the other.

SENATOR BLUE: Then if you -- so none of them have -- again, and you said this, but I want to make sure I understand it. None of them have necessarily a higher priority. It just depends on the specific district that you're drawing at the time.

CHAIRMAN HISE: And we are showing how we considered each of them in the reports for what the results are.

SENATOR BLUE: Okay. If you will take a look at that protrusion from the green district into the blue district up there, that's from -- I can't see the Raleigh district number. I think it may be -- I don't know what the district is, but there's a protrusion reaching sort of north that extends from the green district into the blue district.

Do you see that?
CHAIRMAN HISE: I see it.
SENATOR BLUE: Okay. If you look at
that, tell me why you determined to put that
protrusion in the map as you were drawing it.
CHAIRMAN HISE: As I said when I explained this map, our intent was to connect Granville county with the unincorporated, more rural areas of the northern county. All of drawing this two-county pod was exceptionally difficult compared to the fact that our variance for the district was already at 4.9 percent below the average district, and so we really only had an average variance of about 52 individuals per district. I know you and others that have drawn in Wake county ran into this same complexities in doing so.

And so balancing populations required many more circumstances in which you could not keep VTDs whole and others in doing so in drawing it, but literally this district was drawn starting with Granville county and looking at the northern particularly unincorporated areas of Wake county and adding the two of those into the district and then coming down into the district as was necessary to balance population. CHAIRMAN NEWTON: Senator Blue. SENATOR BLUE: Follow-up. So you chose not to split Raleigh where
it protrudes up into the district, that is, the blue district.

CHAIRMAN HISE: Correct. Well, we can't show it on these. On the map you could put the city limits up and I could better respond to that question, but we -- again, by adding the unincorporated areas and kind of moving down to get towards that equal population number.

SENATOR BLUE: Further question.
CHAIRMAN NEWTON: Question.
SENATOR BLUE: In looking at the stat pack on that district, you did split Raleigh, and you have part of Raleigh into the blue district. And so could you tell me why you chose to put the part of Raleigh to the left of that green protrusion into the blue district and not part of the green since both of them are part of Raleigh's corporate limits.

CHAIRMAN HISE: A specific decision for that choice, I think you're looking at as we were coming south, when you look in the other part of the green area, those seem to be smaller, more compact VTDs, particularly with higher populations that's with coming in. And
so when we're trying to balance populations, as we're getting close, we're looking for the VTDs that closest match that in order to minimize the splitting of VTDs.

CHAIRMAN NEWTON: Follow-up.
SENATOR BLUE: Follow-up.
But you could split one precinct and one VTD and make up for any difference in population.

CHAIRMAN HISE: And that would be an additional split VTD.

SENATOR BLUE: Yes, sir.
Another question.
CHAIRMAN NEWTON: Yes. Follow-up.
SENATOR BLUE: And one of the criteria that you looked at, one of the criteria adopted by the committee was not to split precincts except where it was necessary.

CHAIRMAN HISE: Yeah.
SENATOR BLUE: And that was because when you start splitting precincts, you create a lot of districts for election officials in trying to match up all of these areas with what's in and what's out since we elect on a precinct basis.

CHAIRMAN NEWTON: Senator Blue, I'll just note that you're kind of answering your own question there.

SENATOR BLUE: Thank you, sir. Thank you. I don't mean to answer it, but I think he's going to say yes so I'll state it for him, lead him a little bit, if you will.

So if you had a map that didn't split any precincts and still conformed with all of the other criteria, would that not be a superior map?

CHAIRMAN HISE: Senator Blue, I think -- I don't know if there's a distinction being made. The data in the system is by VTDs. In some areas, those are not consistent with what are called precincts but in others they are and I don't have an answer off the top of my head where those are coming in.

I will tell you with an average variance of 52 individuals, not dividing a VTD in Wake county was a -- considering that your VTD probably minimum size is somewhere around a thousand. If there's many below that, there's not many, that's coming in and having to get districts within 50 people of each other
necessitates the division of VTDs.
CHAIRMAN NEWTON: Follow-up.
SENATOR BLUE: So then -- thank you very much.

So, Senator Hise, I'm going to show you, if you would refer to the map that $I$ have up over there which is before us. It is a map that splits no precincts in Wake county.

Would that not be a superior map based on the criteria? No split precincts.

CHAIRMAN HISE: It would meet the criteria of not splitting VTDs more efficiently, but there are other considerations to consider, including what does it do splitting municipalities, what is the change on that, all the other criteria. I could go through the list, but if you're asking if splitting fewer VTDs meets the criteria better of splitting fewer VTDs, the answer is yes.

CHAIRMAN NEWTON: Follow-up.
SENATOR BLUE: I move the adoption.
CHAIRMAN NEWTON: All right.
Senator Blue moves the adoption --
SENATOR NICKEL: Can I ask a question
first?

CHAIRMAN HISE: Sure.
CHAIRMAN NEWTON: Senator Nickel, yes.
SENATOR NICKEL: We were talking
yesterday about Senator Tillman, and I just wanted to dig up what he said in lead up to my question here.

On the floor of the senate, the last session, he said that this process is --

CHAIRMAN NEWTON: I'm sorry,
Senator Nickel. Who is he?
SENATOR NICKEL: Senator -- Republican Senator Jerry Tillman.

CHAIRMAN NEWTON: Okay. He is not serving in this body. Is this relevant to today's discussion?

SENATOR NICKEL: It is to my question.
UNIDENTIFIED SPEAKER: Mr. Chairman, point of order. We had a motion on the floor.

CHAIRMAN NEWTON: You are correct, we do have a motion on the floor.

Do you want to speak to that motion without -- something that is germane to the motion on the floor today?

SENATOR NICKEL: I think we've got another Wake map coming up; is that correct?

Senator Blue, we have a second Wake map? I can give my comments then.

CHAIRMAN NEWTON: All right.
Senator Hise, would you like to make any other comments before we vote?

All right. Those in favor of the motion to adopt $S C G$ Amendment 6 say aye.

COMMITTEE MEMBERS: Aye.
CHAIRMAN NEWTON: Those opposed, no.
COMMITTEE MEMBERS: No.
CHAIRMAN NEWTON: The nos have it.
Senator Blue, do you know which amendment you'd like to propose next?

SCH Amend-6. SCH Amend-6.
CHAIRMAN HISE: That might be the one that I don't have. There's a lot of Wake county options here.

CHAIRMAN NEWTON: All right.
Senator Blue, who's going to be proposing this amendment? The question is Senator Blue is going to be presenting this amendment and he has a question for Senator Hise.

You have the floor, Senator Blue.
SENATOR BLUE: Yeah. Senator Hise, in the last series I asked you about was splitting

VTDs and you said that that was important and probably took precedence over splitting precincts, at least as you drew the Granville-Wake county district; is that correct?

CHAIRMAN HISE: Again, I would make -- I'm assuming on this line of question that the VTDs and the precincts are not aligned in Wake county.

SENATOR BLUE: They pretty much are aligned, they pretty much are.

CHAIRMAN HISE: And as we -- because it's the layer in the system, we have looked at this from the lens of splitting VTDs.

SENATOR BLUE: Okay.
CHAIRMAN NEWTON: Follow-up.
SENATOR BLUE: Follow-up.
You think that splitting -- at least as you made the decision here, you wanted to split as few VTDs as possible in Wake county.

CHAIRMAN HISE: We balanced the criteria between splitting VTDs, municipalities, compactness of districts, all that exists in coming up with these maps.

SENATOR BLUE: And if I were to show you a map that split two municipalities as
opposed to the three that you split in your map and it split only three VTDs as compared with the ten VTDs that you split in your map, would you agree that that's probably a better map using the criteria that the committee adopted?

CHAIRMAN NEWTON: Senator Hise.
CHAIRMAN HISE: Senator Blue, I will actually say on what's being presented, SCH Amendment 6, it is our understanding from the report it splits the same municipalities.

SENATOR BLUE: And let me correct that. That's what $I$ was going to point out to you. It leaves six people in one of the -- I think it's an Apex VTD, but those people could easily be transferred out to a neighboring district and it wouldn't affect the numbers.

So if in fact you split two municipalities versus three and you split only -- and you split only three VTDs, that would be a better map using the committee's criteria.

CHAIRMAN HISE: There are a lot of considerations under those specific areas. I will say that if you -- driving this home, if you split fewer municipalities, you have better
met the criteria for splitting municipalities. If you split fewer precincts or VTDs, you have better met the criteria of meeting VTDs. That does not imply in some manner that the overall has better complied with the map drawing because it met any one particular criteria in a better manner.

CHAIRMAN NEWTON: Senator Blue.
SENATOR BLUE: [Unintelligible] a question again and we'll move on and other folk can ask questions.

But if you improve on both of those, which of the criteria you used to determine how to draw this map, you say these are the important considerations, then it is a better map if it's improved on the other aspects of the criteria.

CHAIRMAN HISE: I would not limit my comment to both. If you meet all of the criteria better, then you have drawn a better map.

SENATOR BLUE: Okay. I'll hold it for
a minute. I think Senator Nickel --
CHAIRMAN NEWTON: Senator Nickel.
SENATOR NICKEL: My question is about
the partisan intent of drawing the map. And, you know, I represent Wake county so I know every single precinct here pretty well. I know how they perform. I know where people live and how they vote. And in the last session $I$ know Senator Jerry Tillman, who's not here, but he said "This is set up to be partisan. Do you think we're going to draw Democrat maps? We're doing exactly what you all did for 140 years."

And so my question is about intent.
And you know, I'm a lawyer, I was a prosecutor, I'm a defense lawyer. You know, we talk to people and you try to ask them to tell you things that will help with their intent for the fact finder, and it's rare that people will say, "Oh, hey, I did it, I did it."

But the question I have is very specific about Wake county. I know if I wanted to drew two Republican maps, I'd do the top part and then I'd do the bottom part, and that's where the Republicans live, on the top part and on the bottom part.

And so one of the things that's neat about this process, and really boring at the same time, is watching people draw maps. And I
got to watch when you were drawing Wake county, and, you know, you did it and you started at the top with Granville and then you did that weird finger thing and the top part of Wake, and then, instead of drawing other districts, you skipped down to the bottom and you did the Republican district on the bottom.

So my question just is I believe if I were trying to draw two Republican maps, that's the way I would do it, but my question is why did you start at the top and then, instead of doing other districts, skip down to the bottom?

CHAIRMAN NEWTON: Senator Hise.
CHAIRMAN HISE: So I appreciate you giving your intent for drawing several of the other options that are available for us to be considered and for what your intent was. I will say --

SENATOR NICKEL: I didn't draw maps.
CHAIRMAN HISE: -- we began this process in the northern because there is actually a requirement under the Stephenson that when Granville does not meet the criteria of a district in size that it be -- that the county can remain whole and be added to another
district. It so happens in this map that it connects to Wake in the northern area of the county, so we knew that we had to come in and transverse into Wake county on the northern end of the county, that's with coming in. So we completed that district first with the others.

Do I have a propensity to start north?
South? East? West? It probably depends more which mood I'm kind of in coming in, and most of my maps I've drawn with the state I've started in the west with coming in. I think it's clear versus the first time I was involved in drawing maps ten years ago where we had data that told us the election results of the top ten districts in every precinct in the state or VTD in the state and how it performed and formed those together for that purpose.

We have not considered any political data in doing this, and to somehow suggest that my knowledge of political data in Wake county, you know, some 250 miles away from where I live, was somehow the basis for why, after drawing the required transversal, I then moved to the bottom of the county it seems to me a little ridiculous.

CHAIRMAN NEWTON: Senator Nickel, do you have a follow-up?

SENATOR NICKEL: I mean, my follow-up
is just pretty obvious. You know, all the experts who have commented on these maps call it an extreme partisan gerrymander because there's virtually no other way to draw Wake-Granville to make two districts more favorable for Republicans, and that's what I see here.

And, you know, Senator Blue's amendment would have a community of interest, you know, on the top northwest corner. You know, you see on his map, those folks there have a lot more in common with folks from the east and all the way over to the west side. So for me I see, you know, if we're following criteria with that district, one that makes a lot more sense with the committee's criteria.

CHAIRMAN NEWTON: Senator Nickel, are you moving for the adoption of SCH Amendment 6?

SENATOR NICKEL: No.
CHAIRMAN NEWTON: Senator Blue.
SENATOR BLUE: Mr. Chairman, thank you.
And I want to thank Senator Hise for catching the same error in this map that I caught, but it
is my intention to fix that error so that it does have fewer things. So I can end the discussion, but $I$ will fix that error in it, but the point is to show you that we can draw a more efficient map. And I say that because, you know, I'm probably the only person around who has represented every single inch of the geography in Wake county. I've represented this entire county in different forms in senate districts, house districts or the county as a whole.

And I will tell you that for those of us in these urban areas, and it's something that you might really take seriously, we look at ourselves as representing the county, for the most part, and that's the way the county looks at us, especially the business community, that we represent collectively the interests of Wake county, the interests of the state, but these nuances and fine pickings, once we get real communities of interest out of the way, don't really carry the kind of sway. We've got a consolidated school system, so we all -- you know, we work for the same school board. We've got commissioners that are countywide, and so
we -- so we see ourselves as representing the county. So these fine points that you're raising don't register as much here as they do in some of the other areas where you have other entities that are being represented in so many -- you know, if you're representing a senate district, most of you have six or eight school districts and those kinds of things or other cities and towns outside the immediate area that you're in.

But I want to fix this map by putting those six people into a -- so that we're not making another municipal split so that you can see that we can draw a map that still protects all of the interests that the criteria pointed out that we were going to consider and have fewer split municipalities and fewer split VTDs.

So with that said, I will withdraw this map -- and no hurry to get it done. I will just offer it again tomorrow. Okay.

CHAIRMAN NEWTON: Thank you,
Senator Blue.
All right. So SCH Amendment 6 has been withdrawn.

> What's up next, Senator Blue?

SENATOR BLUE: Senator Marcus.
SENATOR MARCUS: Mr. Chair, I believe we are going to move to Durham and Chatham county now, and that's amendment -- SBVA Amend-2.

CHAIRMAN NEWTON: SBVA Amendment 2. SENATOR MARCUS: Yeah. I said that A twice. Sorry about that. If staff could have the side-by-side up again, that would be I think most helpful for people following along.

CHAIRMAN NEWTON: All right.
Senator Marcus, you have the floor.
SENATOR MARCUS: Shall I let Erika get that other map up before I start.

CHAIRMAN NEWTON: It's up to you.
SENATOR MARCUS: Okay, here we go.
Thank you so much.
This amendment that we're submitting here is an amendment that honors the criteria of compactness better than the map that is otherwise drawn here, the Republican map.

So the map that we're offering is the one on the screen to the left compared to the one on the right which is the Republican map. And that one on the right has one very compact
district. You can see it's a tight circle around the center of the city of Durham there, that green area inside all the purple.

And then the other part of this county cluster is not compact at all. It's pretty stretched out. It's oddly shaped. It goes around, it goes over the next two and then under Durham and then picks up all of Chatham county, so it's pretty contorted. It also, this map, unfortunately cuts up some communities of interest.

So the amended map that we're offering here makes two equally compact districts instead, that's the one on the left without any odd shape, and it has a better both Polsby-Popper average compactness score. Ours is a 42 versus the map on the right which is 32. The Reock scores are about the same since when you look at an average of the two they come out to be about the same.

So between these two maps there's no difference in municipality or VTD splits, so we don't have to worry about that, and we're offering this alternative to make both districts compact, for the map to make more sense to the
community, and to improve the compactness of the overall county cluster. So unless there are any questions.

CHAIRMAN NEWTON: Thank you,
Senator Marcus.
The chair has two questions for Senator Murdock because she's the most impacted -- just not catching you cold. We talked about this with respect to one other amendment and one other senator as well.

Are you in favor of this amendment?
SENATOR MURDOCK: Yes, I am.
CHAIRMAN NEWTON: And is it your view that it complies with the VRA?

SENATOR MURDOCK: That it complies with the VRA?

CHAIRMAN NEWTON: It complies -- is it your understanding, your view, your belief that it complies with the Voting Rights Act if we take this amendment?

SENATOR MURDOCK: It's my understanding.

CHAIRMAN NEWTON: Okay. Very good.
All right. Anybody else have any
questions? Senator Hise?

CHAIRMAN HISE: So, Members, I will just add, in choosing this district was unique. We tried to keep as much of Durham as possible, but Durham is sufficiently too large to be contained in a senate district and -- both in this amendment and the map we had to divide Durham in order to do so, and so I'm actually okay with it.

CHAIRMAN NEWTON: All right.
Senator Marcus, have you moved for the adoption of the amendment?

SENATOR MARCUS: I believe Senator Blue would like to be recognized.

SENATOR BLUE: I just want to make one point, Mr. Chairman. And again, I want to disclaim any expertise in the area, but $I$ just don't see any Voting Rights Act violations in Durham, not that there aren't some and maybe experts can tell you differently, but I know that Senator Murdock indicated to her understanding that it complied with the VRA.

I'd rephrase that to say that $I$ am aware of no violations of the Voting Rights Act that exist in the Durham county redistricting. I think that they just want to do it because it
satisfies some community-of-interest issues, but I'm not aware of any VRA issues in the way that Durham county is -- there may be some other issues. As I said, there may be some issues on gerrymandering still, even though it might not have any effect, but again, that's my lay opinion. That's not an expert opinion.

CHAIRMAN NEWTON: Thank you,
Senator Blue.
And is there a motion.
SENATOR MARCUS: I move for the
adoption of this amendment.
CHAIRMAN NEWTON: Thank you.
Senator Marcus has moved for the
adoption of SBV Amendment 2. All those in favor say aye.

COMMITTEE MEMBERS: Aye.
CHAIRMAN NEWTON: All those opposed.
All right. The amendment is in fact adopted.

Next up. Who would like to lead the charge on whatever amendment you prefer next? UNIDENTIFIED SPEAKER: Looks like -SENATOR BLUE: It's my understanding that there's a Guilford county amendment that's
up next; is that right?
UNIDENTIFIED SPEAKER: Yes.
CHAIRMAN NEWTON: Is that SBV
Amendment 3?
SENATOR CLARK: Yes. I'll do that,
Mr. Chair.
CHAIRMAN NEWTON: Wait a minute. Hold
on. I've got the wrong one there. Let's find the right map. Which one is it?

SCG Amendment 3? Is that the one, SCG?
SENATOR CLARK: I will handle SCG
Amendment 3, Mr. Chair.
CHAIRMAN NEWTON: Okay. Thank you,
Senator Clark. You have the floor.
SENATOR BLUE: Is it SCG Amendment 1,
the one that Senator Lowe has?
SENATOR LOWE: Yes. I have 3.
SENATOR BLUE: Senator Clark just said
he has 3.
SENATOR CLARK: I have SCG Amendment 3. That's the one that's on the screen now.

CHAIRMAN NEWTON: Senator Lowe has made the handoff, a good, clean handoff to Senator Clark.

SENATOR CLARK: Okay. Thank you,

Mr. Chair. Thank you, Senator Lowe. Sorry for the confusion there.

But anyway, Mr. Chair, I would like to move that the committee accept this amendment. What it does, it follows one of the criteria that we have established, and that is to give, I guess, relief to the double-bunking of members if we can do so in a reasonable way.

And what this particular amendment does is it essentially changes the orientation of the Senate District 28 and 27 as in the plan put forth by the Senate Republicans by shifting it from a north-south orientation essentially to an east-west orientation, and also it avoids the double-bunking of Senators Robinson and Garrett.

CHAIRMAN NEWTON: Thank you,
Senator Clark.
And, Senator Robinson, I do have the same two questions for you that we asked Senator Murdock. Are you in favor of this redraw, this amendment?

> SENATOR ROBINSON: Yes, I am.

CHAIRMAN NEWTON: And is it your
understanding, belief, view that it complies with the VRA to take this amendment?

SENATOR ROBINSON: Yes. Based on the previous ruling of the courts, yes.

CHAIRMAN NEWTON: Thank you, Senator Robinson.

Senator Blue.
SENATOR BLUE: I make the same observation that I'm certainly not an expert, and I don't think Senator Robinson is holding herself out as one in this area, but I believe that the issue in Guilford county that we wrestle with with these two districts the last time had to do with partisan gerrymandering, and there was a special master appointed who drew what had been earlier VRA district and we complied with the special master's recommendation and that's how we settled the last lawsuit. And so I'm assuming that this configuration doesn't change radically anything that the special master did in District 28 . I think that was the number of it when he did it the last time, and that resolved the voting rights issues in that district as well as political gerrymandering issues.

CHAIRMAN NEWTON: Thank you,
Senator Blue.

Senator Hise, do you have any comments on the proposed amendment?

CHAIRMAN HISE: No, I think [unintelligible] ...functionally equivalent.

CHAIRMAN NEWTON: Okay. So Senator Hise endorses the amendment as well, and Senator Clark has moved that we adopt SCG Amendment 3.

All those in favor say aye.
COMMITTEE MEMBERS: Aye.
CHAIRMAN NEWTON: All those opposed.
The amendment is adopted.
All right. Senator Blue, we'll look to you to determine which amendment is up next.

SENATOR BLUE: I think Senator Lowe has -- on the list I got is SCG Amendment 1.

CHAIRMAN NEWTON: All right. Senator Lowe, I think we have the pink SCG Amendment 1 in front of us.

SENATOR LOWE: We do have pink.
CHAIRMAN NEWTON: And you have the floor.

SENATOR LOWE: Just looking at this map, it's a much cleaner-looking map, and I think it can be well seen that it's cleaner and
it gets to the point and it does what the criteria is trying to do. And I certainly submit this map -- submit this amendment unto you.

CHAIRMAN NEWTON: Thank you,
Senator Lowe.
Members or Senator Hise, do you have any comments?

CHAIRMAN HISE: Yeah. I would just say, technically, I think this amendment would undo the previous amendment we just did and replace the two-county podding with a different two counties, three districts, replace them with different others. This seems to significantly change, $I$ don't have them on top of it, but where High Point would go as well as what in Greensboro would go and how it was configured and would not support -- especially in light of having just changed it to change it again for the committee, I don't think that's a really good fit.

CHAIRMAN NEWTON: Thank you, Senator Hise.

Senator Blue.
SENATOR BLUE: Thank you, Mr. Chair. I
will simply say that's why they were staged in the order that they were staged.

CHAIRMAN NEWTON: Do you want to --
SENATOR LOWE: I will withdraw.
CHAIRMAN NEWTON: The motion to amend SCGA Amend-1 has been withdrawn.

Members, we're getting very close now. Next map or next amendment.

SENATOR MARCUS: Okay, Mr. Chair, I believe I'm up next.

CHAIRMAN NEWTON: What number?
SENATOR MARCUS: This is SCH Amend-5
for Mecklenburg and Iredell.
CHAIRMAN NEWTON: You have the floor to explain proposed Amendment SCH Amend-5.

SENATOR MARCUS: I'll give staff just a minute to get the side-by-side up. I'll get my papers here.

Okay, thank you so much.
So this amendment concerns the new two-county cluster of Mecklenburg and Iredell counties. As you know, this body must carve those two counties into six districts, trying to keep population as equal as possible and following all the other criteria that this body
has adopted. As the chairs have mentioned several times throughout this process, the criteria are not ranked, rather the criteria are considered co-equal and in the chair's own words should be blended to be fair and to honor all of the criteria whenever possible.

So the Republican map, which is on the left, for this cluster, it fails to meet at least two of the criteria that this committee adopted. First, it has low compactness scores. I'll note that when the chair presented the map, he did not even mention this criteria in his discussion of the map to justify why it's drawn as it was and that he also has emphasized frequently, when he was speaking to Senator Blue earlier, that there should not be any one criteria that trumps all the other criteria, that we should blend them all.

The second reason that this map, as drawn, fails to meet this committee's criteria is that it double-bunks two current members of this body, putting the precinct where I live in a district that is now represented by Senator Sawyer in Iredell county. This double-bunk is especially egregious for two reasons. First, it
takes me across county lines, out of the county in the community where $I$ live and $I$ serve, north Mecklenburg, to tack me into a district that is made up almost entirely of Iredell county. And the second reason is it's the only double-bunk that still exists in this entire state map that could have been avoided.

The members of the Mecklenburg delegation thought that we could do a better job of honoring all of the criteria, so we sat together and we drew this map that is now on the right of your screen which $I$ now offer to you as an amendment.

Our map puts all incumbents in separate districts and is significantly more compact. Our Reock average score is . 48 which is 11 points higher than the Republican map which scores only a .37. Our map has a better Polsby-Popper compactness score too. Our score is . 39 while the Republican map scores only . 32 .

At the start of this redistricting process, this committee required all current senators to provide a map which marked with an $X$ exactly where we live. I did that. I hoped that that information would be used to honor the
criteria about considering member residences and the rule that this committee has followed in the past with the court's blessing, I will mention, to avoid pairing incumbents in the same district when it can be avoided with reasonable efforts. Unfortunately, when I saw the Republican-proposed map, it seemed to me that my information was used for the opposite purpose, since the Republican map double-bunks me, pitting me against one of the few other female members of this body who also happens to be of the opposite political party.

Now, it's true that some incumbents from other parts of the state, including one of the chairs of this committee, ended up in the same district with another member due to the county clustering rules. Those double-bunks were unavoidable, they're not in anyone's control, and they will eliminate some members of this body on a partisan-blind basis. But the double-bunk in Mecklenburg-Iredell that is in this map on your screen now is not necessary and in fact drawing the map that way makes it less compact and therefore less fair on two of the criteria that this committee said it would
follow when drawing maps.
In Common Cause v Lewis, the court approved using reasonable efforts to avoid pairing incumbents in the same district. It is certainly reasonable in this case where the map that avoids pairing incumbents is more compact than the map that double-bunks. Now that you've fixed Guilford county's map, there aren't any other double-bunk members when it can be avoided.

And I'm asking you to treat me and the voters I represent fairly based on their public comment that does not like your map and taking into account all the criteria in a blended way and applying those criteria consistently across all districts.

This map that I'm offering is more fair, it is more compact on both Reock and Polsby-Popper, it splits zero precincts or VTDs, and it allows all current members to remain in separate districts. It's fair, and I ask for your support for this amendment.

I'll pause to see if there's any questions.

CHAIRMAN NEWTON: Thank you,

Senator Marcus.
Senator Hise.
CHAIRMAN HISE: Yeah. I think -- I
think there's -- and similar to the proposal the Democrats put forward for how to draw this map that we mentioned earlier, there are some absolute criteria in drawing, and that is that when you have this two-county pod, Iredell county must be kept whole, Mecklenburg is divided, and so it is a narrow region in the northern part of Mecklenburg county where you cross into Mecklenburg and are required to transverse into Mecklenburg.

It does not seem unreasonable to find that the most north municipality in Davidson would be wholly contained in that district when it could be wholly contained in that district versus the options in this. I think it's about a 60/40 split of Davidson coming in and intentionally splits that for the criteria that says we may consider members' addresses in drawing maps.

So I think it is the most -- I'll also say that it is really a misrepresentation of the scores for compactness to average six scores
together and compare the averages of those scores. With coming in, that's not how they were designed, and so trying to take six separate circles and the percentage that fills the circle and somehow averaging that over six circles and making conclusions from that misses a lot of variance that's not included in that, but I know I digress on that, but by comparison of what you may look specifically at what district 37 does -- I don't have those in front of me. It seems to what is being changed specifically in this map, but I am not inclined to support this amendment.

CHAIRMAN NEWTON: Thank you, Senator Hise.

Senator Marcus.
SENATOR MARCUS: Could I make a comment?

CHAIRMAN NEWTON: Yes.
SENATOR MARCUS: Thank you, Mr. Chair.
I will just respond to that by saying it sounds to me like Senator Hise is saying that he didn't like the way we're taking an average compactness score on both and that therefore, what, would should -- there's no other way to
assess that. We should just not use compactness in this cluster? I mean, the statistics I showed you are average compactness scores for the cluster on my map and on the Republican map. And so I hope we all agree that compactness is a criteria that this committee adopted and is definitely relevant here as is consideration of member residences which is a criteria you've taken into account in every other district that we've drawn for the whole state.

And so I'm just asking you to consider both of those when you look at this map and find that it is more fair -- my amended map is more fair and meets more of the criteria better than your map.

CHAIRMAN NEWTON: Thank you for your comment, Senator Marcus.

Other questions, comments. Is there a -- Senator Daniel.

SENATOR DANIEL: I mean, I guess, if I could, I would like to ask Senator Marcus a question.

CHAIRMAN NEWTON: Senator Marcus, will you stand for a question?

SENATOR MARCUS: Sure.

SENATOR DANIEL: Do you consider
Davidson a community of interest?
SENATOR MARCUS: I do. And you know, this is painful to put up a map that has to split my municipality. I didn't want to do that. It certainly wasn't my first choice the way it seems to be Senator Hise's first choice to put Davidson with Iredell. I heard from so many -- so many people who live in Davidson that don't want to be moved into the much more rural area outside of our county, but there's no other way to draw this map.

You're splitting Davidson as well, I'll point out, going over into Cabarrus county. I know you say that doesn't count, but that's also a split of Davidson. Davidson is an oddly shaped municipality, and I will note that in other cases you specifically took into account the oddly shaped municipality to split some VTDs to make it work there.

So I know that the people of Davidson feel very much part of north Mecklenburg. That is how we refer to ourselves. That's the area where we shop and go to church and go to school. And so at least my map allows some of Davidson
to stay with north Mecklenburg.
CHAIRMAN NEWTON: Senator Daniel, you good?

SENATOR DANIEL: No follow-up.
CHAIRMAN NEWTON: Okay. Any other
comments, questions?
Senator Nickel.
SENATOR NICKEL: Yeah. You know, I just want to say I think, you know, if we reject this amendment, you're ending Senator Marcus's career in the senate, and I just -- I hope that this committee and the chairs will continue to meet with Senator Marcus and the members of the Mecklenburg delegation about this issue. We're not done yet, we're not at the floor, and I think the way we address this is going to determine how we proceed as a body. And I hope -- I hope there's a way to find a solution here that follows the committee criteria and allows folks to have a real choice here.

So I know where this is going, I believe, but I truly, truly hope that, you know, the conversation can continue here because I have been with Senator Marcus here since I got here and seen how hard she works every day to
represent her constituents.
CHAIRMAN NEWTON: Thanks,
Senator Nickel.
Senator Lowe, do you have a comment or are you good?

SENATOR LOWE: Yes. As I look at this amendment, I am really hoping that there is a way that given the criteria that is given that we can make the necessary adjustments so that we don't have these two senators double-bunked. I think that there is a way. As a matter of fact, I know there is a way. If we put our heads to it, we can figure this one out, and I'm hoping that we'll do everything that is necessary, hopefully in this meeting, to figure this out so that we don't have a two of our members double-bunked. I think it's important to the work that we're doing to figure this one out.

CHAIRMAN NEWTON: Thank you,
Senator Lowe.
Any other comments, questions?
SENATOR BLUE: One here, Mr. Chairman.
CHAIRMAN NEWTON: Senator Blue.
SENATOR BLUE: Yeah, and I would simply
say that there is precedent for what

Senator Marcus is asking for. In the dialogue between Senator Hise and me a little bit earlier, I think I pointed out to him that decisions are made to split townships or not split -- not townships. I'm sorry. -- towns, municipalities, and we've done it in Sampson county, putting it together, but yet we come to Cumberland county and we split Hope Mills, a town which I'm very familiar, they still stay in the same cluster, and that's in effect what you would be doing here. Yeah, you come down from the north, which is what Granville did to Wake county, came down from the north, and you decided to take a radical left turn. That's strange, but you took a left turn when you could have taken a right turn coming down in Wake county from Granville. Took a left turn to go over to Zebulon and in that area.

And here you're coming down, you got these four, five precincts across the top -- or towns across the top of Mecklenburg county, you can come down the -- as I look at it, the left edge from here and allow this split in that city just like you did in Hope Mills. And that's what I was trying to get at. If none of the
criteria trumps the other, that is, if none is more important than the other criteria and you got eight or ten criteria, none is more important than any other criteria and you got eight of them, you've shown that you're willing to elevate one to a higher level depending on what you're trying to achieve.

So there's no reason not to split
Davidson, it's still got the same group of people representing it, and you can do it within these other five districts in Mecklenburg county in that cluster without -- you can accommodate the question of members who already occupy this body. That's why you put it in as one of the considerations, one of the criteria.

And as I told you privately, I'll tell you publicly, I appreciate the efforts that the three of you have made to unbunk Democrats because we're the ones in the urban areas who ended up being double-bunked. You did it in the case of Wake county. You did it in one instance in the case of Mecklenburg county. You did it in Guilford county. You may have done it somewhere else, but you've done it in the places where we ended up double-bunked.

Certainly, you didn't have to split municipalities or anything like that, you can shift things around, but again, this is a case where you can do some of the things that you've done in other districts and observe that criterion in this decision.

Again, as Senator Nickel said, there are ways you can do it and still preserve the efforts that you've made in the rest of this map, and you know you can in southern Mecklenburg county still preserve the effort that you've made down there, but not just end up in this being the single double-bunk where you could do something about that you didn't do something about.

CHAIRMAN NEWTON: Senator Blue and Members, in the discretion of the chair, I'm going to recommend that we displace this amendment. Let's get our heads together. I will -- I will point out, just for fun, the humor in the fact that I think Senator Marcus championed an amendment to remove consideration of members' residences from the criteria, but that's okay, that was yesterday. Today's today. And why don't we displace this and we'll spend a
little time seeing if we can find a solution. All right. Thank you. Next amendment. SENATOR MARCUS: Mr. Chair, can I just set the record straight on that since you represented what I said.

This caucus, not me, did put forward an amendment when we were adopting these criteria to say let's not consider anybody's residence, to be fair, and the committee turned that down. They said, no, no, we want to consider member residence. So my amendment, for the record, was to say let's be fair and make sure that we use that data for everyone to not double-bunk.

CHAIRMAN NEWTON: Thank you,
Senator Marcus.
SENATOR MARCUS: And you turned that amendment down. So we are where we are for exactly that reason. I don't think I've been inconsistent. I'm trying to be consistent and honest. Obviously, I have feelings about this, and I hope you'll forgive me for being a little bit emotional about it, but $I$ don't want you to misrepresent or suggest that I've been inconsistent in how $I$ feel about this issue. CHAIRMAN NEWTON: Thank you,

Senator Marcus.
SENATOR MARCUS: And I'll be happy to
displace this for today.
CHAIRMAN NEWTON: Thank you.
Senator Blue, what's the next
amendment?
SENATOR BLUE: Since this one is
displaced, Mr. Chair, I have I think one other amendment, and I'll be very brief on that. That's SBK 4. It's a VRA district based in Wilson county.

CHAIRMAN NEWTON: I don't have that nomenclature before me.

SENATOR BLUE: Let's see.
SENATOR MARCUS: Senator Blue, I
believe it's SCH Amend-7.
SENATOR BLUE: Okay. I've got it here. SBA Amend-3.

CHAIRMAN NEWTON: Okay, got it.
So, Members, it's SBA Amend-3.
SENATOR MARCUS: I'm sorry.
CHAIRMAN NEWTON: Members found that map, we're good to go. The map's up on the screen.

Senator Blue, you have the floor.

SENATOR BLUE: Is that it?
CHAIRMAN NEWTON: Vance. That is not -- that is not it.

SENATOR BLUE: That's not it.
CHAIRMAN NEWTON: How about to the left there. Yeah.

SENATOR BLUE: Yeah, that's it, that's it. I'm looking at the wrong one.

I won't repeat everything I said about a VRA district, but this was one of the originally created VRA senate districts, and it stayed in place through 2011. I think it was created in the -- in 2003 with the whole county provision applicable, and this body redid it in 2011, and Senator Angela Bryant was representing various portions of it.

The only thing I've done here -- and again, this is a solution to a problem before it becomes a problem. The only thing I've done is take districts whatever it was beforehand, but as to Wilson, Nash, Edgecombe area, and it starts up in Vance county, comes down to Franklin, then through Nash. It takes those two clusters -- there are two clusters. It takes those two clusters and it combines them because
you can create the functioning VRA district without going through the exercise of the original VRA district which had Wilson, Nash, Edgecombe, Northampton -- I think Northampton, but Halifax and Warren and maybe even Vance, but it went into all of those counties.

And its configuration after Rucho -- or as a result of Rucho was Wilson -- Wilson, Halifax, and Edgecombe, those three counties, and it met the requirements of a VRA district as it was intended to be. And once it got thrown into this new cluster that it was thrown into, it dissolves that VRA district. And as I said earlier, Stephenson can't in and of itself dissolve a VRA district. You've got to make the study. It, too, was one of the districts pointed out by those who were telling you some problem areas and it showed the statistics.

What this would do is preserve that district and it would combine those two districts so that the remaining district -again, just as with my first formulation over in the northeast, it would combine the districts, and the remaining district would be the second district of those two. It would still be three
counties. It wouldn't cause any other configurations under the Stephenson criteria because you will have created a VRA district and then you are left with three counties from that VRA district -- from creating that VRA district just as it is going into it. So it's a three-county cluster. It would still be a three-county cluster. The cluster around it would still be a two-county cluster, and this would be a cluster going into three or four counties, but it would be a VRA district so it wouldn't count against that, and it solves a problem before you have to address it in any other proceeding win or lose. It gives you certainty through this decade, and it doesn't do any harm to the other stuff that you've come up with cluster-wise or any other way. So I offer it to you for your consideration and move its adoption.

CHAIRMAN NEWTON: Thank you,
Senator Blue.
And before we take up the motion,
Senator Hise.
CHAIRMAN HISE: Thank you,
Mr. Chairman.

I guess I want to point out that this fails to create a two-county pod for Edgecombe and Pitt, a three-county pod for Wilson, Greene, and Wayne, and a three-county pod for Vance, Franklin, and Nash, and instead creates an eight-county pod that it divides among three members. No evidence to suggest that that is required that I have seen before you bypass the entire podding and destroy three pods.

Even if I accepted that, I do not -the challenges of why Edgecombe would be divided seems to make no sense to me when Edgecombe and Pitt form a two-county pod already, and so you've got this small, little blip that was divided just because.

But trying to get into those, I think that the request here is to throw out the Stephenson poddings of a two-county pod and two, three-county pods and instead make that an eight-county pod and divide it among three districts, splitting all those counties and others.

> They claim that -- the claim is being made that there are some VRA requirement that has to do so. I refer everyone to the statement
we've made earlier today that we don't see that, and I think it would be a tremendous mistake for us to go this far in violating all the pods and others in order to accommodate with certain other people's opinions of what's required of us.

CHAIRMAN NEWTON: Thank you, Senator Hise.

Senator Blue, comment.
SENATOR BLUE: Just to be clear, Stephenson says you first draw the VRA districts. That's an instruction to the General Assembly. Nobody disputes that. That is the first thing that the opinion says that you do. It says first draw the VRA districts.

After you draw the VRA districts, then you group counties, those that can be separate in and of themselves, a single-member district, you do that. Those that contain within themselves a concrete number of districts, then you do that. So you get Wake -- you used to get Wake and Mecklenburg, and that's how you got Onslow.

Then it says after -- after you do the VRA district, you do the clustering. After I've
done this proposed VRA district, the clustering is still the Pitt-Edgecombe cluster. That's the cluster. That's a two-county cluster because it disregarded what you did to draw the VRA district. The cluster is still Nash, Wilson, and Wayne, a three-county cluster which is what it is now. So those are the clusters that you draw after you've drawn the VRA district.

And that's what Stephenson says you do, no difference than what you did when you started initially. You just didn't recognize the obligation to do a VRA district. That's all this does. It doesn't make an eight-county super cluster. You haven't -- remember, you haven't done the clusters when you do the VRA district. You do the clustering afterwards, and that's why it leaves these counties intact. You don't -- you're still observing the clustering mandate.

Remember, the whole theory behind Stephenson was that you harmonized the whole county provision with -- and that's the language from the case, you harmonize it with federal law, which is what I just tried to do, and that's what I was pointing out to you. It does
not create an eight-county super cluster.
CHAIRMAN NEWTON: Thank you,
Senator Blue.
Seeing no other comments or questions,
Senator Blue has moved for the adoption of SBA Amendment 3. All those in favor say aye.

COMMITTEE MEMBERS: Aye.
CHAIRMAN NEWTON: Those opposed no.
COMMITTEE MEMBERS: No.
CHAIRMAN NEWTON: The nos have it, so
we will not be amending the map.
All right. So I know Senator Blue said
that was his last amendment, but I do have a couple other maps here. I don't know if somebody else moving for those amendments, or are those withdrawn at this point? I've got SBVA Amend-3 and SCHA Amend-7.

SENATOR BLUE: SCH -- I pulled back SCH 10 Amend-7 because you said you're going to set the discussion that Senator Marcus was having aside.

CHAIRMAN NEWTON: 3 and 7.
SENATOR BLUE: Yeah. So it wouldn't be appropriate to do that one until I see how that's resolved.

CHAIRMAN NEWTON: So that takes care of
7. And then so I still --

SENATOR BLUE: And we're pulling back on 3.

CHAIRMAN NEWTON: You're pulling back on 3 as well? Okay.

So that is all the amendments. Am I missing anything? That's all the amendments you wanted to offer today.

SENATOR BLUE: I think it is. It's all
that I have. I don't know whether some other members have other amendments.

CHAIRMAN NEWTON: Okay. I want to make the committee aware that we will be having a committee meeting tomorrow. The time is TBD because I think it's dependent on some work the House is doing, but I wanted to put that on your radar. As soon as we know the schedule, we will certainly let you know.

And I'd like to stand at east for just five minutes or less here. The chairs need to caucus a second.

SENATOR BLUE: Can I do one thing before you go at ease --

CHAIRMAN NEWTON: Sure.

SENATOR BLUE: -- to make sure that the -- so the staff knows where we're going.

Again, and I appreciate publicly the effort that the three chairs made with respect to not unnecessarily changing district numbers in the same counties, and I acknowledge that, and I certainly appreciate it for those members in these counties who are returning who order their supplies in great quantities -- in great quantities so that you'll save some trees. And I'm sure that Senator Hise recognizes that from the western part of the state where they just cut down Christmas trees.

But so that the staff will understand, in case there's a need for them to renumber whatever the final districts are within your map where you've changed, and we won't be rushed to do it, if you could sort of give them some direction in that regard. I know you changed mine in the ones in Wake county, but I didn't know whether there were others where you had made those kinds of --

## CHAIRMAN NEWTON: Thank you,

Senator Blue. The staff's got that on their radar.

ERIKA CHURCHILL: Mr. Chair, if I might, we're happy to engross today's amendments into an underlying map if y'all will give us a couple of hours and then we can reopen the drawing room if Senator Blue and the chairs would like to come in and instruct us how to renumber.

CHAIRMAN NEWTON: All right. Let us caucus here for just a moment. Thanks.
[At ease.]
CHAIRMAN NEWTON: I'll start with just a little housekeeping. The chairs have discussed with Senator Blue the best mechanism for -- if we can come to agreement to cure the double-bunk that Senator Marcus has, we can do that as a floor amendment, so we're going to proceed today to vote out the map as amended with any changes thereto either being technical which we're going to give the staff the ability to make at the direction of the chairs or it can be done on the floor.

And with that, Senator Hise has a motion.

CHAIRMAN HISE: Thank you,
Mr. Chairman.

I move for a favorable report to Senate Bill 737 as amended rolled into a new PCS with leave for staff to make technical and informing changes inclusive of the numbering of districts as technical, unfavorable to the original bill on the direction of the chairs.

CHAIRMAN NEWTON: That is well done, Senator Hise.

Any comments, questions? Good.
All those in favor --
SENATOR BLUE: One --
CHAIRMAN NEWTON: Senator Blue, of course. I should have known.

SENATOR BLUE: No. No. I want to make a statement so the record is clear.

I was iterating the different versions of Edmisten, and the second iteration was Gingles versus Thornburg.

CHAIRMAN NEWTON: Thank you so much for that clarification to the record.

All those in favor of the motion say aye.

COMMITTEE MEMBERS: Aye.
CHAIRMAN NEWTON: Those opposed.
The ayes have it. And so the motion
that's been adopted is unfavorable to the original bill, favorable to the bill as amended rolled into a new Proposed Committee Substitute with a favorable report to the committee substitute and to make technical changes which include renumbering of districts under the direction of the chairs, and with that we stand adjourned. Thank you.
(Transcription from YouTube ended at 4:41:50.)

STATE OF NORTH CAROLINA )
) $\quad \mathrm{C} E R \mathrm{~T}$ I F C A T E
COUNTY OF WAKE )

I, DENISE MYERS BYRD, Stenographic Court Reporter, CSR 8340, do hereby certify that the transcription of the recorded Senate Redistricting Committee held on November 2, 2021, was taken down by me stenographically to the best of my ability and thereafter transcribed under my supervision; and that the foregoing pages, inclusive, constitute a true and accurate transcription of said recording.

Signed this the 17th day of December 2021.

Denise Myers Byrd CSR 8240, RPR, CLR 102409-2




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Please refer to Ex. 29-36

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NORTH CAROLINA GENERAL ASSEMBLY
SENATE REDISTRICTING COMMITTEE
    OCTOBER 5, 2021
    Transcribed by:
Denise Myers Byrd, CSR 8340, RPR
    Discovery Court Reporters and
    Legal Videographers, LLC
        4 2 0 8 ~ S i x ~ F o r k s ~ R o a d
            Suite 1000
Raleigh, North Carolina 27609
            (919) 424-8242
        denise@discoverydepo.com
```

(Transcription from YouTube started at 6:57.)

CHAIRMAN HISE: ... Rod Fuller, Mike
Harris, behind me, Charles Marsalis, he's over here, and Linda Matthews. I saw her in the back. Thank you all for being here today.

Welcome back to the Senate
Redistricting Committee. I wanted to start off by thanking members of the public who came out to our 13 public hearings held across the state last month. There were a number of constructive and useful suggestions made throughout the process as the committee will be able to better respond to the concerns of North Carolinians as a result of hearing that feedback.

I also want to thank the members of the committee who were able to attend those meetings to hear from our constituents. Finally, and probably most importantly, I thank our staff and our sergeant-at-arms and General Assembly police for helping make that process run as smoothly as possible.

What we're here to do today is to begin the map-drawing process. In doing so, it will be important for this committee to understand
the county groupings to be used in the 2021 Senate plan. As the criteria this committee adopted several weeks ago say, we will use state constitutional standards as interpreted by the North Carolina Supreme Court in Stephenson I, Stephenson II, Dickson I, and Dickson II to create these county groupings. These decisions specify the procedure for how the county grouping process works to give effect to the state's constitutional whole county provision and the one person, one vote principle.

I won't recite verbatim what those decisions say, but in layman terms, this means the county population will be used to identify the maximum number of single-county districts that can either support one or multiple legislative districts. Next we will find -after that is completed, you will find the maximum number of two-county districts that will support one or multiple districts that don't landlock parts of the state without a district, then to three, then to four and so on through the process until no more counties are allowed to be grouped.

So in a moment, we'll hear from our
nonpartisan staff about the different options that are available for county groupings and how they comply with the state constitution and the Stephenson decisions. I want to emphasize that the chairs believe that there are multiple options for grouping counties in a way that is legally compliant.

This committee will consider maps that use the constitutionally compliant county groupings as our adopted criteria require us to do. Maps that do not use legal county groupings will not be considered by this committee.

I will now ask Erika Churchill to explain the county grouping options for the 2021 senate plans. And I think they have passed out the packet of 16 plus a blank map that's for coming in with some other information.

Does everyone have that? It appears everyone has it, Erika.

ERIKA CHURCHILL: Very good. So we're going to be looking at it on the screen as well.

CHAIRMAN HISE: Senator Clark, if you can just --

SENATOR CLARK: How do we introduce additional constitutionally compliant cluster
maps into the process?
CHAIRMAN HISE: Anything you'd like to -- anything will be open for you to draw or consider what you want. She's getting ready to present what we think the options are for constitutionally compliant maps, those kind of things, so those will be open for anyone, but I'm going to let her finish her presentation and we'll go through some questions.

SENATOR CLARK: Thank you, Mr. Chair.
ERIKA CHURCHILL: Okay. Jessica and I are going to walk through this the best we understand it.

So we were asked to start with a paper entitled North Carolina General Assembly County Clusterings from the 2020 Census. It was written by Christopher Cooper, Blake Esselstyn, Gregory Herschlag, Jonathan Mattingly, and Rebecca Tippett, and is available on the Duke University website Quantifying Gerrymandering, which is a nonpartisan research group centered at Duke Math. To the best of my knowledge, the post that released this was posted on August 17 th of this year.

So they started with trying to
determine, as Senator Hise mentioned, what are all the single-county clusters, meaning a county that is within a population range of plus or minus 5 percent deviation off of the ideal deviation for a Senate district. The ideal population for a Senate district for the 2020 decade is 208,788 people according to the federal decennial census, with a plus or minus range, that means a range of 198,348 people to 219,227 people.

So in starting their process, this group determined that there are 17 clusters containing 36 of the 50 districts that are fixed based on determining optimal county clusters. They are represented by the colored county groupings in the map that you have before you that are crosshatched. This will stay static throughout the presentation. There are 16 additional maps of how the counties in white can be grouped for the remaining 14 districts.

For the fixed districts, 10 of these contain a one single-member district, meaning that 10 of the 50 Senate districts would be fixed under this particular configuration. Those would be District $P$ in Onslow county;

District L, which is Beaufort, Craven, and Lenoir; District $N$, which is Edgecombe and Pitt; District Q, which is Wilson, Greene, and Wayne; District J, which is Johnston; District I, which is Nash, Franklin, and Vance; District H, which is Person, Caswell, and Orange; and District O, which is Davidson and Davie; District K, which is Rowan and Stanly; District M, which is Hoke, Scotland, and Robeson.

The remainder of the groupings would be multi-member groupings, which means they would have to eventually be divided into single-member districts within that plus or minus 5 percent ideal range for a single member.

So now comes the interesting part. JESSICA SAMMONS: So what we did was take the available options from those groupings that were in white from that first map that was on the screen and in your packet, and according to this group, there are multiple configurations that those counties could be grouped into, and so we created this chart of the different configurations.

For each of the groups in white, you'll see that there's kind of four distinct groupings
in white on that first page, one involving Buncombe county to the west, one involving Wilkes, Yadkin, Surry, Stokes, Forsyth, Alexander, one to the southeast, and then one to the east and northeast up at the top.

ERIKA CHURCHILL: I will jump in and note, starting with our western grouping, including Buncombe, this is sufficient population for five single-member Senate districts.

For that northwestern corner with the Wilkes-Surry-Forsyth area, that is sufficient for three single-member districts.

For this southeastern corner with Brunswick, New Hanover, Pender in it, that is sufficient for four single-member districts.

And starting with Caldwell, Pamlico and all the way back over to Warren in the northeast corner, that is sufficient for two single-member districts.

JESSICA SAMMONS: So what we did is we took the options that were in the article Erika mentioned from Duke, at Math, that Quantifying Gerrymandering group, and they had two different options for each of those white areas from the
first page. And we basically did all the configurations and came up with 16 different maps. And what we're going to do now is just roll through all 16 of them.

This first one, as you can see, fills in all those white spaces with one of the available options.

ERIKA CHURCHILL: And I would note for each of these, remember, the crosshatching is the fixed area from the Duke report.

The second thing that $I$ would note is when you see the, like R2, which is Buncombe, McDowell, and Burke on Duke Senate 01, the "2" means that is a two-member district. When you see Tl, which is Henderson, Polk, and Rutherford, that means that is a single-member district.

JESSICA SAMMONS: So explaining this map, you will see that here for Grouping $R$, that includes Buncombe, McDowell and Burke grouped together; Henderson, Polk, Rutherford grouped together; Lincoln, Gaston, Cleveland grouped together; and then move up to that second grouping, Wilkes, Alexander, Surry, Yadkin grouped together; Surry and Stokes -- Stokes and

Forsyth grouped together; and then over in the southeast, Harnett, Lee, Sampson, Duplin, Jones, Pender, New Hanover grouped together; Bladen, Columbus, and Brunswick grouped together; and then over to the east and northeast, Pamlico, Craven, Hyde, Dare, Washington, Chowan, Perquimans, and Pasquotank grouped together; and then the remaining of those eastern -northeastern counties grouped together.

ERIKA CHURCHILL: As we scroll through these, you will notice that you see a variation on a theme. There will be one district -- or one area of the four that will be changed in each one of these. The remainder will remain the same from a previous version. So it is simply the configurations of how these four areas of the state could potentially be broken down in two different ways and then reconfigured with the rest of the state that can also be broken down in two different ways.

So we're happy to scroll through these and read through each of the counties and each of the groupings, if the chair would like. CHAIRMAN HISE: Yeah. JESSICA SAMMONS: Okay. So In the
second map, you have -- looking back over at the west, you have a grouping of Buncombe and McDowell and Burke; you have a grouping of Henderson, Polk, and Rutherford; a grouping of Cleveland, Lincoln, and Gaston. To a little bit northeast of that, you've got Wilkes, Alexander, Yadkin, and Surry grouped together; Stokes and Forsyth grouped together. Down to the southeast, Buncombe, Columbus, and Bladen grouped together; and then Lee, Harnett, Duplin, Jones, Sampson, Pender, New Hanover grouped together. And Then moving over to the east, you have Warren, Halifax, Martin, Washington, Chowan, Hyde, Pamlico, and Carteret grouped together; and then the remainder would be in a grouping by themselves.

ERIKA CHURCHILL: For Duke Senate 3 -UNIDENTIFIED SPEAKER: Mr. Chair.

ERIKA CHURCHILL: -- back over in the west, Buncombe, McDowell, and Burke would still be grouped together for a two-member district. CHAIRMAN HISE: Excuse me for a second. Senator Marcus.

SENATOR MARCUS: Sorry, Erika, to
interrupt you. I think it would help me if you
could maybe point out, as you're going through these, which section of it is different from the map before. I don't know if that's what everybody else was doing, but I'm flipping back and forth between the one we just talked about and then the next one. So maybe if you could, you know, obviously do as the chair's requested, but if you could also mention where the change is so our eyes could go there first, I think that would be helpful.

ERIKA CHURCHILL: So the first of these series --

JESSICA SAMMONS: The first four -- the first eight.

ERIKA CHURCHILL: -- the first eight of these we're going to go through --

JESSICA SAMMONS: It's the same.
ERIKA CHURCHILL: -- the western part of the state, the Buncombe-McDowell-Burke trio, the Henderson-Polk-Rutherford trio, and the Cleveland-Lincoln-Gaston trio will not change for the first eight maps.

For the first four of these maps, that Forsyth-Stokes combination, with the Wilkes-Alexander-Surry-Yadkin combination, also
will not change for the first four. The changes will be in the eastern part of the state.

CHAIRMAN HISE: It may just be simplest if you focus on each of the four grand pod areas and show what are the two options for that area, holding everything else in the state kind of consistent. That might --

ERIKA CHURCHILL: Great idea.
So starting with Duke Senate 3, let's look at the southeastern portion of the state. One option is what is now will be labeled District $X$. It would have two members. It would be Columbus, Brunswick, and New Hanover. And then the remainder of that southeastern portion would be Lee, Harnett, Sampson, Duplin, Jones, Pender, and Bladen with two members as well. If you want to;

JESSICA SAMMONS: Page 18.
ERIKA CHURCHILL: I'll go back up. Oops, went too far. If you will back up to Duke Senate 01, that same area -- sorry. I was trying to get to 2.

To Duke Senate 02, that same area of the state, that southeastern corner, can be broken down differently. District $X$ would be

Lee, Harnett, Sampson, Duplin, Jones, Pender, and New Hanover, and it would be population sufficient to support three single-member Senate districts. The remainder, District Y as labeled, would be Bladen, Columbus, and Brunswick, and it would be a single-member Senate district.

Again, staying in the eastern part of the state, staying with Duke Senate 02 , that northeastern corner, one option would be to combine Warren, Halifax, Martin, Chowan, Washington, Hyde, Pamlico, and Carteret for a single-member district, and to combine Northampton, Hertford, Bertie, Gates, Perquimans, Pasquotank, Camden, Currituck, Dare, and Tyrrell for a single-member district. JESSICA SAMMONS: Go back one. 3, go to page 3.

ERIKA CHURCHILL: The other option in that northeastern corner will be to combine Carteret, Pamlico, Hyde, Dare, Washington, Chowan, Perquimans, and Pasquotank for a single-member Senate district, and for Warren, Halifax, Northampton, Hertford, Bertie, Martin, Tyrrell, Gates, Camden, and Currituck to be
combined for a single-member Senate district. JESSICA SAMMONS: You need to go to

Map 9.
ERIKA CHURCHILL: Skipping ahead to
Duke Senate 09, the -- well, let's back up to Duke 08 for a second just to look at that southwestern area one more time.

Option 1 would be Buncombe, McDowell,
and Burke for a two-member Senate district; Rutherford, Polk, and Henderson for a single-member Senate district; Lincoln, Gaston, and Cleveland for a two-member Senate district. The other option in that southwestern corner would be to combine Buncombe, Henderson, and Polk for a two-member Senate district; McDowell, Rutherford, and Cleveland for a single-member Senate district; and Burke, Lincoln, and Gaston for a two-member Senate district.

Moving to that northwestern corner or area, the first option would be to combine Forsyth and Stokes for a two-member Senate district; and Surry, Wilkes, Yakin, and Alexander for a single-member Senate district. JESSICA SAMMONS: Go back one.

ERIKA CHURCHILL: The other option in that northwestern corner will be to combine Forsyth and Yakin for a two-member Senate district; and Stokes, Surry, Wilkes, and Alexander for a single-member Senate district.

CHAIRMAN HISE: Members, I will take a moment now to see if there are any questions. As I summarize this, there are four areas of the state where the podding, for example, in the west, will contain three three-county pods.

There are two options for what counties cluster together for those three. So with four areas in the state, two options in each, that will give you a total of 16 possibilities that could be selected for a map.

Staff's here and we'll continue to -and I will answer any questions you may have. If you will please direct your questions to the chair.

Senator Blue.
SENATOR BLUE: Thank you, Mr. Chair.
It might be that the staff can answer this, but I'll ask you directly because I have the greatest amount of respect for Mattingly, Tippett and the various others that you talked
about who were involved in this project. And maybe staff knows, but do you know whether or not, in drawing these initial maps, what the total criteria was? You say the Stephenson criteria. I didn't hear you mention some of the lawyers who would have interacted in this to determine whether in their laying out these maps they looked at first Stephenson criteria which is that Voting Rights district requirement -Voting Rights Act requirements.

And so do you know whether they
factored in that initial criteria in Stephenson in drawing these maps or they just did it on population and the Stephenson criteria generally on the whole county?

ERIKA CHURCHILL: Senator Blue, I'm going to read directly from their --

SENATOR BLUE: Okay. That would be helpful.

Erika CHURCHILL: -- work because I'm not really sure other than to read directly from what they said. And this is in the very first paragraph.
"However, there are often multiple county clusterings that minimize county
splitting." And it has links to two different blogs.
"The release of the 2020 census data allows us to determine the possible county clusterings for both North Carolina State House and State Senate redistricting processes. The one part of Stephenson $v$ Bartlett which this analysis does not reflect is compliance with the Voting Rights Act. To determine the county clusters, we use the implementation of the court-ordered procedure described in Cater, et al., which has a reference to optimal legislative county clustering in North Carolina.
"Daniel Carter, Zach Hunter, Dan
Teague, Gregory Herschlag, and John Mattingly, Statistics and Public Policy, Volume 7, 2020." SENATOR BLUE: Follow-up. CHAIRMAN HISE: Follow-up.

SENATOR BLUE: And the reason that I mentioned that is that Tippett is an absolute asset to the state and her population center, whatever the name of it is, over at Chapel Hill, and she projects those numbers and understands them as well if not better than anybody else in the state. And so she's a -- I want to say
cartographer, whatever the term is that describes those who study population and create maps based on it.

Mattingly, on the other hand, is, again, public policy, statistician, and a great one at that, a mathematician/statistician, but it seems to me that if they are saying that they have not done the first thing in the Stephenson requirements, then these clusters would be suspect until that kind of determination is made.

And I say all of this, Mr. Chairman, because I've lived through this -- those eastern counties, and again, it's totally an exercise in academics to talk about anything initially other than the 42 eastern counties plus two or three urban counties that were involved in the Section 5 formulation of the Voting Rights Act.

In the 80s, in the litigation, it was a determination not by the legislature, but by the courts that they were going to basically nullify the maps in the Gingles case because of that. And since they were able to penetrate two or three urban areas, Cumberland, Mecklenburg, and Gilford, they were able to impose a broad
standard across the state with all of the urban areas.

And In the 90s, they determined that they would not just take the Section 5 issues but they would impose Section 2 issues across the state. That's why you got the weird district from Gastonia to Durham, congressional district. But they cleaned it up, and then Stephenson came along in the first part of this century, the Stephenson case, and imposed the whole county provision on it, but recognized the jurisprudence that it evolved over the prior 20 years under the Voting Rights Act.

And So that's why I think Stephenson said the first thing you got to do, since state law doesn't trump federal law, is try to figure out how you comply with the Voting Rights Act as you do clusters and as you do districts.

Now, I go back again to the fact that Cumberland, Mecklenburg, and Gilford are outside that range now, so you're really narrowing it again to the areas up in eastern and northeastern North Carolina which got us on this treadmill in the first place.

And if there's been no analysis made to
whether or not there's going be compliance of the Voting Rights Act, then we're setting ourselves up again perfectly to sort of lead with the chin and be the poster child for redistricting nationally that gets struck down in this decade.

And so I asked you, since you -- staff pointed out that they made that an exception to their maps, can we do legitimate maps without a constitutional -- without seeing what the constitutional requirement is?

CHAIRMAN HISE: I don't know if you want to respond to that or not.

So the response I will give to the question is we believe that constitutionally compliant maps can be presented under the Voting Rights Act under these county clusters. As much as we are required to -- what's remaining of the Voting Rights Act to comply, we will comply and believe it can be done within these existing clusters. I see them as two separate things. We must comply with federal law, we must comply with state law, and within these clusters, we believe there is the option for doing both. SENATOR BLUE: Could I follow-up,

Mr. Chairman.
CHAIRMAN HISE: You may.
SENATOR BLUE: Because I want to do that, but how would you propose to comply -what would be the analysis to determine that you are complying with the Voting Rights Act?

That's the ultimate question because Gingles set forth the criteria that you have to use to determine whether there's a Voting Right Act violation.

CHAIRMAN HISE: Well, having gone through all these cases as much as I could, I wish it was a simple standard in which they could determine what was the demographics or the process of a district in order to comply with the Voting Rights Act.

But we believe that however these districts may form or the options that are chosen for how these districts form, it is still very much possible to create districts, and intend to, that comply with the Voting Rights Act.

SENATOR BLUE: One last question. So it's the chair's position that you can actually determine clusters without doing the first

Stephenson analysis? Analysis is replicable. I mean, that's what a scientific approach to it is, that folk have to understand that you have to have specific criteria and you can replicate it.

And so is it your position that we can comply with the Voting Rights Act without doing the analysis to determine whether there are Voting Rights Act requirements before you do the clustering, which is what Stephenson says you have to do?

CHAIRMAN HISE: Is there a
determination that you can comply with both laws at the same time? Yes.

SENATOR CLARK: Mr. Chairman.
CHAIRMAN HISE: Yes. Senator Clark.
SENATOR CLARK: Thank you,
Mr. Chairman.
During the last decennial redistricting process, the General Assembly identified three Senate districts as being VRA districts: Senate District 3, Senate District 4, and Senate District 5. Those three were located in the northeastern region of the state of North Carolina.

If I look at this Duke Senate 3 here, I would say that they were in the area where you have Z1, Y1, I1, N1, Q1, and L1. So what we have there are three clusters, each showing what I would call single district clusters, six of them. So how do we know that within that grouping that there are three that are VRA compliant as is the case currently with Senate District 3, 4, and 5?

CHAIRMAN HISE: I can only say at this point that having nothing been done that we believe that compliant districts can be drawn within these clusters.

SENATOR CLARK: Follow-up, Mr. Chair.
CHAIRMAN HISE: Follow-up.
SENATOR CLARK: Mr. Chair, could we have staff provide us with the total BVAPs for those particular clusters I just identified?

CHAIRMAN HISE: I believe at this point we don't have a sense of what a total package is, but we can provide the information that's consistent with the guidance of this committee at this point, not including racial data as were coming in.

SENATOR CLARK: Well, a BVAP is racial
data. It stands for Black Voting Age
Population, and TBVAP is Total Black Voting Age Population, and those were used during the 2011 redistricting process. And I know our criteria says that we will not use racial data in the construction of legislative districts; however, Stephenson has already created them for us in that particular case. Therefore, I just want the data to evaluate what Stephenson has done. CHAIRMAN HISE: As I said, the committee will continue on the process of data that's available under its stated criteria. And I don't even know that that's available in the system.

ERIKA CHURCHILL: At this time, central
staff have followed the committee's instructions, and total population is the only data available to evaluate.

CHAIRMAN HISE: Senator Nickel.
SENATOR NICKEL: I'm just kind of trying to figure out the foundational part to how we do all this. And if we're going to comply with state law and federal law and the Voting Rights Act and Stephenson, race is a central part of all this. So how can we comply
with federal law and all of this without looking at any racial data?

CHAIRMAN HISE: So we've been through
multiple decisions. The last decade, the General Assembly was told by the federal courts that there is not sufficient evidence of racially polarized voting in North Carolina to justify the use of race when drawing districts. So no additional information has been presented to this committee regarding racial polarized voting and none was received during the public comment period held last month. As we have said in the past, if information does come forward regarding racially polarized voting, we will consider it.

SENATOR CLARK: Mr. Chair.
CHAIRMAN HISE: Senator Marcus is next. SENATOR MARCUS: Thank you, Mr. Chair. It seems to me that the way to answer the question is that this committee should conduct a racialized polarized voting study, and I'm asking now whether you intend to do that either before we set these county clusters or before we set the final maps.

CHAIRMAN HISE: I would repeat that no
evidence has been presented to this committee of racially polarized voting. When We went through this 10 years ago, we put mountains of information together that the court found would be insufficient for doing so, and we have taken no additional action, and I'm aware of no commission study or others from this committee or from the General Assembly but would consider anything presented.

SENATOR MARCUS: Follow-up.
Just to clarify, so I hear what you're saying is nobody else has presented this committee with this information, but it's my belief, and I think many others, that it is incumbent on this committee to make that determination, and to do so, you would need a racialized polarized voting study.

So are you saying, Mr. Chair, that you are not going to order that study? As chair of this committee, that it's somehow up to somebody else to present it to you?

CHAIRMAN HISE: I will say the committee will consider the available information we have. There is no plan or process right now for commissioning a particular
study in any of the budget processes or in legislation.

So then I have Senator Clark, then back to Senator Nickel.

SENATOR CLARK: Thank you, Mr. Chair.
Dickson v Rucho indicates that VRA compliance can be a compelling interest of the General Assembly. And we have codified -- well, codify is not the proper term, but we have stated in essence to our criteria that we consider VRA compliance to be a compelling state interest. Therefore, Dickson v Rucho would require that the General Assembly do a racial polarization study in order to fulfill that obligation.

CHAIRMAN HISE: I appreciate your
comment.
Senator Nickel.
SENATOR NICKEL: Question for staff.
CHAIRMAN HISE: You can direct your questions to the chair.

SENATOR NICKEL: My question for staff is just, number one, can we overlay racial data if requested? And, number two, can staff perform a racial polarized voting study if
directed?
CHAIRMAN HISE: Racial data is not
available in the system and cannot be produced for the committee and will not be considered by this committee consistent with its criteria.

I will repeat again, we have no directives right now for some kind of ambiguous racial polarized voting study that would take an indefinite amount of time in the process.

SENATOR PERRY: Mr. Chair.
CHAIRMAN HISE: Next, Senator Perry. SENATOR PERRY: Thank you,

Mr. Chairman.
Mr. Chairman, please forgive my impatience, but it feels like you're having to answer the same question, phrased differently, over and over again, and I would like to move forward to understand the information we have in front of us at the appropriate time.

CHAIRMAN HISE: So we're open for questions right now. This, $I$ guess, is kind of the way the legal process works when people are trying to create --

SENATOR BLUE: Mr. Chairman.
CHAIRMAN HISE: Senator Blue.

SENATOR BLUE: One point that I would follow up on, and Senator Clark raised it, and again, staff can be of some assistance, but the jurisprudence in the area, he's pointed out that you got three districts that were constructed in that area beginning in the 80 s and 90 s that were purposefully preserved in the 2011 redistricting, and part of the problem that was resolved in Rucho is that they were overly preserved and that is they were guilty of efforts to pack, to use the terminology that the courts use.

And there is a body of law that says before you deconstruct these districts, basically redistrict and not take into account the history of them, you have to make certain findings, and I think that's what these members are getting at with respect to a VRA study. It might -- a polarization study.

It might be that a polarization study would show that you can't justify maintaining them as VRA districts, but the law is you can't deconstruct them until you sort of know that they're not serving the purpose any longer for which they were created. And that's the
importance at least in those districts. And again, this whole effort in all of these cases over the last 30,40 years have been about primarily this area of the state.

And so before deconstructing these districts, unless you're going to make specific findings that the three districts that Senator Clark pointed out to us no longer are needed or they can maintain their status as VRA-created districts, that you're walking into a trap to just deconstruct them without any of the information that would support your decision to purposefully deconstruct them or allow them to be deconstructed.

And I think that that's -- at least that's what I gathered the overview of the law in the area is. I might be wrong, but it seems that some analysis along that line is necessary to satisfy Stephenson, the very first prong of Stephenson, what that case determined in 2002 or 2003 as well as the subsequent Stephenson case, and certainly in Rucho and the subsequent cases in the last decade.

CHAIRMAN HISE: What I continue to say is that this committee is still open to consider
any information that exists on racially
polarized voting. There has been no standard that has been met or that the committee should consider at this point. I would also say that for consideration, not considering race is compliant with what this body did -- has done previously in drawing the maps and clearly in what has been upheld by the courts.

So I think next I had Senator Clark and then back to Senator Nickel again, so we'll see if the questions start.

SENATOR CLARK: Thank you, Mr. Chair. Back to the 16 maps we have before us, I had asked previously was there a methodology by which we could introduce additional cluster maps that we consider to be constitutionally compliant. And the reason I asked that is because these maps were done using the Duke code, which I'm familiar with, and Python, and the deviation was set at point 5 -- at 5 percent, excuse me, therefore, this goes to range from zero to 5 percent plus a minus, that is.

However, it's the prerogative of this body, should we choose to do so, to say we're
going to have a cap lower than the 5 percent. So if you take the cap lower than 5 percent, there are additional options out there, and I would like the authority to submit such a map for consideration, cluster map.

CHAIRMAN HISE: I would just say that we will take a look at anything you submit. You're open to draw anything or others. It would be less compliant if there was more one-county pods formed in the map, more two-county pods formed in the map, more three-county pods formed in the map. In creating it, the plus or minus 5 percent is a court standard that we have utilized and adopted.

If you could produce a map that produces a greater number of smaller county clusters than exists in this map, then the committee would consider that and would look to change our process.

SENATOR CLARK: Thank you, Mr. Chair.
CHAIRMAN HISE: So then, I think, back
to Nickel again.
SENATOR NICKEL: Just a data question. Can we get a copy of the population groupings
for each of these 16 different -- well, it's four-county groupings with, you know, two different clusters in each of the four groupings. I'd just like to see that data, what the total numbers are for one versus the other.

ERIKA CHURCHILL: Yes, sir. We can provide total population reports for each of the 17 maps.

SENATOR NICKEL: Thank you.
CHAIRMAN HISE: Any other questions?
Senator Marcus.
SENATOR MARCUS: Thank you, Mr. Chair.
This is the first that this committee has presented any maps that the public can look at, and I'm wondering whether -- I don't know what the chair's plan is for today's committee meeting, whether we're voting on these maps and choosing one and moving forward that quickly, But I would like to have on record a request that the public have time to look at these and to respond to them, and I think we need more public hearings both on county cluster maps but also on whatever additional maps we draw after this process.

I guess my question is what are the
plans for public input on these county cluster possibilities and then moving forward with whatever additional maps are proposed?

CHAIRMAN HISE: So the other purposes today is to announce the beginning of the voting process that's coming in, and that may be -- the drawing process. As you will see, this room is set up with four stations. I believe that one of the stations will be with the data for congressional maps and the other three for -- do all four have all four?

ERIKA CHURCHILL: All four stations will be set up, Mr. Chair, to draw any house, senate or congressional plan. So any member that's sitting down at any one of the stations could choose to start on any one of those three types of plans. And we can do a little bit of a demo as to what folks will be seeing, if you would like that.

CHAIRMAN HISE: We'll get to that in just a second.

That's what's coming in, but starting tomorrow morning, this room will be open for members to come in and begin the process of drawing. There are 16 possible options that
exist under these clusters to submit maps. Some think there's a more optimal podding out there. We would be open to that consideration, if there is a more optimal podding, but for right now, without that evidence coming forth to the committee, the committee will consider any of these 16 possible maps as compliant in that process. And so for the committee to ultimately consider it, it needs to meet one of these 16 parameters. If you have found a more optimal pod, please let us know as soon as possible.

So what is happening after this is we are opening up the drawing process, all 16 of these maps, and the choices you make that exist within these maps will be up to the individual drawer.

I think Senator Blue was --
SENATOR BLUE: Thank you, Mr. Chairman.
I just wanted to make sure you -- you alluded to not just the senate maps but also congressional maps too.

Other than the clustering requirement in the legislative maps, is the criteria that we're going to use in the congressional redistricting process the same as was formulated
for legislative redistricting? I mean, I know the difference in the population and you don't use clusters, but --

CHAIRMAN HISE: There's no variance --
I believe that there is a determination there is no cluster that exists in the congressional maps. I think it's all 100 counties and 14-county cluster. This is coming in with no variance. So this will come in in the same other criteria we've used for compactness and others that are out there and for not using racial data and others are the same criteria that exist across both maps.

And again, they will be open for drawing house, senate, or congressional maps, although this committee will be considering at least we know right now senate maps. The house, as is tradition, we will consider house maps first.

So with all that, maybe we want to get a few moments just to go through what you would be seeing in the process.

ERIKA CHURCHILL: As in 2019, these will be public drawing stations. Everything that is done on one of these drawing stations
will be capable of being viewed by the public. With that, there -- Will is showing you what here in the room the stream will look like. Anyone that is sitting in the back will be able to see the screens and identify which station is the one they want to focus on.

As you can see on the backs of the large monitors, there's four of those. They do have a sign that says Station 1, which is behind Senator Blue, Station 2, which is with Senator Clark, Station 3, which is kind of in between Senator Nickel and Senator Ford, and Station 4, which is with Senator Krawiec.

We'll open up Station 4 so that everybody can see what it will look like with the drawing active. So hopefully, as we understand that the process is going to work, the area where the stations are will be for the staff and the membership. The public will still sit in the area where the public normally sits. The public can sign onto the General Assembly wi-fi if they want to focus on Station 2 or they can use the monitors in the room if they want to kind of monitor what's happening at all four stations simultaneously.

There will also be a feed of all of the audio that is said at each of the stations. So please, as members, remember what is being said at one of the drawing stations will be, as I've heard a member say in the past, heard in Greene county and China simultaneously.

Will, do you want to let me sign in.
JESSICA SAMMONS: We also are going to have a video stream of the entire room, so anyone that signs onto the General Assembly website will be able to see a live stream of everything happening in the room from the perspective of that back camera.

ERIKA CHURCHILL: As you can see, we have a --

CHAIRMAN HISE: They're behind the monitor.

ERIKA CHURCHILL: As you can see, we have attempted to test out what is going on so that everyone will hopefully have as few hiccups as possible when the public drawing starts tomorrow morning, but this is roughly what you would see on the screen in the room.

If anybody wants to come around, we'll leave this up so that you can see what the
actual screens in the drawing station looks like, after the committee adjourns, so everybody can take a look at that.

CHAIRMAN HISE: Just to add to the concept and finally get it all official.

Much like in 2019, we will open this room for members for drawing maps. Beginning tomorrow, this room will be open 9:00 a.m. to 5:00 p.m., Monday through Friday, for members who are interested in working with staff to draw redistricting maps for the senate and for congress. Data will be available for the house as well.

The proceedings will be live-streamed on the General Assembly website. Only maps drawn in full public view will considered by this committee. So if you want to draw a map or an amendment to a map, you will need to draw it here. We anticipate map drawing continuing for at least two weeks. Depending on the level of interest, we may have to expand the hours for drawing or open up this room on weekends as well. We will keep you updated on any changes to the schedule as this process moves forward. At this point, I will continue to be
happy to answer any questions or any technical inquiries you may have about the process.

Senator Clark.
All right. Senator Nickel.
SENATOR NICKEL: Just on the timing here, when is your plan to vote on the county cluster groupings? Because, you know, it's a waste of time for a lot of senate maps if we're not doing the right county cluster grouping.

CHAIRMAN HISE: So there is no -- the committee has not adopted one of the 16 clusters as counties. They will be open to all members drawing and available for all members while drawing maps.

SENATOR NICKEL: Follow-up.
CHAIRMAN HISE: Follow-up.
SENATOR NICKEL: When is that going to happen in the process? I mean, It should be sooner than the end.

CHAIRMAN HISE: We will consider any of the 16 maps that are here in this process or consider additional information that is submitted. So as we begin this process and as we go through this process, all 16 will continue to be available for the committee.

SENATOR NICKEL: So just to follow-up.
CHAIRMAN HISE: Follow-up again.
SENATOR NICKEL: If I'm drawing a map,
I can't -- you know, I don't want to draw a map that doesn't have the right county cluster groupings at some point before that end of the two weeks is up. So do you have a plan to vote on the cluster groupings prior to that end of two weeks?

CHAIRMAN HISE: We do not.
Any other questions? Hearing none, I think that covers everything we have for this meeting.

As we begin tomorrow at 9:00, happy drawing. For the fun and exciting part of this, we look forward to doing it. We will have some specifics out for people for observation and others, but this is all streamed for individuals. So I look forward to seeing you all here and look forward to all this.

This meeting -- having exhausted the agenda, this meeting stands adjourned.
(Transcription from YouTube ended at 55:23.)

STATE OF NORTH CAROLINA )

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\text { ) } \quad C E R T I F I C A T E
$$

COUNTY OF WAKE )

I, DENISE MYERS BYRD, Stenographic Court Reporter, CSR 8340, do hereby certify that the transcription of the recorded Senate Redistricting Committee held on October 5, 2021, was taken down by me stenographically to the best of my ability and thereafter transcribed under my supervision; and that the foregoing pages, inclusive, constitute a true and accurate transcription of said recording. Signed this the 18 th day of December 2021. Denise Myers Byrd CSR 8240, RPR, CLR 102409-2

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- Ex. 8700 -



Please refer to Ex. 29-36

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NORTH CAROLINA GENERAL ASSEMBLY
    JOINT COMMITTEE MEETING
        AUGUST 12, 2021
        Transcribed by:
Denise Myers Byrd, CSR 8340, RPR
    Discovery Court Reporters and
    Legal Videographers, LLC
        4 2 0 8 ~ S i x ~ F o r k s ~ R o a d
            Suite 1000
Raleigh, North Carolina 27609
        (919) 424-8242
    denise@discoverydepo.com
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(Transcription from YouTube started at 2:41:20.)

CHAIRMAN HALL: ... reiterate what was going on. As the committee members know, last week, a week ago, the chairs told committee members that they could put forth amendments because the chairs intended to vote on this criteria today, and so members have had that week time period to get these amendments in. And the first amendments that any of the chairs saw was well after 8:30 a.m. this morning when the committee started. Most amendments were not completed yet by staff, and so it was on probably -- well, I don't want to -- it was at least an hour or so after the committee was supposed to begin before we even actually had any final amendments.

The chair is in possession, and I think has been passed out, roughly somewhere between 10 and 15 amendments. The chair will tell the committee members that not all of those have actually been put forth at this time. Apparently, there were some members still considering whether they actually want to offer those amendments, so they haven't been signed,
but the chairs directed that those be put out so that, for efficiency purposes, we can just go through the amendments that are in possession of the chairs. And if we come to an amendment that a member does not wish to put forward, then simply tell the chair that and the chair will, of course, allow that amendment to be withdrawn. For House members, you've probably already seen your email. Session's been delayed until 12:00, and the chair anticipates session probably being delayed again depending on the time that it takes to hear the bills in this committee. The chair understands that this is a very important committee. It's important that we do things here in a thoughtful and deliberative way, and so we're going to give it the time that it needs today.

Members, I'll also start by just making
a few remarks because the chair believes that this is really a historic occasion for this committee. As members will remember, in 2019, for the first time ever in the history of this state, maps were drawn without using partisan data and partisan considerations. That was, of course, ordered by court. Most of the members
on this committee were here at that time and probably participated in that, and the members will remember that we passed those maps and that the court reviewed those maps and upheld those maps. That was an historic occasion. This state's over 200 years old, and as far as the chair can tell, since the inception of this state, maps have been drawn by a legislative body, and they have been done using partisan means. But again, for the first time ever, in 2019, that did not take place. That was court ordered.

Today's committee meeting is notable and historic because for the first time ever, without a court order, but with doing it voluntarily, the chairs have put forth a set of criteria before you, not -- voluntarily not using election data and partisanship. And so far as the chair can tell, that's the first time that that has ever happened in the history of this state and perhaps the first time that it's happened in this country. I know other states have decided to go in different routes. They've used independent commissions and they've done other things, but the chair is not aware of any
other states who have just voluntarily kept the ability to draw the maps but agreed to not use that partisan data and partisan consideration. And so I hope that the members of the public and I hope that the committee members recognize through this criteria that's been proposed the commitment of the chairs to make significant and reasonable efforts to attempt to limit the partisan consideration and election results data from being used in the drawing of these maps.

Additionally, the chair does want to point out, one thing the chair heard often in public comment earlier this week, and that was that -- that there was some ranking of the proposed criteria of the chairs, and that's not the case. And the chair understands that that was an easy mistake or a misunderstanding that members of the public could have had. They were simply looking at a list of criteria and perhaps they thought that list was ranked. Again, it was not ranked at all. The -- certain provisions on the criteria are constitutional. Obviously, those have to take precedence over those areas that are not constitutional, but
otherwise, those -- those items are not ranked at all.

Members, the data -- as most members of the committee know, the data will be released by the Census Bureau today at about 1:00 p.m., as best we can tell, and so it is the goal of the chairs of this committee to adopt this criteria this morning. And one of the reasons for that is as we all understand, the redistricting process is a very litigious process, not just in North Carolina but really across the country, and because of that, the chairs think it's important to get criteria adopted before the data comes out so that no one can reasonably say that the chairs somehow took the data and then drew the criteria to meet the desires of the chairs. It would be impossible for the chairs to have done that. The chairs have, obviously, put out criteria already. The committees will vote on whether to amend that criteria this morning or not, but it was important before that criteria came out -- before the data came out to get the proposed criteria out.

Members, I'll go ahead and tell you, I expect at some point next week to have a
committee meeting to discuss what the committee wishes in terms of a public comment period, whether here or across the state. There's no -- we have not -- the chairs have not set a date for that yet, but check your email over the course of probably tomorrow the chairs will try to get you notice out, but again, that meeting will be for purposes of the committee discussing how we want to go about public comment. And of course, the portal is open, will remain open. Members of the public have the opportunity to continue to comment on any matter that they see fit that's before this committee, or any matter not before this committee if they see fit, but members of the public are encouraged to submit comments as to what the public schedule should be.

Members, with that being said, the chair will turn to Chairman Daniel.

CHAIRMAN DANIEL: Thank you, Mr. Chair. And I guess I just thank you for those comments and also want to revisit briefly some of the discussions on Monday. There was a question or two that came up regarding proposed criteria that we said we would, you know,
address later on, so makes sense to address today. So I will let -- if the chair would recognize Senator Newton. He would like to make some comments.

CHAIRMAN HALL: Thank you,
Mr. Chairman.
And before the chair does that, the chair also failed to note one thing, and that is this is not technically a joint committee. This is the House Senate -- the House committee and the Senate committee voluntarily meeting jointly, and so because of that, we really need to take two sets of votes on any amendments that are put forth today as well as the final set of criteria. So the method that we'll use to do that is when the House members vote on a given amendment or criteria, I will chair, and when senators are voting on the same, Chairman Daniel will step up here to chair so that there's -the chair just wants to get that out there so there's no confusion. If there's any questions about that -- I know that's not typically how it's done in most of our committees, but we're really taking two votes on each of these today. Are there any comments or questions
about that from the committee members?
Seeing none, Senator Newton, the gentleman is recognized.

SENATOR NEWTON: Thank you, Mr. Chairman.

The couple of questions I wanted to address that came up on Monday. The first is related to county groupings to be used in the 2021 House and Senate plans. As the criterion that we have proposed says, we will use the state constitutional standard as interpreted by the North Carolina Supreme Court in Stephenson I, Stephenson II, Dickson I and Dickson II to create these county groupings.

These decisions specify the procedure for how the county grouping process works and to give effect to the state constitution's whole county provision and the one person, one vote principle. I will not recite verbatim what those decisions say, but in layman's terms, that means that once the county population data is available, either -- we will use it to identify the maximum number of single counties that can support either one legislative district or multiple legislative districts using the ideal
district population within plus or minus
5 percent and keep those counties whole for the purpose of drawing districts.

Next, we will find the maximum number of two county pairs that can be identified that either support one legislative district or multiple legislative districts factoring in population requirements, and we will consider those two county groupings. Next, we'll do the same for three county groupings, then four, then five and so on until there are no more counties in the map to be grouped.

What I want to make clear about this criterion today is that it will control how the county grouping formula is applied, but we are not adopting county groupings today. We will meet again at a later date for the Senate and the House to separately vote on county grouping plans for their respective maps, and they will be adopted by these committees. So there will be more time for input from members and the public prior to those votes to adopt county groupings taking place.

The second question $I$ want to address is the decision to exclude racial data from
being used by this committee in the drawing of districts. Of course, we understand that North Carolina is obligated to comply with Section 2 of the Voting Rights Act when drawing districts in the 2021 Congressional, House, and Senate plans, but during the last decade, the Supreme Court told us that there is not sufficient evidence of racially polarized voting in North Carolina to justify the consideration of race when drawing districts.

If you have new evidence or new studies of racially polarized voting in North Carolina, we would be willing to examine that evidence, and nothing in this criteria prevents any member from bringing forward such evidence during this process.

Thank you, Mr. Chairman.
CHAIRMAN HALL: Members, the chair's now going to go into --

SENATOR BLUE: Mr. Chairman.
CHAIRMAN HALL: Senator Blue.
SENATOR BLUE: Yeah, I had a quick question of Senator Newton.

CHAIRMAN HALL: The gentleman is recognized for a question.

SENATOR BLUE: Senator Newton, in
looking at Stephenson, the first criteria that the court says is that you have to determine what the VRA districts are, and I'm wondering how you determine a VRA district without examining the question of race which is what it's predicated on. And if in fact during the process of drawing clusters, we draw them and then you get information or an indication that a district might be a VRA -- a Section 2 district specifically, that you -- somebody brings evidence that there is sufficient racial polarization in the voting that you have to apply the laws, as evolved, over the last 50 years, that then throws everything else that you're doing about clusters -- or that we're doing about clusters -- not everything, but a significant number of issues about how the clusters look and we go back to the drawing board anyhow.

So with respect to choosing clusters and determining whether they're necessary, I take it that you're waiting to see, whether from the committee or from interested parties, whether there are suggestions of a required VRA
district.
SENATOR NEWTON: Mr. Chairman.
CHAIRMAN HALL: The gentleman is recognized.

SENATOR NEWTON: Thank you. Thank you for that question, Senator Blue.

As you're aware, in 2019, when we drew, we did not consider race in the drawing of those maps, and the court ultimately adopted or embraced that process. And so we're going to do the same thing here. We're going to follow that same process, but as I suggested in my comments, if at any point there is a belief that there's a violation of Section 2, we need to know that. We'll -- we'll, you know, act appropriately at that time.

SENATOR BLUE: One quick follow-up.
CHAIRMAN HALL: The gentleman is recognized.

SENATOR BLUE: The reason and subsequent to 2011 that there were not the other issues on the VRA is the districts had already been drawn and the question got to be -- without considering race, the question got to be which of those districts you could justify as
continuing VRA districts, and so the court did another analysis on concepts of just packing, cracking, stacking, those things, and that's what we were responding to and what Rucho, whatever those cases were in the -- in the last decade. So there had already been a determination by us, as mapmakers, that there were two or three districts that merited continuation in their current form in order to avoid a Section 5 -- especially a Section 5 attack.

Now, I know that that's been muted since 2013, but even trying to avoid a Section 2 attack on the overall redistricting process. And the only aspect of it had to do with overcompensating in non-VRA-required districts, not the VRA districts other than for the Senate, Cumberland, Guilford, and I don't think -- at the last rendering, one of the districts in eastern North Carolina, either Pitt, Greenville, Wayne, Lenoir district, was challenged because of that concept, but it wasn't aimed at whether or not a VRA district actually existed. I know there were no polarization studies done, no evidence presented, and the effort was made to
relate back to 2001 studies to justify it.
But I think that -- I think that
Stephenson makes it relatively clear that before you consider clustering of groupings, you have to make that VRA determination.

CHAIRMAN HALL: The gentleman is recognized.

SENATOR NEWTON: Senator Blue, thank you for your analysis on that. The chairs have considered the various options, and we will comply with the law. And the methodology we used in 2019 passed muster, and we're going to continue with that methodology, but thank you for those concerns.

SENATOR DANIEL: Mr. Chair.
CHAIRMAN HALL: Senator Daniel.
CHAIRMAN DANIEL: I'd like to send forth an amendment.

CHAIRMAN HALL: Senator Daniel is recognized to send forth an amendment.

The members should have -- if you look at the top right of your proposed amendments, it will say who it's offered by, and this one is offered by Senator Daniel. It's a proposed amendment to criteria for -- it says Proposed

Criteria for, An Amendment to Propose Criteria for. And rather than asking on each one of these does every committee member have a copy of the amendment, if we come to an amendment and you don't have a copy of it, if you will just simply let the chair know and the chair will ensure that you get a copy of the amendment.

Senator Daniel, the gentleman is recognized to debate the amendment.

CHAIRMAN DANIEL: Thank you, Mr. Chair, and thank you, Senator Newton, for your comments.

In order to make it clear that the committee intends to comply with the Voting Rights Act, I propose this amendment to just add a sentence under the criteria regarding racial data. The amendment would simply add the sentence "The committee will draw districts that comply with the Voting Rights Act." And I would just ask for the committee's support.

SENATOR CLARK: Mr. Chair.
CHAIRMAN HALL: Senator Clark. SENATOR CLARK: Request to speak regarding the VRA requirements.

CHAIRMAN HALL: Well, if we're -- if
it's on the amendment, that's fine. We're debating the amendment right now. And members of the committee will have ample opportunity to discuss the -- well, frankly, any matter that the member wants that's relevant to the committee, but we're on the amendment now.

So the gentleman, if he wishes, is recognized to debate the amendment.

SENATOR CLARK: Well, my comments actually are relative to the amendment. CHAIRMAN HALL: Well, then the gentleman is recognized to debate the amendment.

SENATOR CLARK: Thank you.
I consider the amendment to be unconstitutional because Stephenson does say, first, legislative districts required by the VRA shall be formed before non-VRA districts are created.

If there has been a court ruling that nullifies that requirement by Stephenson, I ask that the chairs provide that to this committee or the staff provide that to this committee if not today, then soon.

CHAIRMAN HALL: Further discussion or debate on the amendment.

Senator Blue.
SENATOR BLUE: One question of Senator Daniel.

In the amendment to criteria for,
suppose you put a comma after the word plans, and then put except as -- except for purposes of compliance with Voting Rights Act.

CHAIRMAN DANIEL: Senator Blue, I mean, I prefer the amendment as written. You know, we sort of deliberated this at length and went over various versions that we could have considered. I think it probably -- I think it has the same effect as your language. Of course, members can submit additional amendments.

CHAIRMAN HALL: Further discussion or debate on the amendment.

Hearing none, we'll start with House vote. Are any members going to call division? Okay.

Hearing none, all those in favor of the amendment will say aye.

COMMITTEE MEMBERS: Aye.
CHAIRMAN HALL: All those opposed, no.
COMMITTEE MEMBERS: No.
CHAIRMAN HALL: In the opinion of the
chair, the ayes have it, the ayes do have it, and the amendment is adopted.

And the chair will now yield to
Chairman Daniel for the Senate vote.
CHAIRMAN DANIEL: Senate members, all
in favor of the amendment $I$ just proposed, would you please indicate by saying aye.

COMMITTEE MEMBERS: Aye.
CHAIRMAN DANIEL: Opposed nay.
UNIDENTIFIED SPEAKER: Mr. Chair, call for division.

CHAIRMAN DANIEL: That's out of order in the Senate.

UNIDENTIFIED SPEAKER: Pardon me. Senate Rule 35, [unintelligible] division in the Senate.

CHAIRMAN DANIEL: All opposed nay.
COMMITTEE MEMBERS: No.
CHAIRMAN DANIEL: In the opinion of the of the chair, the ayes have it and the amendment passes.

CHAIRMAN HALL: Members, the next amendment the chair will take up is Senator Clark's amendment, and this is Number 6, Proposed Criteria Number 6. Says Amendment to

Proposed Criteria Number 6. Do all members -- and it's dealing with the issue of compactness. Again, if any member has any problem at all, if they don't have a copy of it, let the chair know.

Senator Clark, the gentleman is recognized to debate the amendment.

SENATOR CLARK: Okay. Thank you, Mr. Chair.

This particular amendment, essentially all it does is adds an additional item that can be considered in terms of compactness measures, and it is called the cut edges, and additionally it says that we could also rely on compactness measures that are contained within the software that we will be using for redistricting.

CHAIRMAN HALL: Thank you,
Senator Clark.
Members, the chair will speak to this particular amendment, and you'll see, as we go through this, the chairs will just generally respond to the various amendments.

The chair believes that the amendment, number one, it contains a measure that the chairs are not familiar with. In the past, the
chairs -- this committee has used various methods to measure the district, so to speak, on compactness. And as you'll see in the chair's proposed criteria, we do recognize the Polsby-Popper and the Reock scores. That's what's been used in the past in this body, and that's what courts have ultimately upheld. So the chairs would ask that the members vote against this amendment.

Further discussion or debate on the amendment?

Hearing none, the House will -Senator Marcus.

SENATOR MARCUS: Thank you. I would just like to point out that there -- there are better methods, more modern methods, that are listed in Senator Clark's amendment. Just because we've always used only two doesn't mean that that's the way we should continue to operate when there are more clear and better methods that could also be incorporated. The amendment doesn't suggest we should get rid of Polsby-Popper or Reock but include some other very good methods by which we can test districts. And if the chair's not familiar with
them, perhaps we should pause and let the chair become familiar with them because they're good basis on which to determine whether maps are drawn fairly.

CHAIRMAN HALL: Further discussion or debate on the amendment.

If not, the House will now go into a vote.

All those in favor of the amendment, say aye.

COMMITTEE MEMBERS: Aye.
CHAIRMAN HALL: All those opposed, no.
COMMITTEE MEMBERS: No.
CHAIRMAN HALL: In the opinion of the chair, the nos have it, the nos do have it, and the amendment fails.

We'll now shift to the Senate vote.
CHAIRMAN DANIEL: Thank you, Mr. Chair.
For the Senate members, all in favor of the amendment, please indicate by saying aye.

COMMITTEE MEMBERS: Aye.
CHAIRMAN DANIEL: All opposed, nay.
COMMITTEE MEMBERS: Nay.
CHAIRMAN DANIEL: In the opinion of the chair, the nos have it. Thank you.

CHAIRMAN HALL: Members, the next amendment will be from Senator Clark again. This is his Proposed Amendment to Criteria Number 2. This is dealing with contiguity.

Senator Clark, the gentleman is recognized to debate the amendment.

SENATOR CLARK: Thank you, Mr. Chair.
UNKNOWN SPEAKER: Mr. Chair, two is missing from this line, sir.

CHAIRMAN HALL: Okay. If the sergeant-at-arms will ensure that members who raise their hands on each one of these are brought a copy of the amendment.

And so, Members, if you will -- on each one of these amendments -- the chair will try to go slow, but just every time raise your hand high and I will look out and try to direct sergeant-at-arms as well to get those out.

So we'll -- Senator Clark, just one second, let's give those members a chance to take a look at this amendment.

And for the sergeant-at-arms, there are some members who are not on the committee who are in the back, and so the chair would direct the sergeant-at-arms to, number one, focus on
the committee members, and once you've got the committee members amendments, then if you will make sure that the other members not on the committee in the back will get a copy of the proposed amendments.

Okay. Senator Clark, the gentleman is recognized to debate the amendment.

SENATOR CLARK: Thank you, Mr. Chair.
This particular amendment just clarifies that point contiguity -- excuse me -- point contiguity will not be permitted. That's not mentioned in the previous version.

CHAIRMAN HALL: Is there discussion or debate on the amendment?

Chairman Daniel.
CHAIRMAN DANIEL: Thank you, Mr. Chair. Thank you, Senator Clark, for the amendment.

The chairs considered this at length and would ask the committee -- we think it's a good amendment and would ask the committee to adopt it.

CHAIRMAN HALL: Is there further discussion or debate on this amendment? Hearing none, the House will move into a vote.

All those in favor of the amendment
will say aye.
COMMITTEE MEMBERS: Aye.
CHAIRMAN HALL: All those opposed, no.
The ayes have it and the amendment is adopted.

We'll move into a Senate vote.
CHAIRMAN DANIEL: Thank you, Mr. Chair.
For the members of the Senate, all
favor in Senator Clark's amendment, please indicate by saying aye.

COMMITTEE MEMBERS: Aye.
CHAIRMAN DANIEL: All opposed no.
The ayes have it and the amendment is adopted.

CHAIRMAN HALL: Members, the next amendment is proposed by Representative Reives, and this is the amendment dealing with free elections, the free elections clause. It's Representative Reives free elections.

Again, members of the committee will raise their hands if they don't have a copy. The chair sees Representative Brenden Jones, not sure what's going on over there with Representative Brenden Jones.

Representative Reives, the gentleman is
recognized.
REPRESENTATIVE REIVES: Thank you
Mr. Chair.
And I hope that this is
self-explanatory. And what it is saying is that -- as you said, it references the free elections clause and to ensure the results of elections will reflect the will of the people; that the district lines not be drawn in a manner that will likely provide any political party seats in congress or in the General Assembly that is disproportionate to the election strength of that party. We ask you to support the amendment.

CHAIRMAN HALL: Thank you,
Representative Reives.
And, Members, the chair will -- is also going to take this amendment. The chair would respectfully ask members to vote against this amendment. And the reason why, I'll go back to my opening comments, and that is for the first time ever, this is a redistricting committee that intends to vote on these maps -- on a set of criteria, rather, that does not take into account political data and partisanship, and
this amendment would actually require us to go back on that. It would actually require us to consider election data at some point in order to meet whatever standard is in this proposed criteria.

And finally, the chair would just say that the chair disagrees with the interpretation of Common Cause $v$ Lewis that is set out in this proposed amendment. And again, the chair would ask that you -- respectfully that you vote against the amendment.

Is there further discussion or debate on the amendment?

SENATOR CLARK: Mr. Chair.
CHAIRMAN HALL: Senator Clark.
SENATOR CLARK: This does not require that we use election data in the construction of the districts. We could use election data in the analysis of the districts once they had been approved by the committee.

CHAIRMAN HALL: Further discussion or debate.

Representative Reives.
REPRESENTATIVE REIVES: And I would reemphasize that point, that $I$ think that the
way I would read the agreement and the way I would read the case, we're absolutely asking -- in fact, it seems to me that it's actually asking the opposite and more in line with what the chair is saying, respectfully, that we don't want to use political data that would allow us to do that and that this is completely an analysis amendment when it comes down to it, and so that would be something that we would have to do post taking care of these.

CHAIRMAN HALL: Further discussion or debate on the amendment.

Representative Hastings.
REPRESENTATIVE HASTINGS: Yeah, I was just going to say, with all the respect $I$ have for Representative Reives, the amendment does seem somewhat vague to me, and so that's the reason $I^{\prime} m$ not going to support it.

CHAIRMAN HALL: Further discussion or debate on the amendment.

If not, the House will now vote, and the question is -- before the House is -- the question before the House members of the committee is the adoption of the amendment.

All those in favor will say aye.

COMMITTEE MEMBERS: Aye.
CHAIRMAN HALL: All those opposed, no.
COMMITTEE MEMBERS: No.
CHAIRMAN HALL: In the opinion of the
chair, the nos have it, the nos do have it, and the amendment fails.

We'll move to the Senate vote.
CHAIRMAN DANIEL: Thank you, Mr. Chair.
Members of the Senate, all in favor of
Representative Reives' amendment, please
indicate by saying aye.
COMMITTEE MEMBERS: Aye.
CHAIRMAN DANIEL: All opposed, no.
COMMITTEE MEMBERS: No.
CHAIRMAN DANIEL: In the opinion of the chair, the nos have it and the amendment fails.

REPRESENTATIVE RICHARDSON:
Mr. Chairman.
CHAIRMAN HALL: Representative Richardson.

REPRESENTATIVE RICHARDSON: Inquiry of the chair.

CHAIRMAN HALL: The gentleman's recognized to communicate with the chair.

REPRESENTATIVE RICHARDSON: Earlier,
there was a Senate ruling saying the Senate rules didn't call out for a division. Do our rules apply as it relates to our votes?

CHAIRMAN HALL: That's right. The House rules applies. It applies to House rules and vice versa for the Senate. And that's why on the first vote the chair asked if anyone intended to call division, and that's each House member's right if they wish to do that.

REPRESENTATIVE RICHARDSON: Just wanted to clarify that. Thank you.

CHAIRMAN HALL: Yes, sir.
Representative Reives, we're going to go back to you. This is Representative Reives' amendment on general policy emphasis, general policy emphasis. The chair doesn't see any hands raised.

Representative Reives, the gentleman is recognized.

REPRESENTATIVE REIVES: Thank you.
And what this will be saying is that we will not be splitting any municipalities, counties, groupings, or VTDs in order to give favor to any voter, any candidate, or any political party. I ask you to support the
amendment.
CHAIRMAN DANIEL: Mr. Chair.
CHAIRMAN HALL: Senator Daniel.
CHAIRMAN DANIEL: Thank you, Mr. Chair.
In regard to this amendment, the chairs
did consider this at length and feel that this criteria would be impossible to abide by without considering political data, and therefore we would feel like it would be a violation of our -- the intent of the criteria and would ask for the members to vote against it.

CHAIRMAN HALL: Representative Reives.
REPRESENTATIVE REIVES: And I would just say respectfully, just as with the other amendment, that this would be -- the intent of this amendment would be for post-map analysis, not for anything to be considered when drawing the map.

CHAIRMAN HALL: Further discussion or debate on the amendment. Hearing none, the House will move into a vote.

All those in favor of the amendment will say aye.

COMMITTEE MEMBERS: Aye.
CHAIRMAN HALL: All those opposed, no.

COMMITTEE MEMBERS: No.
CHAIRMAN HALL: In the opinion of the chair, the nos have it and the amendment fails.

We'll move to the Senate vote.
CHAIRMAN DANIEL: Thank you, Mr. Chair.
Members of the Senate, in regards to
Representative Reives Amendment Number 2, all in favor of the amendment please indicate by saying aye.

COMMITTEE MEMBERS: Aye.
CHAIRMAN DANIEL: All opposed, nay.
COMMITTEE MEMBERS: Nay.
CHAIRMAN DANIEL: In the opinion of the chairs, the nos have it and the amendment fails.

CHAIRMAN HALL: Members, the committee will be at ease just momentarily.
[At ease.]
CHAIRMAN HALL: Members, now we're going to move to Senator Marcus' Amendment to Propose Criteria Number 9. This deals with member residence, Proposed Criteria Number 9 from Senator Marcus.

SENATOR MARCUS: Thank you, Mr. Chair.
CHAIRMAN HALL: One second,
Senator Marcus. The chair is going to make sure
we have -- everyone understands which -- which one we're dealing with. So if you'll get --

SENATOR CLARK: Mr. Chairman, may I come to the podium.

CHAIRMAN HALL: Come on up.
The committee will be at ease again momentarily.
[At ease.]
CHAIRMAN HALL: Okay. Members, as the chair said earlier, the chair was aware that perhaps some members had amendments drafted and sent to the chairs that they didn't necessarily want to put forth to the committee.

The chair -- Senator Marcus, the chair's in possession of three possible amendments from the senator. Will the lady read the proposed amendment that you intend to put forth.

SENATOR MARCUS: If it suits the chair, Senator Clark is anticipating -- I don't know why my name is on it, but he was anticipating running the first amendment on this criteria. If we could give him the floor, he can speak to that.

CHAIRMAN HALL: Okay. Then the chair
has conferred with Senator Clark on the matter, and it's -- we can make the technical change later to put Senator Clark's name on it, and Senator Clark can certainly debate it.

Before we move into that, though, can the members give the chair some guidance as to which of these proposed three amendments that Senator Marcus wishes to -- obviously, the one that Senator Clark has shown the chair and that is the one that's the most simple. It just says delete Proposed Criteria Number 9.

Senator Marcus, does the lady wish to send forth any of the other two amendments that -- that have been put forth to chairs?

SENATOR MARCUS: Yes, Mr. Chair. So the amendment that I seek to put forward -- it's hard to distinguish among these since they're not numbered -- begins The residence of members shall not be considered in the formation of congressional districts.

CHAIRMAN HALL: Okay. And to be clear -- so there is one other amendment that begins with incumbency protection, the mapmakers may take reasonable efforts and so on. And on that amendment, the lady does not wish to put
that amendment forward.
SENATOR MARCUS: I did not request this.

CHAIRMAN HALL: You can change your mind later on, but --

SENATOR MARCUS: I'm not changing my
mind. I never requested this, so it -- I don't know why it has my name on it, but I am not putting it forward.

CHAIRMAN HALL: Okay. All right.
We'll do away with that one, and we'll begin, then, with Senator Clark.

And, Members, if you're not confused enough already, Members, this -- Senator Clark is going to present the amendment that says Senator Marcus on the top right, and it says Amendment to Proposed Criteria Number 9 is delete Proposed Criteria Number 9.

Do any committee members feel that they don't know where we're at? Which would be completely reasonable at this point.

Okay. Do all committee members have that amendment?

UNIDENTIFIED SPEAKER: Yes.
CHAIRMAN HALL: Okay. All right.

Senator Clark, the gentleman is recognized.

SENATOR CLARK: Thank you, Mr. Chair.
Essentially what this will do is say we are not going to consider incumbency in the establishment of congressional or legislative districts.

CHAIRMAN HALL: And the chair will speak to this amendment as well.

Members, the chairs have already included in our proposed criteria some account for member residence, and we have included in there that the member residence may be considered in the formation of legislative and congressional districts. And the chairs feel that this is a traditional redistricting criteria that has been long used, that this committee's used it in the past. The chairs believe that it's best that this committee and this body continue to use this proposed criteria. So the chair would ask you to vote against the amendment.

Is there further discussion or debate on -- Senator Blue.

SENATOR BLUE: Yeah, just a quick
question, Mr. Chair.
Since residence is not -- I can
understand looking at residence in legislative districts, since you have to live in them and you got to live in them a year before the election, but in congressional districts, there's no residential requirement. And what you effectively do is figure out a way to skew the map and not for any particular purpose, but if somebody is in a district and serving it well, they don't have to live there. We've had that instance, $I$ think, in the current congressional delegation. I know that was the case in the delegation prior to 20 -- the one elected in 2020.

So what is the reason for considering congressional residence?

CHAIRMAN HALL: Well, thank you for this question, Senator Blue. And the chair would just simply respond by saying that this body has long used member residence both for legislative districts. As the gentleman correctly notes, a member has to live in their residence, there's a time period for that, as the gentleman knows, and the gentleman is
correct that congressional candidates don't necessarily have to live in their districts whether they should or not. But the chair will again say as recently as 2019 , the committee has considered the member residence of both legislative and congressional members, courts have upheld that practice, and the chair believes that it works well for the efficient drafting of maps. And so again, the chair would ask that members vote against the amendment.

Further discussion and debate on the amendment. Hearing none, the House will move into a vote.

All those in favor of the amendment will say aye. COMMITTEE MEMBERS: Aye. CHAIRMAN HALL: All those opposed, no. COMMITTEE MEMBERS: No.

CHAIRMAN HALL: In the opinion of the chair, the nos have it and the amendment is defeated.

We'll move to a senate vote.
CHAIRMAN DANIEL: Thank you, Mr. Chair.
Senate members, we're voting on
Senator Clark's amendment regarding member
residence. All in favor of the amendment please say aye.

COMMITTEE MEMBERS: Aye.
CHAIRMAN DANIEL: All opposed, no. COMMITTEE MEMBERS: No.

CHAIRMAN DANIEL: In the opinion of the chair, the nos have it and the amendment fails.

CHAIRMAN HALL: Members, we will -we'll go back to Senator Marcus on her other amendment. And this is an amendment to Proposed Criteria Number 9 dealing with member residence. It begins -- strikes out "member" and says the residence of members may -- I'm sorry -- "the residence of members shall not be considered in the formation" and it goes on.

Senator Marcus, the lady is recognized to debate the amendment.

SENATOR MARCUS: Thank you, Mr. Chair.
It has been made very clear to this body through public comments that voters don't want elected officials to draw maps in districts that favor ourselves. I believe that in the past maps have been drawn with an eye on where incumbents live in order to give certain members a favorable district and others a tougher
district. And the member residence criteria as it's currently proposed, as was handed out to us at the beginning of this week, is so vague that it could and likely will still allow for such favoritism to occur this time around.

So we proposed earlier -- Senator Clark just discussed with you an amendment to eliminate consideration of member residences completely. Since that was rejected, I think it's important that if we're going to consider member residence that we do so in as minimally a way as possible, so that's why I'm submitting this compromise which is to say for the reason Senator Blue pointed out, congress people do not have to live in their district, there's no need to contort districts in order to accommodate their residence, so my amendment would say we should not consider congressional members' residence when we draw the maps, but as Senator Blue pointed out, members of the General Assembly are required to live in our districts and the court in 2019 did give permission to this body to not double-bunk legislators since we have to live in the district, and so this amendment would allow for the residence of
members of the General Assembly to be considered -- or shall be considered, I should point out, in the formation of legislative districts for the sole purpose of avoiding placing more than one incumbent in the same election district. And I ask for your support of this amendment.

CHAIRMAN HALL: Thank you,
Senator Marcus.
Members, the chair will again speak to this amendment. And many of the same points the chair made earlier on the prior amendment apply to this amendment, so the chair won't restate those, but the chair will just simply say that the proposed criteria in the chair's amendment gives the committee the latitude to adequately make considerations about member residence. And members will be allowed to put forth -- when the map drawing begins, the members are welcome to put forth a map that doesn't take into consideration those matters.

And so for those reasons the chairs believe that the current criteria is sufficient and appropriate for this committee and would ask you to vote against the amendment.

Further discussion or debate on the amendment.

Representative Reives.
REPRESENTATIVE REIVES: Just an inquiry of the chair.

CHAIRMAN HALL: The gentleman is recognized.

REPRESENTATIVE REIVES: So under your belief under the information or the amendment, the criteria as it stands right now without taking the amendment, what reasons would you say that you feel that residency can be taken into consideration?

CHAIRMAN HALL: Thank you for the question, Representative Reives. And again, as the standard lays out, it just simply may be considered, and so that depends on whatever any committee member wants to put forth to this committee as to why one district or the other may be needed to be drawn where it's at.

And again, just like we did in 2019 and that we've done in the past and the member -- the gentleman has been here through many redraws at this point and understands how this provision plays into there, into that analysis,
and the chair anticipates, just as we've done in the past in other redraws and the maps that we're currently sitting under that have been upheld, that we'll interpret those the same way. Further -- Senator Marcus.

SENATOR MARCUS: I would just like to clarify if $I$ could, Mr. Chair, a point. CHAIRMAN HALL: The lady's recognized. SENATOR MARCUS: Thank you.

The way it's currently drafted, without an amendment, the words "may be" are very vague. That says to me that we might help some members, current members to stay in their districts and we might not help others, and that to me is a problem. We can't have a vague standard like that. That's why my amendment would make it very clear that if we're going to do it for some members, we have to do it for all, and that's why the importance of the word "shall be" is in there instead of "may," and I'd ask for your support of this amendment to make sure it's done fairly.

CHAIRMAN HALL: Further discussion or debate on the amendment. If not, the House will move into a vote.

All those if favor of the amendment will say aye.

COMMITTEE MEMBERS: Aye.
CHAIRMAN HALL: All those opposed, no. COMMITTEE MEMBERS: No.

CHAIRMAN HALL: Nos have it, the amendment fails. We'll move to a Senate vote.

CHAIRMAN DANIEL: Thank you, Mr. Chair.
All members of the Senate who are in favor of Senator Marcus's amendment, please indicate by saying aye.

COMMITTEE MEMBERS: Aye.
CHAIRMAN DANIEL: All opposed, no.
COMMITTEE MEMBERS: No.
CHAIRMAN DANIEL: The nos have it and the amendment fails.

CHAIRMAN HALL: Members, the chair mentioned a moment ago the chair had another proposed amendment to Criteria Number 9, and it has Senator Marcus' name on it, but Senator Marcus, as she has said, did not ask for this one to be drafted. And so the chair would simply ask committee members -- the chair's going to read this and ask if the committee member who had this drafted will please let us
know who this is so we can determine whether you want this amendment to be put forth or not.

The amendment reads "Incumbency Protection. The mapmakers may take reasonable effort to not pair incumbents unduly in the same election district."
"The mapmakers may take reasonable efforts to not pair incumbents unduly in the same election district."

Again, this is for Proposed Criteria Number 9. Do -- does any member recognize this proposed amendment?

UNIDENTIFIED SPEAKER: Consider it abandoned.

CHAIRMAN HALL: Okay. It sounds like this one is an orphan, and we will abandon this amendment.

Okay. Members, the next amendment is to Proposed Criteria Number 7. This is Senator Clark's amendment, and this deals with municipal boundaries.

SENATOR CLARK: Mr. Chair.
CHAIRMAN HALL: Senator Clark, just one second.

Okay. All right, the gentleman's
recognized to send forward -- to debate the amendment.

SENATOR CLARK: I withdraw the amendment.

CHAIRMAN HALL: Okay. The gentleman wishing to withdraw his amendment, the amendment will be withdrawn.

Members, the next -- the next amendment is from Representative Reives, and it deal -- it begins with general policy emphasis and then it deals with post-map-drawing policy, and it looks like this is just -- instead of being an amendment to any particular piece of criteria, in the chair's criteria, this is -- this would just simply add to the criteria.

Seeing no members with their hands raised -- Representative Reives, the gentleman, is recognized.

REPRESENTATIVE REIVES: Thank you. And, Mr. Chair, I would be withdrawing this. The first part of this has already been addressed. The second part of this, there's an amendment that $I$ think has been submitted by Senator Marcus that $I$ would defer to.

CHAIRMAN HALL: Okay. The gentleman
wishes for his amendment to be withdrawn, and so it will be withdrawn.

Okay. Back to Senator Marcus, this is an amendment on post-map-drawing policy, post-map-drawing policy. Looks to be, again, another amendment to the criteria as a whole and not an amendment to any specific number in the criteria. Post-map-drawing policy, Senator Marcus.

Senator Marcus, the lady's recognized to debate the amendment.

SENATOR MARCUS: Thank you, Mr. Chair.
This is an amendment that attempts to address the problem that we know will come up which is maps cannot be drawn with consideration of partisan data or previous election results, but they will be analyzed after they are proposed, and we believe that they should be analyzed to see if there is a disproportionate advantage to a candidate or a political party using that data. So this attempts to make clear that that data will not be used in drawing the maps and only for analyzing them afterwards so that the public will know whether they're tilted or not. I ask for you to support the amendment.

CHAIRMAN HALL: Senator Daniel.
CHAIRMAN DANIEL: Thank you, Mr. Chair.
CHAIRMAN HALL: The gentleman is recognized.

CHAIRMAN DANIEL: And thank you for the amendment, Senator Marcus. I think the committee -- the chairs feel like that we want to draw a line in the sand, that we do not intend to use partisan data in the map-drawing process and don't want to inject it in any way, shape, or form into our criteria. Obviously, there may be outside third party groups that do analysis of our maps and that's fine, but we don't intend to do that as a committee.

CHAIRMAN HALL: Further discussion or debate on this amendment. Hearing none, the House will move into a vote.

All those in favor of the amendment will say aye.

COMMITTEE MEMBERS: Aye.
CHAIRMAN HALL: All those opposed, no.
COMMITTEE MEMBERS: No.
CHAIRMAN HALL: Nos have it, the amendment fails. We'll move to the Senate vote.

CHAIRMAN DANIEL: Thank you, Mr. Chair.

All members of the Senate in favor of Senator Marcus' amendment please indicate by saying aye.

COMMITTEE MEMBERS: Aye.
CHAIRMAN DANIEL: All opposed, no.
COMMITTEE MEMBERS: No.
CHAIRMAN DANIEL: The nos have it and the amendment fails.

CHAIRMAN HALL: Members --
Representative Reives, we'll go back to the gentleman.

This is post-map-drawing policies. Does the gentleman still wish to put forth this amendment?

REPRESENTATIVE REIVES: Happy to withdraw it.

CHAIRMAN HALL: Okay. The gentleman withdraws his amendment.

Okay. Members, now we're back to Senator Clark's -- another amendment from Senator Clark. This is Purpose of Criteria. It's Purpose of Criteria.

SENATOR CLARK: Thank you, Mr. Chair.
CHAIRMAN HALL: Senator Clark, the gentleman is recognized.

SENATOR CLARK: Thank you, Mr. Chair. I, too, Mr. Chair, I went online and -- not went online myself, but I did review a lot of the comments that were provided online, and one consistent was that this particular criteria should be rated higher than this one or that one should be rated higher than that one, and as you indicated, we did not establish a priority for the criteria, but I think that we should. And this particular amendment attempts to do that by stating that -- let's see where are we at.

Therefore, the priority of precedence for compliance shall be as follows: First, equal protection; second, contiguity; third, Voting Rights Act; fourth, county groupings, whole counties, communities of interest/community considerations, whole municipalities, whole VTDs and then compactness.

CHAIRMAN DANIEL: Mr. Chair.
CHAIRMAN HALL: Senator Daniel.
CHAIRMAN DANIEL: Thank you, Mr. Chair, and thank you, Senator Clark, for the amendment.

The chairs considered this amendment and believe that we're not prioritizing our criteria, we're harmonizing our criteria. We're
going to consider all of the criteria and try to comply with all criteria when possible -whenever possible in drawing the maps, and therefore we don't feel that the criteria should be placed in any particular order and would ask the committee to vote against the amendment.

CHAIRMAN HALL: Further discussion or debate on this amendment.

Senator Marcus.
SENATOR MARCUS: Question.
CHAIRMAN HALL: The lady's recognized for a question.

SENATOR MARCUS: If we're not going to explicitly prioritize -- we know that they will conflict from time to time, so what are -- what are gonna -- how are we going to handle that if we're not saying one thing is more important than another, if they conflict, who and how will we decide which one to follow first?

CHAIRMAN HALL: Senator Daniels.
CHAIRMAN DANIEL: Senator Marcus, I think we fully intend to comply with all state and federal laws and court decisions regarding the criteria and how it's applied to the maps, and that would be our -- I guess our guiding
star in that regard.
SENATOR MARCUS: Follow-up.
CHAIRMAN HALL: The lady's recognized.
SENATOR MARCUS: It's my understanding
that the courts haven't clearly said -- have not made all these decisions for us already, and so my fear is if we leave it vague about which order these criteria will be considered in, the public doesn't know, members of this committee don't even know how we will resolve conflicts when the criteria do conflict.

CHAIRMAN HALL: Further discussion or debate on the amendment. Hearing none, the House will move into a vote.

All those in favor of the amendment will say aye.

COMMITTEE MEMBERS: Aye.
CHAIRMAN HALL: All those opposed, no.
COMMITTEE MEMBERS: No.
CHAIRMAN HALL: The nos have it, the amendment fails. We'll move to a senate vote.

CHAIRMAN DANIEL: Thank you, Mr. Chair.
All Senate members in favor of the amendment please indicate by saying aye.

COMMITTEE MEMBERS: Aye.

CHAIRMAN DANIEL: All opposed, no.
COMMITTEE MEMBERS: No.
CHAIRMAN DANIEL: The nos have it. The amendment fails.

CHAIRMAN HALL: Members, the next amendment will be from Senator Blue, begins with Voting Rights Act.

SENATOR BLUE: Thank you, Mr. Chairman.
CHAIRMAN HALL: Just one second,
Senator Blue. I want to make sure every member's got a copy.

Looks -- Senator Jackson, Representative Hardister, right here in the middle. Yeah, just keep your hands up, Members, if you will. Again, we're on Senator Blue's Voting Rights Act amendment. And chair will give just a moment to let these members get a copy. Okay. The chair believes all members have a copy at this point.

Senator Blue, the gentleman is recognized.

SENATOR BLUE: Thank you, Mr. Chair.
The amendment is sort of self-explanatory. I'd simply say that for the four decades since the 1980s redistricting,
starting with Gingles versus Edmisten and through Shaw versus Reno and through the series of cases at the early part of this century and the cases in the last redistricting cycle, North Carolina has basically been the state with the chin out before the Supreme Court to get our redistricting plan struck down. And we've spent tens of millions of dollars over that time period, from the '80s forward, to have the Supreme Court basically say no to all of those efforts that we've done.

And so this is an effort to make sure that we make an effort to try to save the taxpayers what now is collectively more than \$50 million in efforts in futility by setting forth that -- related to Senator Daniel's earlier amendment that we know what the Voting Rights Act requires, we know what the Supreme Court has said, and this is the language that they have used with respect to -- in both Cooper versus Harris and Covington versus North Carolina that you got to do to comply with the Voting Rights Act.

And I just offer the amendment so that it's constantly before us so that we don't get
tempted to sort of skirt to the edge again and cost the taxpayers another 10 or $\$ 20$ million defending this thing back up through the Court of Appeals or the Supreme Court -- or a three-judge panel and the Supreme Court, so I move the adoption of the amendment.

CHAIRMAN DANIEL: Mr. Chair.
CHAIRMAN HALL: Senator Daniel.
CHAIRMAN DANIEL: Thank you, Mr. Chair, and thank you for the amendment, Senator Blue. Certainly, you've been involved in this process for a long time and have a lot of knowledge about that.

The chair, you know, we considered this particular issue as, you know, Senator Newton discussed at the beginning of the committee meeting over the last few days and, of course, we amended this criteria at the beginning of the committee meeting today to make it abundantly clear that the committee will not -- or intends to comply with the Voting Rights Act in drawing districts, and therefore $I$ would just ask the committee to reject the amendment. The criteria explicitly states we will not use racial data in the drawing of the maps and -- but will attempt,
in all respects, to comply with the Voting Rights Act. And certainly we'll -- if any evidence of racially polarized voting in any part of North Carolina is presented to us, that would be something that would need to be looked at, but would ask that the members reject the amendment.

CHAIRMAN HALL: Senator Clark.
SENATOR CLARK: Thank you, Mr. Chair. I'd like to ask a few questions.

You may have mentioned it, but it really slipped my mind. How do we intend to comply with the Voting Rights Act if we don't use the racial data that is required to comply with it?

CHAIRMAN DANIEL: Well, I think, Senator Clark, just as -- thank you for the question. Just as Senator Newton explained at the beginning of the meeting that, you know, in the event that evidence is presented to the committee that there's racially polarized voting in North Carolina, then that might be something the committee would need to address. And at this point, you know, the courts in 2019 and even the Democrats own expert have said that
there's not racially polarized voting in North Carolina, and so, you know, that's sort of where we think we're at.

SENATOR CLARK: Follow-up.
CHAIRMAN HALL: The gentleman is recognized.

SENATOR CLARK: Given that the Stephenson requirement is there that we do VRA districts first, is it not incumbent upon the General Assembly itself to perform racial polarized studies in order to make that determination that as we are here today that there is no racial polarization within North Carolina with regard to voting.

CHAIRMAN HALL: The gentleman is recognized.

CHAIRMAN DANIEL: And $I$ think to answer your question, again, $I$ think, you know, based on the 2019 decisions of the court and the Democrat's own expert, we don't feel that that is necessary at this point at the outset of the map drawing.

CHAIRMAN HALL: Further discussion

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    or --
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SENATOR CLARK: Mr. Chair.

CHAIRMAN HALL: Senator Clark, follow-up.

SENATOR CLARK: Were we considering all of the VRA districts during the 2019 court -- within the 2019 court case?

CHAIRMAN DANIEL: I don't really have any further comment about this amendment, Senator -- or Representative Clark.

CHAIRMAN HALL: Is there further discussion or debate on the -- Senator Blue.

SENATOR BLUE: Just one quick comment, Mr. Chairman. In order to make sure that the record is straight, I don't know that there's any testimony that there is no polarized voting in North Carolina. In fact, I think it's just the opposite.

CHAIRMAN HALL: Further discussion or debate.

Representative Richardson.
REPRESENTATIVE RICHARDSON: Yeah. You know, some -- some things make perfect commonsense to me. This amendment I think protects us in the long run, and I think we ought to adopt it.

CHAIRMAN HALL: Senator Newton.

SENATOR NEWTON: I'd like to comment on why we should not adopt the amendment for a very different reason.

The amendment is Senator Blue's summary of the case law. If we start summarizing every aspect of case law related to redistricting, we'd never stop with criteria. So I appreciate the interpretation and the summary. We are going to comply with the law as it is handed down in those decisions, period. We don't need a criteria to do that.

CHAIRMAN HALL: Further discussion or debate on -- Senator Fitch. I mean, Senator Lowe. I'm sorry. Excuse me.

SENATOR LOWE: I look so much different than Senator Fitch.

I think we should adopt this, and I think that -- you know, my mother used to always say if it's not in writing, it ain't so. And I think we need something clearcut for this body to look at. And I think to wait and to push that off is certainly not a good thing, and I hope that we will accept this. Thank you.

CHAIRMAN HALL: Further discussion or debate.

Representative Hawkins.
REPRESENTATIVE HAWKINS: Thank you,
Mr. Chairman. This is just a question for Senator Daniel.

CHAIRMAN HALL: The gentleman is recognized to put forth a question.

REPRESENTATIVE HAWKINS: Thank you.
It's just a simple question. How -- if we -- if we find that African Americans-voters of color are packed and stacked, then what do we do in your opinion?

CHAIRMAN HALL: And if the Senator will yield, the chair will just simply state -- add one thing to the discussion. We've talked a lot about that 2019 case, but there was a case before that called Covington in which the General Assembly did redraw maps not using any racial data at all, and of course, those maps were upheld. And this body, and I believe our congressional districts as well, were run on after the redraw of Covington which was a racial gerrymandering claim. Again, this body came in, redrew those maps just like we are proposing -just like the chair's proposing and this criteria, redrew those maps without using race
and those maps were upheld, and the chairs feel that this is the best path forward to ensure that this committee and ultimately this body can draw and adopt a set of maps that are upheld by the courts.

CHAIRMAN DANIEL: Mr. Chair.
CHAIRMAN HALL: Senator Daniel.
CHAIRMAN DANIEL: And so I think, you know, another point to remember -- for the entire committee to remember is if you -- or Representative Hall made comments at the beginning of the committee meeting that our process is unprecedented, and at this time we're going to voluntarily have a transparent process that's done in public, all map drawing will be done in public, it will be live-streamed. And so, you know, for all -- for many of the concerns that have been addressed or expressed by members of the committee, you know, that is a deterrent for any type of, I guess, mischief, if that's what the opposing party is suggesting. It will all be transparent, it will all be done in public, and certainly once maps are proposed, then members of the opposite party can make whatever suggestions they want to in our
respective committees or whatever allegations in the respective committee. So I think, you know, that's the safeguard on the process that's never been done before, and we intend to follow that as we've stated.

SENATOR CLARK: Mr. Chair.
CHAIRMAN HALL: Senator Clark.
SENATOR CLARK: Just a point for a question for clarification.

The maps that were drawn as a result of the Covington case, $I$ think that was intended to cure the racial gerrymandering; is that correct, sir?

CHAIRMAN HALL: Yes. Part of those were upheld and the court withdrew -- redrew some of those maps, Senator Clark.

SENATOR CLARK: That's right. So it was not the General Assembly's maps that were adopted. It was the maps that were generated by the special master; is that correct?

CHAIRMAN HALL: The majority of the maps were adopted by the General Assembly. The other -- the rest of the maps were adopted by the special master, and that was up to the court.

SENATOR CLARK: Thank you.
CHAIRMAN HALL: Further discussion or debate on the amendment. If not, the House will now move into a vote.

All those in favor of the amendment will say aye.

COMMITTEE MEMBERS: Aye.
CHAIRMAN HALL: All those opposed, no.
COMMITTEE MEMBERS: No.
CHAIRMAN HALL: The nos have it. The amendment fails. We'll move to the Senate.

CHAIRMAN DANIEL: Thank you, Mr. Chair.
All members of the Senate in favor of Senator Blue's amendment, please indicate by saying aye.

COMMITTEE MEMBERS: Aye.
CHAIRMAN DANIEL: All opposed, no.
COMMITTEE MEMBERS: No.
CHAIRMAN DANIEL: The nos have it. The amendment fails.

CHAIRMAN HALL: Members, the next amendment will be Representative Hawkins' amendment, Proposed Criteria Number 10 . And it is dealing with community consideration. And we'll give the members a moment to find that
amendment.
Okay. Representative Hawkins, the gentleman is recognized.

REPRESENTATIVE HAWKINS: Thank you,
Mr. Chairman. I appreciate it. I appreciate everyone's time because not only are we doing the important work of redistricting, we're also, in the House side at least, doing the budget. Who thought it would be fun to have all this fun together, right.

But this particular amendment deals with $I$ think the crux of the matter: communities of interest. We all know that making sure that we keep communities that are similar, that have like understanding, who can talk about things that matter to them cohesively is important, and so keeping communities of interest whole is good for all North Carolinians. And so simply what this is saying is that we shall make reasonable efforts to preserve communities of interest in the construction of congressional house and senate districts.

I'll point to, because $I$ was a member of this committee in 2019, my friend to my right. We -- I think everyone learned what

Tabor City was, if you remember that pretty fondly. We talked about it and Columbus county and that grouping quite a bit, but it was -- it was -- it was important to keep that piece -- that city together, that community together because they understood what they had in common.

Similarly, as proposed, is that we want to make sure and clarify that communities of interest include but are not limited to populations that share racial, cultural, ethnicity data, identity. They also share common history of marginalization and/or discrimination, natural resources, populations prone to excessive damage due to natural resources, a la Tabor City, and are organized by bodies that inform the decisionmaking processes of their community. That includes higher education institutions. That includes public schools of which, again, Tabor City and some of those other areas, you know, are not immune to.

And so one case in addition to that specific around higher education is North Carolina A\&T State University. I think we all know that the largest $H B C U$ in the country
exists in Greensboro, yet it is split between districts. And so when we start to think about what that community potentially has in common, we need to make sure that we're keeping it whole.

And so, you know, I just wanted to make those comments and hope that everyone will vote for this amendment. If you don't do it for me, do it for Representative Brenden Jones and Tabor City. Because as Senator Blue said, we spent millions on defending maps over the last decade, and if we do not get this right, what will we do again: spend millions, Senator Daniel.

And I want to also close by saying that 2019 is our floor and not our ceiling, and so I hope that we will all use that as our guiding principle to ensure that we can build on the 2019 process so that this 2021 process will move us forward and make sure that we don't have to go through another decade of multiple map draw. Thank you, sir.

CHAIRMAN HALL: Thank you, Representative Hawkins.

Members, the chair will take this one.

The chair thanks Representative Hawkins for his always thoughtful additions to the redistricting committee. And the chair respectfully would ask the committee to vote against this amendment, and here's why: The chairs believe that the current criteria does account for a number of different criteria that could be encapsulated in some areas of this proposed amendment. Also, the chair -- it's the chair's understanding that community of interest is a legal term of art and that could throw some unintended consequences into this criteria that the committee may not actually intend to do.

The amendment also mentions not using affiliation relationships with a political party, so election data, for example. And as the committee now well knows, the chairs have said that we don't want to use that election data. And $I$ know this is not saying you can do that, but the chairs believe it to be, again, an unnecessary piece of language in the amendment.

And chair would, you know, finally say, you know, it speaks to local neighborhood and so it's one of those things that if we're describing -- literally we're going to always
consider these local neighborhoods, that can become difficult to do as well.

Again, the chair thanks the member for a thoughtful amendment, but the chair would have to respectfully ask the committee to vote against the amendment.

Is there a discussion or debate on the amendment. Hearing none, the House will move --

SENATOR MARCUS: Mr. Chair.
CHAIRMAN HALL: Senator Marcus.
SENATOR MARCUS: I'd like to speak to the amendment, if $I$ could.

CHAIRMAN HALL: The lady's recognized.
SENATOR MARCUS: Thank you.
I think we need to make the point that public input that we have asked for from the public for purposes of drawing criteria is overwhelmingly in favor of an amendment like Representative Hawkins. There have been more comments in favor of an amendment like this than any other topic, from my reading of those online and in-person comments.

As the criteria's currently written, I think it's vague. There's no definition of what
community means, and it only says that we -that those communities, quote, may be considered, which again, as is the problem with other criteria, means that it might not be and that's unacceptable. I think this is a really important amendment and we should support it.

CHAIRMAN HALL: Further discussion or debate. Hearing none, the House will move into a vote.

All those in favor of the amendment will say aye.

COMMITTEE MEMBERS: Aye.
CHAIRMAN HALL: All those opposed, no.
COMMITTEE MEMBERS: No.
CHAIRMAN HALL: The nos have it. The amendment fails. We'll move to the Senate.

CHAIRMAN DANIEL: Thank you, Mr. Chair.
Members of the Senate, all in favor of Representative Hawkins' amendment please indicate by saying aye.

COMMITTEE MEMBERS: Aye.
CHAIRMAN DANIEL: All opposed, no.
COMMITTEE MEMBERS: No.
CHAIRMAN DANIEL: The nos have it and the amendment fails.

CHAIRMAN HALL: Okay. Members, Senator Clark's amendment on VTDs, voting district splits, voting district splits.

Senator Clark, the gentleman is recognized when he's ready to debate the amendment.

SENATOR CLARK: Thank you, Mr. Chair.
This particular amendment essentially just states that to the extent that a VTD is split that it shall not conflict with a higher priority criteria and the geographic integrity of the VTD shall be preserved.

CHAIRMAN DANIEL: Mr. Chair.
CHAIRMAN HALL: Senator Daniel.
CHAIRMAN DANIEL: Thank you, Mr. Chair. Thank you, Senator Clark, for the amendment.

I think we sort of discussed this in general terms before. Just to reiterate, we're not prioritizing criteria, we're harmonizing our criteria. And we already do have a criteria that says that voting districts should not be -- should be split only when necessary, so therefore I would also respectfully ask that the members vote against this amendment.

CHAIRMAN HALL: Further discussion or
debate on the amendment. Hearing none, the House will move into a vote.

All of those if favor will say aye.
COMMITTEE MEMBERS: Aye.
CHAIRMAN HALL: All those opposed, no. COMMITTEE MEMBERS: No.

CHAIRMAN HALL: The nos have it and the amendment fails. We'll move to the Senate.

CHAIRMAN DANIEL: Members of the Senate, all in favor of Senator Clark's amendment, please indicate by saying aye.

COMMITTEE MEMBERS: Aye.
CHAIRMAN DANIEL: All opposed, no.
COMMITTEE MEMBERS: No.
CHAIRMAN DANIEL: In the opinion of the chair, the nos have it. The amendment fails.

CHAIRMAN HALL: Members, the next amendment will be Representative Harrison's amendment dealing with equal population. It's equal population. This is Proposed Amendment to Criteria Number 1.

Representative Harrison, the lady's recognized.

REPRESENTATIVE HARRISON: Thank you, Mr. Chair. And just to clarify, because I
believe you all might have two copies of amendment of Criteria 1 in front of you, and the one that I am proposing would strike the language "as nearly equal as possible in the congressional district drawing" and replace it with "within plus or minus 150 people of the ideal district population."

CHAIRMAN HALL: Representative
Harrison, if we can suspend just one moment.
Okay. So the chair does have two proposed amendments from Representative Harrison.

Where's the other one.
REPRESENTATIVE HARRISON: It's Criteria 1.

CHAIRMAN HALL: One of them deals with within plus or minus 150 people; the other, the chair's going to have to locate to make sure we can -- okay.

Is the lady withdrawing the other amendment?

REPRESENTATIVE HARRISON: I am, and I'm sorry if $I$ wasn't clear.

CHAIRMAN HALL: No, that's fine.
The lady is withdrawing her equal
population amendment that just simply strikes out the very last sentence of that criteria, so that amendment will be withdrawn.

The amendment that the lady is putting forth, Members, is again an amendment to Proposed Criteria 1. And the amendment, if you'll look down in the body of the amendment, equal population says within plus or minus 150 people of the ideal district population. That is the amendment that the lady's putting forth.

And, Representative Harrison, the
lady's recognized.
REPRESENTATIVE HARRISON: So I will explain, and I believe I talked about this in the 2019 redraw as well.

So there have been several court decisions, most prominently the US Supreme Court in Tennant versus Jefferson County, that allowed for deviation in the drawing of congressional districts. If I heard Senator Daniel correctly on Monday, I believe he said that as nearly equal as practicable meant zero, zero deviation. So this amendment would allow for a minimal amount of deviation based on the Tennant precedent, when the Tennant precedent actually
allows seven-tenths of a percent of deviation, which is a pretty significant number. This just proposes 150 people which is equivalent to . 02 of the ideal population for North Carolina congressional districts. So this just gives flexibility to the map drawing and may be able to avoid split precincts and those sorts of problems, and I would urge your support. Thank you.

CHAIRMAN HALL: The chair thanks the lady, and the chair will handle this amendment.

Members, the chairs believe that the safest legal way to draw these maps is through zero deviation. And of course, this way, the amendment from Representative Harrison, would not follow zero deviation, so the chairs believe that the safest path forward is to do that traditional redistricting criteria, the one that this committee has used, one the body has used I guess at least in the most recent history and go zero deviation. The chair would ask the members to vote against the amendment.

Further discussion or debate on the amendment.

SENATOR CLARK: Mr. Chair.

CHAIRMAN HALL: Senator Clark.
SENATOR CLARK: And this particular
proposal is also intended to take into consideration the fact that the census block data at the block level is not accurate as it was in the past. The Census Bureau has intentionally introduced error into the data for the protection of privacy, so the notion that we're going to really have a great degree of resolution that will support a zero deviation standard is sort of farcical.

CHAIRMAN HALL: Well, and the gentleman -- as the gentleman knows, there has been what they're determine noise put into the data to try to protect folks' privacy, the chair understands that, and so the chairs believe that, really, all we can do is go based off of the numbers that the census gives us. Whether that accounts for noise or not is not 100 percent accurate. All we can do is go with those numbers and try to do zero deviation of those numbers. And again, the chairs believe that to be the legally safest path forward for this committee and the body.

Further discussion or debate on the
amendment. Hearing none, we'll move to a House vote.

All those in favor of the amendment will say aye.

COMMITTEE MEMBERS: Aye.
CHAIRMAN HALL: All those opposed, no. COMMITTEE MEMBERS: No.

CHAIRMAN HALL: The nos have it. The amendment fails. We'll move to the Senate.

CHAIRMAN DANIEL: Thank you, Mr. Chair. For members of the Senate, all in favor of Representative Harrison's amendment, please indicate by saying aye.

COMMITTEE MEMBERS: Aye.
CHAIRMAN DANIEL: All opposed, no. COMMITTEE MEMBERS: No.

CHAIRMAN DANIEL: In the opinion of the chair, the nos have it. The amendment fails.

CHAIRMAN HALL: Okay. Members -REPRESENTATIVE HAWKINS: Mr. Chairman.

CHAIRMAN HALL: Representative Hawkins.
REPRESENTATIVE HAWKINS: Can we be advised on what's happening with the session in the North Carolina House because it's 12:30.

CHAIRMAN HALL: Well, the chair is
going to check the chair's text messages and emails.

REPRESENTATIVE HAWKINS: Thank you.
CHAIRMAN HALL: Well, the chair's
confident -- the chair sees one senior
appropriations chair sitting over here, the majority leader and the rules chair's here, so the chair's confident that the member's not missing any votes. So I anticipate session is going to be delayed until this committee finishes its business which hopefully won't be too long.

REPRESENTATIVE HAWKINS: Thank you.
CHAIRMAN HALL: Members, the last -- I
think the last -- we're out of amendments.
There is one document that the chair wants to --

SENATOR CLARK: Mr. Chair.
CHAIRMAN HALL: Senator Clark.
SENATOR CLARK: May I approach the dais.

CHAIRMAN HALL: Yes, absolutely.
[At ease.]
CHAIRMAN HALL: There is actually one more amendment and -- Mr. Sergeant-At-Arms, has
this one been passed out yet, this last one that you -- okay.

Members, the amendment the chair is referring to is Senator Clark's amendment dealing with counties, groupings, and traversals. Counties, groupings and traversals. Will members raise their hand if they don't have a -- Senator Clark. Okay. Sergeant-at-arms will get -- will please distribute a copy of that amendment, and --

Okay. And, Members, the chair's informed that the House will not go into session until this committee has completed its business today.

Representative Warren.
REPRESENTATIVE WARREN: Thank you, Mr. Chair. I was just curious. The one amendment that was accredited to Senator Marcus, and I think we identified it was actually Senator Clark's, on Proposed Criteria Number 9, the member residence, was that withdrawn? Did I just --

CHAIRMAN HALL: You know, the one that was withdrawn, and the gentleman will have to get with staff to determine which one was
actually withdrawn.
Representative Stevens.
REPRESENTATIVE STEVENS: [Inaudible.]
CHAIRMAN HALL: Yeah, we're waiting right now. We're handling some other business. We're handling some old business, it sounds like.

Members, the chair is also in possession of a document that is, I don't know, three and a half pages long. It says Proposed Criteria for Redistricting August 12, 2021, and the chair was just given this.

Does any member -- I'm going to hold it up. Has a member put this forth as an amendment? There's no name on it and it was given by staff.

Senator Clark.
Okay. Members, this is the last amendment that the committee is in possession of. This again is Senator Clark's amendment to Proposed Criteria 3, counties, groupings, and traversals. The chair believes the committee is in possession -- all members are in possession of it now.

Senator Clark, the gentleman is
recognized to speak to the amendment.
SENATOR CLARK: Thank you, Mr. Chair.
There are quite a few moving pieces in this one so I'll just focus on a few components here. Let's see. If we go down to the third paragraph, it states "The committee shall select from the total set of constitutionally compliant county grouping maps, one each for the House and Senate, a grouping map that shall be used for the construction of House and Senate districts. When choosing from among constitutionally compliant county groupings maps, the grouping map closest to zero population deviation shall be used."

And the purpose of this particular one is to make sure we understand that there will be more than one constitutionally compliant set of grouping maps and therefore we have to have in place some sort of mechanism for deciding amongst those constitutionally compliant maps which we will select.

Then the following paragraph says "To achieve population balance in the 2021 congressional plan, some counties must be split. The number of counties that may be split shall
not exceed 14 which is the number of congressional districts."

The reason for this particular provision is to provide specificity in terms of how many counties can be split. There is none in the criteria as currently stated.

And it says "When splitting counties, reasonable efforts shall be made not to split communities of interest."

And then the final one says that after making any available single-county congressional districts -- and this relates to the one in the first paragraph which I skipped -- but it says "After making any available single-county congressional districts, any two-county grouping with a total population sufficient to contain a congressional district within the combined borders, the committee shall construct such a district and the larger of the two counties, based upon population, shall remain whole and not be split."

CHAIRMAN HALL: Senator Daniel.
CHAIRMAN DANIEL: Thank you, Mr. Chair.
Thank you, Senator Clark, for the amendment. Of course, the chair -- or I would
remind the committee that a future vote will happen on the county groupings, so this amendment in part is not appropriate at this time. The chairs feel like that the -- this criteria as currently drafted, as is shown on the top of Senator Clark's amendment, is entirely appropriate and adequate for this particular topic, and would ask that -respectfully that the committee reject the amendment.

CHAIRMAN HALL: Further discussion or debate on the amendment. Seeing none, we'll move into a House vote.

All those in favor of the amendment will say aye.

COMMITTEE MEMBERS: Aye.
CHAIRMAN HALL: All those opposed, no. COMMITTEE MEMBERS: No.

CHAIRMAN HALL: The nos have it. The amendment fails. We'll move to the Senate.

CHAIRMAN DANIEL: Thank you, Mr. Chair.
Members of the Senate, all in favor of Senator Clark's amendment, please indicate by saying aye.

COMMITTEE MEMBERS: Aye.

CHAIRMAN DANIEL: All opposed, no.
COMMITTEE MEMBERS: No.
CHAIRMAN DANIEL: The nos have it and the amendment fails.

CHAIRMAN HALL: Okay. Members, that's
all the amendments the chair has in the chair's possession. So now we will move to the criteria -- Representative Harrison.

REPRESENTATIVE HARRISON: [Inaudible.]
CHAIRMAN HALL: Okay. We will move to the criteria -- the chair's proposed criteria now as amended. And, of course, that has previously been sent out, and it was amended today, but if any members feel like they need to get another copy of that, then the chair will so direct.

Representative Harrison.
REPRESENTATIVE HARRISON: Thank you, Mr. Chair.

I did not propose it today after consultation with folks about the potential of adding some criteria related to transparency, which is something we've heard about from the public speakers and online comments, and I wanted to propose a process for transparency,
but I didn't want to include it with the criteria because it didn't seem to fit, and I just wanted to make that point on the record, and $I$ hope to bring it forward next week. Thank you.

CHAIRMAN HALL: Absolutely. And the lady, Representative Harrison, and all members are encouraged to put forth whatever their thoughts and opinions are on the way that we should conduct this process, how we should go about whatever level of transparency the committee sees fit. And the committee, of course, has a little bit of time to look at those things because, of course, we're not going to have enough data to draw any maps we believe for at least three and a half weeks so we've got some time. And we want to do public comment, really, before we start drawing those maps. So do give us your ideas about how you want to see the process ran.

Mr. Chair.
CHAIRMAN HALL: Senator Daniel.
CHAIRMAN DANIEL: Mr. Chair, I would
move at this time for the adoption of the criteria as amended and ask that staff engross
that into a new document and provide it to the committee members and also post it on the committee website.

CHAIRMAN HALL: And you want them to make technical changes as needed, I believe, Senator Daniel.

CHAIRMAN DANIEL: Yes.
CHAIRMAN HALL: Okay. Members, is there -- Representative Hawkins.

REPRESENTATIVE HAWKINS: This goes back to since we're moving forward on these, it was a question that $I$ just didn't get a ton of clarity on.

When was asked, you know, regarding Senator Blue's statements about, you know, packing of African Americans, and like what happens -- what happens if we find that there ends up being, based on our -- you know, our best outlines of not using racial data, if we find that African Americans have been packed, what do we do? And so I understand -- and I'm -- you know, I'm not a country lawyer, but I want to make sure because people are asking those kinds of questions online, and we want to make sure that this process is above, you know,
reproach, right, that we move forward and we hope that we will not be in litigation for the next decade. And I again just want to make sure I'm asking that question clearly because it didn't come across as clear in the first.

CHAIRMAN HALL: Okay. Well,
Representative Hawkins, the chair will try to answer that question as best $I$ can. Again, knowing this is a committee, it's a body that makes a decision. We're agreeing -- or at least we're proposing in this criteria not to use racial data at all in the drawing of these maps, but as Senator Daniel has said, members of the committee and members of the public are welcome to gather whatever evidence and put forth evidence that might fall under Section 2 of the Voting Rights Act, that that may require some use of racial data. And, of course, that will be up to this body, to this committee, and ultimately two bodies of the two chambers as to whether to consider that and how to do that. But at this point, none of that evidence has been put forth.

SENATOR CLARK: Mr. Chair.
CHAIRMAN HALL: Senator Clark.

SENATOR CLARK: Thank you, Mr. Chair.
And I did ask the committee earlier on, and I want to restate my request, and that is that the committee provide any ruling that specifically nullified the requirement of Stephenson that states that first legislative districts required by the VRA shall be formed before non-VRA districts are created.

CHAIRMAN HALL: Further discussion or debate.

Again, Senator Daniel has made a motion on the criteria -- post criteria as amended. Seeing none -- Senator Marcus.

SENATOR MARCUS: I just -- I guess a point of clarification. I'm going through my notes here and just want to be clear that we are now being asked to vote on the criteria that were handed out on Monday with the addition of Senator Daniel's amendment.

CHAIRMAN HALL: That's correct,
Senator Marcus.
SENATOR MARCUS: And by my count there were 12 Democratic amendments. Only one -- only one carried, and that is Senator Clark's on Criteria Number 2, so that is now part of the
criteria that we're voting on.
CHAIRMAN HALL: That's right. There
was one Republican amendment adopted and one Democratic amendment adopted.

Further discussion or debate on the motion. If not, the House will move into a vote.

All those in favor of Senator Daniel's motion will signify it by saying aye.

COMMITTEE MEMBERS: Aye.
CHAIRMAN HALL: All of those opposed, no.

COMMITTEE MEMBERS: No.
CHAIRMAN HALL: The ayes have it and the motion carries. We'll move to a Senate vote.

CHAIRMAN DANIEL: Thank you, Mr. Chair.
Senate members, all in favor of the criteria -- of adopting the criteria as amended, please indicate by saying aye.

COMMITTEE MEMBERS: Aye.
CHAIRMAN DANIEL: All opposed, no.
COMMITTEE MEMBERS: No.
CHAIRMAN DANIEL: The ayes have it and the criteria is adopted.

CHAIRMAN HALL: Okay. Members, a couple of housekeeping items for staff that the chair has been passed up, and the chair is going to call on Erika Churchill to explain these.

Number one, the chair anticipates instructing central staff to process the legacy data from the Census Bureau.

Ms. Churchill, will you -- will you discuss what that means.

MS. CHURCHILL: Yes, sir. That means that the Information Systems Division will receive the Census Bureau legacy data whenever it is released by the census, which we anticipate to be sometime today, and it means they will begin processing that data for use in the Maptitude system and our reporting engines which allow us to actually produce the bills that technically is what the General Assembly is enacting.

CHAIRMAN HALL: Okay.
MS. CHURCHILL: And as long as we have the instruction to begin that processing, we will begin it as soon as the Census Bureau releases it.

CHAIRMAN HALL: Okay. Members,
with --
SENATOR CLARK: Mr. Chair.
CHAIRMAN HALL: Senator Clark.
SENATOR CLARK: I have a request. Once
the data is downloaded, can the ISD provide us with the county population data. That's pretty easy.

CHAIRMAN HALL: The chair will so direct that that will be provided when it's downloaded.

MS. CHURCHILL: As soon as we have it available and we've done our few little cross checks for quality assurance, we'll be glad to post that to the web.

CHAIRMAN HALL: Let the chair clarify. That will be sent out once it's in a readable format to where it can be sent out and properly read --

MS. CHURCHILL: Yes, sir.
CHAIRMAN HALL: -- and it has been checked, as the lady said, for any technical issues.

MS. CHURCHILL: Yes, sir.
CHAIRMAN HALL: Senator Clark.
SENATOR CLARK: Yes, but the Census

Bureau provides those files, and essentially it's nothing but a CSV file that you can access -- access via Microsoft Access. All I'm asking for is the 100 counties and what is the population of those counties. There's no quality check required for that.

CHAIRMAN HALL: Ms. Churchill, the lady is recognized.

MS. CHURCHILL: I will not speak for our Information Systems Division. I do know that they want some time to make sure that what they are inputting into the General Assembly systems is the same as what the Census Bureau is delivering. If we have available from the Census Bureau the CSV file, obviously, it will be available on the Census Bureau's website. We are happy to post a link at the General Assembly's website.

SENATOR CLARK: Thank you, Mr. Chair. I'll get it myself.

CHAIRMAN HALL: Okay.
Members, the chair intends to make that direction to staff to process the legacy data from the Census Bureau without objection. So ordered.

Members, staff has requested instructions for central staff, that is, to develop a 2021-2022 residency layer. I think that's self-explanatory.

Ms. Churchill, this committee has adopted a set of criteria that allows it to consider incumbency of members, and the staff just needs to be able to overlay that on the map.

Did I say that pretty much correct in simple terms?

MS. CHURCHILL: Absolutely. And just as a reminder for those of you who have been here before as these residency layers have been developed, we will be contacting each of you individually to confirm what your residency is. We do ask that when we make that contact that you sign and return to us. We will also be making the same contact of all 13 congressional delegation members for the same information.

CHAIRMAN HALL: Members, as previously stated, the chair anticipates the committee meeting at some point next week to discuss how this committee will go about the public comment portion of our work and, again, by way of
example, the chairs will be listening to hear whether the committee wants to hold meetings all across the state or here in this room via video feed, whatever the committee's wish may be. So if committee members will, you can go ahead and start putting forth some of those suggestions. We want to come back in here and have, again, an open, transparent discussion next week about what committee members feel would be the best path forward on the public comment period. Don't know that we will necessarily make a decision on that criteria next week, but we'll see how it goes.

Also, the public comment portal is going to continue to be open. Again, members of the public are encouraged to send forth any thoughts they have about the entire process, especially right now, how they would like to see public comment conducted moving forward now that we have criteria adopted.

And, of course, members are encouraged to reach out to their constituents and hear what they have to say about it.

Just momentarily, the committee will be at ease.


STATE OF NORTH CAROLINA )
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COUNTY OF WAKE )

I, DENISE MYERS BYRD, Stenographic Court Reporter, CSR 8340, do hereby certify that the transcription of the recorded Joint Committee Meeting held on August 12, 2021, was taken down by me stenographically to the best of my ability and thereafter transcribed under my supervision; and that the foregoing pages, inclusive, constitute a true and accurate transcription of said recording.

Signed this the 12th day of December 2021.

Denise Myers Byrd
CSR 8240, RPR, CLR 102409-2

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# EXPRESSIVE HARMS, "BIZARRE DISTRICTS," AND VOTING RIGHTS: EVALUATING ELECTION-DISTRICT APPEARANCES AFTER SHAW v. RENO $^{\dagger}$ 

Richard H. Pildes*<br>and<br>Richard G. Niemi**

With technical assistance provided by Kimball Brace and Doug Chapin

Voting-rights controversies today arise from two alternative conceptions of representative government colliding like tectonic plates. On one side is the long-standing Anglo-American commitment to organizing political representation around geography. As embodied in election districts, physical territory is the basis on which we ascribe linked identities to citizens and on which we forge ties between representatives and constituents. On the other side is the increasing power of the Voting Rights Act of 1965 (VRA), ${ }^{1}$ which organizes political representation around the concept of interest. The Act prohibits the dilution of minority voting power and thereby necessarily ascribes linked identities to citizens on the basis of group political interests. Whenever these two plates of territory and interest collide, surface disturbances in voting-rights policy erupt.

Shaw v. Reno ${ }^{2}$ is the most recent manifestation of these opposing forces. In Shaw, a deeply fractured Supreme Court addressed the conflict between territory and interest by concluding that, for purposes of

[^0]the Fourteenth Amendment, the geography of election districts "is one area in which appearances do matter." ${ }^{3}$ Against the pressure of interest-oriented alternatives that the Voting Rights Act exerts, the decision reaffirms the continuing centrality of physical territory to legitimate political representation. In line with this reaffirmation, the Court endorsed a new kind of equal protection challenge to legislative redistricting. This new, geography-based challenge might be called a district appearance claim.

As the Court defined this claim, "a reapportionment scheme [may be] so irrational on its face that it can be understood only as an effort to segregate voters . . . because of their race . . . ." ${ }^{4}$ In this passage, "on its face" is to be read literally: only election-district configurations that convey a dramatic visual impression of this sort implicate the principles of Shaw. The specific holding of Shaw is that the Constitution permits such an election district only when sufficiently justified under the exacting standards of strict scrutiny. ${ }^{5}$

No other decision from any court has held that, in some circumstances, a district might violate the U.S. Constitution when its shape becomes too "bizarre." 6 When physical geography is stretched too thin, when it is twisted, turned, and tortured - all in the apparent pursuit of fair and effective minority representation - at some point, too much becomes too much. That appears to be the judicial impulse that accounts for Shaw: in the conflict of territory and interest, the Constitution requires policymakers somehow to hold the line and accommodate both.

But judicial impulses are one thing, legal doctrine another. That most people, judges included, recoil instinctively from willfully misshapen districts is understandable enough. Yet defining the values and purposes that might translate this impulse into an articulate, justifiable set of legal principles is no easy task. Leading academic experts in redistricting have long argued that this impulse reflects untutored intuition, an instinctive response that careful analysis reveals to be unwarranted. ${ }^{7}$ Shaw translates this impulse into constitutional doctrine

[^1]but does little to explain or justify the principles that might lie behind it. Moreover, the judicial impulse that too much is too much will degenerate into either a manipulable tool or a meaningless gesture unless transformed into legal principles that courts and redistricting bodies can apply with at least some consistency and certainty. Yet, beyond casting doubt on "highly irregular" districts, Shaw provides no criteria to guide reapportionment bodies or courts in judging when this line has been crossed. As Justice White, writing for four dissenters, said: " $[\mathrm{H}]$ ow [the Court] intends to manage this standard, I do not know." ${ }^{8}$

Working out the theory and implications of Shaw is particularly urgent because the decision is significant for voting-rights law in not one, but two, ways. Shaw directly addresses only constitutional constraints that will now function at the outer boundaries of the districting process. At the core of that process, however, the conflict between territory and interest must be resolved in nearly every context in which the Voting Rights Act applies. The Act imposes a duty to avoid minority-vote dilution, but the scope of that duty depends, in part, upon how much the claims of interest can take precedence over those of territory. Thus, Shaw will not only constrain the districting process constitutionally but, through its radiating effects on statutory interpretation, may reshape the districting process at its core.

This article attempts to define the constitutional principles that characterize Shaw and to suggest how those principles might be applied in a consistent, meaningful way. Part I, in which we argue that Shaw must be understood to rest on a distinctive conception of the kinds of harms against which the Constitution protects, is the theoretical heart of the article. We call these expressive harms, as opposed to more familiar, material harms. In Part II, we briefly survey the history of previous, largely unsuccessful, efforts in other legal contexts to give principled content to these kinds of harms in redistricting. Parts III and IV then provide an alternative for evaluating district "appearance" by developing a quantitative approach for measuring district shapes that is most consistent with the theory of Shaw. These Parts are the empirical and social-scientific heart of the article. We apply our quantitative approach to congressional districts throughout the country, enabling meaningful comparisons between the congressional district at issue in Shaw and other districts. We also compare the shapes of congressional districts historically to test whether the district in Shaw is a distinctly recent phenomenon. In doing so, we identify

[^2]the kind of districts most constitutionally vulnerable after Shaw. In Part V, we describe the further questions that lower courts must answer in deciding whether particular vulnerable districts ultimately fail the constitutional standard outlined in Shaw.

Shaw will undoubtedly be a controversial and confusing decision. We write not to praise Shaw, nor to bury it, but to seek to understand it on its own terms. What follows is an effort to tease out the principles underlying Shaw and to suggest one approach to implementing its seemingly intractable mandate.

## I. Deciphering the Holding of Shaw

Shaw is challenging intellectually precisely because it is so puzzling legally. Untangling its reasoning requires considerable effort. We begin with the Voting Rights Act, which provides the backdrop against which the facts in Shaw arise.

## A. Background of the Voting Rights Act

The VRA not only permits, but requires policymakers, in certain specific circumstances, to be race conscious when they draw electoral district lines. ${ }^{9}$ In 1982, Congress amended section 2 of the Act to clarify that discriminatory intent was not a necessary element of a minor-ity-vote dilution claim; proof of discriminatory result is now sufficient. ${ }^{10}$ Four years later, in Thornburg v. Gingles, ${ }^{11}$ the Court focused the standard for proving such results around three factors that conjoin social conditions and voting structures. First, the minority community ${ }^{12}$ must be "sufficiently large and geographically compact" to constitute a minority-dominated election district. ${ }^{13}$ Second, the mi-

[^3]nority community must be "politically cohesive" 14 - that is, it must demonstrate common voting preferences for candidates. ${ }^{15}$ Finally, the majority must be engaged in racially polarized voting behavior that over time "usually" defeats the preferred candidates of the minority community. ${ }^{16}$ When these conditions are met, the combination of the existing voting structure and the political dynamics of race can be said to cause minority-vote dilution. ${ }^{17}$ The remedy for such a violation requires the governmental unit to create an alternative voting structure that will enable fair and effective minority representation.

The Court, however, specifically designed the three Gingles criteria to define vote dilution only in the context of one particular type of electoral structure: multimember or at-large electoral districts. As in Gingles, most VRA litigation at the time challenged such districts. ${ }^{18}$ These electoral structures, then common throughout the country, ${ }^{19}$ dated from turn-of-the-century Progressive era reforms. In these reforms, northern Progressives and southern Redeemers sought to undermine community-based politics - portrayed as the province of corrupt local bosses - and instead to concentrate power in more centralized, "expertly" administered political bodies. ${ }^{20}$ In many places, the specific aim of these reforms was to diminish the political influence of freed blacks. ${ }^{21}$ In these Gingles-era challenges to multimember

[^4]election units, plaintiffs typically sought a remedy that would divide the unit into several single-member ones, including an appropriate number of minority-dominated districts.

Since Gingles, however, a second type of challenge has emerged and become central. This newer challenge was the catalyst for the North Carolina districting scheme at issue in Shaw. As states in many parts of the country dismantled multimember districts, the focus of litigation began to shift toward the precise design of single-member districts. These cases are winding through the courts; as yet only a few reported decisions address VRA challenges to single-member district plans. ${ }^{22}$ Indeed, not until this Term did the Supreme Court definitively hold that the Gingles criteria also control VRA challenges to single-member district plans. ${ }^{23}$ Though Gingles now clearly applies, the precise way in which courts must adapt its criteria for single-member districts raises a battery of complex questions. As challenges to single-member districts come to dominate VRA litigation in the 1990s, the need for judicial resolution of these questions has become increasingly urgent. ${ }^{24}$

In applying Gingles to single-member districts, the most conceptually difficult issues for courts arise from the requirement that a minority group be "sufficiently large and geographically compact." 2 At

[^5]this point the tension between territory and interest becomes most acute. In the multimember context, the conflict is more diminished because the existing district boundary lines define the limited geographic territory within which to locate replacement single-member districts. One must still define compactness, but within a relatively small, predefined physical territory. In contrast, in challenges to existing single-member districting plans for congressional or state legislative seats, the only fixed boundary lines are those of the state itself. Within those boundaries, an unlimited number of districting plans and individual district shapes are possible. Defining "geographically compact" in this context is more necessary and more difficult.

Such was the legal context in which North Carolina undertook the redrawing of its congressional districts in the wake of the 1990 Census. As a result of this census, the state was entitled to one additional U.S. congressional seat, bringing its delegation up to twelve. The effort to carve the state into twelve districts generated a mix of partisan and racial considerations increasingly common to redistricting. In North Carolina, the General Assembly controls redistricting, with the Governor having no veto power ${ }^{26}$ or other entitlement to participate. During the redistricting of the 1990s, Democrats controlled both houses of the General Assembly, while the Governor was Republican, ${ }^{27}$ and partisan interests had unusually free rein. In addition, in part as a direct result of Gingles itself, the power of the black legislative coalition in the General Assembly had grown. ${ }^{28}$

North Carolina's voting-age population is presently seventy-eight percent white and twenty percent black. ${ }^{29}$ But the state's black population is relatively dispersed, with black residents a majority in only five of the state's one hundred counties. Because numerous counties in North Carolina have a history of discrimination with respect to voting, the VRA requires that the state submit any change in its voting practices or structures to the Attorney General for federal preclearance. This process is the section 5 preclearance review. ${ }^{30}$

[^6]The state's initial redistricting plan included one "convoluted" ${ }^{31}$ district with a black majority; the unusual shape was necessary to protect the political base of white Democrat incumbents in adjoining districts. ${ }^{32}$ When the state submitted this plan to the Justice Department, the Attorney General entered a formal objection and refused clearance. He offered several reasons for doing so, including the state's failure to create a second majority-black district "in the south central to southeastern part of the state," where creating such a district appeared feasible. ${ }^{33}$ The Attorney General also commented that several alternative districting plans had been submitted to the Justice Department - at least one of which had been presented to the North Carolina General Assembly - that included a second majority-minority district in the southern part of the state. Noting that the state had been aware of the minority community's "significant interest" in creating a second majority-minority district, the Attorney General concluded that the state's failure to do so in its initial redistricting plan rested on what appeared to be "'pretextual reasons.' " 34

Rather than challenge this finding judicially, the North Carolina General Assembly adopted a new redistricting plan. This plan included a second majority-black district, with a total population of $56.63 \%$ black and a voting-age population of $53.34 \%$ black. ${ }^{35}$ The new district, however, was not in the south-central to southeastern part of the state. Instead, the state created a 160 -mile long district,
covered jurisdiction must establish that its proposed change does not have the purpose or effect of "denying or abridging the right to vote on account of race or color." 42 U.S.C. § 1973(c) (1982). Most jurisdictions prefer to seek preclearance from the Attorney General rather than a declaratory judgment in the special district court. See Drew S. Days III, Section 5 and the Role of the Justice Department, in Controversies in Minority Voting, supra note 21, at 52, 53 n. 2 (citing Justice Department statistics). For an extensive academic study of the § 5 process, see Hiroshi Motomura, Preclearance Under Section Five of the Voting Rights Act, 61 N.C. L. Rev. 189 (1983).
31. Cf. Brief Amicus Curiae of the Republican National Committee in Support of Appellants at 9, Shaw v. Reno, 113 S. Ct. 2816 (1993) (No. 92-357).
32. Pope v. Blue, 809 F. Supp. 392, 394 (W.D.N.C.) (three-judge court) ("In order to protect white Democratic congressmen at the expense of Republicans, the General Assembly had to make [the majority-black] district very contorted."), affd., $113 \mathrm{~S} . \mathrm{Ct} .30$ (1992).
33. Brief for the Federal Appellees at 10a app. B, Shaw v. Reno, 113 S. Ct. 2816 (1993) (No. 92-357)).
[T] he proposed configuration of the district boundary lines in the south-central to southeastern part of the state appear[s] to minimize minority voting strength given the significant minority population in this area of the state. In general, it appears that the state chose not to give effect to black and Native American voting strength in this area, even though it seems that boundary lines that were no more irregular than found elsewhere in the proposed plan could have been drawn to recognize such minority concentration in this part of the state.

## Id.

34. Shaw, 113 S. Ct. at 2820 (citing Brief for Federal Appellees at 10a-1la app. B).
35. Brief for Federal Appellees at 15a-16a app. D.
winding through ten counties, often in a corridor no wider than Interstate Highway 85, which links the urban areas of Durham, Greensboro, Winston-Salem, and Charlotte. ${ }^{36}$ This area became Congressional District 12 (District 12 or CD12), the focus of Shaw. The record suggests that the General Assembly drew the district this way to minimize the risk to incumbent congressmen from the creation of a second majority-black district. ${ }^{37}$ On resubmission, the Attorney General precleared the new redistricting plan. ${ }^{38}$ Figure 1, on the next page, provides a map of District 12.

Two significant consequences followed once the plan went into effect. First, in the 1992 congressional elections, North Carolina elected its first black representatives since Reconstruction. They were elected from the two majority-black districts in the plan, including District 12. Second, editorial writers feasted on District 12. In a label that was frequently repeated, the Wall Street Journal tagged it "political pornography." ${ }^{39}$ The Raleigh News and Observer complained that it "plays hell with common sense and community." ${ }^{40}$ In another editorial it argued: "The maps . . . don't make any sense to people who

[^7]Figure 1: North Carolina - Congressional District 12

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have any sense." ${ }^{41}$ Even some leading defenders of the VRA, clearly taken aback by the shape of District 12, suggested that it might violate the Constitution. ${ }^{42}$

## B. The Holding in Shaw: Vote-Dilution and District-Appearance Claims

In Shaw, the Court concluded that District 12 did indeed raise serous enough constitutional concerns as to require justification under the exacting standards of strict scrutiny. To do so, the Court endorsed a distinction between two radically different kinds of voting-rights claims, each of which the Equal Protection Clause now recognizes. ${ }^{43}$

The first is a traditional "vote-dilution" claim. To establish such a claim under the Fourteenth Amendment, plaintiffs must prove the fa-

[^8]miliar requirements of discriminatory purpose and effect. Most important for our purposes, the relevant discriminatory effects must involve actual, material harm to the voting strength of an identifiable (and constitutionally protected) group. In the context of race, the Equal Protection Clause is violated only when an election structure "affects the political strength" ${ }^{44}$ of a racial group by unduly diminishing its influence on the political process. This material injury - diminution of relative group political power - is the sine qua non of a vote-dilution claim.

Before Shaw, this claim might have been thought to exhaust the constitutional guarantees securing the voting rights of protected groups. Vote dilution was not merely one "type" of claim; it defined the very meaning of constitutionally protected voting rights and the nature of voting-related harms under the Constitution. Shaw now recognizes a distinct type of claim. This new claim entails a distinct conception of constitutional harms as well as a distinct, implicit theory of political representation.

We call this claim a district appearance claim. As we will explain, ${ }^{45}$ the kind of injury it validates involves what we call expressive, rather than material, harms. The theory of voting rights it endorses centers on the perceived legitimacy of structures of political representation, rather than on the distribution of actual political power between racial or political groups. Vote-dilution and district-appearance claims share no common conceptual elements. They recognize distinct kinds of injuries, implicate different constitutional values, and reflect differing conceptions of the relationship between law and politics. These two claims cannot be assimilated into a single, unitary approach to the Fourteenth Amendment. ${ }^{46}$

[^9]
## 1. Explaining District-Appearance Claims

To begin to understand Shaw, one must first note that vote dilution is not involved in the case. The plaintiffs could not prove - and the Court acknowledged that they did not allege - vote dilution. ${ }^{47}$ This conclusion is understandable, for no racial group in North Carolina could plausibly claim any material deprivation of its relative voting strength. Certainly white residents, who constitute seventy-six percent of the population in North Carolina ${ }^{48}$ and approximately seventyeight percent of its voting-age population, ${ }^{49}$ could not claim impermissible dilution of their voting power. Under the statewide redistricting plan, white voters still constituted a majority in ten, or eighty-three percent, of the twelve congressional districts. ${ }^{50}$ With effective control of more than a proportionate share of seats, white voters in North Carolina could not prove, and did not try to prove, that the redistricting plan diluted their relative voting power in intent or effect.

Second, Shaw does not express constitutional concern with the shape of election districts per se. The Court is clear that, no matter how bizarre or contorted, district appearances standing alone do not implicate the U.S. Constitution. ${ }^{51}$ Colorful references to the shape of District 12 do permeate the opinion: "highly irregular,"52 "tortured [and] dramatically irregular,"53 "bizarre," 54 and "irrational on its face." ${ }^{5 s}$ Nevertheless, it is the conjunction of these features with race-

[^10]conscious districting that the Court condemned, not oddly shaped districts per se. Any other result would revolutionize the districting process because it would suddenly subordinate discretionary state policy choices to a general constitutional imperative concerning district shapes. Far from suggesting a principle of such broad sweep, the decision explicitly reaffirms that the Constitution does not impose on state reapportionment bodies any general requirement of compactness or contiguity. ${ }^{56}$

Third, Shaw also does not appear to condemn race-conscious districting per se. ${ }^{57}$ This point is more ambiguous, both because much more hinges on this holding and because the opinion refrains from endorsing it explicitly. Moreover, when this question is confronted directly, the majority in Shaw might well divide over this question. Justice Kennedy, for example, has gone out of his way to reserve judgment on the constitutionality of section 2 of the Act. ${ }^{58}$ Nonetheless, we believe Shaw is best read as an exceptional doctrine for aberrational contexts rather than as a prelude to a sweeping constitutional condemnation of race-conscious redistricting. In their contribution to this symposium, Professors Alex Aleinikoff and Samuel Issacharoff address this question in detail and reach the same conclusion. ${ }^{59}$ We, however, can only briefly justify this view here.

First, if race-conscious districting per se were the constitutional problem, it is difficult to rationalize the architecture of the decision. The keystone in Shaw is the "highly irregular" shape of District 12. The negative pregnant, then, is that "regular" districts designed for race-conscious reasons do not raise similar constitutional concerns. Second, the Court's analysis builds on major precedents establishing that intentional race-conscious districting is not inherently unconstitutional. The Court finds constraints that apply in Shaw within these precedents or concludes that these cases address a distinct kind of claim and hence do not apply; it does not, however, call these deci-

[^11]sions into question. ${ }^{60}$ Third, at several points, the Court suggests that race-conscious redistricting is neither problematic nor a trigger for strict judicial scrutiny. ${ }^{61}$ In addition, compliance with the VRA and Gingles necessarily requires race-conscious districting; Shaw does not suggest, at least directly, that the Court was questioning the restructuring of the political process that has resulted from reliance on the VRA and Gingles. At least to the extent race consciousness arises in connection with VRA compliance, Shaw appears to accept it.

The Court's decision in Voinovich v. Quilter, ${ }^{62}$ also decided last Term, further supports the conclusion that Shaw is not a broad attack on race-conscious districting per se. ${ }^{63}$ In Quilter, the Republicandominated Ohio apportionment board had redistricted the Ohio legislature and, in the process, intentionally created several minority-dominated election districts. Plaintiffs claimed that these districts illegally

[^12]"packed" minority voters into a handful of districts, thereby diluting their potential power in other districts. The three-judge federal trial court agreed; it held that the VRA permits the intentional creation of minority-dominated districts only when such districts are necessary to remedy what would otherwise be a violation of the VRA. ${ }^{64}$

Quilter thus presented an inversion of the routine voting-rights case. Rather than claiming that Ohio had been insufficiently attentive to race, the plaintiffs argued that the state had been too attentive. The state had created too many minority districts that were too "safe" presumably to pursue an underlying partisan agenda of enhancing Republican influence in other districts. Thus, the plaintiffs argued that race-conscious districting over and above what the VRA requires violates the Act and the Constitution.

The Supreme Court unanimously rejected this argument. In doing so, the Court directly contradicted the three-judge court's view that the VRA establishes both a floor and a ceiling on race-conscious districting. ${ }^{65}$ As the Court held, "federal courts may not order the creation of majority-minority districts unless necessary to remedy a violation of federal law. But that does not mean that the State's powers are similarly limited. Quite the opposite is true . . ." ${ }^{66}$ The VRA therefore does not limit state redistricters only to remedial uses of race. As long as no illegal vote dilution occurs, states do not violate the Act, no matter how race conscious they might be in designing election districts. ${ }^{67}$ Under the VRA, states need not first confess or prove past discrimination in election practices to justify their race-conscious creation of districts - indeed, they need not justify these districts to federal courts at all.

If this were all there were to Quilter, the meaning of Shaw would be clear: in the absence of vote dilution, race-conscious districting, in and of itself, would pose no legal problems. Only when carried to particular kinds of extremes, as in Shaw, would distinctive constitutional issues arise. But Quilter is not quite this transparent. The Court expressly reserved the question of whether race-conscious redistricting per se might violate the Fourteenth or Fifteenth Amendments. ${ }^{68}$ Conceivably, then, the Court could hold that, while Ohio's

[^13]redistricting efforts do not violate the VRA, they do violate the Constitution.

Yet, while legally possible, this result seems unlikely. The sitting Ohio legislature is now composed through the electoral scheme Quilter upholds. If the Court believed there were serious constitutional questions with the fundamental structure of this scheme, the Court had numerous means to avoid permitting an unconstitutionally composed legislature to assume power. Indeed, the parties expressly asked the Court to decide the broad Fifteenth Amendment issue, but the Court found extremely narrow grounds on which to resolve that claim. ${ }^{69}$ The Court could have asked the parties to address or reargue the Fourteenth Amendment issue. We view the Court's reservation of the constitutional issues as expressing the caution and tentativeness that characterizes the current Court's approach to race, as well as the divisions within the Court itself. But we take the tenor of Quilter as further evidence that a majority of the Court is not prepared to find a general ban on race-conscious districting in the Constitution.

Thus, Shaw does not appear to erect a general constitutional barrier to intentionally race-conscious districting that has no dilutive effect. To be sure, many more subtle questions remain regarding the precise circumstances under which redistricting bodies and courts may take race into account - remedially or affirmatively - when designing districts. We address these more nuanced questions in Part V. But, at this stage, the important point is that Shaw does not appear to rest on any general principle condemning race-conscious districting. Although many initial reactions have neglected this side of Shaw, ${ }^{70}$ it is one of the decision's most significant aspects. Given that several members of the current Court are resistant to state departures from the color-blindness ideal in other contexts ${ }^{71}$ and that Justices Marshall and Brennan have retired, one might have thought the Court would

[^14]revisit the constitutionality of the race-conscious districting process that forms the core of the VRA. After Shaw, however, five Justices do not appear to be prepared to do so.

Instead, only those irregular districts that convey one particular impression - or that are chosen on the grounds of one particular set of reasons or motivations - implicate Shaw. The districting plan must be "so extremely irregular on its face that it rationally can be viewed only as an effort to segregate the races for purposes of voting";'72 it must be "so bizarre on its face that it is 'unexplainable on grounds other than race.' "73 Rather than standing for any simple prohibition of "racial gerrymandering," Shaw distinguishes two types of "racial gerrymanders." Some districts - highly irregular ones trigger the extreme demands of strict scrutiny; others raise no special constitutional problem. In dissent, Justice White perfectly captured, we believe, the decision's internal logic: Shaw holds that "race-conscious redistricting that 'segregates' by drawing oddly shaped lines is qualitatively different from race-conscious redistricting that affects groups in some other way." ${ }^{74}$

Justice White means this description to be an ironic commentary on Shaw's analysis, the exposure of a "logic" the mere expression of which immediately indicts itself as incoherent. Those who must work with Shaw, however, will have to find the principles the Court intended to drive this logic. What precisely about these particular kinds of election districts poses unique constitutional problems? What distinct injury do such districts cause?

## 2. Justifying District-Appearance Claims: The Relevance of Value Pluralism

Policymaking processes can be constitutionally flawed in at least three different ways. They might reflect an unconstitutional purpose or, equivalently, take a constitutionally impermissible factor into account. This danger is addressed through constitutional doctrines focused on the search for legislative motivation and purpose. Second, policymaking might take only legitimate factors into account but give too little weight to constitutional rights or too much weight to insubstantial governmental justifications for regulation. Balancing tests re-

[^15]flect concern for the effects of these kinds of policy; such tests typically evaluate whether the governmental justifications for regulation are sufficiently appropriate and significant to justify the degree to which a policy restrains a right. Because the first set of doctrines focuses on purposes, while the second focuses on effects, these might be thought to exhaust the basic modes through which constitutional law can appraise governmental action. Yet there is a third, less familiar type of constitutional problem that policies might raise; in some ways this problem shares concern for both purposes and effects, but it arguably has a distinct logic of its own.

One might call this the problem of value reductionism in public policy. The concern is not that policymakers have taken illegitimate factors into account, nor is it precisely that a policy's effects on rights are too restrictive or not sufficiently justified. Instead, the constitutional problem is better described as the apparent corruption of a decisionmaking process. More broadly, it is the apparent corruption of the public institutions that make their decisions in such a way. When decisions reflect value reductionism, policymakers have transformed a decision process that ought to involve multiple values - as a matter of constitutional law - and reduced it to a one-dimensional problem. They have permitted one value to subordinate all other relevant values. As a result, the decisionmaking process appears tainted because it has become compromised through unconstitutional oversimplification. Interestingly, the concern for public perceptions ultimately seems central to constitutional doctrines that resist value-reductionist public policy. The focus of these doctrines is not impermissible purposes, for they need not be present, nor whether the effect of policy is too great an intrusion on individual rights, but rather whether the process of decisionmaking itself is constitutionally legitimate.

Shaw is best understood, we believe, as an opinion condemning value reductionism. In the Court's view, the process of designing election districts violates the Constitution not when race-conscious lines are drawn, but when race consciousness dominates the process too extensively. Traditionally, redistricting seeks to realize a plurality of values: to ensure effective representation for communities of interest, to reflect the political boundaries of existing jurisdictions, and to provide a district whose geography facilitates efficient campaigning and tolerably close connections between officeholders and citizens. ${ }^{75}$ The inten-

[^16]tional use of race in this process, in conjunction with continuing respect for these other values, does not pose a constitutional problem. Under Shaw, race is not an impermissible factor that corrupts the districting process - as long as it is one among many factors that policymakers use.

When race becomes the single dominant value to which the process subordinates all others, however, it triggers Shaw. For the Court, what distinguishes "bizarre" race-conscious districts is the signal they send out that, to government officials, race has become paramount and dwarfed all other, traditionally relevant criteria. This view is the foundation of the qualitative distinction central to Shaw: at a certain point, the use of race can amount to value reductionism that creates the social impression that one legitimate value has come to dominate all others.

In resisting the use of race in this specific way, Shaw requires that redistricting continue to be understood - and, perhaps more importantly, perceived ${ }^{76}$ - as implicating multiple values. Public officials must maintain this commitment to value pluralism, even when they legitimately and intentionally take race into account.

What precisely are the relevant public understandings concerning democratic institutions that "bizarre" race-conscious districts might violate? Critically, we might say Shaw elevates trivial concerns for "pretty" districts over substantive values of effective minority representation. There are no "naturally shaped" districts, so why should there suddenly be constitutional obstacles at the extremes of the districting process?

One answer might be that the values extreme districts inappropriately compromise are those of political community and political accountability. A principal aim of territorial districting is to facilitate the representation and interests of political communities. Compact districting is at best a proxy for this goal, but to abandon compactness completely might be thought to denigrate the importance of political community as a public value. In addition, because compact districting is thought, at least traditionally, to enhance political ties between representatives and constituents, abandoning compactness might be thought to undermine the value of representation. ${ }^{77}$

[^17]But this answer seems strained in the context of Shaw. If the question is whether the oddly shaped District 12 undermines a sense of political connectedness, unduly burdens those running for office, or weakens representative-constituent ties, we might think state political institutions are best positioned to answer it. Framed in these terms, the Court's concern might seem paternalistic. Moreover, given that District 12 resulted in the election of one of two of North Carolina's first black congressional representatives since Reconstruction, concerns for political community and identifiable representation might seem misplaced.

Perhaps a better answer would start with the view that, in the Court's eyes, oddly shaped race-conscious districts compromise the values of political integrity and legitimacy. While there may be no "natural district shapes," baseline expectations emerge from developed customs and practices. Social understandings, including those concerning the legitimacy of political institutions, are formed with reference to these developed practices. Except in revolutionary moments, political legitimacy is, in part, a matter of compliance with the internal standards of these developed practices. When political bodies devise extremely contorted districting schemes, the violation of these standards suggests politicians are engaged in manipulation of public institutions for their own ends.

When race is added, the mix becomes more combustible and, in the Court's view, the Constitution enters the picture. The concern seems to be that extreme distortions in the (socially constructed) nature of territorial districting, which result from race dominating all other districting values, pose the kind of threat to political legitimacy that the Constitution recognizes. Democratic theory might accommodate either proportional representation or territorial districting. But, as Professors Daniel Polsby and Robert Popper's contribution to this symposium suggests, trying to force the kinds of concerns a propor-tional-representation system addresses into a territorial system eventually stretches the latter to the breaking point. ${ }^{78}$ Short of opting for an interest-based system of representation, public understandings about
an effective representative, a legislator must represent a district that has a reasonable homogeneity of needs and interests; otherwise the policies he supports will not represent the preferences of most of his constituents. There is some although of course not a complete correlation between geographical propinquity and community of interests, and therefore compactness and contiguity are desirable features in a redistricting plan. Compactness and contiguity also reduce travel time and costs, and therefore make it easier for candidates for the legislature to campaign for office and once elected to maintain close and continuing contact with the people they represent.
78. Daniel D. Polsby \& Robert D. Popper, Ugly: An Inquiry into the Problem of Racial Gerrymandering Under the Voting Rights Act, 92 Mich. L. Rev. 652, 670-71, 676-78 (1993). This can be viewed as one of the central themes of Lani Guinier's scholarship. See, c.g. Lani
political legitimacy will reflect the nature of territorial districting, as that form is understood. On this view, the failure to respect value pluralism in territorial redistricting compromises the integrity and legitimacy of the resulting institutions.

This account of Shaw's principles will no doubt leave the decision controversial. In today's culture, we often cannot talk about "the" political legitimacy of institutions, for legitimacy is frequently differential - institutions legitimate from some groups' perspectives might not be from others'. If the "highly irregular" District 12 was actually necessary to ensure a second representative of the black community in North Carolina, that community might well view the districting plan that included District 12 as more legitimate than alternatives. Political legitimacy is also a nebulous concept, into which it is all too easy to read one's own views. Nonetheless, the legitimacy of representative institutions at least seems the kind of question that is properly the concern of the Court - this concern is, after all, at the foundation of the reapportionment revolution itself. ${ }^{79}$ Shaw requires respect for value pluralism as a means, it seems, of ensuring that constitutional concerns for political legitimacy are not ignored or undermined in the process of enhancing minority representation.

Understood in this way, Justice O'Connor's opinion in Shaw resonates with Justice Powell's opinion in Regents of the University of California v. Bakke. ${ }^{80}$ The preference-quota distinction similarly permits noninvidious uses of race, as long as policymakers do not allow race to become - or appear to be - paramount to all other relevant values. When Bakke was decided, some praised this approach as "an act of judicial statesmanship" and "a very civilized ruling." ${ }^{11}$ Others asserted that the preference-quota distinction was at best symbolic and at worst hypocritical - a distinction that reflected no principled theoretical line and that had no functional significance for the way in which academic institutions actually would make admissions deci-

[^18]sions. ${ }^{82}$ Whatever the merits of these views, the distinction has had enough enduring power so that, fifteen years later, it remains an important element in public discourse about race. Virtually no public official endorses racial quotas, even when advocating the preferential use of race. Perhaps Bakke is the sole cause of this way of structuring public discourse; but, if the legal distinction had indeed failed to capture something powerful among public perceptions, at least in some quarters, perhaps it would not have had such a long life. ${ }^{83}$

Methodologically, one can view both Shaw and Bakke as rejecting a categorical, rule-oriented form of legal decision for a more contextualized, standard-based approach. ${ }^{84}$ Neither decision establishes a categorical rule prohibiting intentional race consciousness. The relevant questions are ones of degree: race can be used, but how much weight it is given in relation to other values remains subject to searching judicial inquiry. This contextual approach to constitutional adjudication that links Shaw and Bakke - this commitment to viewing the Fourteenth Amendment as standing against value reductionism - can be understood as an effort to seize and defend a legal middle ground between logically coherent alternatives. At one pole is the principle of color blindness. At the other is the principle of the preferential use of race to enhance the political or economic position of previously disadvantaged minorities. Each alternative rests on its own moral, sociological, and ideological convictions, and many people believe law and policy must come to one clear choice between those alternatives. Yet Shaw, like Bakke, opts for neither option; rather, it sustains the tension between the two. The principle of Shaw is that districters may intentionally take race into account, but only up to the point at which they subordinate all other relevant values to it. Geography and interest are both permissible grounds for constructing election districts, as

[^19]long as the districting process is not reduced to a single-dimensional process in which interest appears to dominate overwhelmingly.

In considering whether the Court is right to be concerned about value reductionism in public policy, ${ }^{85}$ in Shaw or elsewhere, it might be helpful to recall the analysis of complex value choices that Professors Guido Calabresi and Philip Bobbitt offer in Tragic Choices. ${ }^{86}$ In their analysis, societies that endorse a plurality of values, all of them fundamental, must necessarily confront situations of profound value conflict. Faced with such a conflict, society may simply choose to adopt policies that endorse one value over the others at stake. This approach, however, entails rejecting decisively some values that are, and ought to be, considered fundamental. As an alternative, therefore, societies might seek institutions and methods of reaching decisions that preserve the social and political understandings through which they recognize all the values in conflict as fundamental and enduring. One possibility is that public decisions can cycle between preferences for the different values at stake. Alternatively, policymakers might accommodate certain values up to a point, but stop short of following them to their logical conclusion, as a way of signaling respect for countervailing values. ${ }^{87}$

From a certain perspective, these decisions will look inconsistent, or unprincipled, or like compromises having little logical foundation. Indeed, more formal or analytic evaluations of policymaking often generate just such criticisms. ${ }^{88}$ But this kind of fuzzy logic in the public sphere may be a healthy means through which societies embracing

[^20]pluralistic values of fundamental significance address tragic choices they sustain the tension between conflicting values, rather than allowing circumstances to force them finally to endorse one fundamental value over another. By avoiding value-reductionist approaches when such values clash, public decisions can help, in the words of Calabresi and Bobbitt, "preserve the moral foundations of social collaboration." 89

If Shaw is to be justified, we believe the justification must proceed along these lines. On any other terms, Shaw's effort to distinguish race-conscious districting that produces bizarrely shaped districts from that which produces more familiar districts is difficult to comprehend. As the dissenters persuasively argue, one does not involve a more invidious use of race than the other, nor does one differ meaningfully from the other in its effect on individuals' voting rights. Carrying legal analysis to its logical extreme, however, may not be the most important task of the Supreme Court - at least as judges such as Justices O'Connor and Powell understand the functions of the Court and, perhaps, of law itself. Shaw rests on the view that, in certain areas, the Court's role in construing the Constitution should be to require policymakers to accommodate and sustain the tension between conflicting values, rather than to permit one important value to subordinate all others.

## 3. Expressive Harms as Constitutional Injuries

To appreciate this interpretation of Shaw, however, is not yet to grasp the precise harm that the Shaw Court believes this value reductionism causes. Allan Bakke could allege the harm of being denied the right to compete on equal terms for medical school admission - an alleged harm that is concrete, individualized, and material. But, because no North Carolina voters had their voting power diluted, one cannot say a similar injury occurred. Even a districting process that involves the kind of value reductionism we have described does not result in tangible, individualized harm, the kind of harm traditionally considered necessary to create standing. ${ }^{90}$ To understand and apply Shaw, then, we must link the Court's evident concern with value reductionism to a different conception of harm.

One can only understand Shaw, we believe, in terms of a view that what we call expressive harms are constitutionally cognizable. An expressive harm is one that results from the ideas or attitudes expressed

[^21]through a governmental action, rather than from the more tangible or material consequences the action brings about. On this view, the meaning of a governmental action is just as important as what that action does. Public policies can violate the Constitution not only because they bring about concrete costs, but because the very meaning they convey demonstrates inappropriate respect for relevant public values. On this unusual conception of constitutional harm, when a governmental action expresses disrespect for such values, it can violate the Constitution.

Concern for expressive harms focuses on the interpretive dimension of public action. This is the dimension along which such injuries lie, for expressive harms are violations of public understandings and norms. In the language of Robert Cover, "[w]e inhabit a nomos - a normative universe." ${ }^{91}$ Judicial validation of expressive harms reflects concern for the way in which public action can cause injury precisely by distorting or undermining this nomos. The harm is not concrete to particular individuals, singled out for distinct burdens. The harm instead lies in the disruption to constitutionally underwritten public understandings about the appropriate structure of values in some arena of public action.

Expressive harms are therefore, in general, social rather than individual. Their primary effect is not as much the tangible burdens they impose on particular individuals, but the way in which they undermine collective understandings. Governmental action might be thought to implicate these understandings in two ways. When government acts, it must interpret relevant collective understandings insofar as they constrain or guide policymakers. But public action and collective understandings exert a mutually reciprocal influence. Government action does not merely reflect such understandings; it also shapes and reconstitutes them. Governmental actions can express - and therefore perhaps sustain - a reaffirmation or a rejection of these norms. A concern for expressive harms under the Constitution is a concern for precisely these less material, less individualized effects of state action.

If courts grant expressive harms constitutional recognition, they must then engage in exquisitely difficult acts of interpretation. For the material to be interpreted is not a legal text, but the expressive significance or social meaning that a particular governmental action has in the specific historical, political, and social context in which it takes

[^22]place. The quest is not for the intent or purpose behind legislation, at least as those concepts have traditionally been understood; the issue is not what policymakers might subjectively have had in mind or desired. What matters is the social message their action conveys or, less positivistically, the message courts perceive the action to convey. This approach requires courts to attribute a likely social meaning to the action, rather than to discover the subjective intent behind it. ${ }^{92}$ Such exercises of judicial judgment are fraught with complexity and unlikely to yield determinate, single right answers. But courts have not found these potential problems to be reason enough to abandon all judicial concern for expressive harms.

This analysis might sound unfamiliar and obscure. Shaw, however, becomes intelligible only if one recognizes that it rests on just this concern for expressive harms. Shaw validates such harms as constitutionally cognizable, along with more familiar, concrete, material injuries. Indeed, close attention to the language of Justice O'Connor's opinion reveals a constant struggle to articulate exactly these sorts of expressive harms. Thus, the opinion is laden with references to the social perceptions, the messages, and the governmental reinforcement of values that the Court believes North Carolina's districting scheme conveys. ${ }^{93}$ There is simply no way to make sense of these references, which give the opinion its character and are central to its holding,

[^23]without recognizing that the decision is grounded in concern for expressive harms. This conception of constitutionally cognizable harms explains why the Court is adamant that "reapportionment is one area in which appearances do matter."94 If they do, it must be because, even apart from any concrete harm to individual voters, such appearances themselves express a value structure that offends constitutional principles.

Shaw therefore rests on the principle that, when government appears to use race in the redistricting context in a way that subordinates all other relevant values, the state has impermissibly endorsed too dominant a role for race. ${ }^{95}$ The constitutional harm must lie in this endorsement itself: the very expression of this kind of value reductionism becomes the constitutional violation. The justification for this result might rest on the intrinsic ground that the endorsement is wrong, in and of itself; alternatively, the justification might rest on the instrumental ground that this state endorsement threatens to reshape social perceptions along similar lines.

In either case, Shaw depends crucially on judicial recognition of expressive harms under the Fourteenth Amendment. ${ }^{96}$ This concep-

[^24]tion of constitutional harm is intriguing and undoubtedly controversial. To describe and evaluate it in detail would require considerable space. For present purposes, we merely note three brief features of this conception.
a. Legal recognition of expressive harms. Though this conception of harm might at first appear unfamiliar and vague, it is implicitly recognized in many areas of law and public policy. The general distinction between intentional and accidental harms is the most routine example. In torts and criminal law, an intentional and a negligent battery might cause the same quantum of physical injury. Yet common and criminal law understandably treat the former as far more serious. Even if they cause the same objective level of physical injury, the law considers these to be two distinct actions; the distinction rests in the different attitude that an intentional harm expresses toward social norms of individual integrity. Conceivably, the more serious sanctions for intentional harms might be justified as necessary to create optimal deterrence of such actions. But, even apart from incentivealtering calculations, the attitudes expressed through conduct intentionally designed to injure pose a greater challenge to the normative structure underlying social order. The greater challenge such conduct expresses requires a commensurately greater response in the legal sanctions applied - independent of deterrence rationales for greater sanctions. Intentional harms are morally more offensive than accidental ones, and the law reflects this difference in moral evaluation.

For a more interesting and complex example of the difference between expressive and consequential conceptions of harm, consider sentence enhancements for bias-motivated crimes, at issue last Term in Wisconsin v. Mitchell. ${ }^{97}$ From a consequentialist perspective, we

[^25]97. 113 S. Ct. 2194 (1993).
might argue that greater penalties are required to provide greater deterrence. Perhaps these crimes are more common, or perhaps they are more likely to incite retaliatory responses. But, on an expressivist logic, we might argue greater penalties are required because a different, and more threatening, social meaning attaches to the assault. From this perspective, beating up a black man because he is black is a different action, with a different social meaning, than an ordinary assault. The difference between these two forms of justification - consequential and expressive - reflects and shapes collective understandings of why we adopt such measures. In addition, some might believe the constitutionality of such measures, under the First Amendment, depends on whether they are justified on one or the other type of logic. The most important point, though, is that much conduct, like hate crimes, has both an expressive and a consequential dimension; action reveals certain attitudes as well as causing more tangible injuries.

This point can be generalized. Actions of all sorts - public and private, collective and individual - express certain values as well as bring about certain consequences. ${ }^{98}$ Actions both "do" something and "mean" something; at the same time that they bring about certain consequences, they also express some set of values and normative attitudes. Although we do not ordinarily articulate legal harms in these ways, law and policy often, if implicitly, respond to this meaning-making or expressive dimension of actions.

In trying to find the right language to capture this legal concern for expressive harms, we might say that intentional and accidental batteries, or hate crimes and ordinary assaults, are two different actions. Or we might say they are the same action in their material dimension, but distinct in their expressive dimension. Nothing of substance, however, ought to turn on the formal way in which we classify the relationship between an action and its meaning. For action, meaning, and aim are mutually defining, both in social fact and, often, in law and policy.
b. Expressive harms in other areas of constitutional doctrine. Second, the Court has recognized constitutionally cognizable expressive harms in other doctrinal areas, though without using these specific terms. The most striking example is the emergence in recent years of

[^26]the "endorsement test" under the Establishment Clause. ${ }^{99}$ The idea that the First Amendment bans state "endorsement" of religion rests, like Shaw, on a concern for social perceptions; on the perceived meaning of government policies; and on the view that the Constitution reaches not just material harms, but expressive ones. The explicit language with which courts have framed the "endorsement test" is grounded on the same concerns as those central to Shaw. Thus, Justice O'Connor has argued that the problem with a state endorsement of religion, for example, is that it "sends a message to nonadherents that they are outsiders, not full members of the political community, and an accompanying message to adherents that they are insiders . . . ." ${ }^{100}$ In her analysis, the "endorsement test" invalidates government practices that create a perception that the government is endorsing or disapproving of religion. ${ }^{101}$ These concerns for social perceptions, messages, and governmental endorsements of values are central whenever expressive harms are at issue.

That Justice O'Connor is both the author of Shaw and the originator of the "endorsement test" lends credence to the view that one cannot understand Shaw except in terms of concern for expressive values in the area of race and redistricting. To be sure, some commentators have embraced the Establishment Clause "endorsement test" with enthusiasm, ${ }^{102}$ while others have found it vague, empty, or unadministrable. ${ }^{103}$ Any effort to recognize expressive harms through constitutional doctrine must address these kinds of concerns. Despite

[^27]these problems, however, judicial concern for expressive harms is demonstrably a pervasive and long-enduring feature of constitutional doctrine and disagreements. ${ }^{104}$
c. Standing and expressive harms. In much of constitutional law, both substantive and procedural doctrines require that harms be individuated before they become judicially actionable. ${ }^{105}$ Indeed, the current Court has reinvigorated these requirements in recent years, requiring that plaintiffs distinguish their claims from "a generally available grievance about government - claiming only harm to [their] and every citizen's interest in proper application of the Constitution and laws, and seeking relief that no more directly and tangibly benefits [them] than it does the public at large." ${ }^{106}$ As a result, the Court has rejected claims that "abstract stigmatic injuries" can be judicially cognizable. ${ }^{107}$

Yet, when courts recognize expressive harms, this traditional requirement of individualized harm comes under considerable pressure. Expressive harms focus on social perceptions, public understandings, and messages; they involve the government's symbolic endorsement of certain values in ways not obviously tied to any discrete, individualized harm. A significant tension, therefore, exists between recognition

[^28]of expressive harms and traditional requirements of individualized wrongs. ${ }^{108}$

In Shaw, the Court avoided confronting the tension between these traditional requirements and its conception of expressive harm. Given the "special harms" ${ }^{109}$ Shaw recognizes, perhaps any voter in North Carolina - not just those in District 12 and not just those who are white - can legitimately claim to suffer these harms and hence to have standing. In other contexts involving race-conscious policy, blacks do not have legal standing to challenge policies that purportedly benefit them as a group; the fact that some blacks might view an affirmative action policy, for example, as stigmatizing or as essentializing black identity is not the kind of harm that grounds legal standing. Only those disadvantaged in more material and particularized ways suffer the kind of injury necessary for judicial assessment of their claims. Hence, the plaintiffs in affirmative action cases are white individuals or white-owned businesses. Yet the very theory on which Shaw was litigated and decided appears to embrace a much broader conception of legal injury. The complaint, for example, refused to state the race of the plaintiffs and refused to allege the concrete and particularized injury of vote dilution. Instead, the plaintiffs pleaded a right to participate in a color-blind electoral process. ${ }^{110}$ If this is the right at stake, all North Carolina voters might be thought to be injured in the same way and to the same extent.

To bring this claim closer to traditionally recognized ones of individualized harm, the district court rewrote the complaint by taking

[^29]109. Shaw v. Reno, 113 S. Ct. 2816, 2828 (1993).
110. 113 S . Ct. at 2824.
judicial notice that the plaintiffs were white voters. ${ }^{111}$ The Supreme Court then reinterpreted the plaintiffs' legal theory before endorsing it: the claim became a challenge to "legislation so extremely irregular on its face that it can rationally only be viewed as an effort to segregate the races for purposes of voting, without regard for traditional districting principles and without sufficiently compelling justification." ${ }^{112}$ Even so, if the way the legislation is "viewed" is the harm, any North Carolina voter might be similarly positioned and hence equally entitled to standing.

Justice Souter indirectly pressed this issue by arguing that, absent vote dilution, race-conscious districting involves no constitutional harm. ${ }^{113}$ The Court's response revealed just how nonindividualized is the expressive harm central to Shaw:

As we have explained, however, reapportionment legislation that cannot be understood as anything other than an effort to classify and separate voters by race injures voters in other ways. It reinforces racial stereotypes and threatens to undermine our system of representative democracy by signaling to elected officials that they represent a particular racial group rather than their constituency as a whole. Justice Souter does not adequately explain why these harms are not cognizable under the Fourteenth Amendment. ${ }^{114}$
The Court, however, does not adequately explain why these harms are not generalized ones, the kinds of harms for which generalized standing to sue would be appropriate. Indeed, although the conceptions of cognizable harm and standing are directly linked - and standing is both a jurisdictional question and, in part, a constitutional one - the Court leaves issues of standing unaddressed. ${ }^{115}$ The point

[^30]here is that tension exists between the underlying but implicit theory of Shaw and established legal principles, such as those reflected in standing doctrine. There may be principled ways of resolving this tension, but the Court does not confront the conflict or acknowledge it.

## 4. Social Perceptions Versus the "Actual Facts"

Thus far, we have assumed that the North Carolina General Assembly's purpose in designing District 12 was to create a second majority-black district in the state. On this view, the aim of creating a minority district was "the" cause of the "bizarre" district shape. ${ }^{116}$ The social perception of this "fact" seems, at bottom, to be the foundation on which the decision rests. ${ }^{117}$

The central concern of Shaw is this social perception. Seen in this way, Shaw offers a story about the corruption of politics by race consciousness, at least when the latter is carried to extremes. On this view, politicians use civil rights policy, through the pressure the VRA puts on the redistricting process, to manipulate and distort political institutions - or, more precisely, the VRA is being used in ways that create the social perception that this manipulation is taking place.

When the facts are examined from another vantage point, however, Shaw might expose a quite different story. As in many redistricting battles, with their boiling cauldrons of partisan, personal, interestgroup, fair representation, and other motivations, reconstructing the reasons behind North Carolina's actions at each stage is no easy task. The record suggests both a "stronger" and a "weaker" view of the actual facts, and, on either account, Shaw is yet more complex.
a. The strong view of the facts. Recall that the Attorney General objected to North Carolina's initial redistricting plan on the ground that the VRA required creation of a second minority district, which he suggested could be in the southeastern part of the state. The "strong" interpretation of the facts takes this assessment as correct and assumes that such a district, reasonably compact, could indeed have been created. The Court appeared to assume this view, although it did not address the question directly, and the lower court made no formal finding to this effect. ${ }^{118}$ Yet, if this is the assumption on which Shaw is

[^31]decided, what Shaw would reveal is not the manipulation of politics by race, but the manipulation of race by politics.

On this strong reading of the facts, North Carolina could have complied by drawing a reasonably compact minority-dominated district, but it made a deliberate choice not to do so. Yet, on this view, the reasons behind the design of District 12 would have nothing to do with race - and everything to do with protecting incumbent congressmen and seeking partisan political advantage. Faced with a range of choices for creating a second minority district, including a reasonably compact one, the General Assembly made the choice it did for its own reasons. As several Justices appear to have assumed, those reasons were incumbent protection and partisan advantage. ${ }^{119}$ On this assumption, however, political reasons, not concerns involving race, would be the cause or purpose behind the design of District 12 .

At this point, notice that the case would then actually present a conflict between social perceptions and political realities. To restate, the actual reason District 12 appears "bizarre" is that it was designed to protect incumbents and enhance Democratic control of the state's congressional delegation. ${ }^{120}$ Once the Justice Department's objection was lodged, North Carolina was obliged to create a second majorityminority district; but the final shape and location of that district traces to political, not racial, factors. Analytically, we might say two governmental decisions are involved. The first, from the Justice Department, was that North Carolina had to create a second majority-minority district ( $\operatorname{Decision} A$ ); the second, from the North Carolina General Assembly, was where to locate this district (Decision $B$ ). Race was a motivating or dominant factor for Decision $A$, but not Decision $B$.

[^32]From the set of possible majority-minority districts, North Carolina selected District 12 on political, not racial, grounds.

If this "strong" version of the facts is true, two important points follow. First, the North Carolina districting story would reveal the way in which politicians have come to use civil rights and the VRA as a screen; while going to Machiavellian lengths to protect their seats and pursue their partisan agendas, politicians claim "the Voting Rights Act made me do it." This is self-interest masquerading as race consciousness. Political actors thus encourage social perceptions that government has been captured by extremism in the name of race. The backlash, which should be directed at self-interested politicians, instead focuses on the Voting Rights Act, the Justice Department, and race-conscious policymaking. Whether intended this way or not, Shaw might thus be seen as a blow against the cynical manipulation of the VRA.

The second point is related. If the design of District 12 reflects political purposes, any potential equal protection violation would therefore have to reside in the earlier decision - that of the Justice Department to require a second majority-minority district. In legal terms, however, finding such a violation at the first stage of this process would be difficult, at least if the routine application of the VRA remains constitutional, as the opinion suggests it does. For the use of race in Decision $A$ is routine, rather than extreme. Indeed, the decision appears to be a typical application of the VRA; the Attorney General found a violation in the failure to create a second majorityminority district where - applying the Justice Department's traditional criteria, which take geographic compactness into account such a district could be created. Yet nothing in that decision violates the Fourteenth Amendment under the reasoning of Shaw; it is not a decision to ignore all traditionally relevant districting criteria in the name of race.

To see this more clearly, suppose North Carolina had created a relatively compact second district. By definition, this would not trigger the special "district appearance" claim recognized in Shaw. This means that, on Shaw's own reasoning, Decision $A$, which does employ race, does not violate the Constitution. But if Decision $B$ reflects partisan and incumbency purposes, it too does not involve the use of race at all. Thus, Decision $B$ cannot violate the Constitution either.

What does all this establish? That if constitutional principles must assess state action on the basis of "the actual facts," and if we accept the "strong" version of those facts - as the Court appears to do Shaw is difficult to explain or rationalize coherently. From that, we
might conclude that Shaw is simply wrong. Alternatively, we might conclude that the seemingly noncontroversial first premise is wrong: perhaps the mistake is in assuming that constitutional principles must be applied to "the actual facts." Yet what could the alternative possibly be? The best answer would have to be that constitutional principles can properly apply to the social perceptions the facts generate, rather than be confined to the actual facts themselves.

This extraordinary conception of constitutional adjudication would have to underlie Shaw if the Court is assuming the "strong" version of the facts. Shaw would then rest on social perceptions in a much deeper way than our initial description suggests. That is, when the Court says, "we believe that reapportionment is one area in which appearances do matter," ${ }^{121}$ that belief would have to be operating at two levels. For it is the appearance - not the fact - that a district's appearance reflects value reductionism in the name of race that lies behind Shaw.

If District 12 were indeed drawn for incumbency and partisan reasons, Shaw would ultimately involve a conflict between social perceptions and the actual facts of politically self-interested districting. Once the Court assumed this kind of conflict, which it appears to have done, the Court had three options. First, it might have rejected the equal protection claim in an opinion that exposed the politically self-interested manipulation of race. For those who believe the Court can play a significant educative role, this might have been the preferred course: let the citizens of North Carolina know that their politicians, not the VRA, are to blame.

Second, the Court might have focused only on the actual facts, rather than attempt to assess the social perceptions they created. If no constitutional principle prohibits bizarrely shaped districts when designed for the purpose of protecting incumbents, then no constitutional violation would exist. ${ }^{122}$ Many will believe this to have been the better course. After all, legal principles that turn on social perceptions, rather than "the actual facts," will not make judicial decisionmaking any more consistent or predictable.

The third option would be to apply constitutional principles in a way that gives social perceptions priority over the actual facts. To the extent the Court's opinion assumes the "strong" version of the facts,

[^33]this rather remarkable option is the one the Court chose in remanding the case for strict scrutiny assessment. Before dismissing this choice as confused or unworkable, we ought to consider whether social perceptions should be excluded from the proper concerns of constitutional law. For many purposes social perceptions are no less "real" than actual facts; these perceptions play a critical role in defining and shaping the prevailing political culture. Perhaps constitutional law is properly concerned with the character of this public culture. Indeed a surprising number of constitutional doctrines or Supreme Court decisions are difficult to rationalize in functional terms; for example, some decisions preclude legislatures from using certain means to achieve a particular end but permit other means to achieve exactly the same end. ${ }^{123}$ The best justification for these doctrines and decisions is that they are geared toward cultivating certain collective understandings in the political culture, rather than toward prohibiting certain end states from being achieved. That is, these doctrines require public officials to understand the relationship between certain values in a particular way. Shaw rests precisely on this kind of concern for appropriate public understandings regarding the relationship of race to redistricting. Thus, on the strong view of the facts, Shaw must stand for the view that extremely contorted minority districts convey the social impression that race has dominated public decisionmaking - that the appearance that race has played such a role violates the Fourteenth Amendment. More concisely, appearance is part of the reality the Constitution addresses.
b. The weak view of the facts. If this interpretation of Shaw is incorrect, it must be because a different set of facts lies behind the North Carolina districting scheme. The alternative, "weaker" view of the facts would be that North Carolina could not have created a signif-

[^34]icantly more compact second minority district than CD12. On this view, the Justice Department erred in concluding that the state could have created such a district. In light of the difficulty of reaching firm conclusions from the record, ${ }^{124}$ this possibility cannot be dismissed. If the Justice Department were mistaken, then the "bizarre" shape of CD12 would reflect good-faith efforts of the North Carolina General Assembly to comply, not self-serving political ends. Perhaps when the General Assembly attempted to design a second minority-controlled district, the only possibilities turned out to be districts as odd in shape as the one the Assembly eventually chose. ${ }^{125}$

If this account is accurate, the reasons behind the design of CD12 would be more purely race-conscious ones. No manipulation of the VRA or racial symbolism for narrow partisan advantage or protection of incumbents would have been involved. Instead, the state was primarily motivated by the goal of creating a second minority-controlled district; this motivation, not others, would account for the peculiar shape of CD12. To some, this version of the facts might make the design of the district less troubling. On this view, it is far worse for politicians to manipulate social perceptions and pursue political agendas under the guise of complying with federal law and ensuring fair minority representation. When the only means of ensuring fair and effective minority representation is through oddly shaped districts, the direct and exclusive pursuit of this goal should, on this view, be accepted. To others, the weaker interpretation of the facts would make the case even more troubling, for race would then be the dominant purpose behind CD12. Now the actual facts (not the social perceptions) would be that concerns for race had dominated all other redistricting values.

The judicial opinions in Shaw and the record evidence we have reviewed do not permit us to make a convincing choice between the "strong" and "weak" views of the facts. ${ }^{126}$ Certainly the Court comes

[^35]closest to having assumed the strong version. ${ }^{127}$ Moreover, the very terms in which the Court chose to confront the formal legal question to be decided assumes this strong version of the facts. Thus, the appellants initially filed a broad jurisdictional statement that directly challenged the state's power to draw majority-black districts. ${ }^{128}$ But in noting probable jurisdiction of the case, the Court directed the parties to brief a different and narrower question:

Whether a state legislature's intent to comply with the Voting Rights Act and the Attorney General's interpretation thereof precludes a finding that the legislature's congressional redistricting plan was adopted with invidious discriminatory intent where the legislature did not accede to the plan suggested by the Attorney General but instead developed its
the Civil Rights Division, U.S. Department of Justice, copy on file with authors). In reaching this conclusion, the General Assembly, which Democrats controlled, rejected at least two Repub-lican-sponsored alternatives that would have arguably created two minority-dominated districts (as well as, presumably, having Republican-favored partisan effects). The stated reasons for these rejections were that, in one plan, the second district was "so sprawling that it was most often described as 'ludicrous' or 'absurd,' ' id. at 1 , and that, in the other alternative, the second district
sprawled all over eastern North Carolina and looked like a river with many tributaries running from Virginia in the north to Wilmington in the south. It would be exceedingly hard to campaign effectively in this area, or to represent it well, since in many areas it is only one precinct wide.
Id. at 2. Thus, Republicans in North Carolina were no less willing to design highly contorted districts than the General Assembly was when the Assembly created District 12. Moreover, if these reasons are taken at face value, they suggest that the General Assembly sought to avoid extremely distorted districts and ended up with one only after the Department of Justice's denial of preclearance; these comments also suggest that designing a reasonably compact second minority district was considerably more difficult than the "strong" version of the facts assumes. Of course, whether the reasons the General Assembly offered should be taken at face value is a question that would require more detailed factual inquiry.

Second, it is difficult to judge (from the record material we have seen) the basis on which the Justice Department concluded that a second, reasonably compact minority district could have been created in southeastern North Carolina. The only map proposing such a district we have been able to discover in the record is that which the NAACP submitted to the Justice Department with a memorandum dated Oct. 29, 1991. This memorandum stated " $[t]$ here are many ways that the population in the Southeast area of North Carolina can be configured to create another minority district. Our proposal is created to show that there is the possibility of the district." Memorandum from Samuel L. Walters, Assistant General Counsel, NAACP to George Harrison, Voting Rights Division, U.S. Department of Justice 1 (Oct. 29, 1991) (on file with authors). Yet this memorandum itself acknowledged that "[ $[$ ] he map shows the district is not the most compact one ever created," id., and the proposed district would have had a population (not voting-age population, as far as we can tell) that would have been $51.2 \%$ Black and $\mathbf{8 . 4 \%}$ American Indian. Id. at 2. Thus, even the district the NAACP proposed apparently depended on aggregating minority populations to create a second minority-controlled district. Whether the VRA permits or requires such aggregation of minority groups, and under what circumstances, remains a major unresolved question. The Justice Department did not specify the particular location of the second district it had in mind and generally refrains from proposing detailed district designs that local governments must follow. While the Court understandably seems to have accepted the Justice Department's assertion that a reasonably compact second district could have been created - the "strong" version of the facts - the record material we have been able to review does not convincingly establish this conclusion.
127. See supra text accompanying note 118.
128. Shaw v. Bart, 808 F. Supp. 461 (E.D.N.C. 1992), appeal docketed, No. 92-357 (U.S. Aug. 25, 1992).
own. ${ }^{129}$
This way of framing the issue assumes the state could have complied, but deliberately chose its own alternative.

The factual ambiguity behind Shaw v. Reno suggests two quite different interpretations of the decision's reach. Because the Court seemingly decided the case after assuming the strong version of the facts, Shaw might be read as addressing only similar factual contexts. That is, Shaw might stand for the more narrow proposition that a state must justify "highly irregular" minority districts under strict scrutiny when - and only when - the state could have created a reasonably compact minority district instead. If this reading is right, Shaw would turn out to be a case of minimal significance addressing only exceptional circumstances; it would have no impact on actual minority representation. States would have to choose more compact districts over extreme ones, but the number of minority districts in a state or nationwide would not be affected. This interpretation of the decision is consistent with the actual question the Court purported to decide and assumes, as the Court seemingly did, the strong view of the facts.

Alternatively, Shaw might stand for the broader proposition that, even when a state has no other way of creating a minority district, it cannot resort to "highly irregular" shapes to do so without other compelling justifications. This reading, of course, would have far greater effect on minority districts throughout the country; precisely how great depends on the meaning courts give to "highly irregular," a question on which we offer guidance in Parts III and IV. Conceivably this question might be addressed on remand, for the state might seek to defend its district on the ground, in part, that no more significantly compact minority district could have been created.

The facts the Court apparently assumed and the precise legal question presented provide support for reading Shaw narrowly. But, as a predictive matter, we think it more likely the broader reading will prevail. Particular factual contexts often influence the atmosphere in which the Court approaches major legal issues, but those precise facts are sometimes left behind as courts seize upon the broad legal principles the Court has seemingly laid down. In City of Richmond v. J.A. Croson Co., ${ }^{130}$ for example, the atmosphere surrounding the Court's review of state affirmative action set-aside programs was certainly influenced by the fact, which the Court stressed, ${ }^{131}$ that black officials controlled Richmond's city council. Yet the racial composition of the

[^36]enacting body has become irrelevant as lower courts have taken Croson to establish broad constitutional principles for local set-aside programs. ${ }^{132}$

In the redistricting context, it seems unlikely that courts will read Shaw to distinguish between "bizarre" minority districts that are the only way to enhance minority representation and "bizarre" districts created where reapportionment bodies could have designed more compact ones. Shaw emphasizes its own specific facts, but the decision is simultaneously written in broad rhetorical and legal terms. To the extent the decision is primarily focused on the social perceptions about politics and race that the Court views irregular race-conscious districts as generating, it seems yet more implausible that courts will distinguish necessarily irregular districts from more superfluous ones. Thus, we think it most likely courts will emphasize the broad themes of Shaw and apply it as a general constraint on "highly irregular" race-conscious districts.

## 5. Does Shaw Apply to White Districts?

In order to test this analysis, consider whether Shaw applies to districts whose general or voting-age population is overwhelmingly white. Formalistically, and doctrinally, this might be viewed as an easy question: equal protection cannot apply differently to white-dominated and black-dominated districts. Indeed, a defining trait of the current Court is its emerging commitment to the principle that the Equal Protection Clause cannot apply differently depending on the specific racial group that legislation benefits, burdens, or singles out. This vision informs the strict scrutiny standard adopted in City of Richmond v. J.A. Croson Co. ${ }^{133}$

Yet, in the redistricting context, this kind of formal equality seems particularly odd as well as inconsistent with any purposive, rather than formal, interpretation of Shaw. To begin with, Shaw does not recognize a general constitutional barrier to "highly irregular" districts. ${ }^{134}$ Strict scrutiny is not required for districting that is "bizarre on its face," but only for districting that is "so bizarre on its face that it is 'unexplainable on grounds other than race.' "135

If we ask how best to give meaning to these principles when ap-

[^37]plied to white-controlled districts, the social and political contexts in which such districts are likely to arise suggest that Shaw might rarely, if at all, apply. Highly irregular, white-controlled districts might be created in three general contexts. First, they might be located in a state, like Iowa, that is overwhelmingly white. Conceivably, such a district might involve contorted boundaries for a number of reasons, including partisan advantage, incumbency protection, or enhancement of one local economic interest at the expense of others. Yet, by definition, the strange appearance of such a district could not be understood in racial terms, let alone only in racial terms. Thus, on its own terms, Shaw would not apply.

Next, consider a similar district in a state with a significant black population, but where the oddly shaped white district is located in a region of the state far removed from where most black residents live. Congressional District 4, in Tennessee, appears to be such a district; it cuts a swath through the middle of the state and, as our quantitative analysis will show later, it is one of the most diffused districts in the country. ${ }^{136}$ Tennessee's voting-age population is $14.6 \%$ black, but largely concentrated in the southwestern part of the state, around Memphis. Thus, no plausible basis appears to exist for concluding that race explains this "highly irregular" district. Any district that might reasonably take its place, no matter how compact, would likely include a similar percentage of white voters. Under this scenario, the district might be odd, but not because it is "segregating" races. Again, on its own terms Shaw presumably would not apply; Tennessee would not have to defend this district under strict scrutiny.

The third, more complicated, scenario would involve a highly irregular district in a state with a significant black population or in a region in which such a population lives. If the state designs the district with a racially discriminatory intent or if the district results in minority-vote dilution, it would be unlawful without regard to Shaw. But, if it is not unlawful on those grounds, could such a district plausibly generate the perception that it has been designed for racial reasons? In the absence of illegal minority-vote dilution, this scenario is factually unlikely because numerous nonracial reasons might account for the district's irregular shape. However base or noble the motivations of partisan manipulation, incumbency protection, and the like might be, they are not racial motivations. Nor are whites likely to benefit, as whites, from contorted district shapes that do not have the effect of diluting minority votes. In other words, when people see "bi-

[^38]zarrely shaped," white-dominated districts - and no illegal vote dilution is taking place - are they likely to perceive those districts as extremist creations in the name of race, at least as Shaw understands that concept? ${ }^{137}$

The important general point here is that many reasons might explain oddly shaped white-dominated districts. Yet similar black-dominated districts are more likely to reflect a single, recurring aim: to enhance effective minority representation. This asymmetry is a function of the social realities of race in this country and of the existence of the VRA. Whites do not need to be concentrated into districts to assure their effective political participation; in contrast, as the VRA recognizes, minorities might need effective control over some "safe" districts to avoid their submergence in a hostile majority.

In terms of applying Shaw, this means that, in principle or in actual fact, Shaw is unlikely to affect white districts. Only in the third scenario is Shaw potentially relevant, and, even there, it seems unlikely that courts will find race to be the basis for contorted majority-dominated districts (in the absence of actual vote dilution). This result might seem an obvious corollary of the "similarly situated" requirement of equal protection: given social realities, black and white districts rarely, if ever, arise in similar circumstances. But courts, including the Supreme Court, might find it difficult to embrace this conclusion directly. To announce that Shaw constrains only the choices of policymakers designing minority-controlled districts is, at the least, awkward, particularly for a Court committed to formal equality. Yet the logic of Shaw itself would seem to dictate such a conclusion.

We are now in a position to summarize the purposes and principles that underlie Shaw. Government cannot redistrict in a way that conveys the social impression that race consciousness has overridden all other, traditionally relevant redistricting values. In the Court's view, certain districts whose appearance is exceptionally "bizarre" and "irregular" suggest that impression. Plaintiffs need not establish that they suffer material harm, in the sense of vote dilution, from such a district. Shaw is fundamentally concerned with expressive harms: the

[^39]social messages government conveys when race concerns appear to submerge all other legitimate redistricting values.

Identifying these principles is one task; giving meaningful content to them is another. The "special harms" which concern the Shaw Court arise only when some threshold of distorted district "appearance" has been crossed. But how is that threshold to be recognized? If Shaw is fundamentally concerned with social perceptions, can legal criteria be developed to discipline the inquiry - of courts and reapportionment bodies - into these perceptions? Alternatively, are these expressive harms so inarticulable and unquantifiable that courts must be left to apply their intuitive judgments in an ad hoc, case-by-case fashion?

In Part II, we describe previous efforts of courts to give content to similar requirements governing election-district shape. The unpromising history of these efforts suggests the need for an alternative approach. In Part III, we develop quantitative standards for judging district appearance and thereby giving content to Shaw's principles.

## II. Compactness Under State Law and the Voting Rights Act

Shaw raises the issue of district compactness in an unusual - indeed, singular - legal context: the constraints the U.S. Constitution imposes on the appearance of legislative districts. As noted earlier, Shaw is the first case to suggest such a constraint as a matter of federal constitutional law. ${ }^{138}$ Issues of district compactness ${ }^{139}$ have arisen in

[^40]two other legal contexts, however, and judicial experience from these other settings provides a starting point for considering the ways courts might implement Shaw.

First, twenty-five states, through state constitutions or statutes, require compact legislative districts. ${ }^{140}$ In practice, these requirements have been largely ineffective. ${ }^{141}$ Second, the VRA itself, as interpreted in Thornburg $v$. Gingles, ${ }^{142}$ requires proof that a reasonably compact minority district could be created in order to establish substantive liability. ${ }^{143}$ Although only a few decisions have addressed this aspect of Gingles, the VRA cases provide useful additional information concerning judicial implementation of compactness standards. This experience also suggests that, absent quantitative guidelines, judicial efforts to give content to compactness requirements are likely to be inconsistent, ad hoc, and unpredictable.

Neither of these experiences suggests that easy solutions will be forthcoming to Justice White's concern that Shaw is unworkable. ${ }^{144}$ Recent developments in both technology and the social sciences, however, offer a principled and judicially administrable way out of this new redistricting "thicket." ${ }^{145}$ That path involves embracing quanti-
each state. Reapportionment Act of 1842, ch. 47, 5 Stat. 491. Despite the Act, New Hampshire, Georgia, Mississippi, and Missouri conducted their 1842 elections under at-large systems; over protests, Congress seated all the members of these states. Congressional Quarterly Inc., supra, at 18.

In 1901, Congress added a compactness requirement to the Act, Reapportionment Act of 1911, ch. 5, §3, 37 Stat. 13, 14; Reapportionment Act of 1901, ch. 93, § 3, 31 Stat. 733, 734, but this requirement was soon dropped. Reapportionment Act of 1929, ch. 28, § 2a, 46 Stat. 21, 26. See generally Steve Bickerstaff, Reapportionment by State Legislatures: A Guide for the 1980s, 34 Sw. L.J. 607, 610-11 (1980) (describing Congress's failure to pass a reapportionment act after the 1920 Census, thus delaying reapportionment until passage of the federal Reapportionment Act of 1929). The compactness requirement has never been revived. See Wood v. Broom, 287 U.S. 1 (1932) (interpreting the federal Reapportionment Act of 1929 to repeal compactness requirement); cf. Franklin v. Massachusetts, 112 S . Ct. 2767, 2771 (1992) (discussing the passage of the Reapportionment Act of 1929). Today, only the seven states that are entitled to a single representative - Alaska, Delaware, Montana, North Dakota, South Dakota, Vermont, anci Wyoming - hold at-large congressional elections. For a good overview of congressional reapportionment acts, see Emanuel Celler, Congressional Apportionment - Past, Present, and Future, 17 Law \& Contemp. Probs. 268 (1952).
140. Grofman, Criteria for Districting, supra note 7, at 85. In Hawaii, Iowa, Missouri, Montana, Virginia, West Virginia, and Wyoming, state compactness requirements apply to congressional redistricting. See Larry M. Eig \& Michael V. Seitzinger, Congressional Research Service, State Constitutional and Statutory Provisions Concerning Congressional and State Legislative Redistricting, CRS Rep. No. 81-143A (June 7, 1981) (citing statutes and constitutions from Hawaii, Iowa, Missouri, Montana, Virginia, West Virginia, and Wyoming); see, e.g., Shayer v. Kirkpatrick, 541 F. Supp. 922, $931-32$ (W.D. Mo.), affd., 456 U.S. 966 (1982).
141. See infra text accompanying notes 149-55.
142. 478 U.S. 30 (1986).
143. See supra note 13 and accompanying text.
144. Shaw v. Reno, 113 S. Ct. 2816, 2842 (1993) (White, J., dissenting).
145. Justice Frankfurter coined the phrase "political thicket" in Colegrove v. Green, 328
tative measures of "district appearance" that social scientists and statisticians have developed in recent years.

## A. State Compactness Requirements

Nearly all of the twenty-five states that require compact districts express this requirement in qualitative terms. Many provisions simply require that districts be "compact," often in a ritualistic trilogy like the following from the Illinois Constitution: districts must be "compact, contiguous and substantially equal in population." ${ }^{146}$ In other states, this language is modified by provisions requiring that districts be as "compact as possible," as "compact as practicable," or "reasonably compact." ${ }^{147}$ Just two states, Iowa and Colorado, express compactness requirements in specific quantitative formulas. ${ }^{148}$

With respect to both reapportionment practice and judicial decisionmaking, these requirements have been ineffective. The requirements seem to be infrequently litigated; when they are, state courts have been reluctant to enforce them, expressing extreme deference to political bodies. To be sure, a few courts have overturned redistricting plans on state law compactness grounds. ${ }^{149}$ Not surprisingly, perhaps,

[^41]the state courts in the two states, Iowa and Colorado, that embody compactness standards quantitatively are among the few courts to have found compactness violations. ${ }^{150}$ Generally, however, state courts purport to enforce these requirements while signaling that they will seriously scrutinize only dramatic departures from the requirements. Often, courts will not invalidate individually noncompact districts unless they find the entire districting plan to be insufficiently compact. ${ }^{151}$ In addition, when state courts do confront challenges to district compactness, they typically rely on their own intuitive visual assessments - even when the parties have presented expert testimony analyzing districts through quantitative measures. ${ }^{152}$

This article provides quantitative information that bolsters the sense one gets from reading the caselaw that qualitative compactness standards have little practical effect. Using social-scientific methods that we describe and justify later in this article, we have compared the compactness of U.S. House of Representatives districts in the 1980s and 1990s in those states that legally require compact congressional districts with those that do not. Table 1 presents these results.

[^42]Table 1
Compactness of U.S. House Districts in 1980s and 1990s by Presence of Compactness Requirements ${ }^{153}$

|  | Dispersion Scores <br> Range |  | Perimeter Scores |  |
| :--- | :--- | :--- | :--- | :--- |
| Range |  |  |  |  |$\quad$| Mean |
| :--- |

Note: States with only one congressional representative are excluded. Hawaii, Iowa, Missouri, Montana, Virginia, West Virginia and Wyoming require compactness for congressional districts. Montana in the 1990s and Wyoming in both decades are excluded as single-district states.

For present purposes, it is sufficient to know that the quantitative measures of district compactness in Table 1 vary from 0.0 to 1.0 , with more compact districts scoring higher on this scale. As Table 1 reveals, there appears to be no meaningful difference, either in the 1980s or the 1990s, between the compactness of congressional districts in states that legally require it and those that do not. ${ }^{154}$ This result suggests that redistricting bodies do not take compactness into account any more when it is legally required, and that courts have not been willing to enforce such requirements in ways that affect outcomes.

The number of states that require compactness of congressional districts is small; hence, conclusions based on these data must be tentative. ${ }^{155}$ Nevertheless, the best inference from the available information is that, as presently enforced, qualitative state compactness requirements do little to stimulate greater regularity in congressional district shapes.

[^43]
## B. Compactness Requirements Under the Voting Rights Act

Legal requirements that districts be compact also arise under the VRA. ${ }^{156}$ The Court has yet to give this requirement much specific content. Last Term, however, in another significant voting-rights case, Growe v. Emison, ${ }^{157}$ the Court intimated that state and local jurisdictions, as well as lower courts, were paying insufficient attention to compactness. Growe might suggest that the Court is likely to return soon to the requirement of compactness under the VRA. ${ }^{158}$

Even before the Supreme Court's focus on compactness last Term, questions of appropriate district shape were becoming increasingly important in the lower courts. ${ }^{159}$ Under the VRA, compactness arises both as an element of plaintiffs' claims and as a defense put forward by jurisdictions. Compactness concerns can also arise at both the liability and remedial stages of litigation. To date, only a handful of federal courts have addressed these issues; like the state courts, those that have done so have relied on intuitive, eyeball assessments rather than quantitative standards. The decisions display considerable inconsistency. ${ }^{160}$

At one pole, some courts have viewed the governmental interest in enhancing minority representation as sufficient in and of itself to justify contorted district shapes. The leading example is Dillard $v$.

[^44]Baldwin County Board of Education, ${ }^{161}$ in which the court rejected the county's argument that a proposed majority-minority school board district would be "too elongated and curvaceous." 162 The court explained that compactness "does not mean that a proposed district must meet, or attempt to achieve, some aesthetic absolute, such as symmetry or attractiveness." ${ }^{163}$ Thus, the court accepted plaintiffs' proposed districting plan for the county board of education, even though it included this narrow, elongated district. ${ }^{164}$ Other courts have taken a comparative approach. They hold minority-controlled districts that "look rather strange" to be nonetheless sufficiently compact when they "are not materially stranger in shape than at least some of the districts contained" in a jurisdiction's current districting plan. ${ }^{165}$

At the other extreme, some courts decline to find substantive VRA liability when the only possible minority-controlled districts are, in the court's view, insufficiently compact. Thus, one federal court recently rejected a proposed district as "an odd contortion" that "reaches down to get a pocket of white voters in the south-east-central part of the county and then curves around to the west and then back to the north-east corner of the county . . . ."166 Rhetorically asking, "does a legislative body have to draw lines in a distorted way?" the court answered "no." 167 Similarly, another federal court recently rejected a VRA challenge to a county supervisory district in which the plaintiffs' proposed plan joined black residents from three distinct municipalities into a single district. The court concluded that " $[t]$ his exercise results in extreme gerrymandering," with the district being "drawn in an unusual or illogical manner." ${ }^{168}$

Courts also merge the definition of compactness into other relevant districting criteria, such as whether the district preserves a "commu-

[^45]nity of interest" or enables "effective representation." Yet, even when courts merge these inquiries, the decisions continue to conflict. For example, the Dillard court said "a district would not be sufficiently compact if it [were] so spread out that there was no sense of community" 169 and then went on to accept a narrow district that stretched most of a county's length. In contrast, the court in East Jefferson Coalition for Leadership and Development v. Jefferson Parish ${ }^{170}$ adopted a similar "recognizable community" definition of compactness, ${ }^{171}$ but, in applying the standard, it held that a thirty-five-sided district that crossed the Mississippi River failed to meet the standard. The failure to create this district, therefore, did not constitute a VRA violation. ${ }^{172}$

Different federal courts have also interpreted compactness requirements inconsistently with respect to the same geographic features. A recurring issue is whether minority areas in different regions can be joined through corridorlike connections. One court rejected a districting plan that connected two black populations by a "long, narrow corridor." The court labeled this "unacceptable 'gerrymandering'" that "arbitrarily cuts diagonally through the center of the county." ${ }^{173}$ But another court explicitly approved a "corridor" between black populations, concluding that it was "not unreasonably irregular in shape,

[^46]173. Potter v. Washington County, 653 F. Supp. 121, 130 (N.D. Fla. 1986).
given the population dispersal within the County." ${ }^{174}$
Whether any of these federal court decisions merely appear to be in tension with each other, or directly conflict, cannot be determined without an intensely local appraisal of each geographic context. At the least, however, these decisions, and others like them, ${ }^{175}$ reveal considerable uncertainty as to how courts and other bodies interpret and weigh compactness against other relevant redistricting values. This is not surprising: compactness is the conceptual point at which the tension between the traditional American commitment to territorial districting and the VRA concern for fair representation of group interests must be resolved. ${ }^{176}$

The appropriate trade-off between enhancing minority representation and respecting the interests reflected in a territorial-based districting system is both elusive and an issue of considerable political and

[^47]philosophical conflict. In the absence of some guidelines for making this trade-off, the likely result will be increasingly inconsistent judicial decisions and manipulative uses of the VRA by districting bodies. One alternative is to develop quantitative approaches for evaluating district appearance. In Part III, we turn to that task.

## III. Defining District Appearance Consistently

Recent developments in both theory and technology now make it possible to evaluate district "appearances" in a systematic and consistent way. Quantitative information can now be generated concerning different aspects of an election district's shape, including how much its borders meander and how much the area it covers is concentrated or diffused. In this Part, we show how such quantitative measures provide a better alternative to judging district "compactness" than the intuitive approaches courts used before Shaw. In addition, Shaw elevates the stakes considerably in the search for a workable means of defining "irregular" districts, for, with a constraint of this sort constitutionally enshrined, judicial power over the politics of redistricting is potentially expansive, undisciplined, and explosive. Quantitative measures for assessing election-district shapes provide perhaps the most promising approach to turning Shaw into a set of relatively clear and principled guidelines.

The theory of Shaw makes social perceptions about district appearance central. This might suggest that these social perceptions are what we should seek to quantify. Nonetheless, for several reasons, we focus instead on district appearance itself. Although we believe the impulse behind Shaw ultimately rests on judicial concerns for social perceptions, we believe those concerns must necessarily operate at a general level, rather than forming the basis for concrete decisions regarding particular districts. That is, Shaw is not likely to become a transmission belt through which social perceptions are directly relayed, case by case, into constitutional doctrine. The spectre of legal decisions turning on public opinion surveys is no more appealing here than in other areas in which legal doctrine is nonetheless responsive, in a general sense, to social perceptions. The problem is not just the unadministrability of any legal standard grounded on such vaporous foundations. More importantly, the relevant social perceptions would have to be ones the legal system could legitimately credit; only perceptions that are properly informed, for example, and generated under normatively appropriate conditions could plausibly be relevant. Thus, the relevant social perceptions would have to reflect acceptance of governing law, such as the VRA itself, as well as awareness of relevant
general facts, such as, perhaps, the way in which redistricting routinely operates.

As a result, courts implementing Shaw cannot treat social perceptions as a brute fact on which to ground decisions, even if we could measure those perceptions accurately. Courts must inevitably play the more active role of attributing normativity to certain perceptions; in the mediating legal language typically used in such contexts, courts must decide which social perceptions to deem "reasonable." Ordinary observers, for example, might recoil at the shape of many or most congressional districts today, but Shaw does not penetrate this deeply into the foundations of current politics. Shaw is designed to deal with aberrational contexts, not routine ones - with "highly irregular" and "bizarre" districts, not common ones. Courts will have to determine legitimately and consistently when this line can be said to have been crossed.

Shaw thus sets into motion constitutional doctrine ultimately concerned with social perceptions and collective understandings, but a doctrine that courts must necessarily implement with some critical perspective on these perceptions. At the moment, there appear to be two alternative methods by which courts might take on this role. The first is for courts to evolve, on a case-by-case basis, a series of qualitative judgments concerning when districts are sufficiently "irregular" to trigger strict scrutiny. In the context of redistricting, this common law evolutive approach poses multiple dangers. Individual judges do not confront enough redistricting cases to be likely to develop sufficiently informed intuitions about the broader pattern of district shapes. If left to their untutored qualitative assessments, judges are likely to render inconsistent and unpredictable decisions, as has occurred with previous efforts to enforce compactness standards. Yet the costs of uncertainty in this area are particularly high. Redistricting forces on all sides will struggle to exploit any uncertainties for political gain. Fomenting yet more litigation and further delaying the time at which plans become effective create additional costs.

The second alternative for implementing Shaw - the quantitative approach we develop here - is more promising, not just for implementing Shaw, but for other, related purposes. First, Shaw requires that values associated with district appearance be judicially separated from other relevant redistricting concerns; district appearance triggers strict scrutiny, after which jurisdictions must offer sufficient justifications to account for "highly irregular" shapes. To implement this framework, district appearances must therefore be separated, at least initially, from other districting values. Before Shaw, many commenta-
tors had resisted treating appearance or compactness as of any intrinsic value; compactness might be associated with relevant substantive districting values, like preserving communities that shared common political interests, but commentators viewed compactness as a poor proxy for those values. ${ }^{177}$ Similarly, commentators disagreed as to whether a requirement of compactness is an important instrumental prophylactic against partisan and other forms of gerrymandering. ${ }^{178}$
177. Commentators have generally argued that compact districting directly advances three principal values: enhanced communication between representatives and constituents; greater voter knowledge of their representatives and of their political "neighbors"; and greater trust in the legitimacy of a political system in which districts appear "fairly" shaped - or, at least, not obviously unfairly shaped.

With respect to the first value, some have argued that technological changes - such as telephones, modern highway systems, fax machines, and the like - considerably undermine the relationship between compactness and effective communication. See, e.g., Cain, supra note 7, at 32-33. At the same time, communication still often takes place in group contexts, with legislators meeting all manner of boards, committees, organizations, governmental bodies, and so on. Compact districts might facilitate communication because they are likely to hold in check the number of such groups. Empirical evidence on this question is slim. "Community-based" districts make it more likely that constituents can identify their congressmen, though this result does not necessarily mean that such districts encourage better communication. Richard G. Niemi et al., The Effects of Congruity Between Community and District Congruity on Salience of U.S. House Candidates, 11 Legis. Stud. Q. 187 (1986). There is, of course, no guarantee that compact districts enhance communication, but the question is whether there is any meaningful tendency in this direction.

With respect to voter knowledge, the above study suggests, not surprisingly, that constituents are more likely to know the names of their congressmen when the lines of districts and "natural" communities coincide. See id. at 187-88 (citing studies). At the same time, "meaningful" and compact districts are not necessarily the same. When cities or other political subdivisions are themselves noncompact, requiring compact districting would be at odds with this very concern. See Grofman, Vince Lombardi, supra note 7, at 1263 (advocating a "cognizability," rather than a compactness, standard).

Finally, with regard to the claimed relationship between compactness and political legitimacy, critics have argued the public knows so little about districting that any such effect can be safely ignored. See Cain, supra note 7, at 188-91. Shaw, however, with its evident concern about social perceptions, appears to reject this argument.

Of course, to the extent that departures from compactness are necessary to promote other values, such as enhancing fair and effective minority representation, a complete assessment of compactness must weigh the costs of departing from it against whatever values it might intrinsically serve. Cain writes:

Those who argue for the importance of compactness must be willing to accept limitations on the achievement of equity for minorities. . . . From the perspective of the white, median voter in this country, compactness is desirable, since it enhances the strength of the major-
ity. From the perspective of the nonwhite population, compactness deprives them of equita-
ble representation for the same reason.
Id. at 51.
178. For a strong argument that compact districting does tend to minimize impermissible gerrymandering, see Justice Stevens's separate opinion in Karcher v. Daggett, 462 U.S. 725, 75558 (1983) (Stevens, J., concurring). Nevertheless, compactness certainly is not sufficient to guarantee fair distribution of power among competing groups - assuming, for the moment, that fairness is to be measured through some degree of proportionality between groups in the electorate and in the representative body. An equitable distribution of power depends on the geographical distribution of the relevant groups. In addition, computer programs now allow the creation of large numbers of potential districts, all of them compact, but differing in their partisan, racial, and other characteristics. Thus, the ability of compactness to serve as a partial constraint on gerrymandering is lesser now than previously. See generally Cain, supra note 7, at 3538.

For Fourteenth Amendment purposes, however, the terms of the debate have shifted. Shaw isolates district appearance and turns it into a threshold factor for setting strict scrutiny into motion. Thus, district appearance must now be constitutionally assessed, in and of itself, regardless of whether commentators might value it intrinsically, instrumentally, or not at all.

Second, outside of constitutional law, Shaw will also likely pressure courts to focus more attention on what compactness ought to mean under the VRA. Statutory requirements of compactness will be implicated in numerous voting-rights cases, particularly for dispersed minority populations, thus generating the need for clear guidelines implementing this element of the VRA. Quantitative measures of compactness are a way of providing clear and consistent standards for courts and reapportionment bodies to follow.

Third, such measures can be used to shift the focus of courts and others from individual districts, examined in isolation, to the pattern of districting within a state, as well as nationwide. We can also compare the shapes of districts historically, enabling examination of the response of district shapes to various forces over time. This kind of information can make judicial inquiry into district "appearances" meaningful by establishing the baselines against which individual districts can be evaluated. Absent such baselines, different judges are likely to find quite different districts failing their intuitive conception of "bizarre." This information is also crucial for general public discussion of where we are and ought to be in the legal regulation of the redistricting process. Thus, in Part IV, we are able to rank all the current U.S. congressional districts, compare North Carolina District 12 to other districts, indicate how many majority and minority districts are designed in ways that might trigger the strict scrutiny of Shaw, and compare U.S. congressional districts over time.

The information we provide here should be used carefully, and we must note several caveats at the outset. As in most legal areas, quantitative measures for redistricting are not a panacea. With respect to the question in Shaw, quantitative measures cannot be used mechanically to determine whether a district is "bizarre." Even after district shapes are catalogued in absolute terms, the significance of the results will continue to depend on the specific contexts in which particular districts exist. Maryland, for example, is a convoluted state, and any "irregular" district there is presumptively less troubling than a similar district in the square state of Colorado. The results of our quantitative studies enable meaningful threshold comparisons. The ultimate signif-
icance of any quantitative assessment of district "appearance," however, necessitates analysis of the specific political and geographic context in which particular districts originated.

In addition, we do not suggest that there is some ideal level of compactness that every district ought to meet. Nor do we suggest that there is some objective level of "highly irregular" that every district ought to avoid. Neither Shaw nor the VRA entail any requirement that districts meet some Platonic ideal of shape. Similarly, at what point irregular districts become "too irregular" is a political and legal judgment about the appropriate trade-off between competing values; quantitative measures can provide absolute and comparative information about districts, but they cannot resolve this question of judgment. Once such judgments are made, however, quantitative measures can assist in ensuring that they are carried out consistently.

Redistricting is an area in which quantitative standards have demonstrated their appeal in the past. Once Baker v. Carr ${ }^{179}$ declared malapportionment claims justiciable, legal principles gravitated quickly, indeed almost ineluctably, to the one-person-one-vote quantitative formula. Although there is disagreement over the extreme mathematical exactitude the Court has given this principle, ${ }^{180}$ there is little disagreement that one person, one vote is the appropriate ideal. Quantitative measures of compactness cannot function in precisely the same way as the one-person-one-vote measure, because no obviously analogous ideal exists toward which all district shapes should converge. Yet, after Shaw, similar forces may impel courts toward using quantitative approaches to define, at least, the outer-boundary constraints the Constitution now imposes on the conjunction of race-conscious districting and district shape. Given that no approach to redistricting is politically neutral, public confidence in both courts and redistricting bodies is likely to be enhanced through quantitative standards capable of being applied in consistent ways.

## A. The Nature of the Problem

Shaw suggests that North Carolina District 12 is self-evidently so extreme in design that it stands out at a glance. Thus, while Justice O'Connor acknowledges the possible "difficulty of determining from the face of a single-member districting plan that it purposefully distinguishes between voters on the basis of race," she emphasizes that

[^48]"proof sometimes will not be difficult at all." ${ }^{181}$ As another example, she points to the obviously "tortured" ${ }^{182}$ municipal boundaries in Gomillion v. Lightfoot. ${ }^{183}$

The task of determining when district appearances are so "highly irregular" as to require strict scrutiny, however, will be more difficult than these comments suggest. First, the language of "appearance" obscures the fact that districts might be oddly shaped along several different dimensions. In the absence of a clear conceptual understanding of what dimensions of district appearance are relevant, the basis for judging districts will be unclear. Different observers will find different aspects of districts to be troubling. Second, district shapes vary along a continuum; they do not come marked in two clearly distinct categories of the reasonably regular and the bizarre. Third, one cannot adequately distinguish the relevant variations among districts through intuitive, eyeball assessments.

To begin to understand the nature of the problems, consider Figures 2 and 3, which show thirteen current congressional districts drawn after the 1990 Census.

[^49]Figure 2(a): Michigan - Congressional District 7

© Election Data Services, Inc.
Figure 2(b): Mississippi - Congressional District 5

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Figure 2(c): California - Congressional District 22

© Election Data Services, Inc.
Figure 2(D): Wisconsin - Congressional District 9

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Figure 2(e): Texas - Congressional District 14

© Election Data Services, Inc.
Figure 2(f): North Carolina - Congressional District 7

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Figure 2(G): Texas - Congressional District 18

© Election Data Services, Inc.
Figure 3(a): Michigan - Congressional District 9

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Figure 3(b): Minnesota - Congressional District 7

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Figure 3(c): Maryland - Congressional District 3

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Figure 3(d): Ohio - Congressional District 19

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Figure 3(e): Florida - Congressional District 3

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Figure 3(f): Florida - Congressional District 22

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Most observers would probably agree that Michigan CD7 (Figure 2(a)) is considerably more compact than Texas CD18 (Figure 2(g)), and that Michigan CD9 (Figure 3(a)) is more compact than Florida CD22 (Figure 3(f)). Beyond these observations, it becomes more difficult to make such assessments; but the districts in Figures 2(a) and 3(a) might also generally seem reasonably compact. Perhaps there would even be agreement that the districts in Figures 2(g) and 3(f) are irregular, maybe extremely so. Line-drawing problems, however, quickly become substantial. If the districts in Figures 2(g) and 3(f) were minority-dominated districts, would their design be so irregular as to be presumptive evidence of districting processes in which race had exerted too dominant an influence over other values? What about districts "close to" the most distorted ones in the country - such as districts "in between" Figures 2(f) and 2(g) or in between Figures 3(e) and 3(f)?

Keep in mind that there are 428 congressional districts in states with more than one representative. Given this large number, the range of shapes illustrated in Figures 2 and 3 is not surprising. Indeed, one would expect an almost continuous gradation from very regular to very irregular. Of course, a single court would not have to
consider all 428 districts simultaneously. Litigation involving a single state would typically involve only five to twenty districts. Nevertheless, consistent standards are needed to guide and constrain policymakers. Left to intuitive judgments, policymakers will find the task of ordering districts by appearance unlikely to yield consensus. ${ }^{184}$

Part of the difficulty involved in creating standards stems from the fact that "the" appearance of a district could mean one of several things. District shape can be measured along several seemingly relevant dimensions. We will define these different dimensions in technical detail shortly, but we first describe them in more intuitive terms.

First, we might ask how dispersed, or spread out, a district is. This question is commonly taken to mean how efficiently the district covers the territory it includes: in common terms, the question is how "round" or "square" the district is, or how "long" it is versus how "wide." ${ }^{185}$ From this perspective, the crucial issue is the degree to which a district has a central core and the extent to which all points in the district are relatively close to that core. If we judge districts in terms of how dispersed they are, circular or square districts will be the most compact. Extremely long and narrow ones are much more dispersed and hence would be judged as less compact, as would districts that tie together two or more core areas with narrow corridors. Dispersion is also worse if "fingers," or other protrusions, stick out from the main body of a district.

Second, one might judge districts by the regularity or length of their perimeters. The important concern in this assessment ought not to be the number of sides, but how similar and regular the sides are. From this perspective, what matters is how much a district's borders wander around in contorted ways. Legislative districts with smooth borders, especially ones of equal length, are most regular or compact. When borders are not straight or when they repeatedly twist and turn, perimeter measures will be accordingly low.

Third, we might judge districts in terms of how regularly they distribute the population in and around the district. We are less accustomed to judging shapes this way; it does not play a role in elementary geometry. In the context of legislative districting, however, such a measure makes some sense. Legislators represent people, not land.

[^50]Moreover, the way in which district lines move through or around population concentrations is at the heart of concerns regarding such devices as "cracking" or "packing" minority populations. One way to systematize these concerns is to examine the size of the population in the district and compare it to the population outside but near the district. From this perspective, a district that encapsulates most of the population in some well-defined area would be highly regular. Exclusion of large numbers of people who live within such an area makes a district fare much worse on this dimension.

Choosing among these different dimensions makes a significant difference in judgments about the "appearance" of legislative districts. A district can be "highly irregular" in one dimension but not in others. Consider the contrast between "dispersion" and "perimeter" in, for example, Texas CD18 (Figure 2(g)). This district includes most of the city of Houston, is by far the most Democratic in Texas, and was designed to yield a fifty-one percent black population (forty-nine percent black voting-age population). The adjoining Texas CD29 was designed in 1991 as a new Hispanic district, thought to be required under the VRA, and has a Hispanic population of sixty percent (vot-ing-age population of fifty-four percent). To achieve these dual objectives, the redistricters carved heavily Hispanic blocks out of Texas CD18 and moved them next door into Texas CD29. ${ }^{186}$

Texas CD18 is not spread over a large area, hence it does not enclose a highly dispersed population. Despite being part of a large metropolitan area, its bands of streets and neighborhoods do not stretch out excessively. Although it contains extremely narrow corridors, it does not, like North Carolina CD12, stretch between cities many miles apart. Consequently, in terms of the first dimension described above - dispersion - Texas CD18 is not highly irregular. Yet, to some observers, the shape of this district is likely to be as troubling as that of North Carolina CD12. Its borders, especially on the west, meander in and out in an almost continual dance. In the second sense described above - perimeter regularity - this district is certainly extreme.

Next, consider Florida CD22 (Figure 3(f)). This district contains the barrier islands and lucrative beachfront properties of Florida's Gold Coast and has the highest percentage of over-sixty-five residents of any U.S. congressional district. This district is not a minority one, though its shape resulted in part from efforts to maximize the black

[^51]percentage in the adjoining 23d and 17th districts. ${ }^{187}$ The borders of Florida CD22 are relatively smooth. ${ }^{188}$ With few exceptions, the district does not snake into and out of the neighborhoods of cities. While in some places it moves farther inland than in others, this pattern is obviously necessary to include a sufficiently large population. In terms of perimeter, this district is fairly regular. ${ }^{189}$ Yet in length and width, the district stretches nearly 100 miles from north to south and is never more than about five and a half miles wide. This shape makes it look more like a flagpole than any other district in the country. In the sense of dispersion - in terms of its territory not being close together - this district is certainly extreme.

Intuitive assessments based on visual appearance alone are thus likely to produce tremendous uncertainty. Indeed, if we now return to what is frequently considered the most egregious and self-evident example of the manipulation of district boundaries, the classic Gomillion case, the difficulties become even more obvious. Consider Figure 4, the Tuskegee municipal boundaries before and after the city council redrew them.

[^52]Figure 4: Map of Tuskegee, Alabama, Before and After ACT $140^{190}$

(The entire area of the square comprised the City prior to Act 140. The irregular blackbordered figure within the square represents the post-enactment city.)
Justice O'Connor suggests that this example is extreme on immediate inspection. Yet, in terms of visual appearance alone, the twenty-eightsided figure hardly looks more irregular than a number of the districts in Figures 2 and $3 .{ }^{191}$ If the Tuskegee boundaries are extreme simply because of the way they look, the majority of congressional districts would be equally extreme. ${ }^{192}$ What actually makes Gomillion easy and exceptional is that, in the context of Tuskegee, this particular pattern of line drawing had such a racially differential effect that it could only be a blatant example of a racist design to exclude black residents

[^53]from the political boundaries of the town. ${ }^{193}$ Any intuition that the appearance of this twenty-eight-sided figure, standing alone, is an example of extreme manipulation of district appearance would be considerably misguided.

Thus, both abstract considerations of the different ways one can judge appearance and the current array of congressional districts argue for a more systematic, consistent way of comparing district appearances. Fortunately, in recent years, quantitative methods for assessing district appearance have been developed. The results are expressed in terms of a district's compactness. While measures of compactness are only now being introduced into redistricting procedures and their use is not yet settled, Shaw makes certain quantitative measures more meaningful and relevant than others.

## B. Three Quantitative Measures of Compactness

Compactness has been part of the redistricting lexicon for over a century, but only recently has it been rigorously and quantitatively defined. Even with the development of appropriate, theoretical definitions, the technology for measuring compactness was not effectively available until the 1990s. The recent digitization of U.S. geography carried out by the U.S. Census Bureau has made it possible to apply the new quantitative approaches with considerable accuracy. ${ }^{194}$

Compactness can be measured along several dimensions and in different ways. In a systematic review of proposed conceptions of compactness, which one of the authors of this article led, ${ }^{195}$ three distinct dimensions emerged as most relevant. ${ }^{196}$ These dimensions are the traits we have described colloquially above: dispersion, perimeter, and population. We now provide more technical definitions of each and then employ the two of them to rank and analyze congressional districts throughout the country.

[^54]
## 1. Dispersion

The term dispersion captures "how tightly packed or spread out the geography of a district is." 197 Underlying all dispersion measures is the notion that a perfect district is a regular, simple shape, usually a circle. Different quantitative measures exist because different ideal shapes can be taken as a starting point ${ }^{198}$ and because there are multiple ways of measuring deviations from the ideal shape. ${ }^{199}$

During the 1990s round of districting litigation, one approach became common. This technique measures the ratio of the district area to the area of the minimum circumscribing circle. ${ }^{200}$ Such a test is intuitively meaningful and has useful technical features. Operationally, it involves taking the areas of the district and of the smallest circle that completely encloses the district. The ratio of the former to the latter yields the dispersion compactness score. ${ }^{201}$ Hence, a circular district is perfectly compact. A square district is relatively compact because, when one draws a circle around the district, there is little area inside the circle that is not also in the district. A long, narrow district, or one with "fingers" or other extensions, is less compact because it takes a large circle to enclose the entire district, yet much of that circle is empty.

We arranged the congressional districts in Figure 3 in descending order of dispersion, measured in this way. Districts do not come much more square than Michigan CD9. Minnesota CD7 is too rectangular to be perfectly compact, but it still ranks high. Maryland CD3 circles around Baltimore and includes no area west of the city, which lowers its compactness. Ohio CD19 is stretched out, relatively long and narrow, and is consequently even less compact. Florida CD3

[^55]essentially has no central core; not surprisingly, it has a very low compactness score. The extreme flagpolelike district discussed above, Florida CD22, has the lowest dispersion score of any district in the country.

Dispersion scores theoretically range from 1.0 , which is perfectly compact - a circle - to 0.0 - a straight line. For the districts in Figures 3(a) to 3(f), the scores are $.50, .40, .30, .20, .11$, and .03 , respectively. With an appropriate technical measure of how dispersed districts are, we are thus able to rank order congressional districts as well as to provide a more precise sense of the magnitude of the differences between the "appearance" of various congressional districts. This analysis can provide guidance to reapportionment bodies and discipline the judicial assessments Shaw now requires.

## 2. Perimeter

Instead of focusing on the dispersion of a district, we can examine the extent to which district borders wander in irregular ways. We do this through a perimeter measure; the most effective technical measure of perimeter relates length of the district perimeter to the area the district includes. ${ }^{202}$ The intuitive justification for this measure is that a given perimeter length will enclose the most area if the shape it surrounds is a circle. Once again, then, a circle is the baseline against which districts are compared. A precise definition of the measure we use here is the ratio of the district area to the area of a circle with the same perimeter. ${ }^{203}$

[^56]In general, districts that have smooth borders and relatively regular shapes will have shorter boundaries and enclose considerable area given the boundary length. They therefore score high on this perimeter measure. Convoluted district borders substantially lengthen the boundary without enclosing more area and hence score low.

We arranged the congressional districts in Figure 2 in descending order of perimeter scores. Michigan CD7 has nearly straight borders and is relatively square-shaped. Mississippi CD5 is regularly shaped and has mostly smooth borders, except along the Mississippi River and Gulf Coast. ${ }^{204}$ California CD22 has a stair-step border on the northeast. This feature, in addition to the coastline and two small islands, lowers its perimeter score, but the district remains sufficiently regular for its score to fall in the middle of the district scores shown. Wisconsin CD9, Texas CD14, and North Carolina CD7 have increasing boundary twists and turns, and they therefore score progressively lower. Finally, the border of Texas CD18 is extraordinarily long for the area it encloses as a result of the many narrow corridors, wings, or fingers that reach out to enclose black voters, while excluding nearby Hispanic residents.

Perimeter scores, like dispersion scores, theoretically range from 1.0 to 0.0. The perimeter scores for the districts in Figures 2(a) to 2(g) are $.50, .40, .30, .21, .10, .05$, and .01 , respectively. Using this measure, we can rank all congressional districts in terms of the regularity of their borders, as well as suggest the magnitude of differences between districts. If courts applying Shaw focus on district perimeter, this quantitative approach can yield a far more systematic and clear set of norms than intuitive judicial assessments.

## 3. Population

A third focal point for concerns of district "appearance" is sometimes taken to be the way in which a district distributes voters. We can translate this concern into a population measure, which focuses not on shape alone, but on the distribution of population between a district and its surrounding territory. Developing a quantitative measure requires some way of comparing the district's population with the "nearby" excluded population. Commentators have suggested two

[^57]similar measures; both are ratios in which the numerator is the district's population. ${ }^{205}$ In the most common measure, the denominator is the population in what is called the "rubber-band" area around the district - the area that would be inside a rubber band stretched tightly around the district. ${ }^{206}$ In the alternative measure, the denominator is the population in the minimum circumscribing circle - it excludes populations that would fall outside the state. Both measures vary from 1.0 to 0.0. ${ }^{207}$ For reasons we describe in Section III.C, population measures do not seem to reflect the concerns Shaw expresses. Thus, we do not provide quantitative assessments of the districts in Figures 2 and 3 in terms of population measures.

## C. The Relevant Measures Under Shaw

Of the three potentially relevant measures of compactness - dispersion, perimeter, and population - the first two best capture the concerns Shaw expresses. Although the decision offers little in the way of specific criteria for judging "bizarre" appearances, it invokes many synonyms for widely dispersed districts and for those whose borders are severely distorted. Indicating concern for perimeter manipulation, Shaw refers to Gomillion as employing "a tortured municipal boundary line," ${ }^{208}$ and Shaw similarly takes note of the way in which North Carolina CD12 "winds in snake-like fashion" through various areas. ${ }^{209}$

At the same time, Shaw also refers to the concentration of a "dispersed" minority population and to individuals "widely separated by geographical and political boundaries." ${ }^{210}$ In describing District 12, the Court notes that it is "approximately 160 miles long and, for much of its length, no wider than the I-85 corridor." ${ }^{211}$ These comments refer not to twists and turns of district boundaries, but to how spread out the district is, both geographically and with respect to the types of areas - rural versus urban, farming versus manufacturing - it encompasses. Similarly, the proposed state senate district, about which

[^58]the Court intimated doubts in Growe v. Emison, ${ }^{212}$ has a relatively smooth, but elongated, border. ${ }^{213}$ These comments point to concerns about a district's dispersion.

For these reasons, we believe that if courts and reapportionment bodies look to quantitative approaches to implement Shaw, the dispersion and perimeter measures are the most appropriate. Population measures do capture certain manifestations of partisan or racial gerrymandering, but they do not measure "shape" in the usual sense and therefore do not necessarily reflect the problems Shaw identifies. ${ }^{214}$ In our quantitative assessment of congressional districts throughout the country, we will therefore rely on only the dispersion and perimeter measures.

In interpreting the results that follow in Part IV, one must keep in mind at least three complexities, to which we have alluded above. ${ }^{215}$ First, compactness, as quantified, varies on a continuum from zero to one. The point when the compact becomes the noncompact requires judgments about social perceptions that Shaw barely begins to articulate. ${ }^{216}$

Second, although both dispersion and perimeter appear relevant under Shaw, they measure different dimensions. Recall the contrast between the tight core and wandering boundaries of Texas CD18 (Figure $2(\mathrm{~g})$ ) and the highly dispersed, but smooth bordered, Florida CD22 (Figure 3(f)). ${ }^{217}$ Different quantitative measures will not al-

[^59]ways rank individual districts, and even districting plans, in identical order. ${ }^{218}$ For many districts, the two measures will yield similar results, but, when they conflict, questions will remain as to which measure, or what combination of the two measures, should be the focus.

Third, one must take care in comparing compactness scores across states and between different types of jurisdictions. The more compact a state as a whole, the more one might expect its individual districts to be compact. ${ }^{219}$ Similarly, as a general rule, we might expect state legislative and local districts to be more compact than congressional districts. 220 Contextual differences of these sorts must be considered before drawing ultimate conclusions concerning comparisons across districts. At the same time, Shaw seems to discuss district appearance in absolute terms or as a generic concept; before requiring strict scrutiny for District 12, the Court did not compare it to other congressional districts in North Carolina or anywhere else. With the quantitative measures defined and these caveats in mind, Part IV analyzes the compactness of congressional districts throughout the country.

## IV. The Compactness of Congressional Districts in the 1980s and 1990s

In this Part, we apply our quantitative methods to answer three questions that Shaw raises. First, we compare North Carolina District 12 to other districts in the state to determine the extent to which

[^60]District 12 is aberrational. Second, we examine post-1990 congressional districts throughout the country to determine which districts, and how many, have dispersion or perimeter scores comparable to District 12. Specifically, we determine how many African-Americandominated, Hispanic-dominated, and white-dominated districts have shapes that appear, at least initially, to be as irregular as District 12. As a related point, we also show how many congressional districts would be affected if courts translated Shaw into an absolute requirement that districts not exceed some specific measure of compactness. Finally, we compare the shape of congressional districts in the 1990s with those in the 1980s to determine whether districts have become less compact in recent years. If they have not, Shaw would constitute a sudden change in the legal rules governing districting. If they have, Shaw would not change the rules in the middle of the game, but rather would be a response to the changed context of districting.

## A. North Carolina District 12 in the Context of the 1990 North Carolina Redistricting Plan

After the Justice Department's denial of preclearance for its first effort at redistricting, the North Carolina General Assembly eventually designed the twelve-seat congressional districting plan that took effect in time for the 1992 congressional elections. As a map of this plan shows, ${ }^{221}$ it included several districts, in addition to CD12, that many observers might consider irregularly shaped.

Figure 5: North Carolina 1990 Congressional Districts

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Note: The shaded districts, Districts 1 and 12, are minority-dominated ones. In the 1992 congressional elections, District 1 elected Eva Clayton and District 12 elected Melvin Watt, North Carolina's first two black congressional representatives since Reconstruction.

Several facts immediately stand out. First, in a certain obvious sense, District 12 is unlike any other district in that it wanders through the middle of the state as a long, thin line. On the other hand, it might be less distinct than many readers would expect. Shaw emphasizes the extreme length of District 12, but the northwestern-most district, District 5, covers more miles east to west and a similar number of miles north to south. Indeed, many readers may be surprised by how many districts in North Carolina fall considerably short of being square or rectangular. We wonder whether even two districts satisfy many readers' intuitive view of how districts should be drawn. In general, this map confirms the fact that district shapes vary along a continuum and that separating them through an eyeball assessment is extremely difficult. Is District $1,2,3,7$, or 10 considerably more compact than District 12 ? How can one meaningfully compare the appearance of these other districts with District 12 and with each other?

In Table 2, we provide the dispersion and perimeter scores for the 1990s North Carolina congressional districts:

Table 2
Compactness of North Carolina Congressional DISTRICTS IN 1990 s $^{222}$

|  | Compactness Measure |  |
| :---: | :---: | :---: |
| District | Dispersion | Perimeter |
| 1 | .25 | .03 |
| 2 | .25 | .06 |
| 3 | .35 | .06 |
| 4 | .40 | .32 |
| 5 | .14 | .08 |
| 6 | .29 | .09 |
| 7 | .33 | .05 |
| 8 | .28 | .17 |
| 9 | .30 | .07 |
| 10 | .29 | .06 |
| 11 | .28 | .14 |
| 12 | .10 | .01 |
| Mean | .095 |  |

With these quantitative assessments, we can reach one confident conclusion. District 12 is certainly the least compact of North Carolina's districts; measured either in terms of dispersion or perimeter, District 12 ranks lowest in the state. Whether it is so unique as to be consid-

[^61]ered an aberration, however, becomes a matter of judgment. In terms of the dispersion measure, District 12 falls far below any other district, ${ }^{223}$ even when compared to its nearest competitor, District 5. Along this dimension, most other districts are considerably more compact. This comparison means that District 12 has less of a central core than all other districts or, conversely, that it is relatively longer and narrower than other districts. It incorporates a significantly more geographically dispersed population. With respect to district perimeters, however, District 12 is far less unusual. While it remains the least compact when judged this way, the perimeter scores for nine of the twelve districts are less than 0.10 . These scores are quite low compared to districts throughout the country. ${ }^{224}$ Indeed, almost all the districts in North Carolina have perimeters that could be classified as quite, if not extremely, irregular. ${ }^{225}$ To observers who focus on CD12 in isolation, this result might come as a surprise. It might also raise questions as to whether the "appearance" of any congressional district ought to be evaluated on its own or only in the context of the other districts in the same redistricting plan. Perhaps irregular minority districts are, or should be, less troubling when contained within a redistricting plan that employs similarly contorted majority-dominated districts. ${ }^{226}$ In Shaw, the Court's first entry into this arena, however, the Court assessed CD12 in isolation from other districts in the same plan.

## B. The Compactness of 1990s Congressional Districts Throughout the Country

With the quantitative measure we have described above and recently developed technology, we are able to rank congressional dis-

[^62]tricts throughout the country in terms of their dispersion and perimeter. ${ }^{227}$ In Table 3, we provide an abbreviated version of this information by listing the congressional districts whose dispersion or perimeter score (or both) is relatively low. In choosing the cutoff points used in Table 3, we do not imply that all districts below those points, or only those districts, are vulnerable after Shaw. Later in this section, in Table 4, we show how many districts, majority and minority, are affected when a range of different cutoff levels are used to define "low" dispersion and perimeter scores. ${ }^{228}$ The cutoff points in Table 3 are somewhat arbitrary, ${ }^{229}$ and on each dimension they are higher than the scores of North Carolina District 12. Nonetheless, because they identify the districts that are objectively least compact, these are the most important tables we present for the purpose of Shaw's future application.

[^63]Table 3
1990s Congressional Districts with Low
Dispersion or Perimeter
Compactness Scores ${ }^{230}$

| District | Dispersion <br> Score | Perimeter <br> Score | Largest Population <br> Group |  |
| :--- | :---: | :---: | :--- | :--- |
| CA36 | .04 | .10 | White | $69 \%$ |
| FL3 | .11 | .01 | Black | 55 |
| FL17 | .08 | .06 | Black | 56 |
| FL18 | .14 | .03 | Hispanic | 67 |
| FL22 | .03 | .05 | White | 83 |
| HI2 | .05 | .11 | Asian | 53 |
| IL4 | .19 | .03 | Hispanic | 65 |
| LA4 | .13 | .01 | Black | 66 |
| LA6 | .29 | .05 | White | 82 |
| MA3 | .14 | .11 | White | 78 |
| MA10 | .15 | .06 | White | 94 |
| NJ13 | .11 | .07 | White | $42^{*}$ |
| NY5 | .19 | .05 | White | 79 |
| NY7 | .22 | .05 | White | 58 |
| NY8 | .06 | .03 | White | 74 |
| NY9 | .27 | .04 | White | 82 |
| NY12 | .12 | .02 | Hispanic | 58 |
| NC1 | .25 | .03 | Black | 57 |
| NC5 | .14 | .08 | White | 83 |
| NC7 | .29 | .05 | White | 70 |
| NC12 | .05 | .01 | Black | 56 |
| TN4 | .12 | .08 | White | 95 |
| TX3 | .29 | .05 | White | 86 |
| TX6 | .21 | .02 | White | 88 |
| TX18 | .36 | .01 | Black | 50 |
| TX25 | .20 | .02 | White | 53 |
| TX29 | .19 | .01 | Hispanic | 61 |
| TX30 | .24 | .02 | Black | $49 *$ |

Note: Districts shown here are all those with a dispersion score of $\leq 0.15$ or a perimeter score of $\leq 0.05$. For the purpose of this table, "White" means non-Hispanic white; "Black" means nonHispanic black; and "Asian" means Asian or Pacific Islander. "Hispanics" may be of any race, and "population" refers to total population.

* Please also note that blacks and Hispanics constitute a majority in NJ13 and TX30.

One must make comparisons carefully because of the effects of state shapes. ${ }^{231}$ Twenty-eight congressional districts fall below the

[^64]compactness levels we have selected. In two cases, however, the low scores are clearly artifacts of their unusual geography; they can be quickly dismissed because geography, not legislative politics, immediately accounts for their apparently low compactness. Hawaii CD2 is composed of islands, and California CD36 includes two islands as well as part of the coast in the greater Los Angeles area. ${ }^{232}$

With respect to the remaining districts, one result is immediately striking. If we rather crudely consider dispersion and perimeter simultaneously, by simply adding the two scores, North Carolina CD12 turns out to be the worst district in the nation. In this specific sense, this district is truly exceptional. Thus, if a district must be at least as "bizarre" as District 12 to trigger strict scrutiny, and if bizarreness is measured by adding dispersion and perimeter scores, District 12 stands alone. This result is potentially of considerable significance: if Shaw is applied by adding the quantitative and perimeter measures used here, no other current congressional district is as extreme as that in Shaw.

At the same time, District 12 is not a statistical outlier under this combined approach, for other districts are not far behind. New York CD8 and Florida CD22 are nearly at the level of North Carolina CD12 on both measures, followed closely by Florida CD3 and CD17, Louisiana CD4, New York CD12, and then by Florida CD18 and New Jersey CD13.

While combining the two measures in this way is revealing, it poses several theoretical and conceptual problems. Most significantly, Shaw provides no guidance as to whether a district should be considered "highly irregular" if it is extreme on either dimension - dispersion or perimeter - alone or only when these two dimensions are combined. This point is especially relevant for districts like the previously discussed Texas CD18, which is not spread over a large area but does have a very irregular border. ${ }^{233}$

If we focus on dispersion scores alone, North Carolina CD12 turns out to be the second worst in the nation, ${ }^{234}$ with the long, narrow district we described earlier, Florida CD22, at the bottom. ${ }^{235}$ Other

[^65]districts, however, follow close behind. If Shaw requires that CD12 be deemed noncompact, the question of how to treat districts that are similarly, but not quite as badly, dispersed - such as New York CD8 (majority white) or Florida CD17 (majority black) - remains open.

If we focus on perimeter irregularities alone, North Carolina CD12 remains extreme, but several other districts are equally extreme. Even more clearly than with dispersion, compactness falls along a continuum when we focus on the shape of boundary lines. Distinguishing the "unusual" from the "highly irregular" or "bizarre" inevitably requires seemingly arbitrary cutoffs.

Note that over half the districts in Table 3 are majority white. In part, this distribution occurs because majority-white districts that border on irregular minority-majority districts necessarily incorporate those irregularities into their own boundaries. ${ }^{236}$ In absolute terms, a greater number of extremely noncompact districts - as defined in Table 3 - are white-controlled districts. In relative terms, however, minority districts would currently suffer more from any rule that barred districts with scores below the levels of dispersion and perimeter in Table 3. The fifteen majority-white districts listed constitute only four percent of the 370 majority-white districts in the country. But the six majority-black districts are nineteen percent of the thirtyone majority-black districts nationwide, and the four majority-Hispanic districts are twenty percent of the country's twenty majorityHispanic districts. ${ }^{237}$ In addition, given our earlier analysis, ${ }^{238}$ Shaw might have little or no effect on any of the extremely irregular whitedominated districts.

Table 3 further reveals that a few states have the most at stake in the way Shaw is applied. More than three-quarters of the districts in Table 3 are concentrated in only five states: Florida, Louisiana, New York, North Carolina, and Texas. In at least some of these states, Shaw has already influenced litigation. ${ }^{239}$ That so many irregular dis-

[^66]tricts are concentrated in a few states will exacerbate the problem of choosing the relevant baseline for assessing districts. As noted earlier, judges might evaluate an individual district against the mean compactness scores of other districts in that state. Alternatively, judges might examine an individual district in isolation or, perhaps more meaningfully, by comparing it to the kind of nationwide districting standards we make available in this article.

As noted, the cutoffs in Table 3 are somewhat arbitrary. In Table 4, we shift these threshold levels, while keeping them at the low end of the spectrum, and show how many minority and majority districts are affected as the "appearance" threshold changes.

Table 4
Number of 1990s Congressional Districts Falling Below Various Levels of Compactness ${ }^{240}$

|  | Dispersion Score |  |  | Perimeter Score |  |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\leq .15$ | $.16-.20$ | $.21-.24$ | $\leq .05$ | $.06-.08$ | $.09-.12$ |  |
| Number of Districts | 15 | 25 | 27 | 20 | 30 | 31 |  |
| Number of |  |  |  |  |  |  |  |
| Minority Districts* | 07 | 11 | 05 | 10 | 10 | 05 |  |
| Cumulative Number <br> of Districts | 15 | 40 | 67 | 20 | 50 | 81 |  |
| Cumulative Number <br> of Minority Districts | 07 | 18 | 23 | 10 | 20 | 25 |  |
| Number of Districts with <br> Dispersion Score $\leq .24$ <br> Perimeter Score $\leq .12$ <br> Number of Minority Districts with <br> Dispersion Score $\leq .24$ and <br> Perimeter Score $\leq .12$ |  |  |  |  |  |  |  |

* Districts with combined black and Hispanic populations of more than $50 \%$

The results further illustrate our argument that congressional districts lie along a compactness continuum. As cutoff levels are raised, even by small amounts, more and more districts fall below them. The levels in Table 4 also give a more concrete idea of the degree of compactness of districts at the low end of the spectrum. For example, one out of every twenty congressional districts currently in use has a perimeter score no higher than that of North Carolina CD7 (Figure 2(f)), and

[^67]more than one in ten has a score less than that of Texas CD14 (Figure 2(e)).

The number of minority districts below various cutoffs goes up more slowly. Nonetheless, the results in Table 4 show in stark fashion the tension between the goals of more minority districts and high levels of compactness, at least as congressional districts were drawn before Shaw. If courts were to define "highly irregular" as districts that violated the strictest standards of both dispersion and perimeter that Table 4 uses, seventeen of the current fifty-one single-minority districts in the country would be subject to strict scrutiny.

## C. Compactness of Congressional Districts over Time

In response to Shaw, some might argue that the Court's sudden concern with district appearances arose only when states began to use unusual boundaries to create minority-dominated districts. Those who take this view necessarily assume that districts have always been as contorted as they are presently. If this premise is right, Shaw might be taken to reveal a cynical or even invidious concern with district shapes only when they benefit minorities.

To test this premise, we compared the compactness of congressional districts in the 1980s and the 1990s. ${ }^{241}$ We first focus on North Carolina, which had eleven districts in the 1980s. Table 2 contains the dispersion and perimeter scores for the 1990s districts; ${ }^{242}$ Table 5, below, provides these scores for the 1980s districts.

[^68]Table 5
Compactness of North Carolina Congressional Districts in 1980s ${ }^{\mathbf{2 4 3}}$

| District | Compactness Measure |  |
| :---: | :---: | :---: |
| Dispersion | Perimeter |  |
| 1 | .57 | .46 |
| 2 | .34 | .27 |
| 3 | .39 | .27 |
| 4 | .26 | .26 |
| 5 | .30 | .29 |
| 6 | .36 | .33 |
| 7 | .34 | .28 |
| 8 | .30 | .28 |
| 9 | .38 | .22 |
| 10 | .36 | .27 |
| 11 | .36 | .42 |
| Mean | .08 | .30 |
| Standard Deviation | .07 |  |

As these tables reveal, districts became significantly less compact, at least in North Carolina, after the 1990 round of redistricting. In terms of dispersion, all but one district had a score of .30 or above in the 1980 s while, today, only five of the twelve districts are that compact. The perimeter measure, however, reveals even more striking results. Every current district, with the exception of CD4, has a considerably more distorted perimeter than the worst North Carolina district in the 1980s. Average perimeter compactness has plummeted. Although most North Carolina districts are still built around a core area - though less so than in the 1980s - they meander in and around that area to a far greater extent than previously. Compared to the 1980s districts, especially on the perimeter measure, almost all the current districts are significantly more irregularly designed.

For the most part, the pattern in North Carolina turns out to be a general one. Table 6 provides a state-by-state comparison of district compactness, measured in terms of dispersion and perimeter, for the 1980s and for the 1990s. We also show the numbers of districts falling below various levels of compactness.

Table 6
Compactness of 1980s and 1990s Congressional Districts, By State ${ }^{244}$

| State | Dispersion Scores |  |  | Perimeter Scores |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Range | Mean | \# $\leq .20$ | Range | Mean | \# $\leq .08$ |
| Alabama |  |  |  |  |  |  |
| 1980s | .28-. 71 | . 44 |  | .23-.46 | . 33 |  |
| 1990s | .26-.48 | . 39 |  | .11-.26 | . 18 |  |
| Arizona |  |  |  |  |  |  |
| 1980s | . $30-.47$ | . 42 |  | .23-. 44 | . 33 |  |
| 1990s | . $30-.57$ | . 41 |  | .15-. 47 | . 25 |  |
| Arkansas | - |  |  |  |  |  |
| 1980s | . $37-.54$ | . 44 |  | .21-. 34 | . 28 |  |
| 1990s | . $35-.52$ | . 44 |  | .18-. 35 | . 27 |  |
| California |  |  |  |  |  |  |
| 1980s | .09-. 54 | . 33 | 4 | .06-. 39 | . 20 | 5 |
| 1990s | .04-57 | . 39 | 2 | .10-.45 | . 29 | 0 |
| Colorado ${ }^{\text {a }}$ |  |  |  |  |  |  |
| 1980s | . $31-.52$ | . 43 |  | .18-. 44 | . 33 |  |
| 1990s | .25-. 56 | . 40 |  | .15-. 38 | . 26 |  |
| Connecticut |  |  |  |  |  |  |
| 1980s | .27-. 54 | . 40 |  | .12-. 37 | . 26 |  |
| 1990s | .27-. 55 | . 41 |  | .20-. 39 | . 32 |  |
| Florida |  |  |  |  |  |  |
| 1980s | .16-.63 | . 40 | 1 | .13-. 56 | . 36 | 0 |
| 1990s | .03-.56 | . 31 | 7 | .01-.50 | . 20 | 6 |
| Georgia |  |  |  |  |  |  |
| 1980s | .19-.48 | . 34 | 1 | .16-.48 | . 28 | 0 |
| 1990s | .17-.47 | . 34 | 1 | .07-. 32 | . 18 | 2 |
| Hawaii |  |  |  |  |  |  |
| 1980s | .05-.30 | . 18 | 1 | .11-.41 | . 26 |  |
| 1990s | .05-. 34 | . 19 | 1 | .11-.38 | . 24 |  |
| Idaho |  |  |  |  |  |  |
| 1980s | .21-. 54 | . 38 |  | .21-.36 | . 28 |  |
| 1990s | .21-.56 | . 38 |  | .20-. 34 | . 27 |  |
| Illinois |  |  |  |  |  |  |
| 1980s | .15-.53 | . 38 | 1 | .14-. 55 | . 30 | 0 |
| 1990s | .19-. 56 | . 34 | 1 | .03-. 52 | . 27 | 1 |
| Indiana |  |  |  |  |  |  |
| 1980s | .28-.53 | . 39 |  | .16-. 57 | . 33 |  |
| 1990s | .25-. 53 | . 39 |  | .14-57 | . 27 |  |
| Iowa |  |  |  |  |  |  |
| 1980s | . $31-.56$ | . 42 |  | . $33-.46$ | . 38 |  |
| 1990s | . $32-.54$ | . 43 |  | . $30-.54$ | . 41 |  |
| Kansas |  |  |  |  |  |  |
| 1980s | . $34-.54$ | . 45 |  | .33-.67 | . 50 |  |
| 1990s | . $35-.50$ | . 44 |  | .24-.51 | . 39 |  |
| Kentucky . 35.50 |  |  |  |  |  |  |
| 1980s | .26-.51 | . 41 |  | .22-.42 | . 29 |  |
| 1990s | .21-. 64 | . 38 |  | .16-.36 | . 24 |  |
| Louisiana |  |  |  |  |  |  |
| 1980s | .26-60 | . 37 | 0 | .09-. 31 | . 24 | 0 |
| 1990s | .13-.48 | . 31 | 2 | .01-. 23 | . 09 | 4 |

244. Information provided by Election Data Services, Inc.

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| Maine |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1980s | . 31 -. 45 | . 38 |  | .12-. 21 | . 17 |  |
| 1990s | . $31-.45$ | . 38 |  | .13-. 21 | . 17 |  |
| Maryland |  |  |  |  |  |  |
| 1980s | .18-. 57 | . 39 | 1 | .08-.40 | . 22 | 1 |
| 1990s | .16-. 51 | . 32 | 1 | .08-. 37 | . 18 | 1 |
| Massachusetts . 32 |  |  |  |  |  |  |
| 1980s | .17-. 51 | . 32 | 3 | .02-. 54 | . 23 | 1 |
| 1990s | .14-.43 | . 28 | 2 | .06-. 28 | . 15 | 3 |
| Michigan |  |  |  |  |  |  |
| 1980s | .20-.48 | . 35 | 1 | .07-.51 | . 29 | 1 |
| 1990s | .20-. 63 | . 43 | 1 | .07-.61 | . 38 | 1 |
| Minnesota ${ }^{\text {a }}$ |  |  |  |  |  |  |
| 1980s | . $35-.54$ | . 40 |  | .26-. 56 | . 37 |  |
| 1990s | . $36-.56$ | . 45 |  | .22-.47 | . 35 |  |
| Mississippi |  |  |  |  |  |  |
| 1980s | .29-. 57 | . 46 |  | .14-.41 | . 31 | 0 |
| 1990s | .30-. 52 | . 43 |  | .08-. 40 | . 21 | 1 |
| Missouri |  |  |  |  |  |  |
| 1980s | . $37-.59$ | . 45 |  | .24-. 57 | . 39 |  |
| 1990s | .34-. 58 | . 44 |  | .18-.53 | . 32 |  |
| Nebraska |  |  |  |  |  |  |
| 1980s | .27-.46 | . 34 |  | .28-.56 | . 38 |  |
| 1990s | . $33-.45$ | . 40 |  | .26-.49 | . 39 |  |
| Nevada |  |  |  |  |  |  |
| 1980s | .28-. 54 | . 41 |  | .25-.72 | . 49 |  |
| 1990s | . $43-.44$ | . 43 |  | .27-.56 | . 41 |  |
| New Hampshire |  |  |  |  |  |  |
| 1980s | .22-. 32 | . 27 |  | .18-. 26 | . 22 |  |
| 1990s | .23-.30 | . 26 |  | .18-. 23 | . 20 |  |
| New Jersey |  |  |  |  |  |  |
| 1980s | .20-.58 | . 37 | 1 | .10-. 39 | . 21 | 0 |
| 1990s | .11-.51 | . 33 | 2 | .07-.37 | . 19 | 2 |
| New Mexico |  |  |  |  |  |  |
| 1980s | .25-.48 | . 35 |  | .26-.40 | . 34 |  |
| 1990s | . $36-.52$ | . 44 |  | . $32-.37$ | . 33 |  |
| New York |  |  |  |  |  |  |
| 1980s | .06-. 56 | . 30 | 6 | .03-. 39 | . 20 | 7 |
| 1990s | .06-. 55 | . 30 | 8 | .02-. 45 | . 20 | 8 |
| North Carolina |  |  |  |  |  |  |
| 1980s | .26-.57 | . 36 | 0 | .22-. 46 | . 30 | 0 |
| 1990s | .05-.44 | . 28 | 2 | .01-. 32 | . 09 | 8 |
| Ohio 0 |  |  |  |  |  |  |
| 1980s | .25-.53 | . 39 | 0 | .09-. 49 | . 31 |  |
| 1990s | .20-.61 | . 38 | 1 | .11-.58 | . 27 |  |
| Oklahoma .20 .61 |  |  |  |  |  |  |
| 1980s | .23-.52 | . 37 |  | .18-.27 | . 23 |  |
| 1990s | .24-59 | . 38 |  | .16-.32 | . 22 |  |
| Oregon |  |  |  |  |  |  |
| 1980s | . $20-.45$ | . 36 | 1 | .23-.43 | . 30 |  |
| 1990s | .22-.46 | . 37 | 0 | .15-.44 | . 27 |  |
| Pennsylvania |  |  |  |  |  |  |
| 1980s | .25-.55 | . 40 | 0 | .10-. 50 | . 27 |  |
| 1990s | .16-.62 | . 39 | 1 | . $11-.45$ | . 26 |  |
| Rhode Island |  |  |  |  |  |  |
| 1980s | .18-.28 | . 23 | 1 | .06-. 21 | . 14 | 1 |
| 1990s | .22-.46 | . 34 | 0 | . $22-.52$ | . 37 | 0 |


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| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| South Carolina |  |  |  |  |  |  |
| 1980s | .23-. 50 | . 40 |  | .22-. 39 | . 31 | 0 |
| 1990s | .22-. 39 | . 31 |  | .08-. 29 | . 16 | 1 |
| Tennessee |  |  |  |  |  |  |
| 1980s | .15-.43 | . 28 | 2 | .13-. 38 | . 26 | 0 |
| 1990s | .12-. 42 | . 30 | 1 | .08-. 26 | . 17 | 1 |
| Texas |  |  |  |  |  |  |
| 1980s | .23-.57 | . 39 | 0 | .12-. 52 | . 26 | 0 |
| 1990s | .19-. 54 | . 31 | 5 | .01-. 38 | . 13 | 9 |
| Utah |  |  |  |  |  |  |
| 1980s | .43-.51 | . 46 |  | .27-. 35 | . 31 |  |
| 1990s | .32-. 55 | . 46 |  | . $33-.40$ | . 36 |  |
| Virginia |  |  |  |  |  |  |
| 1980s | .20-.55 | . 37 | 1 | .12-.44 | . 30 | 0 |
| 1990s | .22-. 52 | . 31 | 0 | .06-. 29 | . 17 | 2 |
| Washington |  |  |  |  |  |  |
| 1980s | .26-.56 | . 38 | 0 | .11-.42 | . 24 |  |
| 1990s | .20-. 53 | . 38 | 1 | .12-.43 | . 25 |  |
| West Virginia |  |  |  |  |  |  |
| 1980s | .26-.44 | . 32 | 0 | .15-. 31 | . 23 |  |
| 1990s | .20-. 39 | . 28 | 1 | .11-.19 | . 15 |  |
| Wisconsin |  |  |  |  |  |  |
| 1980s | .24-.51 | . 38 |  | .19-.45 | . 30 |  |
| 1990s | .25-. 63 | . 39 |  | .18-.72 | . 33 |  |
| Nationwide |  |  |  |  |  |  |
| 1980s | .05-.71 | . 37 | 25 | .02-.72 | . 28 | 16 |
| 1990s | .03-.64 | . 36 | 40 | .01-.72 | . 24 | 50 |

Note: States with only one congressional representative are excluded. Slightly higher thresholds are used here than in Table 3 to show the large number of quite, if not extremely, low scores in the two decades.

The nationwide figures make it clear, of course, that low compactness is not an invention of the 1990s. A few districts in the 1980s were extremely noncompact, nearly as much so as the least compact districts of the 1990s. In addition, a few states had significantly less compact districts in the 1980s than in the 1990s. California is the prime example. Under the Burton districting plan, considered one of the most notoriously partisan gerrymanders in recent years, several extremely contorted districts were created, making overall compactness scores lower than in the $1970 \mathrm{~s}^{245}$ and lower than those in most other states.

In general, however, there is no denying that the present congressional districts are less compact than those they replaced. ${ }^{246}$ Between

[^69]the 1980s and 1990s, average compactness levels dropped, precipitously in the case of district perimeters. More importantly, at extremely low levels of compactness, the number of districts increased sharply. Overall, the number of districts with very low scores rose substantially, with the decline in perimeter scores the most noticeable. Nationwide, the number of districts with scores at or below .08 more than tripled, as seen in Table 6.

State-by-state comparisons indicate that the number of states in which average compactness declined is greater than the number in which average compactness increased (by a margin of thirty-two to nine for perimeter scores). However, the results in Table 6 also reveal that low compactness is particularly prominent in a small number of states. The chronological comparison in those states indicates the depth of the change the 1990s districting created. In Florida, Louisiana, North Carolina, and Texas, only one district in the 1980s was below the dispersion or perimeter cutoffs shown in Table 6. In these same states in the 1990s, sixteen districts fall below the dispersion cutoff, and twenty-seven fall below the perimeter cutoff.

Three factors best explain this dramatic decline. First, since Karcher v. Daggett, ${ }^{247}$ congressional districts must have virtually identical populations. ${ }^{248}$ In pursuit of the mathematic exactitude the Court has demanded, jurisdictions necessarily have had to compromise other values, like compactness. This is a trade-off legal doctrine itself has imposed on political bodies. Second, the increasing sophistication of redistricting technology enables constant manipulation and recalibration of district boundaries to achieve that equalization, or other goals. The new computer programs facilitate twists and turns in perimeters that add or subtract small numbers of people until some desired level of equality is achieved - or until more partisan and personal agendas are realized. Third, the interpretation of the VRA in Thornburg v. Gingles ${ }^{249}$ has played a major role. Gingles had the ef-

1877, at 590 (1988). In South Carolina, Democrats constructed the "bizarre" South Carolina Seventh District in 1885, which "contained the homes of two Republican incumbents and sliced across county lines in order to pack in every possible black voter." Kousser, The Voting Rights Act, supra note 21, at 144. After these gerrymanders, the Seventh District in South Carolina was $81.7 \%$ black and the Sixth District in Mississippi was $77.5 \%$ black. Id. at 148 . (There are small discrepancies between Foner's and Kousser's figures regarding the postgerrymander populations in the Mississippi congressional districts.).
247. 462 U.S. 725 (1983).
248. In 1983, the Court upheld the invalidation of a New Jersey districting plan in which the maximum deviation from exact equality was $0.6984 \%$. The Court based its holding on the existence of a plan with a smaller deviation and the fact that the state had not justified its adoption of a less accurate plan. Karcher, 462 U.S. at 725.
249. 478 U.S. 30 (1986).
fect of requiring jurisdictions to put greater emphasis on fair and effective representation of minority interests. Because the emphasis on interest representation often conflicts with the traditional role of geography in constructing districts - particularly when minority populations are dispersed - Gingles has led to further deviations from compactness. These explanations are consistent with the greater decline in perimeter measures compared to dispersion measures and with the strong correlation between states with large minority populations and those whose perimeter scores declined in the 1990s. ${ }^{250}$

Whether rightly or wrongly decided, Shaw therefore cannot be seen as the Court's sudden awakening to a phenomenon of long-standing existence. Contorted appearances are not a new invention, but shifts in legal doctrine and technological developments have combined to produce generally less compact congressional districts and a number of extremely noncompact individual districts. In this sense, Shaw should be seen as an outgrowth of the changes occurring in the 1980s, including those the Court itself set into motion through changes in legal doctrine.

## V. Thresholds Versus Justifications: The Legal Role of Compactness

District "appearance" is a threshold, not an ultimate, issue under Shaw. It is important to be clear about the precise way in which Shaw makes compactness relevant. "Bizarre" districts that appear to be drawn for racial reasons are not per se unconstitutional. Instead, jurisdictions must offer specific, legitimate, and compelling purposes that account for the location and design of these districts. Under Shaw, noncompactness functions as a trigger for strict scrutiny; once a district crosses a threshold of noncompactness, special burdens of justification apply. Nonetheless, even extremely noncompact districts can survive strict scrutiny if sufficiently justified.

The process of justification involves two steps. First, the odd shape of a district must result from a state's pursuit of aims that are legitimate and constitutionally compelling. Second, the means the state chooses must be narrowly tailored to achieving those legitimate aims and no others. The issue of justification, therefore, is as crucial as that of appearance. Shaw, however, touches on that issue only briefly. In this last section, we can sketch a few considerations relevant to the justification inquiry.

[^70]Potentially acceptable justifications can be divided into three types: those that are obviously legitimate; those that pose more difficult questions; and those that trace directly to the VRA. With respect to each, we both describe the general form of justification and suggest some of the difficulties courts will face in applying it. We then turn to the more pervasive and general problem posed by Shaw's demand that intensely political and partisan districting decisions be justified in terms of rational, articulable principles. This conflict between the political and the legal poses daunting obstacles to judicial application of Shaw.

## A. Justifications: Ends

## 1. Conventionally Sufficient Ends

Certain traditional districting ends are, in theory, precisely the kind that will provide sufficient justification under Shaw for even "highly irregular" districts. They include respecting existing political boundary lines when they are oddly shaped, following natural geographic features of a landscape, and preserving "communities of interest." At the least, when a court finds these ends to be the dominant purpose behind a district's design, Shaw ought to be satisfied. ${ }^{251}$ For mixed-motive cases, however, in which these purposes are present alongside race-conscious districting aims, Shaw provides no direct guidance. With respect to "highly irregular" minority districts, these cases are likely to be common. Whether in such situations the enhancement of minority representation must be a motivating factor, the dominant motivating factor, or the exclusive motivating factor remains an open question.

Even after courts determine the appropriate causation standard, the evidentiary and administrative difficulties they will face in seeking to untangle mixed motives will remain formidable. The underlying purposes and principles that animate Shaw should govern the choice of standard. If we are right that Shaw fundamentally concerns social perceptions that race has subordinated all other traditionally relevant values in redistricting - but that race-conscious districting is not per se a constitutional problem - the proper causation standard in mixedmotive contexts ought to track this concern. This interpretation might suggest that the enhancement of minority representation must be more than merely a motivating factor behind a "highly irregular" district; it

[^71]must be either the exclusive explanation for that district or, at the least, the dominant purpose behind it. Deciding on which standard is most consistent with Shaw, however, requires a more detailed analysis of the likely effects of these different scenarios on social perceptions.

Apart from the problem of mixed motives, these theoretically sufficient justifications will pose additional conceptual difficulties in practice. With respect to "community of interest" justifications, reapportionment bodies often give some weight to defining districts in terms of attributed common interests. The list of potential interests, all reflected in actual districting plans, includes urban interests, rural interests, coastal interests, agricultural interests, mountain interests, beachfront property ownership, ethnic interests, and many more. The intersection between race-conscious districting and the acknowledged legitimacy of preserving communities of interest generates at least three interrelated questions that courts applying Shaw must confront.

First, what kinds of interests can policymakers legitimately treat as the basis for attributing a community identity to some group? This question is normative, not descriptive. The issue is which of the many dimensions that might describe some group's common interest may be acted on by legislators. If living on the coast defines a legitimately distinct political interest, does being wealthy? If so, does being poor?

Once inroads into territorial districting can be made in the name of preserving communities of interest, the second question is whether policymakers can treat race itself as constituting such an interest. The argument for doing so is particularly strong when two of the predicates to a section 2 claim under Gingles are present: that is, when majorities engage in racial-bloc voting against minority interests that are themselves politically cohesive. Under these circumstances, there might be strong reasons for permitting, if not requiring, policymakers to define communities of interest in racial terms. If urban residents or rural residents can be assumed to have cohesive political interests, perhaps racial groups can as well252 - particularly when this cohesiveness is not assumed, but demonstrated in fact.

With respect to "bizarrely" shaped race-conscious districts, however, Shaw seems to reject this kind of justification. If a "bizarre" district that appears to be a racial gerrymander cannot stand absent sufficient justification, the fact that the district was designed to be a racial gerrymander cannot provide that justification. This different

[^72]treatment of race and other interests may be a basis for criticizing Shaw, but it is the sine qua non of the decision.

Third, as the Court has recognized in other contexts, race frequently correlates with other socioeconomic factors. ${ }^{253}$ In evaluating oddly shaped districts, this correlation will require courts to attempt to untangle legitimate communities of interest from the now-illegitimate one of race. If blacks as blacks cannot be grouped into a "highly irregular" district, but urban residents or the poor can, how will courts distinguish these contexts, and under what mixed-motive standard?

In short, even the justifications most readily acceptable in theory - acknowledgement of existing political boundary lines, recognition of natural geographic features, preservation of communities of interest - will pose considerable difficulty in application.

## 2. More Complex Ends

Redistricting necessarily distributes political power between parties and specific politicians, particularly incumbent officeholders. In general, the Supreme Court has embraced political realism and, at least to some extent, tolerated these facts as inevitable or even desirable. As Justice White, perhaps the leading judicial realist in this area, wrote for the Court in Gaffney v. Cummings: 254 "Politics and political considerations are inseparable from districting and apportionment. . . . [I]t requires no special genius to recognize the political consequences of drawing a district line along one street rather than another. . . . The reality is that districting inevitably has and is intended to have substantial political consequences." ${ }^{255}$ After Shaw, the extent to which partisan objectives and protection of incumbent officeholders will be permitted to justify "highly irregular" race-conscious districts, if at all, becomes a critical question.

Currently, the Justice Department is taking the litigation position that these ends - partisan advantage or incumbent protection - do suffice to justify districts that Shaw requires to pass strict scrutiny. Thus, in post-Shaw litigation challenging certain black-dominated congressional districts in Louisiana, the Justice Department has filed a brief arguing that "where a compact majority-minority district could be drawn, but the state chooses to draw the district in a different, less

[^73]compact way to protect an incumbent or to give partisan advantage to one political party, the state will be able to explain the odd shape of the district on considerations other than race." 256 As a descriptive or analytic statement, this assertion is certainly accurate, as we argued earlier, ${ }^{257}$ but whether these explanations will satisfy Shaw is more uncertain.

The pattern of judicial response to these motivations in other redistricting contexts forms an intricate mosaic. With respect to protecting incumbents, federal courts accept this as legitimate state policy in some contexts; moreover, federal courts are actually required to defer to state aims of this sort in some circumstances when those courts are called upon to redistrict. For example, in interpreting the cause of action Davis v. Bandemer ${ }^{258}$ creates, which makes extreme partisan gerrymandering unconstitutional, courts increasingly focus on whether the plan treats incumbents of both parties "fairly." If a plan pairs too many incumbents from the same party against each other in a new district, this becomes significant evidence of impermissibly partisan redistricting. ${ }^{259}$ In effect, this approach not only tolerates state efforts to protect incumbents, but comes dangerously close to ensuring fair districting by making public office a personal sinecure. ${ }^{260}$ Federal courts have labeled protecting incumbents an "important state goal" ${ }^{261}$ and a "legitimate" justification when special justifications for district design are required. ${ }^{262}$ Similarly, the Supreme Court has held that, when federal courts are forced to choose among state redistricting plans, those courts must respect state policy preferences for pre-

[^74]262. Gonzalez v. Monterey County, 808 F. Supp. 727, 735 (N.D. Cal. 1992).
serving "the constituencies of congressional incumbents."263
Yet, in other redistricting contexts, federal courts have refused to acknowledge state interests in protecting incumbents. For example, when jurisdictions fail in repeated efforts to draw legally valid redistricting plans, federal courts assume that role. In these circumstances, some courts explicitly refuse to permit partisan or incumbency concerns to influence redistricting policy. 264 In the recent court-mandated reapportionment of the Minnesota legislature, the court evaluated the plan in terms of independent, nonpartisan fairness criteria, explicitly assuming a veil of ignorance concerning effects on incumbents. ${ }^{265}$ In other cases, court-appointed expert witnesses have specifically requested that they not be provided with data concerning partisan or incumbent effects of various plans. ${ }^{266}$ Arguably, an affirmative judicial role in redistricting might implicate different concerns than a more passive review of policymakers' reapportionment plans, but these cases reflect some judicial discomfort with legitimating too strongly state efforts to protect existing officeholders.

As for the legitimacy of partisan political aims, the argument that they justify "bizarre" race-conscious districts can be pressed in two forms. In the most compelling form, states might argue that oddly shaped districts are necessary to create a legislature that fairly reflects the distribution of partisan power in a state. In the least attractive but often more realistic form, states might argue that the political forces in control of redistricting ought to be permitted to exploit their advantage as far as possible. The argument would continue that, as long as this pursuit of political advantage is not carried to the unconstitutional

[^75]266. See, e.g., Issacharoff, supra note 260, at 1694.
extremes that Bandemer condemns, state political forces should be permitted to battle for control, even through the means of contorted, race-conscious districts. The Court has acknowledged the inevitable role of political aims in redistricting and has held that the pursuit of "political fairness," in the form of districts designed to bring about proportional representation of Democrats and Republicans in the state legislature, is not unconstitutional. ${ }^{267}$ Beyond that context, however, the Court has not suggested how much weight partisan aims will be given under the Fourteenth Amendment.

This wavering and uncertain pattern of decisions suggests a limit on the willingness of courts to accept state partisan and incumbencyprotection interests as compelling ones. Shaw offers no direct guidance on the question, but it seems unlikely that courts will view these interests as sufficient to justify "highly irregular" race-conscious districts. Both the tenor of Shaw and its formal legal requirement of strict scrutiny suggest the Court believes it has identified a value of profound constitutional importance that certain oddly shaped districts threaten. Although a state's partisan agenda might be a legitimate aim that courts will defer to in some contexts, it will be awkward for courts to declare it compelling enough to override the constitutional values Shaw identifies.

In addition, Shaw itself suggests that partisan motivations are a further reason to condemn, rather than to salvage, "bizarre" race-conscious districts. No veil obscured the possible role of incumbency protection behind the creation of District 12; the dissents raised it several times as a reason justifying the district, ${ }^{268}$ while amicus curiae squarely presented it as a reason to find North Carolina's plan unconstitutional. ${ }^{269}$ With partisan "defenses" so obviously available, Shaw would be a strange exercise in formality if the Court believes that, on remand, these defenses should be sufficient to justify contorted districts. Moreover, if Shaw rests on concern for social perceptions involving the role of race in politics, this concern suggests invalidating "highly irregular" districts when these perceptions are likely. Shaw resists permitting politicians to manipulate these social perceptions in pursuit of their own self-interest and partisan advantage. For these reasons, we consider it unlikely courts will find protection of incum-

[^76]bents or pursuit of partisan gain to be a sufficiently compelling justification for "highly irregular" race-conscious districts.

## 3. VRA Compliance as an End

Race-conscious districting most often occurs in the context of efforts to comply with the VRA's ban on minority-vote dilution. ${ }^{270}$ But compliance with the VRA is not a unitary phenomenon. Claims of compliance can arise in purely remedial contexts, they can arise when jurisdictions claim to be preventing future violations, or they can arise when jurisdictions affirmatively use race to comply with the general aim of enhancing minority representation.

As in other areas involving race and the Constitution, the purely remedial context is the easiest one. When a minority district is required for a jurisdiction to comply with either section 2 or 5 , that mandate should provide sufficient justification under Shaw. ${ }^{271}$ With respect to district shapes, the difficult question will not be whether required compliance satisfies strict scrutiny, but what kinds of districts the VRA will be interpreted to require. We have described the conflicting ways in which federal courts have approached that statutory question. ${ }^{272}$ Shaw directly bears on this question only when an interpretation of the VRA would be unconstitutional - that is, when the district it requires would be unconstitutionally contorted. But, Shaw will cast a larger shadow, for it will likely change the background assumptions courts bring to interpreting the Act. Courts might become more likely to find that the Act does not require extremely noncompact districts, particularly at the stage of determining substantive liability under the Act. ${ }^{273}$ The difficult question will not be the formal

[^77]one of whether VRA compliance is sufficiently compelling, but how broadly the courts will construe this compliance. We examine this question shortly.

Apart from the pure remedial context, jurisdictions might use race to forestall potential VRA violations. With respect to oddly shaped minority districts, the crucial question is whether Shaw will lead to Croson-like constraints on racial redistricting. ${ }^{274}$ Must jurisdictions first establish a factual predicate for the position that race-conscious districting is a necessary preventative? What evidence would be required and what level of proof must be met? For example, must jurisdictions engage in the costly and complex process of establishing racially polarized voting patterns, a task plaintiffs must undertake to establish a section 2 violation? Because we are focused here on "highly irregular" districts, it is unlikely jurisdictions will be able to establish that such districts are necessary to avoid substantive VRA liability. ${ }^{275}$

Finally, jurisdictions might seek to justify oddly shaped minority districts not in remedial terms, but prospectively. If forced to put this in terms of compliance with the VRA, jurisdictions might argue that such districting is consistent with the general purposes and spirit of the Act, even if not technically required. Jurisdictions might assert, for example, that these districts are a means of enhancing the legitimacy, fairness, and responsiveness of democratic institutions. Under Voinovich v. Quilter, ${ }^{276}$ nothing in the VRA prohibits race-conscious districting justified in these terms. But, whatever the constitutional status of such justifications for race-conscious districts that are reasonably compact, Shaw seemingly requires that these justifications be found insufficient for "highly irregular" districts. Shaw requires strict scrutiny for irregular districts, and, again, it is difficult to see the point

[^78]276. 113 S. Ct. 1149 (1993).
in that requirement if jurisdictions can successfully defend with the argument that they were seeking to enhance minority representation. ${ }^{277}$

## B. Means: The Requirement of Narrow Tailoring

In addition to sufficiently compelling ends, Shaw requires "narrowly tailored" means that advance those ends with precision. ${ }^{278}$ This will be a complex undertaking, again raising, among other difficulties, the problems of mixed motives.

Consider VRA compliance. When the Justice Department under section 5 or the courts under section 2 find that a jurisdiction is required to create an additional minority district, neither typically specifies precisely where that district must be located and how it must be designed. This policy of self-abnegation rests both on the recognition that districting implicates multiple, diverse values, and on policy reasons for deferring to state recommendations of those values. As long as the jurisdiction gets to the required end state and creates the additional district, federal concerns are satisfied.

In this context, the meaning of "narrowly tailored" is obscure. Absent direct specification from either the courts or the Justice Department as to how a district is to be designed, no obvious baseline exists against which to measure "narrowly tailored."

One solution is to construe this language to suggest that the minority districts the VRA requires must be drawn in the most compact way possible. Yet this would confuse the purpose of Shaw's strict scrutiny standard and require jurisdictions, for no obvious purpose, to compromise significant redistricting values. The purpose of demanding close connections between means and ends is to ensure that the state is not covertly pursuing forbidden ends. But compactness is not constitutionally required; ${ }^{279}$ Shaw does not forbid noncompact districts per se. Instead, the suspect districts are those so noncompact as to create the social perception that the single value of race-conscious districting has subordinated all other districting values.

As a result, "narrowly tailored" in this context should mean no

[^79]279. Shaw, 1 i 3 S. Ct. at 2827 (citing Gaffney v. Cummings, 412 U.S. 735 , 752 n. 18 (1973)).
more than avoiding "highly irregular" district shapes. This view may make the means test appear redundant, given that Shaw requires strict scrutiny for precisely such districts. Interpreted this way, however, the narrow tailoring requirement would still be an element in Shaw's logic because it would clarify that vague assertions of compliance with the VRA will not suffice. At the same time, as long as jurisdictions are complying with their VRA obligations, while still accommodating traditional redistricting goals, Shaw implies that they will retain policymaking discretion to make trade-offs among these goals. Shaw requires that jurisdictions respect value pluralism and avoid value reductionism. The requirement of "narrow tailoring" should be construed with this principle in mind.

## C. Justifications: The General Problem

Easily lost in this technical legal analysis is the essential nature of the districting process. Districting implicates an array of values, some relatively neutral, some intensely partisan. For the most part, one cannot rank these values in any lexical order; no decision rule specifies the precise trade-offs to be made among these values when they conflict. ${ }^{280}$ Moreover, the design of even a single district reflects not one decision, but the cumulation of hundreds of small decisions whether to include this or that section of adjacent towns, whether to extend the district to the north or to the west, even whether to include this or that street. In addition, district plans draw from a virtually unlimited range of potential alternatives. There is no ideal districting plan that forms a baseline against which to measure individual districts or a district plan.

Shaw attempts to pull one thread out of this tapestry; it demands specific, articulable justifications in one particular districting situation. It is not clear, however, whether this aim can be achieved without unraveling the fabric of the districting process. Districting plans are integrated bundles of compromises, deals, and principles. To ask about the reason behind the design of any one particular district is typically to implicate the entire pattern of purposes and trade-offs behind a districting plan as a whole. ${ }^{281}$ Searching for "the reason" or

[^80]"the dominant reason" behind a particular district's shape is often like asking why one year's federal budget is at one level rather than another. Moreover, to require a coherent explanation for the specific shape of even one district is to impose a model of legalistic decisionmaking on the one political process that least resembles that model.

These general pressures may lead Shaw in another direction. Rather than providing a doctrine for recovering the reasons behind an irregular district, Shaw might eventually become an external constraint on the districting process. That is, Shaw might come to define an outer constraint on extreme noncompactness. As long as redistricting bodies stay within that constraint, however, they will retain the discretion to make arbitrary, politically laden policy trade-offs between competing districting values. In this way, Shaw would not demand ex post what does not take place ex ante: reasoned articulation of specific purposes for drawing district boundaries in particular ways.

Rather than seeking the reasons an irregular district was drawn, courts might implement Shaw as a constraint on the extent to which districts can become extremely noncompact. With a clearly announced constraint on extreme noncompactness, political bodies will understand the domains in which they cannot act and those within which they retain policymaking discretion. As long as policymakers stay within this specified constraint, courts will not have to inquire into the reasons behind district designs. Many of the issues discussed above can then be bypassed. When policymakers continue to believe they have sufficient reasons for violating this constraint, courts will still have to evaluate those justifications. Yet such contexts are likely to be rare once a clear constraint is specified.

## CONClUSION

In some respects, Shaw might function as the Baker v. Carr ${ }^{282}$ of the Voting Rights Act era. In Shaw, the Court found justiciable an entirely new kind of equal protection claim that constrains the design of election districts. Like Baker, the decision will be controversial, in part because it is bereft of virtually any guidance as to how the elusive principles that underlie its holding are to be turned into an administrable set of standards. In an area as explosive as race and redistrict-

[^81]ing, the political, legal, and social costs of this uncertainty are potentially vast.

We have argued that Shaw ultimately must be understood in terms of judicial concern for "expressive harms." American conceptions of political representation are riven right now by competing ideals. Traditionally, the fundamental template has been that of the territorially based single-member districting system, in which geographically defined interests are the foundation on which political representation is built. Working within this mold, the VRA stresses instead direct representation of group interests, seeking to ensure the fair and effective representation of minority groups. In Shaw, the Court effectively held that the tension between these alternative visions had reached the breaking point. When jurisdictions create "bizarre" territorial districts, in single-minded pursuit of enhancing minority representation, they compromise the perceived legitimacy of political institutions. The harm is a generalized one, for it lies not in specific burdens on particular individuals, but in government's expression of disrespect for significant public values. Right or wrong, this is the theory on which Shaw is decided.

Expressive harms are notoriously difficult to translate into legal rules. We have argued that quantitative measures of compactness provide the most secure starting points for defining "bizarre" districts in principled and administrable terms. Using these measures, we have shown that North Carolina District 12 can legitimately be considered the least compact congressional district in the country. At the same time, other districts - majority and minority - are not far behind. The precise effect of Shaw will depend on how "irregular" a district must be to trigger strict scrutiny, but quantitative measures of compactness promise the most useful guidance for making that choice. Baker became meaningful once Reynolds v. Sims ${ }^{283}$ translated it into the one-person-one-vote standard. If Shaw is to have its Reynolds, it will be through the quantitative measures of compactness we offer here.

[^82]IN THE UNITED STATES DISTRICT COURT FOR THE MIDDLE DISTRICT OF NORTH CAROLINA


## SPECIAL MASTER'S RECOMMENDED PLAN AND REPORT

On November 1, 2017, the United States District Court for the Middle District of North Carolina sitting as a three-judge panel comprised of the Honorable James A. Wynn, Judge of the United States Court of Appeals for the Fourth Circuit, the Honorable Thomas D. Schroeder, Chief Judge for the Middle District of North Carolina, and the Honorable Catherine C. Eagles, United States District Judge for the Middle District of North Carolina, (hereinafter "the Court") appointed me as Special Master in the above captioned case. Appointment Order, Nov. 1, 2017, ECF No. 206 (hereinafter the "Order"). The Order directed the Special Master, by December 1, 2017, "to submit a report and proposed plans to remedy the unconstitutional racial gerrymander" of various districts in the 2011 Enacted Senate and House districting plans for the North Carolina General Assembly. Id. at 5. Herein provided is the Plan and Report called for in the Court's Order.

Exhibit 1 presents statewide and selected county maps of the Special Master's Recommended Plan, along with analogous maps from the Enacted 2011 and 2017 Plans for comparison. Exhibit 2 presents population deviations for all districts in the Special Master's Recommended Plan, the Enacted 2011 Plan, and the Enacted 2017 Plan. Exhibit 3 presents

Reock and Polsby-Popper compactness statistics for all districts in the Special Master's Recommended Plan, the Enacted 2011 Plan, and the Enacted 2017 Plan. Exhibit 4 presents a report on splits of county and municipality boundaries for all districts in the Special Master's Recommended Plan, the Enacted 2011 Plan, and the Enacted 2017 Plan. Exhibit 5 presents a report on splits of 2010 Voter Tabulation Districts (hereinafter "precincts"), as provided by the U.S. Census Bureau, for all districts in the Special Master's Recommended Plan, the Enacted 2011 Plan, and the Enacted 2017 Plan. Exhibit 6 provides a breakdown of the districts by Voting Age Population for Census-designated racial and ethnic groups for all districts in the Special Master's Recommended Plan, the Enacted 2011 Plan, and the Enacted 2017 Plan. Exhibit 7 provides statewide and county maps for the Special Master's Draft Plan, as well as associated statistical reports. Exhibit 8 includes the briefs and maps filed by Plaintiffs in response to the Special Master's Draft Plan. Exhibit 9 includes briefs provided by the Legislative Defendants in response to the Special Master's Draft Plan. Exhibit 10 provides color maps of alternatives to the Recommended Senate and House Plans for Guilford County. Exhibit 11 provides a list of the incumbents assigned to each district in the Special Master's Recommended House and Senate Plans. Exhibit 12 provides the Plaintiffs' Proposed House and Senate Plans. Exhibit 13 provides the Court's November 1st Order Appointing the Special Master. In addition to the above, the Court, the parties, and the North Carolina General Assembly have been provided with 2010 Census block equivalency files and shapefiles for the Special Master's Draft Plan, the Special Master's Recommended Plan, and alternate plans, as well as a "stat pack" with computer generated reports describing features of the Recommended Plan in detail.

## Background

On August 11, 2016, the Court struck down twenty-eight districts in the State House of Representatives and Senate plans enacted in 2011 by the North Carolina General Assembly (hereinafter Enacted 2011 Plans). Covington v. North Carolina, 316 F.R.D. 117, 176 (M.D.N.C. 2016), aff'd in relevant part, 137 S. Ct. 2211 (2017) (mem.). The Court ruled those districts unconstitutional under the Equal Protection Clause of the Fourteenth Amendment. In particular, the Court found that those districts were drawn with race as their predominant purpose in violation of Shaw v. Reno, 509 U.S. 630 (1993), and its progeny, and that neither section 2 nor section 5 of the Voting Rights Act of 1965 justified doing so. 316 F.R.D. at 167-77.

Following the 2016 election and additional proceedings in both the District Court and the United States Supreme Court, the North Carolina General Assembly passed a remedial redistricting plan on August 31, 2017 (hereinafter the Enacted 2017 Plan), approximately one year after the Court's decision striking down the Enacted 2011 Plan. On September 15, 2017, Plaintiffs filed objections to three Senate districts and nine House districts. Plaintiffs contended that Enacted 2017 Senate Districts 28 and 21 and Enacted 2017 House Districts 21 and 57 continued to violate the Equal Protection Clause in that, even in their revised configurations, race continued to be the predominant factor in their construction. They also alleged that certain districts violated the North Carolina State Constitution. They claimed that Enacted 2017 House Districts 36, 37, 40, 41, and 105 were redrawn in violation of the provision of the state constitution that prohibits redistricting more than once per decade. See N.C. Const. art. II, §§ 3(4), 5(4). Because those districts did not adjoin the districts ruled unconstitutional racial gerrymanders, the Plaintiffs argued, redrawing those districts was not necessary to address the constitutional infirmities identified in the Court's decision. They also argued that Enacted 2017

House Districts 10 and 83 violated the state constitution's Whole County Provision, N.C. Const. art. II, §§ 3(3), 5(3), because the General Assembly could have drawn a plan in which those districts traversed fewer counties or in which fewer counties were split by certain districts.

Finally, the Plaintiffs claimed that Enacted 2017 Senate District 41 was noncompact to the point of violating the Whole County Provision. After Legislative Defendants filed their response, the Court held a hearing on those objections on October 12, 2017.

On November 1, 2017, the Court issued the Order appointing a Special Master and raising concerns as to the legality of the Enacted 2017 Plan. In particular, the Court expressed "serious concerns that 2017 Enacted Senate Districts 21 and 28 and 2017 Enacted House Districts 21 and 57 fail to remedy the identified constitutional violation" from the Enacted 2011 Plan. The Order explained:

> Among other concerns, some or all of the proposed remedial districts preserve the core shape of the unconstitutional version of the district, divide counties and municipalities along racial lines, and are less compact than their benchmark version. In some cases, the General Assembly's use of incumbency and political data in drawing its proposed remedial districts embedded, incorporated, and perpetuated the impermissible use of race that rendered unconstitutional the 2011 districts. The 2017 Enacted Districts do not appear to cure the constitutional violations found as to 2011 Enacted House Districts 21 and 57 and Senate Districts 21 and 28.

Order at 1-2. In other words, the Court emphasized that, despite the 2017 revisions, the constitutional infirmity identified in some of the 2011 districts remains. The district boundaries may have moved somewhat, but according to the Court, some districts continue to violate, in critical respects, the Constitution's prohibition against unjustified and excessive use of race in the design of districts.

For House districts in Wake and Mecklenburg Counties, the Court expressed a different set of concerns related to the Enacted 2017 Plan's violation of the North Carolina State Constitution. As described above with respect to the Plaintiffs' objections to the 2017 Plan, several of the districts in those counties did not need to be redrawn in order to remedy the constitutional infirmity as to racial predominance in the Enacted 2011 House Districts 33, 38, 99, 102, and 107. Because the North Carolina Constitution prohibits redistricting more than once a decade, the Court observed that any lines redrawn in 2017 must be justified by a need to correct some legal infirmity (e.g., unconstitutional racial gerrymandering) in the plan adopted following the decennial census. As the Court has concluded, "[u]nless required by Court order, the General Assembly was prohibited by the North Carolina Constitution from redrawing these districts. N.C. Const. art. II §§ 3(4), 5(4)." Order at 2. As is shown in the Special Master’s Recommended Plan, it was, indeed, possible to reconfigure the districts deemed unconstitutional while retaining the Enacted 2011 districts that did not adjoin them.

## The Charge to the Special Master

The Court determined that appointment of a Special Master was necessary because of the "fast approaching filing period for the 2018 election cycle and the specialized expertise necessary to draw district maps." Order at 4. The Court confronted a problem familiar to redistricting cases. The tightness of the election schedule and especially the impending candidate-filing deadline often makes it extremely challenging, within the necessary time period, to perform all the tasks necessary to have a plan in place. It requires the Court to evaluate a state's plan, to issue an opinion explaining the legal infirmities therein, to appoint a Special Master (after the parties have had an opportunity to object), to have that Special Master draw a remedial plan (often with input from the parties), to have a hearing and entertain objections to
the Special Master's Plan, to make any warranted changes to the Special Master's Plan, and then to adopt the Plan as the Court's plan. Allowing the Special Master to begin his work once the Court has made its initial determination that a remedial plan will be necessary is one way to ensure that the Court's plan will be ready in time for candidates to know in which districts they will need to file to run for office. Of course, in the end, regardless of the sequencing of the tasks above, the Court will only adopt a plan if it determines, after hearing from the parties, that the plan remedies the legal infirmity the Court has identified in the state's plan.

With these time pressures in mind, the Court issued an order on November 1, 2017, appointing a Special Master and defining his responsibilities. The Court ordered the Special Master to develop, by December 1, 2017, redistricting plans that addressed the infirmities of the Enacted 2017 Plans for the North Carolina General Assembly, as identified in the order and reflected in the Court's earlier opinion in Covington, 316 F.R.D. 117. Order at 5. The Order laid out specific criteria that would guide production of the Special Master's Plan, as well as a procedure for developing the plan. See Order at 9-10 (detailing principles of the plan and other aspects of the process, such as a bar on ex parte communication, permission for hiring assistants and using state resources, and authorization for a release on a draft plan to garner feedback).

In particular, the Court ordered that "[i]n drawing remedial districts, the Special Master shall":
a. Redraw district lines for the Subject Districts and any other districts within the applicable 2017 county grouping necessary to cure the unconstitutional racial gerrymanders. As to House District 57, the redrawn lines shall also ensure that the unconstitutional racial gerrymanders in 2011 Enacted House Districts 58 and 60 are cured. As to 2011 Enacted House Districts 33, 38, 99, 102, and 107, no 2011 Enacted House Districts which do not adjoin those
districts shall be redrawn unless it is necessary to do so to meet the mandatory requirements set forth in Paragraphs 2(b) through 2(e) of this Order, and if the Special Master concludes that it is necessary to adjust the lines of a non-adjoining district, the Special Master shall include in his report an explanation as to why such adjustment is necessary.
b. Use the 2010 Federal Decennial Census Data;
c. Draw contiguous districts with a population as close as possible to 79,462 persons for the House Districts and 190,710 persons for the Senate Districts, though a variance up to $+/-5 \%$ is permitted and authorized if it would not conflict with the primary obligations to ensure that remedial districts remedy the constitutional violations and otherwise comply with state and federal law, would enhance compliance with state policy as set forth in subsection (f) below, and would not require redrawing lines for an additional district.
d. Adhere to the county groupings used by the General Assembly in the 2017 Enacted Senate and House Plans;
e. Subject to any requirements imposed by the United States Constitution or federal law, comply with North Carolina constitutional requirements including, without limitation, the Whole County Provision as interpreted by the North Carolina Supreme Court.
f. Make reasonable efforts to adhere to the following state policy objectives, so long as adherence to those policy objectives does not conflict with the primary obligations of ensuring that remedial districts remedy the constitutional violations and otherwise comply with state and federal law:
i. Split fewer precincts than the 2011 Enacted Districts;
ii. Draw districts that are more compact than the 2011 Enacted Districts, using as a guide the minimum Reock ("dispersion") and Polsby-Popper ("perimeter") scores . . . ; and
iii. Consider municipal boundaries and precinct lines.
g. After redrawing the districts, in view of the policy decision by the General Assembly that efforts to avoid pairing incumbents are in the interest of North Carolina voters, the Special Master may adjust district lines to avoid pairing any incumbents who have not publicly announced their intention not to run in 2018, but only to the extent that such adjustment of district lines does not interfere with remedying the constitutional violations and otherwise complying with federal and state law. Additionally, the Special Master shall treat preventing the pairing of incumbents as "a distinctly subordinate consideration" to the other traditional redistricting policy objectives followed by the State. . . .
h. Except as authorized in Paragraph 2(g), the Special Master shall not consider incumbency or election results in drawing the districts. . . .
i. The Special Master may consider data identifying the race of individuals or voters to the extent necessary to ensure that his plan cures the unconstitutional racial gerrymanders and otherwise complies with federal law.

Order at 5-7 (internal citations omitted).
The Court further specified what should be contained in the Special Master's Report accompanying the Plan:
a. At least one recommended redistricting plan for each Subject District;
b. For each county or county grouping encompassing a Subject District, a color map showing the recommended remedial plan;
c. For each Subject District, an analysis (i) explaining the proposed remedial plan and the recommendation of that plan over the 2017 Enacted Districts or the Plaintiffs' proposed districts; (ii) covering any matters required elsewhere in this Order; and (iii) discussing any criteria, issues, or questions which the Special Master believes may arise or which will otherwise aid the Court;
d. A comparison of the Special Master's districts with the related 2011 and 2017 Enacted Districts as to population deviations; compactness; county, municipal, and precinct splits; incumbency pairing; Black Voting Age Population; and
any other relevant criteria; and
e. A "stat pack" for the recommended plans.

Order at 12-13.

## Creation of the Special Master's Plan

The one-month deadline for constructing the Recommended Plan required that preliminary work begin immediately following the Appointment Order on November 1. Among other tasks, the preliminary work included becoming familiar with the earlier decisions of the Court, with the filings of the parties to that point, and with the 2011 and 2017 redistricting plans for the North Carolina General Assembly. In addition, drawing the Draft Plan required the purchase of certain software (Maptitude for Redistricting by Caliper Corporation) and hardware.

Given the intense partisan concerns that always surround processes of this sort and the critical importance of nonpartisanship to the legitimacy of the Special Master's work, the Special Master's Plan needed to be compliant with the applicable law, transparent in its following of the Court's Order, and based on the articulated state redistricting principles. Experience in several similar redistricting disputes counseled in favor of gathering much-needed feedback from the parties in the formulation of the plan. Therefore, any draft redistricting plan would need to be submitted to the parties with enough time for them to raise objections and make suggestions. In particular, because the issues surrounding incumbency present knotty problems for any nonpartisan plan of this sort, the Draft Plan would ignore incumbent residence and then be altered following advice from the parties on how to "unpair incumbents" - that is, to the extent possible, to ensure that one and only one incumbent seeking reelection was placed in any given district. This principle was one explicitly called for by the Court's Order, based on the state's
articulated goal in its redistricting plan under review. Because the parties are in a better position to know which incumbents plan to run for reelection ${ }^{1}$ and whether a proposed redistricting plan might change their electoral calculations, it is necessary to get some input from the parties throughout the process to make sure that any such "unpairing" was something that the incumbents themselves desired. However, per the Court's Order, the Recommended Plan would honor any request by the parties to unpair incumbents, so long as it did not violate the other criteria in the Order.

That strategy and those goals led to the creation of the Special Master's Draft Plan. With respect to the 2017 Enacted Districts for which the Court raised concerns as to racial predominance, the Draft Plan provided a limited remedy, constructed of compact districts made of whole precincts that respected political subdivision lines, specifically the boundaries of Census Designated Places ("CDPs"), which usually refer to city boundaries. Of course, sometimes these criteria were in tension with each other - for example, when a city is, itself, noncompact and noncontiguous, as is frequently the case in North Carolina, or when precinct boundaries cross municipal boundaries. Nevertheless, these factors comprise the kind of nonpartisan redistricting principles typical of court-drawn plans. Although any change in district lines will have partisan, electoral, or incumbency-related effects, a redistricting plan adhering to these principles is less open to the charge of partisan manipulation than one based on more amorphous criteria as to how communities "ought" to be represented.

[^83]Construction of the Draft Plan could only proceed, however, after analysis and rejection of the Plaintiffs' proposed remedial plans. In its Order, the Court expressed its "concern[] that among, other things, some of the districts proposed by Plaintiffs may be the result of impermissible political considerations." Order at 2. The Legislative Defendants, moreover, characterized the Plaintiffs' remedial plan as motivated by partisan concerns. See Legislative Defendants' Response to Plaintiffs' Objections at 2, ECF No. 192 ("Plaintiffs' proposed house and senate districts target numerous Republican members of the legislature . . . , the only reason for which appears to be to punish those members for being Republican."); id. at 47 ("the Covington plans . . . were motivated primarily by political considerations"). Of course, political considerations admittedly played a role in the Enacted 2011 and 2017 Plans, as they do in most redistricting plans.

The Special Master's Plan, however, could not be drawn on a similarly political basis. First, the Court prohibited the Special Master from considering election results in drawing districts, and permitted consideration of incumbency only to the limited degree of unpairing incumbents after drawing the plan. Order at 7-8. Second, Supreme Court precedent makes clear that courts lack "political authoritativeness" and must act "in a manner free from any taint of arbitrariness and discrimination" in drawing remedial plans. Wise v. Lipscomb, 437 U.S. 535, 541 (1978) (quoting Connor v. Finch, 431 U.S. 408, 417 (1977)). A nonpartisan approach to redistricting is absolutely critical to bolstering the legitimacy of the Special Master's Plan. Third, the Court tasked the Special Master with remedying a legal problem, not with addressing political unfairness. The Special Master's Plan must be evaluated on the basis of its correction of the state and federal constitutional problems for which the Court has ordered a remedial plan.

It shall make revisions only to the extent necessary to remedy the legal infirmity in the legislature's plan. See Perry v. Perez, 565 U.S. 388, 394 (2012).

Given those considerations and the specific criteria for the Special Master's Plans called for in the Court Order, the Plaintiffs' proposed plans could not be adopted as the Special Master's Plan. To be clear, the Plaintiffs' proposals complied with applicable law. The plans were composed of equipopulous districts that complied with one person, one vote, and at least on the face of them, they did not appear to use race as the predominant factor in their creation. However, even leaving the allegation of partisanship aside, the Plaintiffs' plans fell short according to the Court's criteria and redrew more districts than were necessary to remedy the legal violation. In any event, the Special Master's Recommended Plan does a better job in complying with such criteria.

The Plaintiffs submitted two sets of plans as part of this litigation. What they describe in their briefing as "the Plaintiffs' Plans," are presented as Exhibit 12. However, they also included alternative plans for some districts (so-called "Cromartie Demonstrative Maps") provided by their expert witness William R. Gilkeson, Jr. See Plaintiffs' Objections to Defendants' Remedial Districts and Memorandum of Law, at 2-23, ECF No. 187-7. Neither warranted adoption as the Special Master's Plan.

First, the Plaintiffs' Plans redrew more districts than necessary to remedy the constitutional violations. Their Proposed House and Senate Plans for Guilford County redrew all of the districts there, despite the fact that they challenged only one district in each plan (Enacted 2017 House District 57 and Enacted 2017 Senate District 28), which were the only

Guilford districts for which the Court expressed constitutional concerns. ${ }^{2}$ They also completely reorganized the districts in Wayne, Sampson, and Johnston Counties to deal with the constitutional objection to Enacted 2017 House District 21. Likewise, the plans for Wake and Mecklenburg Counties, while reinstating the Enacted 2011 districts deemed unnecessarily redrawn to cure the Equal Protection violations there, redrew several districts that did not need to be redrawn to harmonize the 2017 and 2011 districts.

Second, in some areas the Plaintiffs' Plans did a poor job of respecting municipal lines. This was especially the case in Guilford County, once again, wherein a single district (Plaintiffs' House District 57) was located within Greensboro, with all of the remaining districts in the County extending from outside Greensboro to pick up slices of the city. The Cromartie Demonstrative Map for those districts fared better, but even it placed two districts largely within Greensboro, whereas a third (as demonstrated in the Special Master's Draft and Recommended Plans) is possible. The remaining districts in that alternative plan, therefore, extended from outside Greensboro to take in significant portions of Greensboro.

Finally, several of the Plaintiffs' proposed districts were noncompact. This was especially the case in their proposed House districts for Wayne, Sampson, and Johnston Counties. Plaintiffs' House District 76 followed the border of Johnston County with Nash, Wilson, and Wayne Counties, but it then snaked south to follow Wayne County's border with Sampson, Duplin and Lenoir. Plaintiffs' District 28 occupied most of southern Johnston County but entered Sampson County with a fishhook-style intrusion. Similarly, Plaintiffs' Senate Plan for Guilford County, while attempting to place two districts that straddle Greensboro, contained

[^84]one district (Plaintiffs' District 28) which spanned nearly the entire midsection of the county, but also needlessly traveled southwest to split the CDP of High Point. As a result, Plaintiffs' Senate Districts 24 and 29 filled in the "leftover" territory in northern and southern Guilford County in a decidedly noncompact fashion.

For these reasons, along with the general warning issued by the Court to avoid adopting a plan tainted by political considerations, the Special Master declined to adopt the Plaintiffs' Plan and set out to craft the Draft Plan and eventually, the Recommended Plan. The remainder of this Report explains why the Special Master's Recommended Plans solve the constitutional problems the Court identified in the 2017 Enacted Plans, and are superior according to the criteria the Court laid down in its order.

## Release of the Special Master's Draft Plan and Order

The Special Master's Draft Plan and Order were released on November 13, 2017, to give the parties an opportunity to propose revisions and, in particular, to make suggestions as to how to unpair incumbents. See Exhibit 7. The Draft Plan also included an order to the parties to submit objections and revisions by November 17, 2017. Reply briefs were to be submitted by November 21, 2017, at which time the parties were "encouraged to identify which proposed changes of the plaintiffs and defendants, if any, were jointly supported by the parties." Id. at 19 . The parties were also ordered to supply by November 14, 2017, in electronic form, a geographic layer . . . that includes the location of the residences of all current incumbents in the North Carolina General Assembly." Id. The Legislative Defendants did so on November 14.

The parties filed their responses to the Special Master's Draft Plan on November 17, 2017. See Exhibits 8 and 9. The Plaintiffs offered several suggestions related to unpairing certain incumbents. In particular, they proposed revisions (two scenarios, in fact) that would unpair two incumbents in Draft Plan House District 59, by moving Draft Plan District 58 south to pick up the residence of Representative Amos Quick. They also proposed several changes to the Draft Plan's districts in Wake County. They proposed restoring a split precinct in House District 40 that was split in the 2011 Plan. They also proposed revisions that would unpair incumbents placed together into Draft Plan House District 49. In particular, Plaintiffs proposed moving the boundaries of Draft Plan House District 34 so that it would capture the residence of Representative Grier Martin. Although the Special Master's Draft Plan paired incumbents in other districts, as well, the Plaintiffs did not propose changes to any other districts.

The Legislative Defendants took a different approach in their response to the Special Master's Draft Plan. See Legislative Defendants' Response to Special Master's Draft Report, Nov. 17, 2017, ECF No. 215. They did not propose changes to any specific districts. Indeed, they argued it was "inappropriate for the Court to authorize the special master to ask legislative defendants to comment on, or propose revisions of, districts drawn by the special master when the legislative defendants do not themselves speak for the entire General Assembly." Id. at 5. Instead, the Defendants reiterated their earlier objections to the appointment of the Special Master, argued that the Court and Special Master were without jurisdiction or authority to craft a remedial plan, and maintained that the Court's Order misinterpreted the North Carolina State Constitution. As mentioned above, the Legislative Defendants also argued that the Special Master's Draft Plan "improperly engaged in racial sorting" by adopting racial targets for the redrawn districts. However, the Legislative Defendants did not offer any suggestions as to how
to unpair incumbents or how to redraw individual districts, except insofar as they urged the adoption of the 2017 Plan.

On November 21, 2017, the parties filed reply briefs addressing the proposed revisions to the Special Master's Draft Plan. Because the Legislative Defendants had objected to any revisions to the Enacted 2017 Districts and suggested none of their own, the Plaintiffs limited their reply to legal arguments as to the requirements of the North Carolina Constitution and the precedent regarding race-based redistricting. See Plaintiffs' Response to Legislative Defendants' November 17, 2017 Filing, November 21, 2017, ECF No. 217. The Legislative Defendants, in their reply, objected en masse to all of the changes proposed by the Plaintiffs. Legislative Defendants' Response to Plaintiffs' Proposed Modifications to Special Master's Draft Plan, Nov. 21, 2017, ECF No. 218. They reiterated their position as to racial targeting in the Special Master's Draft Plan, and raised new concerns as to split precincts in House District 21, respect for municipal lines in Greensboro and Fayetteville, and the noncompactness of certain Guilford County districts. They also alleged that the Plaintiffs' proposed revisions only attempted to unpair Democrats, and as such, should not be honored by the Special Master in revising the Draft Plan. The Legislative Defendants, however, did not offer any suggestions as to how other incumbents might be unpaired, let alone concrete suggestions as to how the Draft Plan should be revised. In their view, the Special Master should advocate for the General Assembly and urge the Court to adopt the 2017 Enacted Plan.

As explained in greater detail in the descriptions of the individual districts, feedback from the parties led to several changes to the Special Master's Draft House Plan. In response to the Legislative Defendants' concern as to split precincts in Draft House District 21, the Special Master's Recommended House Plan repairs all of the split precincts but one (located in the

Sampson County portion of the district), which is equal to the number of split precincts in the Enacted 2017 version of the district. The Recommended House Plan also responds to the Plaintiffs' concerns as to the incumbent pairing in the Wake County districts. Based on criticism from the Legislative Defendants and suggestions from the Plaintiffs, the Recommended Plan modified the Guilford County House districts from the Draft Plan. As a result of these modifications, the districts in the Recommended House Plan are more compact, do not pair any incumbents, and disturb fewer districts from the 2017 Enacted Plan. No changes were made to the Draft Senate Plan to produce the Recommended Senate Plan.

## Overview of the Special Master's Recommended Plan

The Court's Order mandated that the Special Master's Final Plan and Report contain an evaluation of the recommended districts and a comparison with the Enacted 2011 and 2017 Plans. Specifically, the Order requested "a comparison of the Special Master's Districts with the related 2011 and 2017 Enacted Districts as to population deviations; compactness; county, municipal and precinct splits; incumbency pairing; Black Voting Age Population; and any other relevant criteria." Order at 12-13. A detailed description of each district follows, but a few general points as to the redrawn districts can provide some context. Tables displaying data on the redrawn Senate Districts 21 and 28 and House Districts 21 and 57 are included within the text here, adjoining districts are further described in the detailed descriptions of the districts, and full statistics for all districts are included as attached Exhibits.

First, all of the districts in the Special Master's Plan comply with the law. The Court identified several areas of federal and state law in its order. The Special Master's plan must
comply with the equal population requirement ("one person, one vote") of the Fourteenth Amendment to the United States Constitution. It also must avoid running afoul of that same Amendment's prohibition against unjustified racial predominance in districting, which was the central constitutional flaw the Court identified in the Enacted 2011 Districts. Finally, the Special Master's Plan must comply with the requirements of the North Carolina Constitution, including the Whole County Provision referenced above. ${ }^{3}$

The Special Master's Recommended Plan complies with one person, one vote. The Court directed that the Special Master's Plan be comprised of "contiguous districts with a population as close as possible to 79,462 persons for the House Districts and 190,710 persons for the Senate Districts, though a variance up to $+/-5 \%$ is permitted and authorized" to comply with the other criteria in the Order. Order at 6. All of the districts in the Special Master's

Recommended Plan comply with one person, one vote, in that their total population according to the 2010 Census was within five percent of the "ideal" population for each district. See Table A below and Exhibit 2. In some areas, as with the House Districts in Wayne and Sampson Counties, this proved quite difficult (as is revealed in both the Enacted 2017 Plan and the Special Master's Recommended Plan). The district deviations there necessarily equal five percent because the Whole County Provision of the State Constitution requires working within a county grouping to achieve equipopulous districts, if possible. For example, if a county's population totals $210 \%$ of the ideal district population, then two districts, each exactly $105 \%$ of an ideal population district, must be drawn. The deviations in the districts of the Special Master's

[^85]Recommended Plan do not materially differ from those in the 2011 or 2017 Plans, as all comply with one person, one vote.

## Table A. Comparison of Population Deviations from Ideal Size Among Selected Districts ${ }^{4}$

| Population Deviation |  |  |  |  |  | Percent Deviation |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| District | $\begin{aligned} & 2011 \\ & \text { Plan } \end{aligned}$ | $\begin{aligned} & 2017 \\ & \text { Plan } \end{aligned}$ | Rec. Plan | chg in abs dev from 2011 | chg in abs dev from 2017 | $\begin{aligned} & 2011 \\ & \text { Plan } \end{aligned}$ | $\begin{gathered} 2017 \\ \text { Plan } \end{gathered}$ | Rec. Plan | chg in abs dev from 2011 | chg in abs dev from 2017 |
| Senate 21 | -7,508 | -6,394 | -7,196 | -312 | +802 | -3.9\% | -3.4\% | -3.8\% | -0.1\% | +0.4\% |
| Senate 28 | 8,729 | 6,428 | 7,404 | -1,325 | +976 | 4.6\% | 3.4\% | 3.9\% | -0.7\% | +0.5\% |
| House 21 | 3,558 | 3,972 | 3,969 | +411 | -3 | 4.5\% | 5.0\% | 5.0\% | +0.5\% | 0.0\% |
| House 57 | -118 | 3,293 | 3,841 | +3,723 | +548 | -0.1\% | 4.1\% | 4.8\% | +4.7\% | +0.7\% |

Second, the Special Master's Recommended Plan complies with the constitutional prohibition on the predominant use of race in the construction of districts. See Ala. Legis. Black Caucus v. Alabama, 135 S. Ct. 1257, 1267 (2015). As is evident from the maps and accompanying statistics, the Recommended Plan is guided by traditional districting principles, such as compactness, contiguity, and respect for precinct and municipal boundaries. Unlike several districts in the 2011 and 2017 Enacted Plans, districts in the Special Master's

Recommended Plan do not track precincts based on their racial composition, nor (contrary to the Legislative Defendants' assertions) do they set out to hit some preordained racial target. The fact that the districts happen to reduce the Black Voting Age Population (BVAP) in the redrawn districts, while increasing it in adjoining districts, is to be expected whenever a plan replaces racial predominance with other redistricting principles. See Table B below and Exhibit 6. The Special Master's Recommended Plan addresses the constitutional infirmity in the underlying

[^86]districts by redrawing them irrespective of the race of the inhabitants the districts would then capture. That practice is abundantly clear from the district boundaries, which track municipal lines wherever possible.

Traditional districting principles, such as compactness and respect for political subdivision lines, are the touchstones against which courts often measure racial predominance. Although racial predominance, like any other motivation, can be proven by way of direct or circumstantial evidence, violation of traditional districting principles, such as compactness, can "be persuasive circumstantial evidence that race for its own sake, and not other districting principles, was the legislature's dominant and controlling rationale in drawing its district lines." Miller v. Johnson, 515 U.S. 900, 913 (1995); see also Covington, 316 F.R.D. at 129 ("In general, [a Shaw claim] requires proof that 'the legislature subordinated traditional race-neutral districting principles, including . . . compactness, contiguity, and respect for political subdivisions . . . to racial considerations.'") (quoting Miller, 515 U.S. at 916). As such, a remedial plan grounded on these traditional districting principles will be less likely to replicate - even inadvertently - any racial predominance in the underlying plan.

Indeed, for this very reason, the Special Master's Plan is inoculated against the kind of attack that the Legislative Defendants seek to lodge with respect to racial predominance. In their briefs addressing the Special Master's Draft Plan, the Legislative Defendants argue that " $[\mathrm{t}] \mathrm{he}$ special master has improperly engaged in racial sorting to create districts with a mechanical target of black voting age population between $39 \%$ and $43.6 \%$." Legislative Defendants' Response to Special Master's Draft Report, at 15, ECF No. 215. They maintain that by frankly stating that the Special Master's Draft Plan removed "any residuum of racial predominance that
may have been expressed in the 2017 configuration of the district" the Special Master must have carefully constructed the remedial districts to hit race-based targets. ${ }^{5} I d$. at 18.

That claim is false, and the maps themselves belie that interpretation. ${ }^{6}$ The Special Master's Plan removes the racial predominance of the Enacted 2017 Districts by replacing the constitutionally tainted districts with others that adhere to explicitly race-neutral criteria. To be sure, the Court authorized the Special Master to consider racial data in the construction of the plans "to the extent necessary to ensure that his plan cures the unconstitutional racial gerrymanders." Order at 8-9. However, as is clear from the Special Master's Draft Plan, the remedial districts were drawn not with any racial target in mind, but in order to maximize compactness, preserve precinct boundaries, and respect political subdivision lines.

This approach grew directly from the Court's Order. The Court expressed concerns with the Enacted 2017 Districts, in that "some or all of the proposed remedial districts preserve the core shape of the unconstitutional version of the district, divide counties and municipalities along racial lines, and are less compact than their benchmark version." Order at 2. To address those identified legal problems, the Special Master's Draft Plan does not preserve the core shape of the

[^87]unconstitutional version of the district, avoids dividing counties and municipalities, and attempts to enhance compactness. Hitting some arbitrary racial target was not a goal of the Special Master's Plan. Rather, the Special Master sought to create remedial districts that, without question, extirpated the unconstitutional racial predominance from the 2011 Districts that the Court has identified as reemerging in the Enacted 2017 Plan.

## Table B. Comparison of Black Voting Age Population (BVAP) \% Among Selected Districts

| District | 2011 <br> Plan | 2017 <br> Plan | Rec. <br> Plan | chg from <br> 2011 | chg from <br> 2017 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Senate 21 | $51.5 \%$ | $47.5 \%$ | $\mathbf{4 2 . 1 \%}$ | $-9.4 \%$ | $-5.4 \%$ |
| Senate 28 | $56.5 \%$ | $50.5 \%$ | $\mathbf{4 3 . 6 \%}$ | $-12.9 \%$ | $-6.9 \%$ |
| House 21 | $51.9 \%$ | $42.3 \%$ | $\mathbf{3 9 . 0 \%}$ | $-12.9 \%$ | $-3.3 \%$ |
| House 57 | $50.7 \%$ | $60.8 \%$ | $\mathbf{3 8 . 4 \%}$ | $-12.3 \%$ | $-22.4 \%$ |

Finally, different considerations factored into the creation of the plan for the districts in Wake and Mecklenburg Counties, given that the Plan was designed to remedy a different type of legal violation there. (One should note, however, that certain districts in those counties, which the Special Master retained, such as Recommended District 38, fall outside the supposed racebased range that the Defendants allege was motivating the Special Master in the construction of the remedial districts.) The Court's Order was quite specific in its goal to recreate the districts from the 2011 plan that did not adjoin the unconstitutional districts. As explained in greater detail below, in order to deal with the excess population created by merging two different redistricting plans together, several of the districts in Wake County, but only three additional districts in Mecklenburg County needed to be redrawn. The principle guiding the Special Master's plans for those counties was simply to draw compact districts that achieved population
equality, using whole precincts to the extent possible, while redrawing the minimal number of districts necessary to resolve the state constitutional problem. ${ }^{7}$

In addition to these legal requirements, the Court urged the Special Master to "make reasonable efforts to adhere to the following state policy objectives." Order at 6-7. Those included splitting fewer precincts than the 2011 Enacted Districts, drawing districts that are more compact than the 2011 Enacted Districts (using the Reock and Polsby-Popper measures), and considering municipal boundaries and precinct lines. The Special Master's Recommended Plans comply with all these additional objectives.

To the extent possible, each district in the Special Master's Recommended Plan is made of whole precincts. In its evaluation of the Enacted 2011 Plan, the Court noted that, of the 2,692 precincts in North Carolina, the Enacted 2011 Senate Plan split 257 precincts, and the Enacted 2011 House Plan split 395 precincts. Covington, 316 F.R.D. at 137. The Court noted evidence that precincts were split in the Enacted 2011 Plans "for the purpose of separating voters according to race." Id. The split precincts in the Special Master's Recommended Plan either are required by one person one vote, as in House District 21, or they were mandated by the Court when it directed the Special Master to restore the 2011 Districts in Wake and Mecklenburg Counties. As a result, the total number of split precincts in the Special Master's Plan is higher than the Enacted 2017 Plans, but much lower than the Enacted 2011 Plans. See Table C below and Exhibit 5. In the four districts about which the Court raised concerns as to racial predominance only two precincts are split by the Special Master's Recommended Plan. In contrast, the Enacted 2011 Plan, which did not pay much attention to precinct lines, split eighty-

[^88]eight precincts in just these four districts and the Enacted 2017 Plan split a total of seven precincts for those four districts.

## Table C. Comparison of Precinct (VTD) Splits Among Selected Districts

| District | 2011 <br> Plan | 2017 <br> Plan | Rec. <br> Plan | chg <br> from <br> 2011 | chg <br> from <br> 2017 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Senate 21 | 33 | 3 | $\mathbf{0}$ | -33 | -3 |
| Senate 28 | 15 | 2 | $\mathbf{0}$ | -15 | -2 |
| House 21 | 25 | 2 | $\mathbf{2}$ | -23 | 0 |
| House 57 | 15 | 0 | $\mathbf{0}$ | -15 | 0 |

The Court also ordered the Special Master to "draw districts that are more compact than the 2011 Enacted Districts." Order at 7. Compactness is a traditional districting principle, an aesthetic value, and a geometric concept. See 316 F.R.D. at 141 (comparing mathematical measures of compactness with "an 'eyeball' approach") (quoting Bush v. Vera, 517 U.S. 952, 960 (1996)). In evaluating the Enacted 2011 Plan, the Court concluded that compactness was "given little consideration" and that "compactness was subordinated to . . . racial goals throughout the redistricting." Id. at 138. It noted, in particular, the lack of compactness in the majority-minority districts in the plan, which suggested the predominant role of race in their construction. Id. at 142-66. Compactness measures for the four remedial districts are presented in Table D below; scores for the entire plan appear in Exhibit 3.

The Court urged the evaluation of district compactness (at least as comparing the Special Master's Plan to the Enacted 2011 Districts) based on two particular mathematical scores: the Reock and the Polsby-Popper Measures. The Reock test is "an area-based measure that . . . computes the ratio of the area of the district to the area of the minimum enclosing circle for the
district." Caliper Corporation, Maptitude for Redistricting: Supplemental User's Guide, 117-19 (2010) (citations omitted). The Polsby-Popper test "computes the ratio of the district area to the area of a circle with the same perimeter: 4(pi)Area/(Perimeter squared)." Id. (citations omitted). For both measures, a score of 0 is the least compact, and a score of 1 is the most compact.

These particular measures served as significant constraints in formulating the Recommended Plan. Both measures compare a district to a circle, and circles cannot tessellate to serve as building blocks for larger shapes, let alone for counties and municipalities that often have irregular boundaries. No districting plan can be made up of districts with perfect Reock or Polsby-Popper compactness scores. Moreover, many shapes that appear visually compact, such as longer rectangles, will score poorly according to these measures, even though they may perform well according to "the eyeball test." ${ }^{8}$ (Indeed, a perfect square district will merely earn a Reock score of 0.66.) For this reason, mathematical scores of compactness ordinarily need to be supplemented with a common sense appreciation for the geometric constraints imposed by the irregular precinct building blocks of a plan, as well as the noncompact shapes of political subdivisions, such as counties and cities.

With those caveats, the Special Master's Recommended Plan scores well on the compactness measures the Court's Order suggested for evaluation. Unsurprisingly, the Special Master's Plan scores better than the extremely noncompact districts in the Enacted 2011 Plan. It also has higher Reock and Polsby-Popper Scores than the 2017 Districts. Indeed, Recommended Senate District 28, which comes about as close as one can to creating a circle out of whole

[^89]precincts, has one of the highest compactness scores one will see in a districting plan - a Reock score of 70 .

## Table D. Comparison of Compactness Scores Among Selected Districts

|  | Reock |  |  |  |  | Polsby-Popper |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| District | $\begin{gathered} 2011 \\ \text { Plan } \end{gathered}$ | $\begin{aligned} & 2017 \\ & \text { Plan } \end{aligned}$ | Rec. Plan | chg <br> from <br> 2011 | chg from 2017 | $\begin{gathered} 2011 \\ \text { Plan } \end{gathered}$ | $\begin{aligned} & 2017 \\ & \text { Plan } \end{aligned}$ | Rec. Plan | chg from 2011 | chg <br> 2017 |
| Senate 21 | . 34 | . 42 | . 48 | +. 14 | +. 06 | . 06 | . 25 | . 35 | +. 29 | +. 10 |
| Senate 28 | . 25 | . 40 | . 70 | +. 45 | +. 30 | . 12 | . 17 | . 28 | +. 16 | +. 11 |
| House 21 | . 19 | . 29 | . 40 | +. 21 | +. 11 | . 08 | . 12 | . 28 | +. 20 | +. 16 |
| House 57 | . 39 | . 37 | . 44 | +. 05 | +. 07 | . 17 | . 28 | . 37 | +. 20 | +. 09 |

The Court's Order requires the Special Master to consider municipal boundaries. Order at 7. The Court determined that "little to no attention was paid to political subdivisions" in the Enacted 2011 Plan. 316 F.R.D. at 138. The 2017 Plan fares better, but in the areas of concern to the Court, several districts continue to ignore municipal boundaries.

To be clear, municipalities must be split by any redistricting plan. Because the population of towns and cities does not subdivide neatly into units equal to the ideal population of a district, several districts must traverse municipal boundaries. Moreover, respecting municipal boundaries often conflicts with the goals of compactness and avoiding precinct splits. As displayed in the maps below, several North Carolina cities are themselves bizarrely shaped and even noncontiguous, due to annexations. Precincts also split towns and cities, so that a plan made up of whole precincts will often split municipal boundaries. Moreover, some precincts span two municipalities, such that a decision to follow precinct lines will lead to splits of municipalities.

## Boundaries of Selected Census Designated Places (CDPs)

Goldsboro


Greensboro


Raleigh


As difficult a principle as respecting political subdivisions may be for any North Carolina redistricting plan to follow, the Special Master's Recommended Plan pays great attention to the boundaries of municipalities. See Table E below and Exhibit 4. The plan does this, not only because such a consideration is a traditional districting principle ordered by the Court, but also to avoid any charges of racial predominance or partisan bias. Unlike respecting "communities of interest," municipal boundaries are the kinds of non-partisan guideposts that a court-drawn plan can follow without being accused of playing favorites among contending definitions of relevant communities deserving of protection.

The power of this principle in determining the boundaries of the Special Master's Recommended Plan is evident from a simple examination of the district maps. For example, Recommended Senate District 28, like Recommended House District 61, is almost entirely contained by the boundaries of Greensboro. By altering the lines in House Districts 21 and 22, the Recommended Plan respects (to the extent possible given precinct lines) the boundaries of Clinton and retains the portion of Enacted House District 21 that contains (also to the extent possible given precinct lines) the city of Goldsboro. To be sure, the Special Master's Recommended Plan must split certain municipalities to comply with the law and other principles ordered by the Court. But municipal boundaries guided the drawing of the Recommended Plan to an extent that distinguishes it from both the Enacted 2011 and 2017 Plans.

Table E. Comparison of Municipality (CDP) Splits Among Selected Districts

| District | 2011 <br> Plan | 2017 <br> Plan | Rec. <br> Plan | chg <br> from <br> 2011 | chg <br> from <br> 2017 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Senate 21 | 5 | 4 | $\mathbf{2}$ | -3 | -2 |
| Senate 28 | 4 | 2 | $\mathbf{1}$ | -3 | -1 |
| House 21 | 10 | 7 | $\mathbf{7}$ | -3 | 0 |
| House 57 | 2 | 1 | $\mathbf{2}$ | 0 | +1 |

Finally, the Court ordered the Special Master to avoid pairing incumbents. However, the Court made clear that "the Special Master shall treat preventing the pairing of incumbents as 'a distinctly subordinate consideration' to the other traditional redistricting policy objectives followed by the state." Order at 7 (quoting Ga. State Conf. of NAACP v. Fayette Cty. Bd. of Comm'rs, 996 F. Supp. 2d 1353, 1363 (N.D. Ga. 2014)). The Court also made clear that such unpairing should occur "[a]fter redrawing the districts" and "only to the extent that such adjustment of district lines does not interfere with remedying the constitutional violations and otherwise complying with federal and state law." Id. (emphasis added).

As the Court's Order recognizes, incorporation of incumbency-related concerns necessarily puts the Special Master and any court in a difficult position. See Order at 6 (quoting Wise v. Lipscomb, 437 U.S. 535, 541 (1978) (noting that courts lack "political authoritativeness" and must act "in a manner free from any taint of arbitrariness or discrimination" in drawing remedial districts")). While recognizing that any change in district lines will have political and partisan effects, it is critical that the process of line-drawing be nonpartisan and transparent in its treatment of incumbency. To achieve that goal and to respect the Court's Order that incumbency be considered only "after redrawing the districts," the Special Master drew the Draft Plan without consideration of incumbency and released it to the parties and the public. The parties
were then invited to make suggestions as to how incumbents should be unpaired. The Plaintiffs did so; the Legislative Defendants refused, but nevertheless objected to all of the Plaintiffs' suggested modifications as motivated by partisanship.

Per the Court's Order, the Special Master's Recommended Plan unpairs all incumbents to the extent possible. Indeed, no incumbents are paired in the Recommended House Plan, and only two incumbents remain paired in the Recommended Senate Plan (in Recommended Senate District 27). To avoid even the appearance of partisanship, no incumbents paired in the Draft House Plan remain paired in the Recommended House Plan. With respect to the incumbent pairing in Recommended Senate District 27, the Special Master has provided the Court with two scenarios that resolve the pairing in the event the Court comes to a different determination as to whether doing so conflicts with the other principles in the plan. See Exhibit 10. Moreover, since the Draft Plan was released prior to the incorporation of incumbency in the Recommended Plan, the Court has available to it a plan that ignores incumbency should it determine that the incumbent unpairings conflict with the other principles identified in the Court's Order. As difficult as it is to incorporate incumbency into a nonpartisan plan built around other traditional districting principles, the Special Master's Recommended Plan is successful in doing so.

## Detailed Description of the Districts in the Special Master's Recommended Plan

## Senate Districts 19 and 21

The Court struck down District 21 in the 2011 Senate Plan as a violation of the Fourteenth Amendment's prohibition on excessive race consciousness in districting. See Covington, 316 F.R.D. at 146-47 (describing it as a noncompact, majority-minority district that
split precincts and municipalities along racial lines). The Court continues to harbor serious constitutional concerns with the district as redrawn in 2017. See Order at 1. These arise, no doubt, because of the district's noncompact shape in the Enacted 2017 Plan - in particular, the long extension into Fayetteville that seems surgically designed to capture heavily African American precincts, while evading heavily white precincts.

The Special Master's Recommended Plan attempts to remedy any constitutional infirmity in Enacted 2017 District 21 by utilizing whole precincts to create a compact district that, like its predecessors, spans Hoke and Cumberland counties. It begins by uniting split precincts in the northern part of the district; thereby moving Fort Bragg and Spring Lake into District 21. Doing so avoids the axe-like shape of the intrusion into Fayetteville that characterized the Enacted 2017 version of the district. Unlike the 2017 version of the district, Recommended District 21 is constructed of whole precincts - not a single one is divided in the construction of this district. The district includes just enough of Fayetteville so as to comply with one person, one vote. The boundaries of the district are determined by the shape of the precinct boundaries. As noted in Table F below, the Recommended Districts split fewer precincts and achieve much higher compactness scores than either the Enacted 2011 or Enacted 2017 versions of the districts. No changes were made to these districts between the Draft Plan and the Recommended Plan.

## North Carolina Senate: Hoke and Cumberland Counties

2011 Plan


2017 Plan


## Special Master's Recommended Plan



Table F. Cumberland and Hoke Counties: Comparison of Senate Plans
Population Deviations from Ideal Size

| District | Population Deviation |  |  |  |  | Percent Deviation |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & 2011 \\ & \text { Plan } \end{aligned}$ | $\begin{aligned} & 2017 \\ & \text { Plan } \end{aligned}$ | Rec. Plan | chg in abs dev from 2011 | chg in <br> abs dev <br> from <br> 2017 | $\begin{gathered} 2011 \\ \text { Plan } \end{gathered}$ | $\begin{gathered} 2017 \\ \text { Plan } \end{gathered}$ | Rec. Plan | chg in abs dev from 2011 | chg in <br> abs dev <br> from <br> 2017 |
| 19 | -7,529 | -8,643 | -7,841 | 312 | -802 | -3.9 | -4.5 | -4.1 | 0.2 | -0.4 |
| 21 | -7,508 | -6,394 | -7,196 | -312 | 802 | -3.9 | -3.4 | -3.8 | -0.1 | 0.4 |
| average | -7,519 | -7,519 | -7,519 | 0 | 0 | -3.9 | -4.0 | -4.0 | -0.1 | 0.0 |

## Measures of Compactness

Reock

| District | 2011 <br> Plan | 2017 <br> Plan | Rec. <br> Plan | chg <br> from <br> 2011 | chg <br> from <br> 2017 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 19 | .45 | .45 | $\mathbf{. 5 1}$ | .06 | .06 |
| 21 | .34 | .42 | $\mathbf{. 4 8}$ | .14 | .06 |
| average | .40 | .44 | $\mathbf{. 5 0}$ | .10 | .06 |

Polsby-Popper

| 2011 <br> Plan | 2017 <br> Plan | Rec. <br> Plan | chg <br> from <br> 2011 | chg <br> from <br> 2017 |
| :---: | :---: | :---: | :---: | :---: |
| .05 | .20 | .30 | .25 | .10 |
| .06 | .25 | .35 | .29 | .10 |
| .06 | .23 | .33 | .27 | .10 |

Splits of Municipalities and Precincts

## Municipalities (CDPs)

| District | 2011 <br> Plan | 2017 <br> Plan | Rec. <br> Plan | chg <br> from <br> 2011 | chg <br> from <br> 2017 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 19 | 5 | 4 | $\mathbf{2}$ | -3 | -2 |
| 21 | 5 | 4 | $\mathbf{2}$ | -3 | -2 |
| total | 10 | 8 | $\mathbf{4}$ | -6 | -4 |

## Black Voting Age Population (BVAP) \%

| District | 2011 <br> Plan | 2017 <br> Plan | Rec. <br> Plan | chg <br> from <br> 2011 | chg <br> from <br> 2017 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 19 | 22.5 | 26.0 | $\mathbf{3 1 . 7}$ | 9.2 | 5.7 |
| 21 | 51.5 | 47.5 | $\mathbf{4 2 . 1}$ | -9.4 | -5.4 |

## Senate District 28 and the Surrounding Districts in Guilford County

For similar reasons explained above as to District 21, the Court struck down the 2011 version of Senate District 28. See Covington, 316 F.R.D. at 147-48 (describing Enacted 2011 Senate District 28 as a non-compact, majority-minority district that split municipalities so as "to achieve the 50\%-plus-one goal"). The 2017 incarnation of the district is much more compact than its predecessor and is largely contained within the CDP of Greensboro. However, the Court continues to harbor constitutional concerns as to racial predominance with regard to the district's 2017 configuration, no doubt because of the District's tracking of the African American precincts in Greensboro. As expressed in the Special Master's Recommended Plan, the newly configured district is a compact district - a circle of precincts, which is the shape privileged by the Reock and Polsby-Popper compactness measures set out as criteria in the Court's Order. The newly drawn district is contained almost completely within the city (CDP) of Greensboro, and is made up of whole precincts. 2017 Enacted Senate District 26 remains untouched, per the Court's order that the Special Master's Plan may only alter districts adjoining the Subject Districts. District 24 is slightly changed by moving west to the Greensboro CDP border to accommodate the new boundaries of District 28. District 27 "retreats" from most of central Greensboro so as to contain much of the outskirts of Greensboro along with nearby towns of Summerfield, Oak Ridge, and Stokesdale.

## North Carolina Senate: Guilford County

2011 Plan


2017 Plan


Special Master's Recommended Plan


Table G. Comparisons of Senate Plans for Guilford County
Population Deviations from Ideal Size
Population Deviation $\quad \underline{\text { Percent Deviation }}$

| District | $\begin{aligned} & 2011 \\ & \text { Plan } \end{aligned}$ | $\begin{aligned} & 2017 \\ & \text { Plan } \end{aligned}$ | Rec. <br> Plan | chg in abs dev from 2011 | chg in abs dev from 2017 | $\begin{aligned} & 2011 \\ & \text { Plan } \end{aligned}$ | $\begin{aligned} & 2017 \\ & \text { Plan } \end{aligned}$ | Rec. <br> Plan | chg in abs dev from 2011 | chg in abs dev from 2017 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 27 | 456 | 4,653 | -756 | 300 | -3,897 | 0.2 | 2.4 | -0.4 | 0.2 | -2.0 |
| 28 | 8,729 | 6,428 | 7,404 | -1,325 | 976 | 4.6 | 3.4 | 3.9 | -0.7 | 0.5 |
| abs avg | 4,593 | 5,541 | 4,080 | -513 | -1,461 | 2.4 | 2.9 | 2.2 | -0.2 | -0.7 |

## Measures of Compactness

Reock

| District | 2011 <br> Plan | 2017 <br> Plan | Rec. <br> Plan | chg <br> from <br> 2011 | chg <br> from <br> 2017 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 27 | .39 | .43 | .46 | .07 | .03 |
| 28 | .25 | .40 | .70 | .45 | .30 |
| average | .32 | .42 | .58 | .26 | .17 |

## Polsby-Popper

2011

Plan \begin{tabular}{ccccc}
2017 <br>
Plan

 

Rec. <br>
Plan

 

chg <br>
from <br>
2011

 

chg <br>
from <br>
2017
\end{tabular}

Splits of Municipalities and Precincts

## Municipalities (CDPs)

| District | 2011 <br> Plan | 2017 <br> Plan | Rec. <br> Plan | chg <br> from <br> 2011 | chg <br> from <br> 2017 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 27 | 8 | 6 | $\mathbf{6}$ | -2 | 0 |
| 28 | 4 | 2 | 1 | -3 | -1 |
| total | 12 | 8 | 7 | -5 | -1 |

## Black Voting Age Population (BVAP) \%

| District | 2011 <br> Plan | 2017 <br> Plan | Rec. <br> Plan | chg <br> from <br> 2011 | chg <br> from <br> 2017 |
| :---: | ---: | ---: | ---: | ---: | ---: |
| 27 | 17.0 | 12.7 | $\mathbf{1 8 . 3}$ | 1.3 | 5.6 |
| 28 | 56.5 | 50.5 | $\mathbf{4 3 . 6}$ | $\mathbf{- 1 2 . 9}$ | -6.9 |

As stated earlier in the discussion of incumbency, Recommended Senate District 27 is the only district in the Recommended Plans that contains two incumbents. It pairs Senator Gladys Robinson with Senator Trudy Wade. Neither the Plaintiffs nor the Defendants have urged the Special Master to unpair these incumbents. To resolve this incumbent pairing would require significant restructuring of the district.

While not resolving this incumbent pairing in the Recommended Plan, the Special Master has provided the Court with two scenarios that would unpair these incumbents. The easiest way to do so would be to draw Senator Wade's residence into Recommended Senate District 28. The scenario provided below and in Exhibit 10 - titled Alternate Senate Plan 1 - demonstrates how this could be done with minimal disruption to the plan. The scenario "trades" the precinct containing Senator Wade's residence with one to the east, moving Senator Wade into Recommended District 28. The Special Master has not recommended this alternative because it effectively takes both Senator Wade and Senator Robinson out of the territory that comprises most of their present districts. However, if the Court were looking to unpair incumbents with minimal disruption to the Recommended Plan, this scenario would provide the easiest path to doing so.

It is also possible to draw Senator Robinson's residence into District 28, for which she currently serves as the incumbent. The most minimal way to do so, as depicted below in Guilford Senate Alternate 2, is to connect the precincts between her home and Recommended District 28. Enacted 2017 Senate District 28 splits the precinct containing her home, as does Guilford Senate Alternate 2, but moving the entire precinct could achieve the same result. These moves must be compensated for elsewhere in the plan. This alternative plan does so by moving three precincts in the northern part of Recommended District 28 into District 27, but any number
of precincts along the outside of District 28 could achieve the same result. The only reason the Special Master has not included this revision in the Recommended Plan is that it does decrease the compactness of District 28, and causes District 28 to traverse into High Point. Also, no one has yet called for this kind of revision. However, the two incumbents could be unpaired without violating any provision of state or federal law.

## North Carolina Senate: Guilford County Alternate Plans

Special Master's Recommended Plan


Alternate 1


Alternate 2


## House Districts 21 and 22

As with the Senate Districts described above, the Court struck down Enacted 2011 House District 21 as a violation of the Equal Protection Clause of the Fourteenth Amendment. 316 F.R.D. at 155-56. In its 2011 incarnation, the district spanned portions of three counties, divided seven municipalities and multiple precincts, in order to reach majority-minority status. Id. The Enacted 2017 version, which remains somewhat bizarre in shape, continues to join Goldsboro in Wayne County with portions of eastern Sampson County splitting the town of Clinton in half. The Court's suspicions as to the remaining racial predominance in Enacted 2017 House District 21 grow, no doubt, from the fact that the included precincts in Sampson are correlated with the racial percentages in those precincts. More specifically, the district continues to include the more heavily African American precincts in the County, while excluding the heavily white precincts nearby.

The Special Master's Recommended House Plan addresses the district's lack of compactness by placing the Sampson County precincts closest to the Wayne County border into Recommended District 21. It thereby avoids the selective inclusion of heavily African American precincts that characterized the 2011 and 2017 versions of the district. The District continues to retain its configuration in Wayne County, which is principally defined by the boundaries of Goldsboro. It extends up to the boundaries of Clinton and only includes a tiny portion of it (83 people) because of a small intrusion by the nearby precinct. Because Districts 21, 22 and 10 approach the upper limit (almost exactly five percent deviation) of what is permissible under one-person, one-vote, a precinct must be split in Sampson County. This is true for both the Enacted 2017 House Plan as well as the Recommended House Plan. The Special Master’s Draft House District 21 split more than one precinct to gain additional compactness for the district and
to avoid the small intrusion into Clinton. Given the Legislative Defendants' expressed concerns as to split precincts, the Special Master's Recommended Plan made small revisions so that only one precinct in Sampson County is split, as in the Enacted 2017 District 21.

## North Carolina House: Bladen, Sampson and Wayne Counties

2011 Plan


2017 Plan


## Special Master's Recommended Plan



Table H. Comparisons of House Plans for Bladen, Sampson and Wayne Counties
Population Deviations from Ideal Size
Population Deviation Percent Deviation

| District | $\begin{gathered} 2011 \\ \text { Plan } \end{gathered}$ | $\begin{aligned} & 2017 \\ & \text { Plan } \end{aligned}$ | Rec. Plan | chg in abs dev from 2011 | chg in abs dev from 2017 | $\begin{aligned} & 2011 \\ & \text { Plan } \end{aligned}$ | $\begin{aligned} & 2017 \\ & \text { Plan } \end{aligned}$ | Rec. Plan | chg in abs dev from 2011 | chg in <br> abs dev from 2017 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 21 | 3,558 | 3,972 | 3,969 | 411 | -3 | 4.5 | 5.0 | 5.0 | 0.5 | 0.0 |
| 22 | 3,503 | 3,972 | 3,975 | 472 | 3 | 4.4 | 5.0 | 5.0 | 0.6 | 0.0 |
| abs avg | 3,531 | 3,972 | 3,972 | 442 | 0 | 4.4 | 5.0 | 5.0 | 0.6 | 0.0 |

## Measures of Compactness

Reock

| District | 2011 <br> Plan | 2017 <br> Plan | Rec. <br> Plan | chg <br> from <br> 2011 | chg <br> from <br> 2017 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 21 | .19 | .29 | .40 | .21 | .11 |
| 22 | .43 | .48 | .46 | .03 | -.02 |
| average | .31 | .39 | .43 | .12 | .05 |

## Polsby-Popper

| 2011 | 2017 |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| Plan | Plan | Rec. <br> Plan | chg <br> from <br> 2011 | chg <br> from <br> 2017 |
| .08 | .12 | .28 | .20 | .16 |
| .20 | .20 | .26 | .06 | .06 |
| .14 | .16 | .27 | .13 | .11 |

Splits of Municipalities and Precincts

## Municipalities (CDPs)

| District | 2011 <br> Plan | 2017 <br> Plan | Rec. <br> Plan | chg <br> from <br> 2011 | chg <br> from <br> 2017 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 21 | 10 | 7 | 7 | -3 | 0 |
| 22 | 3 | 4 | 3 | 0 | -1 |
| total | 13 | 11 | 10 | -3 | -1 |

## Black Voting Age Population (BVAP) \%

| District | 2011 <br> Plan | 2017 <br> Plan | Rec. <br> Plan | chg <br> from <br> 2011 | chg <br> from <br> 2017 |
| :---: | ---: | ---: | ---: | ---: | ---: |
| 21 | 51.9 | 42.3 | $\mathbf{3 9 . 0}$ | -12.9 | -3.3 |
| 22 | 26.8 | 28.2 | $\mathbf{3 1 . 5}$ | 4.7 | 3.3 |

## North Carolina House: Bladen, Sampson and Wayne Counties Comparison with Draft Plan

2017 Plan


Special Master's Draft Plan


Special Master's Recommended Plan


## House District 57 and Surrounding Districts in Guilford County

The Court determined that Enacted 2011 House Districts 57, 58, and 60 in Guilford County were drawn with race as their predominant factor. 316 F.R.D. at 163-64. The Court found that those three districts "contain[ed] $70.67 \%$ of the city of Greensboro, but manage[d] to capture $88.39 \%$ of Greensboro's African-American voting age population." Id. at 164. Several of the most non-compact features of those districts are cut away in the Enacted 2017 versions of the districts. However, the Court continues to harbor concerns as to racial predominance in Enacted 2017 District 57, no doubt because the district retains a Black Voting Age Population (BVAP) of $60.75 \%$ by largely tracking the heavily African American precincts in northeastern Greensboro in a reverse "L shaped" pattern.

The directions from the Court with respect to redrawing this district are more specific than for others in the remedial plan. "As to House District 57," the Court's Order directs, "the redrawn lines shall also ensure that the unconstitutional racial gerrymanders in 2011 Enacted House Districts 58 and 60 are cured." Order at 5. This direction presents additional constraints as to how the districts adjoining District 57 must be drawn. In particular, in redrawing District 57, one must make sure not to recreate one of the districts previously struck down. However, of the Enacted 2011 House Districts determined to be unconstitutional, only Enacted 2017 House District 57 continues to pose a constitutional problem for the Court and needs to be redrawn.

The Special Master's Recommended Plan redraws House District 57, but keeps intact the other "Subject Districts" (House Districts 58 and 60) as redrawn in the 2017 Plan. In redrawing House District 57, the Recommended Plan creates it as a north Greensboro district, made up of whole precincts, which largely follows the city lines. It takes one precinct out of Enacted 2017

House District 59 that contains the section of northeastern Greensboro to the east of Lake Townshend. Its northern boundary is determined by the precincts that track the northern city limits of Greensboro, which it takes from Enacted 2017 District 62. Its eastern boundary also follows the precincts that include northeastern Greensboro. Its northwest boundary includes enough precincts so as to include the residence of Representative John Blust, who is the only incumbent included in the district. The district includes a majority of the people who were drawn into the Enacted 2017 version of his district ( 42,350 of the 80,732 people in the Enacted 2017 version of the district). It fills in by moving south so as to create a compact district with a Reock score of . 44 and a Polsby-Popper score of .37. It is therefore more compact than the Enacted 2017 version of the district, which has a Reock Score of .37 and a Polsby-Popper Score of .28 , or the Enacted 2011 version of the District, which had a Reock score of .39 and PolsbyPopper score of . 17 .

The Recommended Plan makes minor changes to District 59. Because of the precinct in northeastern Greensboro transferred from Enacted 2017 District 59 into Recommended District 57, Recommended District 59 moves west over the northern boundary of Recommended District 57 to include two additional precincts. It extends up to its current boundary in Summerfield that is, the northwestern boundary of Enacted 2011 House District 59.

Recommended House District 62 extends along the western expanse of Guilford County. Because of the territory it cedes to Recommended House Districts 59 and 57, it must move south to comply with one person, one vote. It therefore contains the portions of Enacted 2017 House Districts 61 and 62 that had touched the county border, up to the point where its boundaries are determined by Enacted 2017 House District 60. It extends into Greensboro just slightly in order to pick up the necessary population to comply with one person, one vote. (Most of its population
and its incumbent are from Enacted House District 61, but the Recommended Plan keeps the same numbering as the Enacted 2017 Plan for ease of comparison.)

Recommended House District 61 is a compact district fully contained within central Greensboro. It extends to the eastern border of the city, picking up the southernmost section of Enacted 2017 House District 57 and a majority $(48,789)$ of its people. Unlike the Enacted 2017 House District 57, though, it extends west, meeting Recommended District 62 where it enters Greensboro. Its southern border is determined by the northernmost boundaries of Enacted 2017 District 58 (which remains unchanged in the Recommended Plan).

The Recommended Guilford County House Districts provide a narrowly tailored remedy to address the constitutional infirmity identified by the Court in Enacted 2017 District 57. They do so while splitting zero precincts, and achieving a higher average compactness score (on both the Reock and Polsby-Popper measures) than the Enacted 2011 plan, per the Court's order. They respect the boundaries of Greensboro by anchoring three districts largely within its borders. They do this while retaining two of the Enacted 2017 Districts in their entirety, making minimal changes to a third, and pairing no incumbents in a single district.

## North Carolina House: Guilford County

2011 Plan


2017 Plan


Special Master's Recommended Plan


Table I. Comparison of House Plans for Guilford County
Population Deviations from Ideal Size

|  | Population Deviation |  |  |  |  | Percent Deviation |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| District | $\begin{aligned} & 2011 \\ & \text { Plan } \end{aligned}$ | $\begin{aligned} & 2017 \\ & \text { Plan } \end{aligned}$ | Rec. Plan | chg in abs dev from 2011 | chg in abs dev from 2017 | $\begin{gathered} 2011 \\ \text { Plan } \end{gathered}$ | $\begin{aligned} & 2017 \\ & \text { Plan } \end{aligned}$ | Rec. Plan | chg in abs dev from 2011 | chg in <br> abs dev from 2017 |
| 57 | -118 | 3,293 | 3,841 | 3,723 | 548 | -0.1 | 4.1 | 4.8 | 4.7 | 0.7 |
| 58 | -407 | 2,675 | 2,675 | 2,268 | 0 | -0.5 | 3.4 | 3.4 | 2.9 | 0.0 |
| 59 | 3,813 | 445 | -5 | -3,808 | -440 | 4.8 | 0.6 | 0.0 | -4.8 | -0.6 |
| 60 | 1,065 | 2,394 | 2,394 | 1,329 | 0 | 1.3 | 3.0 | 3.0 | 1.7 | 0.0 |
| 61 | 3,600 | 1,557 | 292 | -3,308 | -1,265 | 4.5 | 2.0 | 0.4 | -4.1 | -1.6 |
| 62 | 3,681 | 1,270 | 2,437 | -1,244 | 1,167 | 4.6 | 1.6 | 3.1 | -1.5 | 1.5 |
| abs avg | 2,114 | 1,939 | 1,941 | -173 | 2 | 2.7 | 2.4 | 2.4 | -0.3 | 0.0 |

Measures of Compactness

| District | Reock |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & 2011 \\ & \text { Plan } \end{aligned}$ | $\begin{aligned} & 2017 \\ & \text { Plan } \end{aligned}$ | Rec. Plan | chg <br> from <br> 2011 | chg <br> from <br> 2017 |
| 57 | . 39 | . 37 | . 44 | . 05 | . 07 |
| 58 | . 38 | . 44 | . 44 | . 06 | . 00 |
| 59 | . 40 | . 39 | . 41 | . 01 | . 02 |
| 60 | . 22 | . 29 | . 29 | . 07 | . 00 |
| 61 | . 30 | . 32 | . 37 | . 07 | . 05 |
| 62 | . 48 | . 47 | . 30 | -. 18 | -. 17 |
| average | . 36 | . 38 | . 38 | . 01 | -. 01 |

Polsby-Popper

| 2011 <br> Plan | 2017 <br> Plan | Rec. <br> Plan | chg <br> from <br> 2011 | chg <br> from <br> 2017 |
| :---: | :---: | :---: | :---: | :---: |
| .17 | .28 | $\mathbf{. 3 7}$ | .20 | .09 |
| .20 | .18 | $\mathbf{. 1 8}$ | -.02 | .00 |
| .21 | .25 | . $\mathbf{2 3}$ | .02 | -.02 |
| .08 | .21 | $\mathbf{. 2 1}$ | .13 | .00 |
| .13 | .22 | $\mathbf{. 2 8}$ | .15 | .06 |
| .36 | .50 | $\mathbf{. 3 1}$ | -.05 | -.19 |
| .19 | .27 | $\mathbf{. 2 6}$ | .07 | -.01 |

Splits of Municipalities and Precincts

|  |  | Municipalities (CDPs) |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| District | 2011 |  |  |  |  |
|  | Plan | 2017 <br> Plan | Rec. <br> Plan | chg <br> from <br> 2011 | chg <br> from <br> 2017 |
| 57 | 2 | 1 | $\mathbf{2}$ | 0 | 1 |
| 58 | 1 | 2 | $\mathbf{2}$ | 1 | 0 |
| 59 | 6 | 6 | $\mathbf{7}$ | 1 | 1 |
| 60 | 2 | 4 | $\mathbf{4}$ | 2 | 0 |
| 61 | 5 | 3 | $\mathbf{1}$ | -4 | -2 |
| 62 | 4 | 1 | $\mathbf{4}$ | 0 | 3 |
| total | 20 | 17 | $\mathbf{2 0}$ | 0 | 3 |

Precincts (VTDs)

## Black Voting Age Population (BVAP) \%

| District | 2011 <br> Plan | 2017 <br> Plan | Rec. <br> Plan | chg <br> from <br> 2011 | chg <br> from <br> 2017 |
| :---: | :---: | :---: | :---: | ---: | ---: |
| 57 | 50.7 | 60.8 | $\mathbf{3 8 . 4}$ | -12.3 | $-\mathbf{2 2 . 4}$ |
| 58 | 51.1 | 42.7 | $\mathbf{4 2 . 7}$ | -8.5 | 0.0 |
| 59 | 13.6 | 22.2 | $\mathbf{1 8 . 8}$ | 5.2 | -3.4 |
| 60 | 51.4 | 40.1 | $\mathbf{4 0 . 1}$ | -11.3 | 0.0 |
| 61 | 15.3 | 11.5 | $\mathbf{4 0 . 3}$ | 25.0 | 28.9 |
| 62 | 13.3 | 14.0 | $\mathbf{1 1 . 5}$ | -1.9 | -2.5 |

Response to Criticism of the Draft House Plan for Guilford County, Explanation of Changes Made in the Recommended Plan, and Provision of Alternative Plans

Several considerations led to revisions from the Special Master's Draft Plan to the Recommended Plan in Guilford County. First, the Plaintiffs made recommendations as to unpairing incumbents in Draft Plan District 59, to which the Legislative Defendants objected. Second, the Legislative Defendants, while not suggesting any changes, broadly criticized the plan as disrespecting state policy choices. Finally, in analyzing those criticisms and evaluating
the plan, the Special Master sought to improve the compactness of the districts to ensure that they met the Court's criterion that the Special Master's plan score higher than the Enacted 2011 Districts on the Reock and Polsby-Popper measures.

The Recommended Plan does not pair any incumbents. Moreover, every single incumbent retains a majority of his or her constituency from the 2017 Enacted Plan. By retaining Enacted 2017 House District 58, which had been altered by the Draft Plan, it now avoids the incumbent pairing in that district from the Draft Plan and need not address the Legislative Defendants' criticisms of potential partisanship in the Plaintiffs' plan to unpair them. Moreover, by retaining two Enacted 2017 House Districts (58 and 60) in their entirety, and a third (59) with minor revisions, the Recommended Plan respects, to the extent possible, the policy decisions the legislature made regarding Guilford County districts. It alters districts only to the extent necessary to remedy the constitutional infirmity in Enacted 2017 District 57.

Second, the Legislative Defendants made the following unfounded criticisms of the Special Master's Draft Plan. First, they argued that the plan "negated the legislature's policy choice to create a suburban district that followed city lines." Defendants' Reply Brief, at 3 n. 2 ECF No. 218. If such was the legislature's goal, it failed to achieve it with the 2017 Enacted Districts. Neither Enacted 2017 District 61 nor 62 (the supposed suburban districts Legislative Defendants reference) track city lines. Quite the opposite, they both intrude substantially into the city of Greensboro. Roughly 36,000 of the inhabitants of Enacted 2017 District 61 (almost half of the district's population) reside within the Greensboro CDP limits. The majority of people (51,747 out of 80,732) living in Enacted 2017 District 62, live within Greensboro. In contrast, for both the Recommended and Draft Plans, 80 percent of the district's inhabitants are outside of
the Greensboro CDP $(65,385$ out of 81,899 for the Recommended Plan, and 72,946 out of 82,023 for the Draft Plan). ${ }^{9}$

Third, the Legislative Defendants argued that the Draft Plan created less compact districts in Greensboro. Defendants Reply Brief, at 3 ECF No. 218. While mere visual examination suggests this criticism seems misplaced, a plan could be created with higher compactness scores for the Reock and Polsby-Popper measures preferred by the Court, while also remedying the constitutional problems with Enacted 2017 House District 57 and redrawing as few districts as possible. The Recommended Plan, thereby, complies with the Court's Order to "draw districts that are more compact than the 2011 Enacted Districts, using as a guide the Reock ('dispersion’) and Polsby-Popper ('perimeter') scores." Order at 8 . Whereas the average Reock and PolsbyPopper scores for the Enacted 2011 Guilford County Districts were .36 and .19 , respectively, the averages for the Recommended Plan are .38 and .26 (which is roughly the same as the Enacted 2017 Plans). Compactness scores for a majority of the Guilford County districts in the Recommended Plan are now superior to those in both the Enacted 2011 and Enacted 2017 Plans.

The final criticism lodged by the Legislative Defendants against the Draft Plan was that it engaged in racial targeting. That criticism was unfounded with respect to the Draft Plan, and remains so with the Recommended Plan. The race-neutral criteria that animated both plans are apparent on their face. By replacing Enacted House District 57 with Recommended House Districts 57 and 61, the plan remedies the perceived constitutional infirmity that arises from Enacted 2017 House District 57's tracking of the African American population in eastern

[^90]Greensboro. It does so by drawing compact, horizontal districts going east-west, made of complete precincts, rather than following the reverse L-shaped pattern of the Enacted 2017 Districts. Recommended House District 57 has a BVAP of $38.4 \%$ and Recommended House District 61 has a BVAP of $40.3 \%$. They achieve these levels not through intentional targeting, but through an attempt to avoid what the Court suggests are the constitutionally suspect geographic choices made in construction of the 2011 and 2017 districts. These decreases in the African American population are to be expected from a plan that remedies a district judged to be racially predominant.

To be clear, the Special Master considers the Draft House Plan for Guilford County to be one the Court can adopt, and should be considered as an option. However, the Recommended Plan does a better job in satisfying the Court's articulated criteria and in responding to the parties' concerns. The Draft Plan alters more districts than the Recommended Plan in order to fit three districts completely within Greensboro. In doing so, it has lower scores on the Court's preferred compactness measures. However, were the Court to adopt the Draft Plan, it would remedy the perceived constitutional infirmity of the districts in Guilford County.

Per the Court's request in its Order for the Special Master to discuss "issues, or questions which the Special Master believes may arise or which will otherwise aid the Court," Order at 13, the Special Master wants to alert the Court to yet another option to address the issue of incumbency, precinct splits, and municipality splits in northwest Greensboro. The Recommended Plan resolves the incumbency pairing from the Draft Plan in northwestern Greensboro in a compact way that includes all of the Greensboro precincts that follow the CDP lines and that includes Representative Blust's residence and a majority of his constituents under the Enacted 2017 House Plan. One of those precincts straddles both Greensboro and

Summerfield (containing roughly 700 people in the CDP of Summerfield). That precinct is included in Recommended House District 57 because doing so increases the compactness of the district and the plan. However, to avoid one more intrusion over municipal borders, the precinct could be split or it could easily be taken out, with single precinct "trades" occurring between Recommended District 62, 61, and 57. Such a plan is presented below and in Exhibit 10 as the Guilford Alternate House Plan. The Special Master endorses this plan as an alternative to the Recommended Plan. The change was not made in the Recommended Plan, however, because it would lower the compactness scores of the districts and the plan on the Reock and PolsbyPopper measures preferred by the Court.

## North Carolina House: Guilford County Plan Comparisons

2017 Plan


## Special Master's Recommended Plan



Special Master's Draft Plan


Alternate Plan


## Wake County Districts

In Wake County, the Court struck down Enacted 2011 House Districts 33 and 38 as racially predominant in violation of the Equal Protection Clause. 316 F.R.D., at 159-60. Only one of the benchmark districts (i.e., those existing immediately prior to enactment of the 2011 plan) had BVAP percentages over 40 percent. However, the Court found that the Enacted 2011 Plan split municipalities, precincts, communities of interest, and neighborhoods along racial lines to hit a racial target in those districts that exceeded 50 percent. The Court concluded, "[w]hen viewed in light of the strong statewide evidence, it is clear that Defendants drew district boundaries in Wake County with the primary goal of creating two majority-black districts. The district specific evidence supports our finding that race predominated in drawing of House Districts 33 and 38." Id., at 160.

The legal infirmity in the districts in Wake County is characteristically different than those in the previous districts described and therefore requires a different type of remedy. The Court has not called into question any of the 2017 districts that themselves were redrawn to address the racial predominance of their prior incarnations. Rather, the Court has called into question under the North Carolina Constitution the Enacted 2017 Districts that were unnecessarily redrawn to address racial predominance in the Enacted 2011 Districts. In Wake County, the districts deemed unnecessary to be redrawn are 2011 House Districts 36, 37, 40 and 41. By redrawing those districts, which did not adjoin the unconstitutional districts in Wake County, the 2017 Enacted Plan raises concerns for the Court under the provision of the state constitution that prohibits redistricting more than once a decade. See N.C. ConST. art. II, §§ 3(4), 5(4).

To address this violation of the state constitution, the Court has ordered the Special Master to recreate the Enacted 2011 House Districts 36, 37, 40 and 41 in their 2011 form. Once redrawn, it becomes necessary to reallocate populations among the districts that did, in fact, adjoin the previously unconstitutional districts. Reinstating these particular 2011 districts, most of which adhere to the western and southern county boundaries, provides an exterior frame within which the reallocation of population must occur. The remaining Enacted 2017 districts are the basemap from which the Special Master's Recommended Plan is created, but significant redrawing must occur in some districts because of the "leftover" territory that remains once the 2011 districts are reinstated. (The task is similar to fitting several square pegs into a round hole - the pegs need to be reshaped if they are going to "fit.")

For the most part, the configurations of the Wake County districts in the Recommended Plan are determined by attaching to each of the Enacted 2017 House Districts the "leftover territory" that exists immediately next to them once the 2011 Districts are reinstated. For example, Enacted 2017 House District 33 moves to the Johnston County border to pick up the territory left there once House District 36 reassumes its 2011 form. Because Recommended House District 33 moves southeast to the border, Recommended District 11 must fill in the "gap" left behind by both 33 and 36. Once 2011 Enacted House District 40 is recreated, Enacted 2017 District 49 is pushed east and Enacted 2017 District 34 is pushed north to assume their form in the Recommended Plan. Enacted 2017 Districts 38 and 39 are kept completely intact, while Enacted 2017 District 35 undergoes very minor alterations to respond to the recreation of Enacted 2011 House District 40.

Per the Court's instruction, the Recommended Plan for Wake County is far superior on compactness scores and precinct splits to the 2011 Enacted Plan. Recreating the 2011 Districts -
some of which were noncompact and split precincts - will naturally increase the number of precinct splits and decrease (just slightly) the compactness scores of the Recommended Plan as compared to the 2017 Enacted Plan. Altering only the districts necessary to remedy the identified state constitutional problems with the Enacted 2017 Districts, while reinstalling the Enacted 2011 Districts, leaves limited options for reconfiguring the districts. This is a virtue, not a vice, of the Court's Order, the principles from which largely determine the reconfiguration of the districts in Wake County.

## North Carolina House: Wake County

2011 Plan


2017 Plan


Special Master's Recommended Plan


Table J. Comparisons of House Plans for Wake County
Population Deviations from Ideal Size

| District | Population Deviation |  |  |  |  | Percent Deviation |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & 2011 \\ & \text { Plan } \end{aligned}$ | $\begin{aligned} & 2017 \\ & \text { Plan } \end{aligned}$ | Rec. Plan | chg in abs dev from 2011 | chg in <br> abs dev from 2017 | $\begin{aligned} & 2011 \\ & \text { Plan } \end{aligned}$ | $\begin{aligned} & 2017 \\ & \text { Plan } \end{aligned}$ | Rec. Plan | chg in <br> abs dev from 2011 | chg in <br> abs dev from 2017 |
| 11 | 3,755 | 3,804 | 2,879 | -876 | -925 | 4.7 | 4.8 | 3.6 | -1.1 | -1.2 |
| 33 | 3,106 | 3,182 | 3,880 | 774 | 698 | 3.9 | 4.0 | 4.9 | 1.0 | 0.9 |
| 34 | 3,621 | -1,514 | 3,363 | -258 | 1,849 | 4.6 | -1.9 | 4.2 | -0.4 | 2.3 |
| 35 | -1,566 | 3,266 | -2,520 | 954 | -746 | -2.0 | 4.1 | -3.2 | 1.2 | -0.9 |
| 36 | 3,911 | 2,464 | 3,911 | 0 | 1,447 | 4.9 | 3.1 | 4.9 | 0.0 | 1.8 |
| 37 | 3,856 | 2,490 | 3,856 | 0 | 1,366 | 4.9 | 3.1 | 4.9 | 0.0 | 1.8 |
| 38 | 3,941 | 3,599 | 3,599 | -342 | 0 | 5.0 | 4.5 | 4.5 | -0.5 | 0.0 |
| 39 | 1,932 | 3,593 | 3,593 | 1,661 | 0 | 2.4 | 4.5 | 4.5 | 2.1 | 0.0 |
| 40 | -2,853 | 1,213 | -2,853 | 0 | 1,640 | -3.6 | 1.5 | -3.6 | 0.0 | 2.1 |
| 41 | 3,404 | 1,277 | 3,404 | 0 | 2,127 | 4.3 | 1.6 | 4.3 | 0.0 | 2.7 |
| 49 | 3,804 | 3,537 | 3,799 | -5 | 262 | 4.8 | 4.5 | 4.8 | 0.0 | 0.3 |
| abs avg | 3,250 | 2,722 | 3,423 | 173 | 702 | 4.1 | 3.4 | 4.3 | 0.2 | 0.9 |

Measures of Compactness

| District | Reock |  |  |  |  | Polsby-Popper |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & 2011 \\ & \text { Plan } \end{aligned}$ | $\begin{aligned} & 2017 \\ & \text { Plan } \end{aligned}$ | Rec. Plan | chg from 2011 | chg from 2017 | $\begin{aligned} & 2011 \\ & \text { Plan } \end{aligned}$ | $\begin{aligned} & 2017 \\ & \text { Plan } \end{aligned}$ | Rec. Plan | chg from 2011 | chg from 2017 |
| 11 | . 31 | . 41 | . 33 | . 02 | -. 08 | . 19 | . 34 | . 26 | . 07 | -. 08 |
| 33 | . 47 | . 45 | . 54 | . 07 | . 09 | . 22 | . 29 | . 41 | . 19 | . 12 |
| 34 | . 39 | . 34 | . 44 | . 05 | . 10 | . 10 | . 29 | . 43 | . 33 | . 14 |
| 35 | . 43 | . 32 | . 35 | -. 08 | . 03 | . 26 | . 33 | . 35 | . 09 | . 02 |
| 36 | . 37 | . 31 | . 37 | . 00 | . 06 | . 34 | . 21 | . 34 | . 00 | . 13 |
| 37 | . 34 | . 44 | . 34 | . 00 | -. 10 | . 22 | . 48 | . 22 | . 00 | -. 26 |
| 38 | . 31 | . 32 | . 32 | . 01 | . 00 | . 18 | . 30 | . 30 | . 12 | . 00 |
| 39 | . 22 | . 43 | . 43 | . 21 | . 00 | . 11 | . 40 | . 40 | . 29 | . 00 |
| 40 | . 28 | . 52 | . 28 | . 00 | -. 24 | . 24 | . 38 | . 24 | . 00 | -. 14 |
| 41 | . 28 | . 42 | . 28 | . 00 | -. 14 | . 25 | . 40 | . 25 | . 00 | -. 15 |
| 49 | . 43 | . 44 | . 46 | . 03 | . 02 | . 16 | . 44 | . 31 | . 15 | -. 13 |
| average | . 35 | . 40 | . 38 | . 03 | -. 02 | . 21 | . 35 | . 32 | . 11 | -. 03 |

Splits of Municipalities and Precincts

| District | Municipalities (CDPs) |  |  |  |  | Precincts (VTDs) |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{gathered} 2011 \\ \text { Plan } \end{gathered}$ | $\begin{aligned} & 2017 \\ & \text { Plan } \end{aligned}$ | Rec. Plan | chg <br> from <br> 2011 | chg <br> from <br> 2017 | $\begin{aligned} & 2011 \\ & \text { Plan } \end{aligned}$ | $\begin{aligned} & 2017 \\ & \text { Plan } \end{aligned}$ | Rec. Plan | chg from 2011 | chg <br> from <br> 2017 |
| 11 | 2 | 3 | 3 | 1 | 0 | 9 | 1 | 3 | -6 | 2 |
| 33 | 2 | 2 | 2 | 0 | 0 | 13 | 1 | 2 | -11 | 1 |
| 34 | 2 | 1 | 1 | -1 | 0 | 14 | 0 | 0 | -14 | 0 |
| 35 | 5 | 3 | 3 | -2 | 0 | 2 | 1 | 1 | -1 | 0 |
| 36 | 5 | 5 | 5 | 0 | 0 | 5 | 3 | 5 | 0 | 2 |
| 37 | 4 | 4 | 4 | 0 | 0 | 4 | 1 | 4 | 0 | 3 |
| 38 | 2 | 1 | 1 | -1 | 0 | 13 | 0 | 0 | -13 | 0 |
| 39 | 6 | 3 | 3 | -3 | 0 | 15 | 1 | 1 | -14 | 0 |
| 40 | 5 | 1 | 5 | 0 | 4 | 4 | 0 | 4 | 0 | 4 |
| 41 | 4 | 4 | 4 | 0 | 0 | 7 | 0 | 7 | 0 | 7 |
| 49 | 1 | 3 | 2 | 1 | -1 | 3 | 0 | 5 | 2 | 5 |
| total | 38 | 30 | 33 | -5 | 3 | 89 | 7 | 32 | -57 | 25 |

## Black Voting Age Population (BVAP) \%

| District | 2011 <br> Plan | 2017 <br> Plan | Rec. <br> Plan | chg <br> from <br> 2011 | chg <br> from <br> 2017 |
| :---: | ---: | ---: | ---: | ---: | ---: |
| 11 | 14.8 | 14.3 | $\mathbf{1 6 . 5}$ | 1.7 | 2.2 |
| 33 | 51.4 | 44.2 | $\mathbf{4 5 . 1}$ | -6.3 | 0.9 |
| 34 | 17.0 | 15.8 | $\mathbf{1 3 . 1}$ | -3.9 | -2.7 |
| 35 | 17.4 | 15.6 | $\mathbf{1 6 . 2}$ | -1.2 | 0.7 |
| 36 | 7.7 | 9.3 | $\mathbf{7 . 7}$ | 0.0 | -1.5 |
| 37 | 13.8 | 14.3 | $\mathbf{1 3 . 8}$ | 0.0 | -0.5 |
| 38 | 51.4 | 48.3 | $\mathbf{4 8 . 3}$ | -3.1 | 0.0 |
| 39 | 26.5 | 35.5 | $\mathbf{3 5 . 5}$ | 9.0 | 0.0 |
| 40 | 9.8 | 7.7 | $\mathbf{9 . 8}$ | 0.0 | 2.0 |
| 41 | 7.4 | 8.1 | $\mathbf{7 . 4}$ | 0.0 | -0.7 |
| 49 | 8.9 | 12.8 | $\mathbf{1 3 . 3}$ | 4.4 | 0.5 |

## Explanation of Changes from the Draft House Plan to the Recommended House Plan for Wake County

In response to Plaintiffs' suggestions related to the incumbent pairing in the Draft Plan, the Recommended Plan makes minor changes. These involve a swap between Draft House Districts 34 and 49, to unpair the two incumbents there, while ensuring that Recommended House District 41 complies with the Court's Order that it retain its configuration under the Enacted 2011 Plan. The Recommended Plan adopts these minor revisions because they do not undermine the other features of the plan, and as a result, no incumbents are then paired in the Recommended House Plan.

The suggested change is explained in full in Plaintiffs' Response and Proposed Modification to the Special Master's Draft Plan included in Exhibit 8. Representatives Cynthia Ball and Grier Martin were both paired in Draft House District 49. They are easily unpaired by moving Draft District 34 south to pick up the precincts between its border and Representative Martin's residence, and then compensating by moving two nearby precincts into District 49. This can be done while also ensuring that Enacted House District 40 is restored to its 2011 version. This modification ensures that no incumbents are paired in the Special Master's Recommended House Plan.

## North Carolina House: Wake County Comparisons with Draft Plan

2017 Plan


Special Master's Draft Plan


Special Master's Recommended Plan


## Mecklenburg County Districts

In Mecklenburg County, the Court struck down Enacted 2011 Districts 99, 102, and 107 as unconstitutional racial gerrymanders. The Court found that the legislature had increased the BVAP percentages over the benchmark plan so as to intentionally create majority-minority districts. It did so by drawing districts that tracked the precincts with significant African American population shares and even broke precincts in order to fulfill that goal. See 316 F.R.D. at 164-65.

The Court, however, does not harbor any suspicions about residual racial predominance in any of those districts. Rather, the legal problem to be solved in Mecklenburg, as in Wake, concerns the districts that were unnecessarily redrawn to deal with the constitutional infirmity in the Subject Districts. Because the Court ordered only the recreation of 2011 Enacted House District 105, which exists in the southernmost corner of Mecklenburg County, only three additional districts, which border it, needed to be redrawn.

Once Enacted 2011 House District 105 is recreated, Districts 92, 103, and 104 need to be redrawn to fill in the space vacated as 105 retreats to the border. The Recommended House Plan for Mecklenburg County makes the minimum changes necessary to address the state constitutional problem identified by the court. Each of those districts from the Enacted 2017 Plan then converges on the northern border of Enacted 2011 District 105. As District 105 moves south, Districts 92, 103, and 104 move into the territory closest to each one of those districts. The exact configurations are determined by a decision to keep precincts whole (outside of those already split by 2011 Enacted District 105), to keep the districts in the area relatively compact and contiguous, and to make only the changes necessary to remedy the constitutional violation.

The precincts in this area of Mecklenburg County are themselves quite noncompact so any remedial plan, limited to these three districts, will have lower compactness scores than their predecessor districts. The recreation of 2011 Enacted District 105, which is less compact than 2017 Enacted District 105, also inevitably affects the compactness of its adjoining districts.

## North Carolina House: Mecklenburg County

2011 Plan


2017 Plan


Special Master's Recommended Plan


Table K. Comparisons of House Plans for Mecklenburg County
Population Deviations from Ideal Size
Population Deviation Percent Deviation

| District | $\begin{aligned} & 2011 \\ & \text { Plan } \end{aligned}$ | $\begin{aligned} & 2017 \\ & \text { Plan } \end{aligned}$ | Rec. Plan | chg in <br> abs dev from 2011 | chg in <br> abs dev from 2017 | $\begin{aligned} & 2011 \\ & \text { Plan } \end{aligned}$ | $\begin{aligned} & 2017 \\ & \text { Plan } \end{aligned}$ | Rec. Plan | chg in <br> abs dev <br> from <br> 2011 | chg in <br> abs dev from 2017 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 92 | -1,751 | -2,290 | -2,224 | 473 | -66 | -2.2 | -2.9 | -2.8 | 0.6 | -0.1 |
| 103 | -3,790 | -3,081 | -1,656 | -2,134 | -1,425 | -4.8 | -3.9 | -2.1 | -2.7 | -1.8 |
| 104 | -3,389 | -2,593 | -3,829 | 440 | 1,236 | -4.3 | -3.3 | -4.8 | 0.6 | 1.6 |
| 105 | -3,750 | -3,495 | -3,750 | 0 | 255 | -4.7 | -4.4 | -4.7 | 0.0 | 0.3 |
| abs avg | 3,170 | 2,865 | 2,865 | -305 | 0 | 4.0 | 3.6 | 3.6 | -0.4 | 0.0 |

## Measures of Compactness

## Reock

| District | 2011 <br> Plan | 2017 <br> Plan | Rec. <br> Plan | chg <br> from <br> 2011 | chg <br> from <br> 2017 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 92 | .16 | .44 | $\mathbf{. 4 0}$ | .24 | -.04 |
| 103 | .34 | .27 | $\mathbf{. 1 9}$ | -.15 | -.08 |
| 104 | .55 | .49 | .35 | -.20 | -.14 |
| 105 | .37 | .49 | $\mathbf{. 3 7}$ | .00 | -.12 |
| average | .36 | .42 | $\mathbf{. 3 3}$ | -.03 | -.10 |

Splits of Municipalities and Precincts

| District | Municipalities (CDPs) |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & 2011 \\ & \text { Plan } \end{aligned}$ | $\begin{gathered} 2017 \\ \text { Plan } \end{gathered}$ | Rec. Plan | chg <br> from <br> 2011 | chg <br> from <br> 2017 |
| 92 | 3 | 2 | 2 | -1 | 0 |
| 103 | 5 | 5 | 4 | -1 | -1 |
| 104 | 2 | 2 | 1 | -1 | -1 |
| 105 | 3 | 1 | 3 | 0 | 2 |
| total | 13 | 10 | 10 | -3 | 0 |

Precincts (VTDs)

| 2011 <br> Plan | 2017 <br> Plan | Rec. <br> Plan | chg <br> from <br> 2011 | chg <br> from <br> 2017 |
| :---: | :---: | :---: | :---: | :---: |
| 11 | 0 | $\mathbf{2}$ | -9 | 2 |
| 12 | 0 | $\mathbf{3}$ | -9 | 3 |
| 9 | 2 | $\mathbf{3}$ | -6 | 1 |
| 7 | 1 | $\mathbf{7}$ | 0 | 6 |
| 39 | 3 | $\mathbf{1 5}$ | -24 | 12 |

## Black Voting Age Population (BVAP) \%

| District | 2011 <br> Plan | 2017 <br> Plan | Rec. <br> Plan | chg <br> from <br> 2011 | chg <br> from <br> 2017 |
| :---: | ---: | ---: | ---: | ---: | ---: |
| 92 | 18.2 | 30.2 | $\mathbf{2 8 . 0}$ | 9.8 | -2.2 |
| 103 | 13.1 | 7.7 | $\mathbf{8 . 1}$ | -5.0 | 0.4 |
| 104 | 8.2 | 6.2 | $\mathbf{6 . 8}$ | -1.4 | 0.6 |
| 105 | 9.5 | 8.3 | $\mathbf{9 . 5}$ | 0.0 | 1.3 |

## CONCLUSION

The Special Master's Recommended Plans for the North Carolina Senate and House of Representatives eliminate all of the constitutional infirmities the Court has identified in the plans enacted by the North Carolina General Assembly in 2017. The Court has appointed the Special Master to solve specific and identified problems in the existing state redistricting plans. The Recommended Plans do so. They represent a limited response to a select number of districts that require alteration to comply with the law.

The role a Special Master serves in a redistricting dispute is determined by the purpose for which he or she is appointed. In this case, it was to provide an available remedy for identified violations of the Equal Protection Clause of the Fourteenth Amendment to the United States Constitution and of the North Carolina Constitution's prohibition on redistricting more than once a decade. At times, the Legislative Defendants have asked the Special Master to advocate on their behalf or to speak for the Court. See Legislative Defendants' Response to Special Master's Draft Report, at 2, 5, 11, 12, ECF No. 215. The Special Master declines both of those invitations. Even on the expedited schedule in the present case (as in many redistricting cases, given the election calendar), there will be ample time for the parties to present arguments
regarding the Court's evaluation of the 2017 Enacted Plans for the North Carolina Senate and House of Representatives.

With this Report and Plan, the Special Master has provided the Court with redistricting plans that satisfy the criteria stated in the Order. The Recommended Districts solve the legal problems the Court has identified, while complying with one person, one vote, promoting compactness, reducing precinct splits, following municipal lines, and avoiding almost all pairings of incumbents. With the Draft Plan and other alternatives, the Special Master has also provided options to the Court should it wish to strike the balance among the criteria in the Order in a different way than done with the Recommended Plans. If, with the benefit of a hearing and additional briefing, the Court requires modification of the Recommended Plan, the Special Master stands ready to provide additional assistance.

SUBMITTED, this the 1st day of December, 2017.


## EXHIBITS

Exhibit 1

## North Carolina Senate Special Master's Recommended Plan




- Ex. 8992 -


North Carolina Senate 2011 Enacted Plan


## North Carolina Senate 2017 Enacted Plan



## North Carolina House Special Master's Recommended Plan



## North Carolina House Special Master's Recommended Plan







## North Carolina House 2011 Enacted Plan



North Carolina House 2011 Enacted Plan


## North Carolina House 2017 Enacted Plan



North Carolina House 2017 Enacted Plan


Plan: senate_2011_plan
11/26/2017
Administrator:
11:31 p.m.

## Population Summary Report



| Plan: senate_2011_plan Administrator: |  |  |  | $11 / 26 / 2017$ |
| :---: | :---: | :---: | :---: | :---: |
| District | Population | Deviation | \% Devn. |  |
| 27 | 191,166 | 456 | 0.24 |  |
| 28 | 199,439 | 8,729 | 4.58 |  |
| 29 | 192,959 | 2,249 | 1.18 |  |
| 30 | 190,414 | -296 | -0.16 |  |
| 31 | 199,875 | 9,165 | 4.81 |  |
| 32 | 189,201 | -1,509 | -0.79 |  |
| 33 | 190,676 | -34 | -0.02 |  |
| 34 | 197,348 | 6,638 | 3.48 |  |
| 35 | 189,794 | -916 | -0.48 |  |
| 36 | 189,509 | -1,201 | -0.63 |  |
| 37 | 183,253 | -7,457 | -3.91 |  |
| 38 | 183,694 | -7,016 | -3.68 |  |
| 39 | 181,619 | -9,091 | -4.77 |  |
| 40 | 188,928 | -1,782 | -0.93 |  |
| 41 | 182,134 | -8,576 | -4.50 |  |
| 42 | 191,556 | 846 | 0.44 |  |
| 43 | 197,035 | 6,325 | 3.32 |  |
| 44 | 200,108 | 9,398 | 4.93 |  |
| 45 | 190,341 | -369 | -0.19 |  |
| 46 | 188,990 | -1,720 | -0.90 |  |
| 47 | 187,477 | -3,233 | -1.70 |  |
| 48 | 184,866 | -5,844 | -3.06 |  |
| 49 | 193,282 | 2,572 | 1.35 |  |
| 50 | 194,102 | 3,392 | 1.78 |  |

State Total: $\quad 9,535,483$

Plan: Senate 2017 plan
11/26/2017
Administrator:
11:35 p.m.

## Population Summary Report



| Plan: Senate 2017 plan Administrator: |  |  |  | $11 / 26 / 2017$ |
| :---: | :---: | :---: | :---: | :---: |
| District | Population | Deviation | \% Devn. |  |
| 27 | 195,363 | 4,653 | 2.44 |  |
| 28 | 197,138 | 6,428 | 3.37 |  |
| 29 | 190,676 | -34 | -0.02 |  |
| 30 | 198,458 | 7,748 | 4.06 |  |
| 31 | 197,532 | 6,822 | 3.58 |  |
| 32 | 194,378 | 3,668 | 1.92 |  |
| 33 | 199,013 | 8,303 | 4.35 |  |
| 34 | 197,843 | 7,133 | 3.74 |  |
| 35 | 189,794 | -916 | -0.48 |  |
| 36 | 189,509 | -1,201 | -0.63 |  |
| 37 | 185,257 | -5,453 | -2.86 |  |
| 38 | 182,674 | -8,036 | -4.21 |  |
| 39 | 184,099 | -6,611 | -3.47 |  |
| 40 | 183,426 | -7,284 | -3.82 |  |
| 41 | 184,172 | -6,538 | -3.43 |  |
| 42 | 191,556 | 846 | 0.44 |  |
| 43 | 197,035 | 6,325 | 3.32 |  |
| 44 | 185,394 | -5,316 | -2.79 |  |
| 45 | 198,833 | 8,123 | 4.26 |  |
| 46 | 191,738 | 1,028 | 0.54 |  |
| 47 | 187,477 | -3,233 | -1.70 |  |
| 48 | 184,866 | -5,844 | -3.06 |  |
| 49 | 193,282 | 2,572 | 1.35 |  |
| 50 | 194,102 | 3,392 | 1.78 |  |

State Total: $\quad 9,535,483$

## Population Summary Report



| Plan: Special Administrator: | Senate Plan |  |  | $11 / 26 / 2017$ |
| :---: | :---: | :---: | :---: | :---: |
| District | Population | Deviation | \% Devn. |  |
| 27 | 189,954 | -756 | -0.40 |  |
| 28 | 198,114 | 7,404 | 3.88 |  |
| 29 | 190,676 | -34 | -0.02 |  |
| 30 | 198,458 | 7,748 | 4.06 |  |
| 31 | 197,532 | 6,822 | 3.58 |  |
| 32 | 194,378 | 3,668 | 1.92 |  |
| 33 | 199,013 | 8,303 | 4.35 |  |
| 34 | 197,843 | 7,133 | 3.74 |  |
| 35 | 189,794 | -916 | -0.48 |  |
| 36 | 189,509 | -1,201 | -0.63 |  |
| 37 | 185,257 | -5,453 | -2.86 |  |
| 38 | 182,674 | -8,036 | -4.21 |  |
| 39 | 184,099 | -6,611 | -3.47 |  |
| 40 | 183,426 | -7,284 | -3.82 |  |
| 41 | 184,172 | -6,538 | -3.43 |  |
| 42 | 191,556 | 846 | 0.44 |  |
| 43 | 197,035 | 6,325 | 3.32 |  |
| 44 | 185,394 | -5,316 | -2.79 |  |
| 45 | 198,833 | 8,123 | 4.26 |  |
| 46 | 191,738 | 1,028 | 0.54 |  |
| 47 | 187,477 | -3,233 | -1.70 |  |
| 48 | 184,866 | -5,844 | -3.06 |  |
| 49 | 193,282 | 2,572 | 1.35 |  |
| 50 | 194,102 | 3,392 | 1.78 |  |

State Total: $\quad \mathbf{9 , 5 3 5 , 4 8 3}$

## Population Summary Report

| Overall Range: |  |  |  | 9.93 | Percent | 7,889 | Persons |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Largest District: | 83,406 |  | Deviation: | 4.96 | Percent | 3,944 | Persons |
| Smallest District: | 75,517 |  | Deviation: | -4.96 | Percent | -3,945 | Persons |
|  |  | Mean Deviation: Standard Deviation: |  | 3.24 | Percent | 2,577.41 | Persons |
|  |  |  |  | 2,844 |  | 2,844.34 | Persons |
| Ideal District: | 79,462 |  |  |  |  |  |  |
| District |  | Population | Deviation | \% Devn. |  |  |  |
| 1 |  | 82,880 | 3,418 | 4.30 |  |  |  |
| 2 |  | 83,143 | 3,681 | 4.63 |  |  |  |
| 3 |  | 83,172 | 3,710 | 4.67 |  |  |  |
| 4 |  | 83,211 | 3,749 | 4.72 |  |  |  |
| 5 |  | 82,109 | 2,647 | 3.33 |  |  |  |
| 6 |  | 83,234 | 3,772 | 4.75 |  |  |  |
| 7 |  | 75,609 | -3,853 | -4.85 |  |  |  |
| 8 |  | 83,385 | 3,923 | 4.94 |  |  |  |
| 9 |  | 83,346 | 3,884 | 4.89 |  |  |  |
| 10 |  | 82,841 | 3,379 | 4.25 |  |  |  |
| 11 |  | 83,217 | 3,755 | 4.73 |  |  |  |
| 12 |  | 76,402 | -3,060 | -3.85 |  |  |  |
| 13 |  | 76,622 | -2,840 | -3.57 |  |  |  |
| 14 |  | 77,065 | -2,397 | -3.02 |  |  |  |
| 15 |  | 77,307 | -2,155 | -2.71 |  |  |  |
| 16 |  | 75,617 | -3,845 | -4.84 |  |  |  |
| 17 |  | 77,263 | -2,199 | -2.77 |  |  |  |
| 18 |  | 77,681 | -1,781 | -2.24 |  |  |  |
| 19 |  | 76,666 | -2,796 | -3.52 |  |  |  |
| 20 |  | 78,488 | -974 | -1.23 |  |  |  |
| 21 |  | 83,020 | 3,558 | 4.48 |  |  |  |
| 22 |  | 82,965 | 3,503 | 4.41 |  |  |  |
| 23 |  | 81,057 | 1,595 | 2.01 |  |  |  |
| 24 |  | 82,651 | 3,189 | 4.01 |  |  |  |
| 25 |  | 80,850 | 1,388 | 1.75 |  |  |  |
| 26 |  | 82,926 | 3,464 | 4.36 |  |  |  |


| Plan: House 2011 Plan Administrator: |  |  |  | $11 / 27 / 2017$ |
| :---: | :---: | :---: | :---: | :---: |
| District | Population | Deviation | \% Devn. |  |
| 27 | 76,790 | -2,672 | -3.36 |  |
| 28 | 83,355 | 3,893 | 4.90 |  |
| 29 | 80,137 | 675 | 0.85 |  |
| 30 | 79,990 | 528 | 0.66 |  |
| 31 | 78,465 | -997 | -1.25 |  |
| 32 | 82,631 | 3,169 | 3.99 |  |
| 33 | 82,568 | 3,106 | 3.91 |  |
| 34 | 83,083 | 3,621 | 4.56 |  |
| 35 | 77,896 | -1,566 | -1.97 |  |
| 36 | 83,373 | 3,911 | 4.92 |  |
| 37 | 83,318 | 3,856 | 4.85 |  |
| 38 | 83,403 | 3,941 | 4.96 |  |
| 39 | 81,394 | 1,932 | 2.43 |  |
| 40 | 76,609 | -2,853 | -3.59 |  |
| 41 | 82,866 | 3,404 | 4.28 |  |
| 42 | 78,925 | -537 | -0.68 |  |
| 43 | 79,233 | -229 | -0.29 |  |
| 44 | 78,020 | -1,442 | -1.81 |  |
| 45 | 83,253 | 3,791 | 4.77 |  |
| 46 | 83,143 | 3,681 | 4.63 |  |
| 47 | 82,820 | 3,358 | 4.23 |  |
| 48 | 83,406 | 3,944 | 4.96 |  |
| 49 | 83,266 | 3,804 | 4.79 |  |
| 50 | 80,467 | 1,005 | 1.26 |  |
| 51 | 75,538 | -3,924 | -4.94 |  |
| 52 | 76,894 | -2,568 | -3.23 |  |
| 53 | 81,777 | 2,315 | 2.91 |  |
| 54 | 78,734 | -728 | -0.92 |  |
| 55 | 75,792 | -3,670 | -4.62 |  |
| 56 | 82,329 | 2,867 | 3.61 |  |
| 57 | 79,344 | -118 | -0.15 |  |
| 58 | 79,055 | -407 | -0.51 |  |
| 59 | 83,275 | 3,813 | 4.80 |  |
| 60 | 80,527 | 1,065 | 1.34 |  |
| 61 | 83,062 | 3,600 | 4.53 |  |
| 62 | 83,143 | 3,681 | 4.63 |  |
| 63 | 75,550 | -3,912 | -4.92 |  |
| 64 | 75,581 | -3,881 | -4.88 |  |
| 65 | 81,444 | 1,982 | 2.49 |  |


| Plan: House 2011 Plan Administrator: |  |  |  | 11/27/2017 |
| :---: | :---: | :---: | :---: | :---: |
| District | Population | Deviation | \% Devn. |  |
| 66 | 83,380 | 3,918 | 4.93 |  |
| 67 | 83,372 | 3,910 | 4.92 |  |
| 68 | 76,067 | -3,395 | -4.27 |  |
| 69 | 76,381 | -3,081 | -3.88 |  |
| 70 | 76,125 | -3,337 | -4.20 |  |
| 71 | 76,671 | -2,791 | -3.51 |  |
| 72 | 77,038 | -2,424 | -3.05 |  |
| 73 | 77,256 | -2,206 | -2.78 |  |
| 74 | 80,474 | 1,012 | 1.27 |  |
| 75 | 78,634 | -828 | -1.04 |  |
| 76 | 80,735 | 1,273 | 1.60 |  |
| 77 | 78,424 | -1,038 | -1.31 |  |
| 78 | 76,980 | -2,482 | -3.12 |  |
| 79 | 79,093 | -369 | -0.46 |  |
| 80 | 81,522 | 2,060 | 2.59 |  |
| 81 | 81,356 | 1,894 | 2.38 |  |
| 82 | 78,861 | -601 | -0.76 |  |
| 83 | 78,419 | -1,043 | -1.31 |  |
| 84 | 77,282 | -2,180 | -2.74 |  |
| 85 | 78,372 | -1,090 | -1.37 |  |
| 86 | 79,175 | -287 | -0.36 |  |
| 87 | 83,029 | 3,567 | 4.49 |  |
| 88 | 75,622 | -3,840 | -4.83 |  |
| 89 | 77,838 | -1,624 | -2.04 |  |
| 90 | 76,583 | -2,879 | -3.62 |  |
| 91 | 83,319 | 3,857 | 4.85 |  |
| 92 | 77,711 | -1,751 | -2.20 |  |
| 93 | 78,360 | -1,102 | -1.39 |  |
| 94 | 75,933 | -3,529 | -4.44 |  |
| 95 | 82,155 | 2,693 | 3.39 |  |
| 96 | 76,520 | -2,942 | -3.70 |  |
| 97 | 78,265 | -1,197 | -1.51 |  |
| 98 | 76,887 | -2,575 | -3.24 |  |
| 99 | 77,118 | -2,344 | -2.95 |  |
| 100 | 78,386 | -1,076 | -1.35 |  |
| 101 | 77,335 | -2,127 | -2.68 |  |
| 102 | 76,572 | -2,890 | -3.64 |  |
| 103 | 75,672 | -3,790 | -4.77 |  |
| 104 | 76,073 | -3,389 | -4.26 |  |


| Plan: House 2011 Plan Administrator: |  |  |  | $11 / 27 / 2017$ |
| :---: | :---: | :---: | :---: | :---: |
| District | Population | Deviation | \% Devn. |  |
| 105 | 75,712 | -3,750 | -4.72 |  |
| 106 | 75,539 | -3,923 | -4.94 |  |
| 107 | 77,001 | -2,461 | -3.10 |  |
| 108 | 76,926 | -2,536 | -3.19 |  |
| 109 | 75,517 | -3,945 | -4.96 |  |
| 110 | 75,573 | -3,889 | -4.89 |  |
| 111 | 76,148 | -3,314 | -4.17 |  |
| 112 | 79,547 | 85 | 0.11 |  |
| 113 | 81,089 | 1,627 | 2.05 |  |
| 114 | 82,902 | 3,440 | 4.33 |  |
| 115 | 79,883 | 421 | 0.53 |  |
| 116 | 75,533 | -3,929 | -4.94 |  |
| 117 | 79,251 | -211 | -0.27 |  |
| 118 | 76,322 | -3,140 | -3.95 |  |
| 119 | 75,548 | -3,914 | -4.93 |  |
| 120 | 80,814 | 1,352 | 1.70 |  |

State Total: $\quad 9,535,483$

Plan: 2017 House Plan
11/26/2017
Administrator:
11:36 p.m.

## Population Summary Report

| Overall Range: |  |  |  | 9.96 | Percent | 7,917 | Persons |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Largest District: | 83,434 |  | Deviation: | 5.00 | Percent | 3,972 | Persons |
| Smallest District: | 75,517 |  | Deviation: | -4.96 | Percent | -3,945 | Persons |
|  |  | Mean Deviation: <br> Standard Deviation: |  | 3.29 | Percent | 2,615.28 | Persons |
|  |  |  |  | 2,839 |  | 2,838.88 | Persons |
| Ideal District: | 79,462 |  |  |  |  |  |  |
| District |  | Population | Deviation | \% Devn. |  |  |  |
| 1 |  | 77,143 | -2,319 | -2.92 |  |  |  |
| 2 |  | 82,634 | 3,172 | 3.99 |  |  |  |
| 3 |  | 75,726 | -3,736 | -4.70 |  |  |  |
| 4 |  | 81,905 | 2,443 | 3.07 |  |  |  |
| 5 |  | 77,527 | -1,935 | -2.44 |  |  |  |
| 6 |  | 76,421 | -3,041 | -3.83 |  |  |  |
| 7 |  | 78,432 | -1,030 | -1.30 |  |  |  |
| 8 |  | 75,926 | -3,536 | -4.45 |  |  |  |
| 9 |  | 75,794 | -3,668 | -4.62 |  |  |  |
| 10 |  | 83,434 | 3,972 | 5.00 |  |  |  |
| 11 |  | 83,266 | 3,804 | 4.79 |  |  |  |
| 12 |  | 75,923 | -3,539 | -4.45 |  |  |  |
| 13 |  | 76,622 | -2,840 | -3.57 |  |  |  |
| 14 |  | 77,065 | -2,397 | -3.02 |  |  |  |
| 15 |  | 77,307 | -2,155 | -2.71 |  |  |  |
| 16 |  | 81,425 | 1,963 | 2.47 |  |  |  |
| 17 |  | 77,263 | -2,199 | -2.77 |  |  |  |
| 18 |  | 77,681 | -1,781 | -2.24 |  |  |  |
| 19 |  | 76,666 | -2,796 | -3.52 |  |  |  |
| 20 |  | 78,488 | -974 | -1.23 |  |  |  |
| 21 |  | 83,434 | 3,972 | 5.00 |  |  |  |
| 22 |  | 83,434 | 3,972 | 5.00 |  |  |  |
| 23 |  | 81,057 | 1,595 | 2.01 |  |  |  |
| 24 |  | 81,234 | 1,772 | 2.23 |  |  |  |
| 25 |  | 78,027 | -1,435 | -1.81 |  |  |  |
| 26 |  | 83,432 | 3,970 | 5.00 |  |  |  |


| Plan: 2017 House Plan Administrator: |  |  |  | $\begin{gathered} \text { 11/26/2017 } \\ 11: 36 \text { p.m. } \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: |
| District | Population | Deviation | \% Devn. |  |
| 27 | 76,790 | -2,672 | -3.36 |  |
| 28 | 83,431 | 3,969 | 4.99 |  |
| 29 | 82,735 | 3,273 | 4.12 |  |
| 30 | 83,272 | 3,810 | 4.79 |  |
| 31 | 82,773 | 3,311 | 4.17 |  |
| 32 | 83,140 | 3,678 | 4.63 |  |
| 33 | 82,644 | 3,182 | 4.00 |  |
| 34 | 77,948 | -1,514 | -1.91 |  |
| 35 | 82,728 | 3,266 | 4.11 |  |
| 36 | 81,926 | 2,464 | 3.10 |  |
| 37 | 81,952 | 2,490 | 3.13 |  |
| 38 | 83,061 | 3,599 | 4.53 |  |
| 39 | 83,055 | 3,593 | 4.52 |  |
| 40 | 80,675 | 1,213 | 1.53 |  |
| 41 | 80,739 | 1,277 | 1.61 |  |
| 42 | 81,439 | 1,977 | 2.49 |  |
| 43 | 77,725 | -1,737 | -2.19 |  |
| 44 | 80,973 | 1,511 | 1.90 |  |
| 45 | 79,294 | -168 | -0.21 |  |
| 46 | 80,440 | 978 | 1.23 |  |
| 47 | 82,618 | 3,156 | 3.97 |  |
| 48 | 83,109 | 3,647 | 4.59 |  |
| 49 | 82,999 | 3,537 | 4.45 |  |
| 50 | 80,866 | 1,404 | 1.77 |  |
| 51 | 83,434 | 3,972 | 5.00 |  |
| 52 | 76,894 | -2,568 | -3.23 |  |
| 53 | 83,429 | 3,967 | 4.99 |  |
| 54 | 82,312 | 2,850 | 3.59 |  |
| 55 | 75,792 | -3,670 | -4.62 |  |
| 56 | 76,654 | -2,808 | -3.53 |  |
| 57 | 82,755 | 3,293 | 4.14 |  |
| 58 | 82,137 | 2,675 | 3.37 |  |
| 59 | 79,907 | 445 | 0.56 |  |
| 60 | 81,856 | 2,394 | 3.01 |  |
| 61 | 81,019 | 1,557 | 1.96 |  |
| 62 | 80,732 | 1,270 | 1.60 |  |
| 63 | 75,550 | -3,912 | -4.92 |  |
| 64 | 75,581 | -3,881 | -4.88 |  |
| 65 | 83,430 | 3,968 | 4.99 |  |


| Plan: 2017 House Plan Administrator: |  |  |  | $11 / 26 / 2017$ |
| :---: | :---: | :---: | :---: | :---: |
| District | Population | Deviation | \% Devn. |  |
| 66 | 83,032 | 3,570 | 4.49 |  |
| 67 | 82,583 | 3,121 | 3.93 |  |
| 68 | 76,067 | -3,395 | -4.27 |  |
| 69 | 76,381 | -3,081 | -3.88 |  |
| 70 | 76,125 | -3,337 | -4.20 |  |
| 71 | 75,793 | -3,669 | -4.62 |  |
| 72 | 76,245 | -3,217 | -4.05 |  |
| 73 | 78,189 | -1,273 | -1.60 |  |
| 74 | 79,963 | 501 | 0.63 |  |
| 75 | 78,886 | -576 | -0.72 |  |
| 76 | 81,908 | 2,446 | 3.08 |  |
| 77 | 82,918 | 3,456 | 4.35 |  |
| 78 | 76,980 | -2,482 | -3.12 |  |
| 79 | 75,538 | -3,924 | -4.94 |  |
| 80 | 81,522 | 2,060 | 2.59 |  |
| 81 | 81,356 | 1,894 | 2.38 |  |
| 82 | 81,088 | 1,626 | 2.05 |  |
| 83 | 81,172 | 1,710 | 2.15 |  |
| 84 | 77,282 | -2,180 | -2.74 |  |
| 85 | 78,372 | -1,090 | -1.37 |  |
| 86 | 79,175 | -287 | -0.36 |  |
| 87 | 83,029 | 3,567 | 4.49 |  |
| 88 | 76,022 | -3,440 | -4.33 |  |
| 89 | 77,838 | -1,624 | -2.04 |  |
| 90 | 82,779 | 3,317 | 4.17 |  |
| 91 | 82,843 | 3,381 | 4.25 |  |
| 92 | 77,172 | -2,290 | -2.88 |  |
| 93 | 78,360 | -1,102 | -1.39 |  |
| 94 | 83,358 | 3,896 | 4.90 |  |
| 95 | 82,155 | 2,693 | 3.39 |  |
| 96 | 76,520 | -2,942 | -3.70 |  |
| 97 | 78,265 | -1,197 | -1.51 |  |
| 98 | 75,602 | -3,860 | -4.86 |  |
| 99 | 77,141 | -2,321 | -2.92 |  |
| 100 | 75,589 | -3,873 | -4.87 |  |
| 101 | 79,876 | 414 | 0.52 |  |
| 102 | 77,391 | -2,071 | -2.61 |  |
| 103 | 76,381 | -3,081 | -3.88 |  |
| 104 | 76,869 | -2,593 | -3.26 |  |


| Plan: 2017 House Plan Administrator: |  |  |  | $\begin{array}{r} 11 / 26 / 2017 \\ 11: 36 \text { p.m. } \end{array}$ |
| :---: | :---: | :---: | :---: | :---: |
| District | Population | Deviation | \% Devn. |  |
| 105 | 75,967 | -3,495 | -4.40 |  |
| 106 | 75,762 | -3,700 | -4.66 |  |
| 107 | 75,856 | -3,606 | -4.54 |  |
| 108 | 76,926 | -2,536 | -3.19 |  |
| 109 | 75,517 | -3,945 | -4.96 |  |
| 110 | 75,573 | -3,889 | -4.89 |  |
| 111 | 76,148 | -3,314 | -4.17 |  |
| 112 | 79,547 | 85 | 0.11 |  |
| 113 | 81,089 | 1,627 | 2.05 |  |
| 114 | 82,902 | 3,440 | 4.33 |  |
| 115 | 79,883 | 421 | 0.53 |  |
| 116 | 75,533 | -3,929 | -4.94 |  |
| 117 | 79,251 | -211 | -0.27 |  |
| 118 | 76,322 | -3,140 | -3.95 |  |
| 119 | 75,548 | -3,914 | -4.93 |  |
| 120 | 80,814 | 1,352 | 1.70 |  |

State Total:
9,535,483

Plan: Special Master Recommended House Plan
11/26/2017
Administrator:

## Population Summary Report

|  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: |
| Overall Range: |  |  | 9.97 Percent | 7,920 Persons |
| Largest District: | 83,437 | Deviation: | 5.00 Percent | 3,975 Persons |
| Smallest District: | 75,517 | Deviation: | -4.96 Percent | $-3,945$ Persons |
|  |  | Mean Deviation: | 3.37 Percent | $2,679.68$ Persons |
|  |  | Standard Deviation: | 2,909 | $2,908.94$ Persons |
|  |  |  |  |  |


| District | Population | Deviation | \% Devn. |
| :--- | :---: | :---: | :---: |
| 001 | 77,143 | $-2,319$ | -2.92 |
| 002 | 82,634 | 3,172 | 3.99 |
| 003 | 75,726 | $-3,736$ | -4.70 |
| 004 | 81,905 | 2,443 | 3.07 |
| 005 | 77,527 | $-1,935$ | -2.44 |
| 006 | 76,421 | $-3,041$ | -3.83 |
| 007 | 78,432 | $-1,030$ | -1.30 |
| 008 | 75,926 | $-3,536$ | -4.45 |
| 009 | 75,794 | $-3,668$ | -4.62 |
| 010 | 83,434 | 3,972 | 5.00 |
| 011 | 82,341 | 2,879 | 3.62 |
| 012 | 75,923 | $-3,539$ | -4.45 |
| 013 | 76,622 | $-2,840$ | -3.57 |
| 014 | 77,065 | $-2,397$ | -3.02 |
| 015 | 77,307 | $-2,155$ | -2.71 |
| 016 | 81,425 | 1,963 | 2.47 |
| 017 | 77,263 | $-2,199$ | -2.77 |
| 018 | 77,681 | $-1,781$ | -2.24 |
| 019 | 76,666 | $-2,796$ | -3.52 |
| 020 | 78,488 | -974 | -1.23 |
| 021 | 83,431 | 3,969 | 4.99 |
| 022 | 83,437 | 3,975 | 5.00 |
| 023 | 81,057 | 1,595 | 2.01 |
| 024 | 81,234 | 1,772 | 2.23 |
| 025 | 78,027 | $-1,435$ | -1.81 |
| 026 | 83,432 | 3,970 | 5.00 |
|  |  |  |  |
|  |  |  |  |

Plan: Special Master Recommended House Plan

11/26/2017
Administrator:
11:21 a.m.

| District | Population | Deviation | \% Devn. |
| :---: | :---: | :---: | :---: |
| 027 | 76,790 | -2,672 | -3.36 |
| 028 | 83,431 | 3,969 | 4.99 |
| 029 | 82,735 | 3,273 | 4.12 |
| 030 | 83,272 | 3,810 | 4.79 |
| 031 | 82,773 | 3,311 | 4.17 |
| 032 | 83,140 | 3,678 | 4.63 |
| 033 | 83,342 | 3,880 | 4.88 |
| 034 | 82,825 | 3,363 | 4.23 |
| 035 | 76,942 | -2,520 | -3.17 |
| 036 | 83,373 | 3,911 | 4.92 |
| 037 | 83,318 | 3,856 | 4.85 |
| 038 | 83,061 | 3,599 | 4.53 |
| 039 | 83,055 | 3,593 | 4.52 |
| 040 | 76,609 | -2,853 | -3.59 |
| 041 | 82,866 | 3,404 | 4.28 |
| 042 | 81,439 | 1,977 | 2.49 |
| 043 | 77,725 | -1,737 | -2.19 |
| 044 | 80,973 | 1,511 | 1.90 |
| 045 | 79,294 | -168 | -0.21 |
| 046 | 80,440 | 978 | 1.23 |
| 047 | 82,618 | 3,156 | 3.97 |
| 048 | 83,109 | 3,647 | 4.59 |
| 049 | 83,261 | 3,799 | 4.78 |
| 050 | 80,866 | 1,404 | 1.77 |
| 051 | 83,434 | 3,972 | 5.00 |
| 052 | 76,894 | -2,568 | -3.23 |
| 053 | 83,429 | 3,967 | 4.99 |
| 054 | 82,312 | 2,850 | 3.59 |
| 055 | 75,792 | -3,670 | -4.62 |
| 056 | 76,654 | -2,808 | -3.53 |
| 057 | 83,303 | 3,841 | 4.83 |
| 058 | 82,137 | 2,675 | 3.37 |
| 059 | 79,457 | -5 | -0.01 |
| 060 | 81,856 | 2,394 | 3.01 |
| 061 | 79,754 | 292 | 0.37 |
| 062 | 81,899 | 2,437 | 3.07 |
| 063 | 75,550 | -3,912 | -4.92 |
| 064 | 75,581 | -3,881 | -4.88 |
| 065 | 83,430 | 3,968 | 4.99 |


| Plan: Special Administrator: | House Plan |  |  | 11/26/2017 |
| :---: | :---: | :---: | :---: | :---: |
| District | Population | Deviation | \% Devn. |  |
| 066 | 83,032 | 3,570 | 4.49 |  |
| 067 | 82,583 | 3,121 | 3.93 |  |
| 068 | 76,067 | -3,395 | -4.27 |  |
| 069 | 76,381 | -3,081 | -3.88 |  |
| 070 | 76,125 | -3,337 | -4.20 |  |
| 071 | 75,793 | -3,669 | -4.62 |  |
| 072 | 76,245 | -3,217 | -4.05 |  |
| 073 | 78,189 | -1,273 | -1.60 |  |
| 074 | 79,963 | 501 | 0.63 |  |
| 075 | 78,886 | -576 | -0.72 |  |
| 076 | 81,908 | 2,446 | 3.08 |  |
| 077 | 82,918 | 3,456 | 4.35 |  |
| 078 | 76,980 | -2,482 | -3.12 |  |
| 079 | 75,538 | -3,924 | -4.94 |  |
| 080 | 81,522 | 2,060 | 2.59 |  |
| 081 | 81,356 | 1,894 | 2.38 |  |
| 082 | 81,088 | 1,626 | 2.05 |  |
| 083 | 81,172 | 1,710 | 2.15 |  |
| 084 | 77,282 | -2,180 | -2.74 |  |
| 085 | 78,372 | -1,090 | -1.37 |  |
| 086 | 79,175 | -287 | -0.36 |  |
| 087 | 83,029 | 3,567 | 4.49 |  |
| 088 | 76,022 | -3,440 | -4.33 |  |
| 089 | 77,838 | -1,624 | -2.04 |  |
| 090 | 82,779 | 3,317 | 4.17 |  |
| 091 | 82,843 | 3,381 | 4.25 |  |
| 092 | 77,238 | -2,224 | -2.80 |  |
| 093 | 78,360 | -1,102 | -1.39 |  |
| 094 | 83,358 | 3,896 | 4.90 |  |
| 095 | 82,155 | 2,693 | 3.39 |  |
| 096 | 76,520 | -2,942 | -3.70 |  |
| 097 | 78,265 | -1,197 | -1.51 |  |
| 098 | 75,602 | -3,860 | -4.86 |  |
| 099 | 77,141 | -2,321 | -2.92 |  |
| 100 | 75,589 | -3,873 | -4.87 |  |
| 101 | 79,876 | 414 | 0.52 |  |
| 102 | 77,391 | -2,071 | -2.61 |  |
| 103 | 77,806 | -1,656 | -2.08 |  |
| 104 | 75,633 | -3,829 | -4.82 |  |

- Ex. 9023 -

| Plan: Special Administrator: | House Plan |  |  | $11 / 26 / 2017$ |
| :---: | :---: | :---: | :---: | :---: |
| District | Population | Deviation | \% Devn. |  |
| 105 | 75,712 | -3,750 | -4.72 |  |
| 106 | 75,762 | -3,700 | -4.66 |  |
| 107 | 75,856 | -3,606 | -4.54 |  |
| 108 | 76,926 | -2,536 | -3.19 |  |
| 109 | 75,517 | -3,945 | -4.96 |  |
| 110 | 75,573 | -3,889 | -4.89 |  |
| 111 | 76,148 | -3,314 | -4.17 |  |
| 112 | 79,547 | 85 | 0.11 |  |
| 113 | 81,089 | 1,627 | 2.05 |  |
| 114 | 82,902 | 3,440 | 4.33 |  |
| 115 | 79,883 | 421 | 0.53 |  |
| 116 | 75,533 | -3,929 | -4.94 |  |
| 117 | 79,251 | -211 | -0.27 |  |
| 118 | 76,322 | -3,140 | -3.95 |  |
| 119 | 75,548 | -3,914 | -4.93 |  |
| 120 | 80,814 | 1,352 | 1.70 |  |

State Total: $\quad \mathbf{9 , 5 3 5 , 4 8 3}$

Plan Type:
Date: $\quad 11 / 26 / 2017$
Time:
Administrator:

## Measures of Compactness

11/26/2017

| Sum | N/A | N/A |
| :--- | :---: | :---: |
| Min | 0.21 | 0.05 |
| Max | 0.54 | 0.56 |
| Mean | 0.38 | 0.26 |
| Std. Dev. | 0.09 | 0.14 |


| DISTRICT | Reock | Polsby- <br> Popper |
| :--- | :---: | :---: |
| 1 | 0.48 | 0.24 |
| 2 | 0.48 | 0.42 |
| 3 | 0.34 | 0.22 |
| 4 | 0.36 | 0.16 |
| 5 | 0.25 | 0.07 |
| 6 | 0.52 | 0.55 |
| 7 | 0.30 | 0.06 |
| 8 | 0.41 | 0.18 |
| 9 | 0.24 | 0.27 |
| 10 | 0.43 | 0.28 |
| 11 | 0.44 | 0.22 |
| 12 | 0.52 | 0.43 |
| 13 | 0.41 | 0.33 |
| 14 | 0.34 | 0.08 |
| 15 | 0.49 | 0.28 |
| 16 | 0.44 | 0.16 |
| 17 | 0.43 | 0.31 |
| 18 | 0.25 | 0.15 |
| 19 | 0.45 | 0.05 |
| 20 | 0.28 | 0.14 |
| 21 | 0.34 | 0.06 |
| 22 | 0.37 | 0.14 |
| 23 | 0.39 | 0.37 |
| 24 | 0.30 | 0.32 |
| 25 | 0.28 | 0.24 |
| 26 | 0.54 | 0.53 |
| 27 | 0.39 | 0.13 |
| 28 | 0.25 | 0.12 |
| 29 | 0.27 | 0.26 |
| 30 | 0.28 | 0.32 |
| 31 | 0.33 | 0.10 |
| 32 | 0.38 | 0.07 |
| 33 | 0.27 | 0.27 |
| 34 | 0.45 | 0.29 |
| 35 | 0.44 | 0.56 |
| 36 | 0.43 | 0.39 |
| 37 | 0.15 | 0.26 |
| 38 | 0.34 |  |
| 39 |  |  |
|  |  |  |

- Ex. 9026 -

| Plan Name: | senate_2011_plan | Administrator: |  |
| :--- | :---: | :--- | :--- |
| Plan Type: |  | User: |  |
| DISTRICT | Reock |  | Polsby- <br> Popper |
| 41 | 0.21 | 0.12 |  |
| 42 | 0.45 | 0.48 |  |
| 43 | 0.43 | 0.50 |  |
| 44 | 0.34 | 0.17 |  |
| 45 | 0.37 | 0.27 |  |
| 46 | 0.29 | 0.32 |  |
| 47 | 0.42 | 0.24 |  |
| 48 | 0.40 |  | 0.32 |
| 49 | 0.39 | 0.30 |  |
| 50 | 0.42 |  | 0.46 |

Plan Type:

| Date: | $11 / 26 / 2017$ |
| :--- | :--- |
| Time: | $11: 35: 43$ PM |

Administrator:

## Measures of Compactness

11/26/2017

| Sum | N/A | $\mathrm{N} / \mathrm{A}$ |
| :--- | :---: | :---: |
| Min | 0.19 | 0.11 |
| Max | 0.62 | 0.61 |
| Mean | 0.42 | 0.34 |
| Std. Dev. | 0.09 | 0.13 |


| DISTRICT | Reock | Polsby- <br> Popper |
| :--- | :---: | :---: |
| 1 | 0.46 | 0.46 |
| 2 | 0.48 | 0.42 |
| 3 | 0.23 | 0.15 |
| 4 | 0.45 | 0.31 |
| 5 | 0.62 | 0.44 |
| 6 | 0.52 | 0.55 |
| 7 | 0.46 | 0.35 |
| 8 | 0.41 | 0.18 |
| 9 | 0.24 | 0.27 |
| 10 | 0.48 | 0.29 |
| 11 | 0.22 | 0.24 |
| 12 | 0.46 | 0.40 |
| 13 | 0.41 | 0.33 |
| 14 | 0.41 | 0.27 |
| 15 | 0.38 | 0.11 |
| 16 | 0.50 | 0.48 |
| 17 | 0.39 | 0.34 |
| 18 | 0.41 | 0.28 |
| 19 | 0.45 | 0.20 |
| 20 | 0.44 | 0.49 |
| 21 | 0.42 | 0.25 |
| 22 | 0.58 | 0.54 |
| 23 | 0.39 | 0.37 |
| 24 | 0.58 | 0.61 |
| 25 | 0.46 | 0.28 |
| 26 | 0.56 | 0.55 |
| 27 | 0.43 | 0.15 |
| 28 | 0.40 | 0.17 |
| 29 | 0.27 | 0.27 |
| 30 | 0.27 | 0.40 |
| 31 | 0.32 | 0.14 |
| 32 | 0.58 | 0.23 |
| 33 | 0.32 | 0.30 |
| 34 | 0.33 | 0.34 |
| 35 | 0.49 | 0.56 |
| 36 | 0.42 | 0.39 |
| 37 | 0.37 | 0.42 |
| 38 | 0.24 |  |
| 39 |  |  |
|  |  |  |

- Ex. 9028 -

| Plan Name: | Senate 2017 plan | Administrator: |
| :--- | :---: | :--- |
| Plan Type: |  | User: |
| DISTRICT | Reock | Polsby- <br> Popper |
| 41 | 0.19 | 0.13 |
| 42 | 0.45 | 0.48 |
| 43 | 0.43 | 0.50 |
| 44 | 0.38 | 0.32 |
| 45 | 0.44 | 0.41 |
| 46 | 0.54 | 0.45 |
| 47 | 0.42 | 0.24 |
| 48 | 0.40 | 0.32 |
| 49 | 0.39 | 0.30 |
| 50 | 0.42 | 0.46 |

$$
\text { - Ex. } 9029 \text { - }
$$

Plan Name: $\quad$ Special Master Recommended Senate Plan
Plan Type:
Date: $\quad 11 / 26 / 2017$
Time:
Administrator:

## Measures of Compactness

11/26/2017

| Sum | N/A | N/A |
| :--- | :---: | :---: |
| Min | 0.19 | 0.11 |
| Max | 0.70 | 0.62 |
| Mean | 0.43 | 0.35 |
| Std. Dev. | 0.10 | 0.12 |


| DISTRICT | Reock | Polsby- <br> Popper |
| :--- | :---: | :---: |
| 1 | 0.46 | 0.46 |
| 2 | 0.48 | 0.42 |
| 3 | 0.23 | 0.15 |
| 4 | 0.45 | 0.31 |
| 5 | 0.62 | 0.44 |
| 6 | 0.52 | 0.55 |
| 7 | 0.46 | 0.35 |
| 8 | 0.41 | 0.18 |
| 9 | 0.24 | 0.27 |
| 10 | 0.48 | 0.29 |
| 11 | 0.22 | 0.24 |
| 12 | 0.46 | 0.40 |
| 13 | 0.41 | 0.33 |
| 14 | 0.41 | 0.27 |
| 15 | 0.38 | 0.11 |
| 16 | 0.50 | 0.48 |
| 17 | 0.39 | 0.34 |
| 18 | 0.41 | 0.28 |
| 19 | 0.51 | 0.30 |
| 20 | 0.44 | 0.49 |
| 21 | 0.48 | 0.35 |
| 22 | 0.58 | 0.54 |
| 23 | 0.39 | 0.37 |
| 24 | 0.59 | 0.62 |
| 25 | 0.46 | 0.28 |
| 26 | 0.56 | 0.55 |
| 27 | 0.46 | 0.20 |
| 28 | 0.70 | 0.28 |
| 29 | 0.27 | 0.27 |
| 30 | 0.27 | 0.40 |
| 31 | 0.32 | 0.14 |
| 32 | 0.58 | 0.23 |
| 33 | 0.32 | 0.30 |
| 34 | 0.33 | 0.34 |
| 35 | 0.49 | 0.56 |
| 36 | 0.42 | 0.39 |
| 37 | 0.37 | 0.42 |
| 38 |  | 0.24 |
| 39 |  |  |
|  |  |  |

- Ex. 9030 -

Plan Name: Special Master Recommende Administrator:
Plan Type: User:

| DISTRICT | Reock | Polsby- <br> Popper |
| :--- | :---: | :---: |
| 41 | 0.19 | 0.13 |
| 42 | 0.45 | 0.48 |
| 43 | 0.43 | 0.50 |
| 44 | 0.38 | 0.32 |
| 45 | 0.44 | 0.41 |
| 46 | 0.54 | 0.45 |
| 47 | 0.42 | 0.24 |
| 48 | 0.40 | 0.32 |
| 49 | 0.39 | 0.30 |
| 50 | 0.42 | 0.46 |

Plan Name: House 2011 Plan
Plan Type:
Date:
Time:
Administrator:

## Measures of Compactness

11/27/2017

| Sum | $\mathrm{N} / \mathrm{A}$ | $\mathrm{N} / \mathrm{A}$ |
| :--- | :---: | :---: |
| Min | 0.12 | 0.04 |
| Max | 0.57 | 0.57 |
| Mean | 0.38 | 0.24 |
| Std. Dev. | 0.10 | 0.11 |


| DISTRICT | Reock | Polsby- <br> Popper |
| :--- | :---: | :---: |
| 1 | 0.53 | 0.28 |
| 2 | 0.40 | 0.25 |
| 3 | 0.49 | 0.27 |
| 4 | 0.34 | 0.11 |
| 5 | 0.46 | 0.23 |
| 6 | 0.46 | 0.29 |
| 7 | 0.28 | 0.04 |
| 8 | 0.19 | 0.13 |
| 9 | 0.39 | 0.23 |
| 10 | 0.18 | 0.04 |
| 11 | 0.31 | 0.19 |
| 12 | 0.12 | 0.05 |
| 13 | 0.24 | 0.22 |
| 14 | 0.39 | 0.28 |
| 15 | 0.55 | 0.37 |
| 16 | 0.40 | 0.24 |
| 17 | 0.48 | 0.30 |
| 18 | 0.51 | 0.33 |
| 19 | 0.20 | 0.28 |
| 20 | 0.36 | 0.20 |
| 21 | 0.19 | 0.08 |
| 22 | 0.43 | 0.20 |
| 23 | 0.35 | 0.24 |
| 24 | 0.25 | 0.19 |
| 25 | 0.40 | 0.06 |
| 26 | 0.42 | 0.32 |
| 27 | 0.52 | 0.40 |
| 28 | 0.50 | 0.29 |
| 29 | 0.47 | 0.16 |
| 30 | 0.38 | 0.13 |
| 31 | 0.45 | 0.15 |
| 32 | 0.44 | 0.24 |
| 33 | 0.47 | 0.22 |
| 34 | 0.39 | 0.10 |
| 35 | 0.37 | 0.26 |
| 36 | 0.34 | 0.34 |
| 37 | 0.22 | 0.18 |
| 38 | 0.11 |  |
| 39 |  |  |
| 2 |  |  |

- Ex. 9032 -
Plan Name: $\quad$ House 2011 Plan
Plan Type:

Administrator: User:

Polsby-

| DISTRICT | Reock | $\begin{aligned} & \text { Polsby- } \\ & \text { Popper } \\ & \hline \end{aligned}$ |
| :---: | :---: | :---: |
| 41 | 0.28 | 0.25 |
| 42 | 0.44 | 0.12 |
| 43 | 0.32 | 0.08 |
| 44 | 0.36 | 0.09 |
| 45 | 0.37 | 0.09 |
| 46 | 0.44 | 0.23 |
| 47 | 0.45 | 0.10 |
| 48 | 0.23 | 0.04 |
| 49 | 0.43 | 0.16 |
| 50 | 0.44 | 0.18 |
| 51 | 0.54 | 0.23 |
| 52 | 0.32 | 0.25 |
| 53 | 0.43 | 0.36 |
| 54 | 0.49 | 0.32 |
| 55 | 0.42 | 0.29 |
| 56 | 0.30 | 0.36 |
| 57 | 0.39 | 0.17 |
| 58 | 0.38 | 0.20 |
| 59 | 0.40 | 0.21 |
| 60 | 0.22 | 0.08 |
| 61 | 0.30 | 0.13 |
| 62 | 0.48 | 0.36 |
| 63 | 0.34 | 0.30 |
| 64 | 0.34 | 0.28 |
| 65 | 0.36 | 0.23 |
| 66 | 0.25 | 0.07 |
| 67 | 0.43 | 0.38 |
| 68 | 0.33 | 0.28 |
| 69 | 0.37 | 0.20 |
| 70 | 0.54 | 0.54 |
| 71 | 0.42 | 0.20 |
| 72 | 0.51 | 0.23 |
| 73 | 0.25 | 0.24 |
| 74 | 0.36 | 0.17 |
| 75 | 0.23 | 0.14 |
| 76 | 0.45 | 0.26 |
| 77 | 0.55 | 0.31 |
| 78 | 0.36 | 0.28 |
| 79 | 0.51 | 0.29 |
| 80 | 0.28 | 0.22 |
| 81 | 0.50 | 0.22 |
| 82 | 0.33 | 0.26 |
| 83 | 0.27 | 0.21 |
| 84 | 0.51 | 0.45 |
| 85 | 0.39 | 0.23 |
| 86 | 0.38 | 0.27 |
| 87 | 0.50 | 0.57 |
| 88 | 0.27 | 0.25 |
| 89 | 0.34 | 0.26 |
| 90 | 0.57 | 0.50 |
| 91 | 0.34 | 0.25 |
| 92 | 0.16 | 0.10 |
| 93 | 0.57 | 0.42 |
| 94 | 0.52 | 0.31 |
| 95 | 0.43 | 0.37 |
| 96 | 0.30 | 0.21 |

- Ex. 9033 -
Plan Name: House 2011 Plan
Plan Type:

Administrator: User:

| DISTRICT | Reock | Polsby- <br> Popper |
| :--- | :--- | :--- |
| 97 | 0.33 | 0.52 |
| 98 | 0.49 | 0.40 |
| 99 | 0.48 | 0.21 |
| 100 | 0.27 | 0.17 |
| 101 | 0.47 | 0.26 |
| 102 | 0.32 | 0.15 |
| 103 | 0.34 | 0.18 |
| 104 | 0.55 | 0.33 |
| 105 | 0.37 | 0.30 |
| 106 | 0.49 | 0.30 |
| 107 | 0.35 | 0.14 |
| 108 | 0.44 | 0.32 |
| 109 | 0.46 | 0.47 |
| 110 | 0.36 | 0.26 |
| 111 | 0.40 | 0.28 |
| 112 | 0.39 | 0.30 |
| 113 | 0.24 | 0.21 |
| 114 | 0.39 | 0.13 |
| 115 | 0.38 | 0.19 |
| 116 | 0.35 | 0.23 |
| 117 | 0.40 | 0.28 |
| 118 | 0.36 | 0.15 |
| 119 | 0.36 | 0.20 |
| 20 | 0.40 | 0.37 |

Plan Type:
Date: $\quad 11 / 26 / 2017$
Time: 11:37:31PM
Administrator:

## Measures of Compactness

11/26/2017

| Sum | N/A | N/A |
| :--- | :---: | :---: |
| Min | 0.20 | 0.12 |
| Max | 0.70 | 0.71 |
| Mean | 0.41 | 0.32 |
| Std. Dev. | 0.09 | 0.11 |


| DISTRICT | Reock | Polsby- <br> Popper |
| :--- | :---: | :---: |
| 1 | 0.49 | 0.18 |
| 2 | 0.43 | 0.49 |
| 3 | 0.37 | 0.33 |
| 4 | 0.44 | 0.37 |
| 5 | 0.25 | 0.27 |
| 6 | 0.33 | 0.24 |
| 7 | 0.52 | 0.32 |
| 8 | 0.51 | 0.39 |
| 9 | 0.40 | 0.27 |
| 10 | 0.36 | 0.23 |
| 11 | 0.41 | 0.34 |
| 12 | 0.36 | 0.34 |
| 13 | 0.24 | 0.22 |
| 14 | 0.39 | 0.28 |
| 15 | 0.55 | 0.37 |
| 16 | 0.31 | 0.22 |
| 17 | 0.48 | 0.30 |
| 18 | 0.51 | 0.33 |
| 19 | 0.20 | 0.28 |
| 20 | 0.36 | 0.20 |
| 21 | 0.29 | 0.12 |
| 22 | 0.48 | 0.20 |
| 23 | 0.35 | 0.24 |
| 24 | 0.53 | 0.71 |
| 25 | 0.50 | 0.35 |
| 26 | 0.39 | 0.27 |
| 27 | 0.52 | 0.40 |
| 28 | 0.38 | 0.22 |
| 29 | 0.39 | 0.34 |
| 30 | 0.40 | 0.39 |
| 31 | 0.50 | 0.37 |
| 32 | 0.53 | 0.51 |
| 33 | 0.45 | 0.29 |
| 34 | 0.34 | 0.29 |
| 35 | 0.32 | 0.33 |
| 36 | 0.34 | 0.21 |
| 37 | 0.48 | 0.30 |
| 38 | 0.40 |  |
| 39 |  |  |
|  |  | 0.38 |
|  |  |  |

- Ex. 9035 -
Plan Name: 2017 House Plan
Plan Type:

Administrator: User:

Polsby-

| DISTRICT | Reock | Popper |
| :---: | :---: | :---: |
| 41 | 0.42 | 0.40 |
| 42 | 0.50 | 0.40 |
| 43 | 0.34 | 0.31 |
| 44 | 0.50 | 0.24 |
| 45 | 0.46 | 0.22 |
| 46 | 0.23 | 0.16 |
| 47 | 0.57 | 0.42 |
| 48 | 0.48 | 0.45 |
| 49 | 0.44 | 0.44 |
| 50 | 0.38 | 0.34 |
| 51 | 0.52 | 0.40 |
| 52 | 0.32 | 0.25 |
| 53 | 0.59 | 0.47 |
| 54 | 0.45 | 0.43 |
| 55 | 0.42 | 0.29 |
| 56 | 0.49 | 0.34 |
| 57 | 0.37 | 0.28 |
| 58 | 0.44 | 0.18 |
| 59 | 0.39 | 0.25 |
| 60 | 0.29 | 0.21 |
| 61 | 0.32 | 0.22 |
| 62 | 0.47 | 0.50 |
| 63 | 0.34 | 0.30 |
| 64 | 0.34 | 0.28 |
| 65 | 0.52 | 0.47 |
| 66 | 0.40 | 0.35 |
| 67 | 0.51 | 0.31 |
| 68 | 0.33 | 0.28 |
| 69 | 0.37 | 0.20 |
| 70 | 0.54 | 0.54 |
| 71 | 0.35 | 0.19 |
| 72 | 0.50 | 0.26 |
| 73 | 0.46 | 0.47 |
| 74 | 0.38 | 0.23 |
| 75 | 0.22 | 0.16 |
| 76 | 0.49 | 0.46 |
| 77 | 0.39 | 0.35 |
| 78 | 0.36 | 0.28 |
| 79 | 0.48 | 0.30 |
| 80 | 0.28 | 0.22 |
| 81 | 0.50 | 0.22 |
| 82 | 0.42 | 0.43 |
| 83 | 0.32 | 0.25 |
| 84 | 0.51 | 0.45 |
| 85 | 0.39 | 0.23 |
| 86 | 0.38 | 0.27 |
| 87 | 0.50 | 0.57 |
| 88 | 0.60 | 0.33 |
| 89 | 0.34 | 0.26 |
| 90 | 0.29 | 0.15 |
| 91 | 0.32 | 0.32 |
| 92 | 0.44 | 0.25 |
| 93 | 0.57 | 0.42 |
| 94 | 0.34 | 0.22 |
| 95 | 0.43 | 0.37 |
| 96 | 0.30 | 0.21 |

- Ex. 9036 -


Plan Type:
Date: $\quad 11 / 26 / 2017$
Time:
Administrator:

11:21:55AM

Measures of Compactness
11/26/2017

|  |  |  |
| :--- | :---: | ---: |
| Sum | N/A | N/A |
| Min | 0.19 | 0.13 |
| Max | 0.70 | 0.71 |
| Mean | 0.41 | 0.32 |
| Std. Dev. | 0.09 | 0.10 |


| DISTRICT | Reock | Polsby- <br> Popper |
| :--- | :---: | :---: |
| 001 | 0.49 | 0.18 |
| 002 | 0.43 | 0.49 |
| 003 | 0.37 | 0.33 |
| 004 | 0.44 | 0.37 |
| 005 | 0.25 | 0.27 |
| 006 | 0.33 | 0.24 |
| 007 | 0.52 | 0.32 |
| 008 | 0.51 | 0.39 |
| 009 | 0.40 | 0.27 |
| 010 | 0.36 | 0.23 |
| 011 | 0.33 | 0.26 |
| 012 | 0.36 | 0.34 |
| 013 | 0.24 | 0.22 |
| 014 | 0.39 | 0.28 |
| 015 | 0.55 | 0.37 |
| 016 | 0.31 | 0.22 |
| 017 | 0.48 | 0.30 |
| 018 | 0.51 | 0.33 |
| 019 | 0.20 | 0.28 |
| 020 | 0.36 | 0.20 |
| 021 | 0.40 | 0.28 |
| 022 | 0.46 | 0.26 |
| 023 | 0.35 | 0.24 |
| 024 | 0.53 | 0.71 |
| 025 | 0.50 | 0.35 |
| 026 | 0.39 | 0.27 |
| 027 | 0.52 | 0.40 |
| 028 | 0.38 | 0.22 |
| 029 | 0.39 | 0.34 |
| 030 | 0.40 | 0.39 |
| 031 | 0.50 | 0.37 |
| 032 | 0.53 | 0.51 |
| 033 | 0.54 | 0.41 |
| 034 | 0.44 | 0.43 |
| 035 | 0.35 | 0.35 |
| 036 | 0.37 | 0.34 |
| 037 | 0.34 | 0.22 |
| 038 | 0.43 | 0.30 |
| 039 | 0.40 |  |
|  |  |  |

- Ex. 9038 -

| Plan Name: | Special Master Recommende | Administrator: |
| :--- | :--- | :--- |
| Plan Type: |  | User: |


| DISTRICT | Reock | PolsbyPopper |
| :---: | :---: | :---: |
| 041 | 0.28 | 0.25 |
| 042 | 0.50 | 0.40 |
| 043 | 0.34 | 0.31 |
| 044 | 0.50 | 0.24 |
| 045 | 0.46 | 0.22 |
| 046 | 0.23 | 0.16 |
| 047 | 0.57 | 0.42 |
| 048 | 0.48 | 0.45 |
| 049 | 0.46 | 0.31 |
| 050 | 0.38 | 0.34 |
| 051 | 0.52 | 0.40 |
| 052 | 0.32 | 0.25 |
| 053 | 0.59 | 0.47 |
| 054 | 0.45 | 0.43 |
| 055 | 0.42 | 0.29 |
| 056 | 0.49 | 0.34 |
| 057 | 0.44 | 0.37 |
| 058 | 0.44 | 0.18 |
| 059 | 0.41 | 0.23 |
| 060 | 0.29 | 0.21 |
| 061 | 0.37 | 0.28 |
| 062 | 0.30 | 0.31 |
| 063 | 0.34 | 0.30 |
| 064 | 0.34 | 0.28 |
| 065 | 0.52 | 0.47 |
| 066 | 0.40 | 0.35 |
| 067 | 0.51 | 0.31 |
| 068 | 0.33 | 0.28 |
| 069 | 0.37 | 0.20 |
| 070 | 0.54 | 0.54 |
| 071 | 0.35 | 0.19 |
| 072 | 0.50 | 0.26 |
| 073 | 0.46 | 0.47 |
| 074 | 0.38 | 0.23 |
| 075 | 0.22 | 0.16 |
| 076 | 0.49 | 0.46 |
| 077 | 0.39 | 0.35 |
| 078 | 0.36 | 0.28 |
| 079 | 0.48 | 0.30 |
| 080 | 0.28 | 0.22 |
| 081 | 0.50 | 0.22 |
| 082 | 0.42 | 0.43 |
| 083 | 0.32 | 0.25 |
| 084 | 0.51 | 0.45 |
| 085 | 0.39 | 0.23 |
| 086 | 0.38 | 0.27 |
| 087 | 0.50 | 0.57 |
| 088 | 0.60 | 0.33 |
| 089 | 0.34 | 0.26 |
| 090 | 0.29 | 0.15 |
| 091 | 0.32 | 0.32 |
| 092 | 0.40 | 0.29 |
| 093 | 0.57 | 0.42 |
| 094 | 0.34 | 0.22 |
| 095 | 0.43 | 0.37 |
| 096 | 0.30 | 0.21 |

- Ex. 9039 -

| Plan Name: | Special Master Recommende | Administrator: |
| :--- | :--- | :--- |
| Plan Type: | User: |  |


| DISTRICT | Reock | Polsby- <br> Popper |
| :--- | :--- | :---: |
| 097 | 0.33 | 0.52 |
| 098 | 0.70 | 0.64 |
| 099 | 0.43 | 0.42 |
| 100 | 0.43 | 0.35 |
| 101 | 0.51 | 0.34 |
| 102 | 0.64 | 0.43 |
| 103 | 0.19 | 0.25 |
| 104 | 0.35 | 0.29 |
| 105 | 0.37 | 0.30 |
| 106 | 0.43 | 0.44 |
| 107 | 0.38 | 0.20 |
| 108 | 0.44 | 0.32 |
| 109 | 0.46 | 0.47 |
| 110 | 0.36 | 0.26 |
| 111 | 0.40 | 0.28 |
| 112 | 0.39 | 0.30 |
| 113 | 0.24 | 0.21 |
| 114 | 0.39 | 0.13 |
| 115 | 0.38 | 0.19 |
| 116 | 0.35 | 0.23 |
| 117 | 0.40 | 0.28 |
| 118 | 0.36 | 0.15 |
| 119 | 0.36 | 0.20 |
| 20 |  | 0.37 |

$$
\text { Exhibit } 4
$$

## Senate Plans: County Splits

|  | 2011 Plan | 2017 Plan | Rec. Plan |
| :--- | :---: | :---: | :---: |
| Counties split | 19 | 12 | $\mathbf{1 2}$ |
| Total number of county splits | 27 | 21 | $\mathbf{2 1}$ |

House Plans: County Splits

|  | 2011 Plan | 2017 Plan | Rec. Plan |
| :--- | :---: | :---: | :---: |
| Counties split | 49 | 39 | 39 |
| Total number of county splits | 92 | 79 | $\mathbf{7 9}$ |

Senate Plans: Municipalities (CDPs) Splits

|  | 2011 Plan | 2017 Plan | Rec. Plan |
| :--- | :---: | :---: | :---: |
| CDPs split | 92 | 71 | 69 |
| Total number of CDP splits | 208 | 163 | 158 |
|  |  |  |  |
| House Plans: Municipalities (CDPs) Splits |  |  |  |
| CDPs split | 2011 Plan | 2017 Plan | Rec. Plan |
| Total number of CDP splits | 170 | 139 | $\mathbf{1 4 1}$ |

Senate Plans: Precincts (VTDs) Splits

|  | 2011 Plan | 2017 Plan | Rec. Plan |
| :--- | :---: | :---: | :---: |
| VTDs split | 249 | 11 | $\mathbf{6}$ |
| Total number of VTD splits | 259 | 10 | $\mathbf{5}$ |

House Plans: Precincts (VTDs) Splits

|  | 2011 Plan | 2017 Plan | Rec. Plan |
| :--- | :---: | :---: | :---: |
| VTDs split | 352 | 50 | 68 |
| Total number of VTD splits | 411 | 50 | $\mathbf{6 8}$ |

- Ex. 9045 -

District Demographics: Voting Age Population 2011 Senate Plan

| District | Non-Hispanic White VAP | Hispanic VAP | Black VAP | Asian VAP | American Indian VAP | Native Hawaiian VAP |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 73.4\% | 3.8\% | 21.5\% | 0.8\% | 0.9\% | 0.1\% |
| 2 | 77.7\% | 4.0\% | 15.8\% | 1.7\% | 1.0\% | 0.2\% |
| 3 | 44.4\% | 2.3\% | 52.4\% | 0.4\% | 0.9\% | 0.1\% |
| 4 | 40.5\% | 4.3\% | 52.8\% | 0.7\% | 2.4\% | 0.1\% |
| 5 | 40.5\% | 6.0\% | 52.0\% | 1.4\% | 0.9\% | 0.1\% |
| 6 | 71.2\% | 8.5\% | 16.9\% | 2.8\% | 1.5\% | 0.5\% |
| 7 | 75.6\% | 6.1\% | 16.1\% | 1.7\% | 0.8\% | 0.1\% |
| 8 | 75.5\% | 4.5\% | 18.4\% | 0.6\% | 1.4\% | 0.1\% |
| 9 | 81.1\% | 4.4\% | 12.3\% | 1.5\% | 1.0\% | 0.2\% |
| 10 | 64.3\% | 12.7\% | 21.6\% | 0.5\% | 1.5\% | 0.1\% |
| 11 | 67.7\% | 8.4\% | 22.7\% | 0.9\% | 0.8\% | 0.1\% |
| 12 | 67.8\% | 10.5\% | 19.6\% | 1.2\% | 1.6\% | 0.2\% |
| 13 | 40.4\% | 5.7\% | 26.4\% | 0.8\% | 27.4\% | 0.1\% |
| 14 | 30.5\% | 15.5\% | 51.3\% | 3.2\% | 1.4\% | 0.1\% |
| 15 | 81.3\% | 4.5\% | 10.1\% | 4.0\% | 0.7\% | 0.1\% |
| 16 | 67.0\% | 8.0\% | 15.0\% | 9.8\% | 1.1\% | 0.1\% |
| 17 | 76.9\% | 5.0\% | 9.5\% | 8.2\% | 0.8\% | 0.1\% |
| 18 | 69.2\% | 7.9\% | 21.1\% | 1.4\% | 1.2\% | 0.1\% |
| 19 | 64.6\% | 7.7\% | 22.5\% | 3.3\% | 2.9\% | 0.6\% |
| 20 | 35.6\% | 11.0\% | 51.0\% | 2.4\% | 1.1\% | 0.1\% |
| 21 | 34.2\% | 8.9\% | 51.5\% | 2.8\% | 4.4\% | 0.6\% |
| 22 | 65.3\% | 7.5\% | 21.5\% | 5.3\% | 1.0\% | 0.1\% |
| 23 | 73.7\% | 7.8\% | 12.8\% | 5.1\% | 1.0\% | 0.1\% |
| 24 | 73.8\% | 7.9\% | 16.6\% | 1.2\% | 1.1\% | 0.1\% |
| 25 | 69.3\% | 3.1\% | 23.7\% | 1.1\% | 3.1\% | 0.1\% |
| 26 | 78.7\% | 3.6\% | 15.3\% | 1.9\% | 0.8\% | 0.1\% |
| 27 | 73.3\% | 5.3\% | 17.0\% | 3.9\% | 1.0\% | 0.1\% |
| 28 | 31.4\% | 7.6\% | 56.5\% | 4.3\% | 1.4\% | 0.1\% |
| 29 | 82.4\% | 6.7\% | 9.0\% | 1.2\% | 1.1\% | 0.1\% |
| 30 | 90.1\% | 4.7\% | 4.2\% | 0.5\% | 0.7\% | 0.0\% |
| 31 | 87.3\% | 4.3\% | 6.4\% | 1.7\% | 0.6\% | 0.1\% |
| 32 | 41.4\% | 14.2\% | 42.5\% | 2.1\% | 1.1\% | 0.2\% |
| 33 | 82.1\% | 5.6\% | 10.2\% | 1.3\% | 0.9\% | 0.0\% |
| 34 | 78.3\% | 6.1\% | 14.2\% | 1.0\% | 0.8\% | 0.1\% |
| 35 | 76.1\% | 9.3\% | 12.3\% | 1.9\% | 0.9\% | 0.1\% |
| 36 | 76.4\% | 7.2\% | 14.1\% | 2.1\% | 0.8\% | 0.1\% |
| 37 | 52.0\% | 16.9\% | 26.3\% | 4.8\% | 1.1\% | 0.2\% |
| 38 | 32.9\% | 8.4\% | 52.5\% | 6.3\% | 1.3\% | 0.2\% |
| 39 | 82.4\% | 4.5\% | 7.0\% | 5.8\% | 0.6\% | 0.1\% |
| 40 | 26.9\% | 16.7\% | 51.8\% | 4.8\% | 1.4\% | 0.2\% |
| 41 | 76.9\% | 6.0\% | 13.1\% | 3.6\% | 0.8\% | 0.1\% |
| 42 | 83.0\% | 5.9\% | 8.0\% | 2.6\% | 0.7\% | 0.1\% |
| 43 | 78.4\% | 4.9\% | 14.8\% | 1.4\% | 0.9\% | 0.1\% |
| 44 | 82.8\% | 5.2\% | 9.9\% | 1.5\% | 0.7\% | 0.1\% |
| 45 | 91.8\% | 3.6\% | 3.2\% | 0.7\% | 0.7\% | 0.1\% |
| 46 | 80.9\% | 3.1\% | 13.5\% | 1.9\% | 0.7\% | 0.2\% |
| 47 | 90.4\% | 3.1\% | 5.3\% | 0.5\% | 0.8\% | 0.0\% |
| 48 | 88.6\% | 5.9\% | 3.5\% | 1.2\% | 0.9\% | 0.1\% |
| 49 | 86.6\% | 4.7\% | 6.8\% | 1.0\% | 1.1\% | 0.2\% |
| 50 | 90.2\% | 3.2\% | 1.4\% | 0.6\% | 4.9\% | 0.1\% |

- Ex. 9046 -

District Demographics: Voting Age Population 2017 Senate Plan

| District | Non-Hispanic White VAP | Hispanic VAP | Black VAP | Asian VAP | American Indian VAP | Native Hawaiian VAP |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 66.9\% | 3.2\% | 28.4\% | 0.9\% | 1.0\% | 0.1\% |
| 2 | 77.7\% | 4.0\% | 15.8\% | 1.7\% | 1.0\% | 0.2\% |
| 3 | 51.0\% | 3.4\% | 44.4\% | 0.4\% | 1.3\% | 0.1\% |
| 4 | 46.2\% | 4.5\% | 47.5\% | 0.7\% | 1.6\% | 0.1\% |
| 5 | 59.8\% | 5.2\% | 32.9\% | 1.8\% | 0.8\% | 0.1\% |
| 6 | 71.2\% | 8.5\% | 16.9\% | 2.8\% | 1.5\% | 0.5\% |
| 7 | 57.4\% | 7.0\% | 33.9\% | 1.3\% | 0.8\% | 0.1\% |
| 8 | 75.5\% | 4.5\% | 18.4\% | 0.6\% | 1.4\% | 0.1\% |
| 9 | 81.1\% | 4.4\% | 12.3\% | 1.5\% | 1.0\% | 0.2\% |
| 10 | 60.2\% | 14.4\% | 24.1\% | 0.5\% | 1.5\% | 0.1\% |
| 11 | 66.5\% | 6.6\% | 25.4\% | 1.0\% | 1.1\% | 0.1\% |
| 12 | 67.4\% | 10.5\% | 20.1\% | 1.2\% | 1.6\% | 0.2\% |
| 13 | 40.4\% | 5.7\% | 26.4\% | 0.8\% | 27.4\% | 0.1\% |
| 14 | 44.5\% | 13.3\% | 38.9\% | 3.6\% | 1.3\% | 0.1\% |
| 15 | 59.2\% | 9.1\% | 26.8\% | 4.8\% | 1.0\% | 0.1\% |
| 16 | 69.0\% | 6.6\% | 11.7\% | 12.4\% | 0.9\% | 0.1\% |
| 17 | 77.7\% | 6.7\% | 11.4\% | 3.7\% | 1.0\% | 0.1\% |
| 18 | 76.9\% | 4.8\% | 15.6\% | 2.4\% | 0.8\% | 0.1\% |
| 19 | 61.5\% | 7.5\% | 26.0\% | 2.9\% | 3.2\% | 0.5\% |
| 20 | 41.3\% | 12.1\% | 40.3\% | 6.3\% | 1.2\% | 0.1\% |
| 21 | 37.9\% | 9.0\% | 47.5\% | 3.2\% | 4.1\% | 0.6\% |
| 22 | 59.7\% | 7.1\% | 30.8\% | 2.0\% | 1.0\% | 0.1\% |
| 23 | 73.7\% | 7.8\% | 12.8\% | 5.1\% | 1.0\% | 0.1\% |
| 24 | 72.2\% | 7.3\% | 18.7\% | 1.3\% | 1.1\% | 0.1\% |
| 25 | 66.3\% | 3.8\% | 25.9\% | 1.0\% | 3.3\% | 0.1\% |
| 26 | 72.2\% | 8.2\% | 16.7\% | 2.3\% | 1.2\% | 0.1\% |
| 27 | 79.6\% | 3.5\% | 12.7\% | 3.8\% | 0.7\% | 0.1\% |
| 28 | 37.3\% | 7.7\% | 50.5\% | 4.3\% | 1.4\% | 0.2\% |
| 29 | 82.1\% | 5.6\% | 10.2\% | 1.3\% | 0.9\% | 0.0\% |
| 30 | 80.1\% | 3.5\% | 15.2\% | 0.5\% | 0.8\% | 0.1\% |
| 31 | 84.3\% | 4.8\% | 8.9\% | 1.7\% | 0.7\% | 0.1\% |
| 32 | 46.2\% | 12.7\% | 39.2\% | 2.1\% | 1.0\% | 0.1\% |
| 33 | 79.1\% | 4.9\% | 14.3\% | 1.2\% | 0.8\% | 0.1\% |
| 34 | 82.1\% | 5.9\% | 10.1\% | 1.5\% | 0.7\% | 0.1\% |
| 35 | 76.1\% | 9.3\% | 12.3\% | 1.9\% | 0.9\% | 0.1\% |
| 36 | 76.4\% | 7.2\% | 14.1\% | 2.1\% | 0.8\% | 0.1\% |
| 37 | 38.7\% | 14.7\% | 42.7\% | 4.0\% | 1.2\% | 0.2\% |
| 38 | 36.8\% | 7.7\% | 48.5\% | 7.1\% | 1.2\% | 0.2\% |
| 39 | 83.8\% | 4.4\% | 6.6\% | 4.7\% | 0.6\% | 0.1\% |
| 40 | 39.6\% | 17.5\% | 38.9\% | 4.1\% | 1.4\% | 0.2\% |
| 41 | 71.6\% | 8.5\% | 14.2\% | 5.3\% | 0.8\% | 0.1\% |
| 42 | 83.0\% | 5.9\% | 8.0\% | 2.6\% | 0.7\% | 0.1\% |
| 43 | 78.4\% | 4.9\% | 14.8\% | 1.4\% | 0.9\% | 0.1\% |
| 44 | 81.8\% | 3.6\% | 13.3\% | 0.8\% | 0.7\% | 0.1\% |
| 45 | 91.3\% | 4.9\% | 2.6\% | 0.6\% | 0.7\% | 0.1\% |
| 46 | 88.1\% | 3.8\% | 5.8\% | 1.7\% | 0.8\% | 0.2\% |
| 47 | 90.4\% | 3.1\% | 5.3\% | 0.5\% | 0.8\% | 0.0\% |
| 48 | 88.6\% | 5.9\% | 3.5\% | 1.2\% | 0.9\% | 0.1\% |
| 49 | 86.6\% | 4.7\% | 6.8\% | 1.0\% | 1.1\% | 0.2\% |
| 50 | 90.2\% | 3.2\% | 1.4\% | 0.6\% | 4.9\% | 0.1\% |

- Ex. 9047 -

District Demographics: Voting Age Population
Special Master's Recommended Senate Plan

| District | Non-Hispanic White VAP | Hispanic VAP | Black VAP | Asian VAP | American Indian VAP | Native Hawaiian VAP |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 66.9\% | 3.2\% | 28.4\% | 0.9\% | 1.0\% | 0.1\% |
| 2 | 77.7\% | 4.0\% | 15.8\% | 1.7\% | 1.0\% | 0.2\% |
| 3 | 51.0\% | 3.4\% | 44.4\% | 0.4\% | 1.3\% | 0.1\% |
| 4 | 46.2\% | 4.5\% | 47.5\% | 0.7\% | 1.6\% | 0.1\% |
| 5 | 59.8\% | 5.2\% | 32.9\% | 1.8\% | 0.8\% | 0.1\% |
| 6 | 71.2\% | 8.5\% | 16.9\% | 2.8\% | 1.5\% | 0.5\% |
| 7 | 57.4\% | 7.0\% | 33.9\% | 1.3\% | 0.8\% | 0.1\% |
| 8 | 75.5\% | 4.5\% | 18.4\% | 0.6\% | 1.4\% | 0.1\% |
| 9 | 81.1\% | 4.4\% | 12.3\% | 1.5\% | 1.0\% | 0.2\% |
| 10 | 60.2\% | 14.4\% | 24.1\% | 0.5\% | 1.5\% | 0.1\% |
| 11 | 66.5\% | 6.6\% | 25.4\% | 1.0\% | 1.1\% | 0.1\% |
| 12 | 67.4\% | 10.5\% | 20.1\% | 1.2\% | 1.6\% | 0.2\% |
| 13 | 40.4\% | 5.7\% | 26.4\% | 0.8\% | 27.4\% | 0.1\% |
| 14 | 44.5\% | 13.3\% | 38.9\% | 3.6\% | 1.3\% | 0.1\% |
| 15 | 59.2\% | 9.1\% | 26.8\% | 4.8\% | 1.0\% | 0.1\% |
| 16 | 69.0\% | 6.6\% | 11.7\% | 12.4\% | 0.9\% | 0.1\% |
| 17 | 77.7\% | 6.7\% | 11.4\% | 3.7\% | 1.0\% | 0.1\% |
| 18 | 76.9\% | 4.8\% | 15.6\% | 2.4\% | 0.8\% | 0.1\% |
| 19 | 57.1\% | 6.5\% | 31.7\% | 2.7\% | 3.2\% | 0.4\% |
| 20 | 41.3\% | 12.1\% | 40.3\% | 6.3\% | 1.2\% | 0.1\% |
| 21 | 41.9\% | 10.1\% | 42.1\% | 3.4\% | 4.1\% | 0.7\% |
| 22 | 59.7\% | 7.1\% | 30.8\% | 2.0\% | 1.0\% | 0.1\% |
| 23 | 73.7\% | 7.8\% | 12.8\% | 5.1\% | 1.0\% | 0.1\% |
| 24 | 71.3\% | 7.3\% | 19.6\% | 1.3\% | 1.1\% | 0.1\% |
| 25 | 66.3\% | 3.8\% | 25.9\% | 1.0\% | 3.3\% | 0.1\% |
| 26 | 72.2\% | 8.2\% | 16.7\% | 2.3\% | 1.2\% | 0.1\% |
| 27 | 72.4\% | 4.7\% | 18.3\% | 4.2\% | 0.9\% | 0.1\% |
| 28 | 45.6\% | 6.6\% | 43.6\% | 4.0\% | 1.2\% | 0.1\% |
| 29 | 82.1\% | 5.6\% | 10.2\% | 1.3\% | 0.9\% | 0.0\% |
| 30 | 80.1\% | 3.5\% | 15.2\% | 0.5\% | 0.8\% | 0.1\% |
| 31 | 84.3\% | 4.8\% | 8.9\% | 1.7\% | 0.7\% | 0.1\% |
| 32 | 46.2\% | 12.7\% | 39.2\% | 2.1\% | 1.0\% | 0.1\% |
| 33 | 79.1\% | 4.9\% | 14.3\% | 1.2\% | 0.8\% | 0.1\% |
| 34 | 82.1\% | 5.9\% | 10.1\% | 1.5\% | 0.7\% | 0.1\% |
| 35 | 76.1\% | 9.3\% | 12.3\% | 1.9\% | 0.9\% | 0.1\% |
| 36 | 76.4\% | 7.2\% | 14.1\% | 2.1\% | 0.8\% | 0.1\% |
| 37 | 38.7\% | 14.7\% | 42.7\% | 4.0\% | 1.2\% | 0.2\% |
| 38 | 36.8\% | 7.7\% | 48.5\% | 7.1\% | 1.2\% | 0.2\% |
| 39 | 83.8\% | 4.4\% | 6.6\% | 4.7\% | 0.6\% | 0.1\% |
| 40 | 39.6\% | 17.5\% | 38.9\% | 4.1\% | 1.4\% | 0.2\% |
| 41 | 71.6\% | 8.5\% | 14.2\% | 5.3\% | 0.8\% | 0.1\% |
| 42 | 83.0\% | 5.9\% | 8.0\% | 2.6\% | 0.7\% | 0.1\% |
| 43 | 78.4\% | 4.9\% | 14.8\% | 1.4\% | 0.9\% | 0.1\% |
| 44 | 81.8\% | 3.6\% | 13.3\% | 0.8\% | 0.7\% | 0.1\% |
| 45 | 91.3\% | 4.9\% | 2.6\% | 0.6\% | 0.7\% | 0.1\% |
| 46 | 88.1\% | 3.8\% | 5.8\% | 1.7\% | 0.8\% | 0.2\% |
| 47 | 90.4\% | 3.1\% | 5.3\% | 0.5\% | 0.8\% | 0.0\% |
| 48 | 88.6\% | 5.9\% | 3.5\% | 1.2\% | 0.9\% | 0.1\% |
| 49 | 86.6\% | 4.7\% | 6.8\% | 1.0\% | 1.1\% | 0.2\% |
| 50 | 90.2\% | 3.2\% | 1.4\% | 0.6\% | 4.9\% | 0.1\% |

- Ex. 9048 -

District Demographics: Voting Age Population
House 2011 Plan

| District | Non-Hispanic White VAP | Hispanic VAP | Black VAP | Asian VAP | American Indian VAP | Native Hawaiian VAP |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 77.1\% | 2.3\% | 18.9\% | 1.1\% | 0.8\% | 0.1\% |
| 2 | 67.0\% | 5.2\% | 26.6\% | 0.6\% | 1.1\% | 0.1\% |
| 3 | 73.3\% | 4.9\% | 19.5\% | 1.6\% | 1.0\% | 0.2\% |
| 4 | 69.6\% | 12.7\% | 16.1\% | 1.2\% | 0.8\% | 0.2\% |
| 5 | 42.1\% | 2.4\% | 54.2\% | 0.7\% | 1.2\% | 0.1\% |
| 6 | 76.9\% | 5.0\% | 17.0\% | 0.6\% | 0.9\% | 0.1\% |
| 7 | 43.7\% | 4.2\% | 50.7\% | 1.0\% | 1.2\% | 0.1\% |
| 8 | 66.1\% | 4.6\% | 27.7\% | 1.3\% | 0.6\% | 0.1\% |
| 9 | 74.7\% | 4.0\% | 18.8\% | 2.2\% | 0.7\% | 0.1\% |
| 10 | 77.4\% | 5.8\% | 15.2\% | 1.1\% | 0.8\% | 0.1\% |
| 11 | 65.7\% | 10.4\% | 14.8\% | 8.9\% | 1.3\% | 0.1\% |
| 12 | 42.4\% | 5.5\% | 50.6\% | 1.3\% | 0.8\% | 0.2\% |
| 13 | 85.8\% | 2.7\% | 9.4\% | 1.1\% | 1.1\% | 0.1\% |
| 14 | 69.3\% | 9.0\% | 17.4\% | 3.8\% | 1.6\% | 0.6\% |
| 15 | 71.9\% | 9.5\% | 15.4\% | 2.6\% | 1.6\% | 0.5\% |
| 16 | 76.6\% | 5.3\% | 16.5\% | 0.8\% | 1.3\% | 0.1\% |
| 17 | 87.2\% | 3.4\% | 8.0\% | 0.6\% | 1.1\% | 0.1\% |
| 18 | 63.5\% | 5.4\% | 29.2\% | 1.2\% | 1.5\% | 0.1\% |
| 19 | 87.0\% | 4.5\% | 6.3\% | 1.4\% | 1.0\% | 0.1\% |
| 20 | 85.8\% | 3.7\% | 8.2\% | 1.7\% | 0.8\% | 0.2\% |
| 21 | 36.3\% | 10.4\% | 51.9\% | 1.2\% | 1.0\% | 0.2\% |
| 22 | 59.7\% | 10.8\% | 26.8\% | 0.4\% | 2.8\% | 0.1\% |
| 23 | 44.8\% | 2.8\% | 51.8\% | 0.3\% | 0.6\% | 0.1\% |
| 24 | 33.3\% | 7.9\% | 57.3\% | 1.5\% | 0.8\% | 0.2\% |
| 25 | 76.3\% | 6.5\% | 16.1\% | 0.7\% | 1.0\% | 0.1\% |
| 26 | 72.9\% | 9.0\% | 16.7\% | 1.0\% | 1.0\% | 0.1\% |
| 27 | 41.5\% | 1.5\% | 53.7\% | 0.6\% | 3.1\% | 0.1\% |
| 28 | 72.9\% | 12.0\% | 14.0\% | 0.6\% | 1.0\% | 0.1\% |
| 29 | 31.7\% | 11.8\% | 51.3\% | 5.1\% | 1.2\% | 0.1\% |
| 30 | 62.6\% | 9.1\% | 18.4\% | 9.7\% | 0.9\% | 0.1\% |
| 31 | 29.9\% | 16.3\% | 51.8\% | 2.1\% | 1.3\% | 0.1\% |
| 32 | 43.6\% | 4.2\% | 50.5\% | 0.5\% | 2.0\% | 0.0\% |
| 33 | 33.8\% | 11.9\% | 51.4\% | 3.2\% | 1.2\% | 0.1\% |
| 34 | 70.5\% | 9.0\% | 17.0\% | 3.4\% | 1.0\% | 0.1\% |
| 35 | 72.1\% | 6.9\% | 17.4\% | 3.2\% | 1.0\% | 0.1\% |
| 36 | 81.0\% | 6.0\% | 7.7\% | 4.8\% | 0.9\% | 0.1\% |
| 37 | 76.2\% | 6.8\% | 13.8\% | 2.7\% | 1.1\% | 0.1\% |
| 38 | 28.6\% | 16.0\% | 51.4\% | 4.9\% | 1.4\% | 0.2\% |
| 39 | 60.5\% | 10.6\% | 26.5\% | 2.2\% | 1.3\% | 0.1\% |
| 40 | 76.2\% | 4.0\% | 9.8\% | 9.8\% | 0.8\% | 0.1\% |
| 41 | 69.7\% | 4.1\% | 7.4\% | 18.5\% | 0.7\% | 0.1\% |
| 42 | 32.8\% | 10.7\% | 52.6\% | 4.3\% | 2.1\% | 0.8\% |
| 43 | 39.7\% | 5.6\% | 51.5\% | 2.1\% | 2.5\% | 0.4\% |
| 44 | 60.5\% | 8.3\% | 25.4\% | 4.1\% | 2.8\% | 0.6\% |
| 45 | 67.9\% | 7.6\% | 19.6\% | 2.5\% | 3.4\% | 0.6\% |
| 46 | 64.0\% | 3.3\% | 25.8\% | 0.7\% | 6.6\% | 0.1\% |
| 47 | 22.3\% | 8.3\% | 17.4\% | 0.9\% | 52.1\% | 0.1\% |
| 48 | 31.8\% | 4.9\% | 51.3\% | 0.7\% | 12.1\% | 0.1\% |
| 49 | 83.2\% | 4.5\% | 8.9\% | 3.3\% | 0.6\% | 0.1\% |
| 50 | 75.3\% | 5.7\% | 13.3\% | 5.3\% | 0.9\% | 0.1\% |
| 51 | 72.1\% | 10.5\% | 15.7\% | 1.0\% | 1.4\% | 0.1\% |
| 52 | 80.4\% | 4.6\% | 13.0\% | 1.1\% | 1.2\% | 0.1\% |

- Ex. 9049 -

District Demographics: Voting Age Population
House 2011 Plan

| District | Non-Hispanic White VAP | Hispanic VAP | Black VAP | Asian VAP | American Indian VAP | Native Hawaiian VAP |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 53 | 66.7\% | 8.5\% | 22.2\% | 1.5\% | 1.9\% | 0.2\% |
| 54 | 68.1\% | 12.3\% | 18.0\% | 1.2\% | 1.0\% | 0.1\% |
| 55 | 70.6\% | 3.9\% | 24.1\% | 0.8\% | 0.9\% | 0.1\% |
| 56 | 73.1\% | 6.8\% | 12.5\% | 7.0\% | 1.0\% | 0.1\% |
| 57 | 38.9\% | 6.6\% | 50.7\% | 3.6\% | 1.3\% | 0.1\% |
| 58 | 40.1\% | 5.9\% | 51.1\% | 2.8\% | 1.4\% | 0.1\% |
| 59 | 81.2\% | 2.9\% | 13.6\% | 1.8\% | 0.8\% | 0.1\% |
| 60 | 32.7\% | 9.7\% | 51.4\% | 6.0\% | 1.4\% | 0.2\% |
| 61 | 73.6\% | 5.7\% | 15.3\% | 4.9\% | 1.0\% | 0.1\% |
| 62 | 77.3\% | 4.3\% | 13.3\% | 4.7\% | 0.7\% | 0.1\% |
| 63 | 70.0\% | 9.1\% | 19.2\% | 1.3\% | 1.2\% | 0.1\% |
| 64 | 71.9\% | 7.7\% | 18.5\% | 1.5\% | 0.9\% | 0.1\% |
| 65 | 74.0\% | 3.7\% | 21.2\% | 0.5\% | 0.9\% | 0.1\% |
| 66 | 64.0\% | 6.6\% | 22.5\% | 1.4\% | 6.3\% | 0.2\% |
| 67 | 81.6\% | 4.6\% | 11.7\% | 1.6\% | 0.7\% | 0.1\% |
| 68 | 75.2\% | 10.1\% | 11.7\% | 2.7\% | 0.7\% | 0.1\% |
| 69 | 74.3\% | 10.5\% | 12.7\% | 1.9\% | 1.0\% | 0.1\% |
| 70 | 82.1\% | 9.4\% | 6.3\% | 1.5\% | 1.1\% | 0.1\% |
| 71 | 36.0\% | 17.5\% | 45.5\% | 1.8\% | 1.1\% | 0.1\% |
| 72 | 42.3\% | 11.0\% | 45.0\% | 1.8\% | 0.9\% | 0.2\% |
| 73 | 89.3\% | 5.1\% | 4.5\% | 0.6\% | 0.6\% | 0.1\% |
| 74 | 82.3\% | 5.4\% | 10.7\% | 1.3\% | 0.8\% | 0.1\% |
| 75 | 79.3\% | 5.4\% | 12.3\% | 2.6\% | 0.7\% | 0.1\% |
| 76 | 80.9\% | 4.8\% | 12.9\% | 0.8\% | 0.9\% | 0.1\% |
| 77 | 75.5\% | 6.1\% | 16.8\% | 1.2\% | 0.7\% | 0.1\% |
| 78 | 86.2\% | 6.0\% | 6.5\% | 0.6\% | 1.1\% | 0.1\% |
| 79 | 84.6\% | 4.9\% | 8.1\% | 2.0\% | 0.7\% | 0.1\% |
| 80 | 84.9\% | 5.1\% | 8.4\% | 0.9\% | 0.9\% | 0.0\% |
| 81 | 83.7\% | 4.8\% | 9.1\% | 1.6\% | 0.9\% | 0.1\% |
| 82 | 72.6\% | 7.8\% | 16.2\% | 3.2\% | 0.8\% | 0.1\% |
| 83 | 74.5\% | 8.5\% | 15.2\% | 1.5\% | 0.8\% | 0.1\% |
| 84 | 78.4\% | 6.1\% | 13.9\% | 1.3\% | 0.7\% | 0.1\% |
| 85 | 91.5\% | 3.7\% | 3.5\% | 0.6\% | 0.8\% | 0.0\% |
| 86 | 85.7\% | 4.4\% | 6.3\% | 3.0\% | 0.8\% | 0.4\% |
| 87 | 90.6\% | 3.4\% | 4.9\% | 0.6\% | 0.7\% | 0.1\% |
| 88 | 80.6\% | 7.9\% | 7.9\% | 3.3\% | 0.7\% | 0.1\% |
| 89 | 82.8\% | 5.5\% | 8.6\% | 2.7\% | 0.7\% | 0.0\% |
| 90 | 88.4\% | 6.9\% | 3.8\% | 0.5\% | 0.7\% | 0.1\% |
| 91 | 82.9\% | 3.0\% | 13.1\% | 0.4\% | 0.8\% | 0.0\% |
| 92 | 65.7\% | 10.4\% | 18.2\% | 5.5\% | 0.9\% | 0.2\% |
| 93 | 93.5\% | 3.3\% | 1.6\% | 0.9\% | 0.8\% | 0.1\% |
| 94 | 90.2\% | 4.7\% | 4.1\% | 0.5\% | 0.6\% | 0.1\% |
| 95 | 82.2\% | 5.0\% | 9.9\% | 2.4\% | 0.8\% | 0.1\% |
| 96 | 80.0\% | 7.8\% | 8.4\% | 3.4\% | 0.6\% | 0.1\% |
| 97 | 87.7\% | 5.5\% | 5.7\% | 0.6\% | 0.7\% | 0.0\% |
| 98 | 79.9\% | 5.3\% | 11.2\% | 3.3\% | 0.7\% | 0.1\% |
| 99 | 23.4\% | 18.5\% | 54.6\% | 4.1\% | 1.6\% | 0.2\% |
| 100 | 43.4\% | 19.8\% | 32.0\% | 4.6\% | 1.3\% | 0.3\% |
| 101 | 36.6\% | 7.7\% | 51.3\% | 4.3\% | 1.4\% | 0.2\% |
| 102 | 24.8\% | 17.1\% | 53.5\% | 4.9\% | 1.1\% | 0.2\% |
| 103 | 74.8\% | 7.8\% | 13.1\% | 3.8\% | 0.9\% | 0.1\% |
| 104 | 83.1\% | 4.3\% | 8.2\% | 4.1\% | 0.6\% | 0.1\% |

## District Demographics: Voting Age Population

## House 2011 Plan

|  | Non-Hispanic <br> White VAP | Hispanic VAP | Black VAP | Asian VAP | American Indian <br> VAP | Native Hawaiian <br> VAP |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| District | $74.1 \%$ | $7.3 \%$ | $9.5 \%$ | $8.8 \%$ | $0.6 \%$ | $0.1 \%$ |
| 105 | $27.8 \%$ | $14.2 \%$ | $51.1 \%$ | $7.1 \%$ | $1.2 \%$ | $0.2 \%$ |
| 106 | $34.2 \%$ | $6.7 \%$ | $52.5 \%$ | $6.7 \%$ | $1.0 \%$ | $0.2 \%$ |
| 107 | $77.8 \%$ | $5.5 \%$ | $14.4 \%$ | $1.7 \%$ | $0.9 \%$ | $0.1 \%$ |
| 108 | $73.5 \%$ | $5.7 \%$ | $18.9 \%$ | $1.5 \%$ | $0.9 \%$ | $0.1 \%$ |
| 109 | $80.8 \%$ | $2.7 \%$ | $15.3 \%$ | $0.6 \%$ | $0.8 \%$ | $0.0 \%$ |
| 110 | $80.2 \%$ | $2.1 \%$ | $16.3 \%$ | $1.0 \%$ | $0.6 \%$ | $0.1 \%$ |
| 111 | $85.8 \%$ | $2.6 \%$ | $10.2 \%$ | $0.8 \%$ | $0.8 \%$ | $0.1 \%$ |
| 112 | $91.8 \%$ | $3.7 \%$ | $3.2 \%$ | $0.5 \%$ | $0.9 \%$ | $0.1 \%$ |
| 113 | $79.4 \%$ | $5.8 \%$ | $12.6 \%$ | $1.3 \%$ | $1.1 \%$ | $0.2 \%$ |
| 114 | $92.1 \%$ | $3.3 \%$ | $2.7 \%$ | $0.9 \%$ | $1.1 \%$ | $0.1 \%$ |
| 115 | $89.8 \%$ | $5.0 \%$ | $3.0 \%$ | $1.3 \%$ | $1.0 \%$ | $0.1 \%$ |
| 116 | $85.9 \%$ | $8.4 \%$ | $3.6 \%$ | $1.3 \%$ | $1.0 \%$ | $0.2 \%$ |
| 117 | $95.4 \%$ | $2.3 \%$ | $1.1 \%$ | $0.4 \%$ | $0.9 \%$ | $0.1 \%$ |
| 118 | $84.6 \%$ | $3.5 \%$ | $1.8 \%$ | $0.8 \%$ | $9.7 \%$ | $0.1 \%$ |
| 119 | $93.1 \%$ | $3.2 \%$ | $1.1 \%$ | $0.6 \%$ | $2.1 \%$ | $0.1 \%$ |
| 120 |  |  |  |  |  |  |

- Ex. 9051 -

District Demographics: Voting Age Population House 2017 Plan

| District | Non-Hispanic White VAP | Hispanic VAP | Black VAP | Asian VAP | American Indian VAP | Native Hawaiian VAP |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 57.2\% | 1.9\% | 39.7\% | 0.7\% | 0.8\% | 0.1\% |
| 2 | 65.8\% | 5.3\% | 27.8\% | 0.6\% | 1.1\% | 0.1\% |
| 3 | 69.9\% | 5.4\% | 21.2\% | 3.0\% | 1.0\% | 0.3\% |
| 4 | 63.0\% | 13.4\% | 22.6\% | 0.6\% | 1.0\% | 0.2\% |
| 5 | 51.3\% | 2.7\% | 44.3\% | 1.0\% | 1.2\% | 0.1\% |
| 6 | 85.2\% | 4.0\% | 9.2\% | 0.8\% | 1.0\% | 0.1\% |
| 7 | 66.2\% | 7.7\% | 25.2\% | 0.6\% | 1.1\% | 0.1\% |
| 8 | 48.2\% | 4.6\% | 44.8\% | 2.1\% | 0.8\% | 0.2\% |
| 9 | 73.0\% | 4.1\% | 20.4\% | 2.1\% | 0.7\% | 0.1\% |
| 10 | 69.0\% | 8.0\% | 21.4\% | 1.1\% | 0.9\% | 0.1\% |
| 11 | 67.8\% | 9.7\% | 14.3\% | 7.9\% | 1.2\% | 0.2\% |
| 12 | 56.5\% | 5.2\% | 37.4\% | 0.6\% | 0.7\% | 0.1\% |
| 13 | 85.8\% | 2.7\% | 9.4\% | 1.1\% | 1.1\% | 0.1\% |
| 14 | 69.3\% | 9.0\% | 17.4\% | 3.8\% | 1.6\% | 0.6\% |
| 15 | 71.9\% | 9.5\% | 15.4\% | 2.6\% | 1.6\% | 0.5\% |
| 16 | 69.6\% | 4.4\% | 23.1\% | 0.5\% | 2.8\% | 0.1\% |
| 17 | 87.2\% | 3.4\% | 8.0\% | 0.6\% | 1.1\% | 0.1\% |
| 18 | 63.5\% | 5.4\% | 29.2\% | 1.2\% | 1.5\% | 0.1\% |
| 19 | 87.0\% | 4.5\% | 6.3\% | 1.4\% | 1.0\% | 0.1\% |
| 20 | 85.8\% | 3.7\% | 8.2\% | 1.7\% | 0.8\% | 0.2\% |
| 21 | 45.7\% | 10.0\% | 42.3\% | 1.5\% | 1.3\% | 0.2\% |
| 22 | 60.1\% | 9.4\% | 28.2\% | 0.4\% | 2.5\% | 0.1\% |
| 23 | 44.8\% | 2.8\% | 51.8\% | 0.3\% | 0.6\% | 0.1\% |
| 24 | 53.2\% | 7.6\% | 38.1\% | 0.9\% | 0.6\% | 0.1\% |
| 25 | 54.4\% | 3.1\% | 40.7\% | 1.1\% | 1.2\% | 0.1\% |
| 26 | 75.2\% | 8.7\% | 14.8\% | 1.0\% | 0.9\% | 0.1\% |
| 27 | 41.5\% | 1.5\% | 53.7\% | 0.6\% | 3.1\% | 0.1\% |
| 28 | 69.3\% | 13.2\% | 16.5\% | 0.6\% | 1.1\% | 0.1\% |
| 29 | 42.3\% | 12.4\% | 37.5\% | 7.8\% | 1.1\% | 0.1\% |
| 30 | 59.1\% | 8.2\% | 28.7\% | 3.8\% | 0.9\% | 0.1\% |
| 31 | 31.9\% | 15.0\% | 49.6\% | 3.7\% | 1.3\% | 0.1\% |
| 32 | 45.0\% | 4.1\% | 49.1\% | 0.5\% | 2.0\% | 0.0\% |
| 33 | 42.0\% | 11.1\% | 44.2\% | 2.9\% | 1.1\% | 0.1\% |
| 34 | 72.6\% | 8.6\% | 15.8\% | 2.9\% | 0.9\% | 0.1\% |
| 35 | 75.4\% | 5.2\% | 15.6\% | 3.5\% | 0.9\% | 0.1\% |
| 36 | 80.6\% | 6.4\% | 9.2\% | 3.2\% | 1.1\% | 0.1\% |
| 37 | 74.9\% | 7.0\% | 14.3\% | 3.3\% | 1.1\% | 0.1\% |
| 38 | 31.8\% | 16.2\% | 48.3\% | 4.2\% | 1.4\% | 0.2\% |
| 39 | 49.3\% | 12.4\% | 35.5\% | 2.9\% | 1.4\% | 0.1\% |
| 40 | 84.7\% | 3.4\% | 7.7\% | 3.8\% | 0.6\% | 0.1\% |
| 41 | 66.5\% | 4.7\% | 8.1\% | 20.6\% | 0.6\% | 0.1\% |
| 42 | 41.7\% | 11.9\% | 42.2\% | 4.2\% | 2.2\% | 0.9\% |
| 43 | 38.6\% | 7.7\% | 50.0\% | 3.5\% | 1.9\% | 0.6\% |
| 44 | 55.5\% | 7.7\% | 31.8\% | 3.2\% | 3.0\% | 0.5\% |
| 45 | 66.1\% | 4.8\% | 24.2\% | 2.0\% | 3.8\% | 0.3\% |
| 46 | 52.5\% | 7.7\% | 24.7\% | 0.4\% | 15.3\% | 0.1\% |
| 47 | 22.0\% | 4.6\% | 25.8\% | 1.2\% | 47.3\% | 0.1\% |
| 48 | 46.4\% | 6.4\% | 36.1\% | 1.4\% | 10.6\% | 0.3\% |
| 49 | 72.1\% | 5.7\% | 12.8\% | 9.2\% | 0.9\% | 0.1\% |
| 50 | 71.3\% | 5.0\% | 21.1\% | 2.0\% | 1.1\% | 0.1\% |
| 51 | 64.5\% | 12.9\% | 20.5\% | 1.4\% | 1.4\% | 0.2\% |
| 52 | 80.4\% | 4.6\% | 13.0\% | 1.1\% | 1.2\% | 0.1\% |
| 53 | 69.0\% | 8.0\% | 20.8\% | 1.1\% | 1.9\% | 0.2\% |

- Ex. 9052 -

District Demographics: Voting Age Population
House 2017 Plan

| District | Non-Hispanic White VAP | Hispanic VAP | Black VAP | Asian VAP | American Indian VAP | Native Hawaiian VAP |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 54 | 72.0\% | 8.8\% | 15.7\% | 3.1\% | 0.9\% | 0.1\% |
| 55 | 70.6\% | 3.9\% | 24.1\% | 0.8\% | 0.9\% | 0.1\% |
| 56 | 71.9\% | 7.4\% | 10.3\% | 9.9\% | 0.9\% | 0.1\% |
| 57 | 30.0\% | 6.2\% | 60.8\% | 3.1\% | 1.4\% | 0.1\% |
| 58 | 41.2\% | 10.0\% | 42.7\% | 5.8\% | 1.4\% | 0.2\% |
| 59 | 71.9\% | 3.8\% | 22.2\% | 1.4\% | 1.1\% | 0.1\% |
| 60 | 46.1\% | 7.5\% | 40.1\% | 6.0\% | 1.2\% | 0.1\% |
| 61 | 80.1\% | 4.0\% | 11.5\% | 4.1\% | 0.7\% | 0.1\% |
| 62 | 79.2\% | 3.2\% | 14.0\% | 3.4\% | 0.7\% | 0.1\% |
| 63 | 70.0\% | 9.1\% | 19.2\% | 1.3\% | 1.2\% | 0.1\% |
| 64 | 71.9\% | 7.7\% | 18.5\% | 1.5\% | 0.9\% | 0.1\% |
| 65 | 74.9\% | 4.3\% | 19.6\% | 0.6\% | 0.9\% | 0.1\% |
| 66 | 66.0\% | 6.2\% | 24.9\% | 1.3\% | 2.1\% | 0.1\% |
| 67 | 87.0\% | 2.5\% | 8.4\% | 1.5\% | 0.6\% | 0.1\% |
| 68 | 75.2\% | 10.1\% | 11.7\% | 2.7\% | 0.7\% | 0.1\% |
| 69 | 74.3\% | 10.5\% | 12.7\% | 1.9\% | 1.0\% | 0.1\% |
| 70 | 82.1\% | 9.4\% | 6.3\% | 1.5\% | 1.1\% | 0.1\% |
| 71 | 48.2\% | 13.7\% | 36.6\% | 2.0\% | 1.0\% | 0.1\% |
| 72 | 39.7\% | 11.2\% | 47.5\% | 1.8\% | 1.0\% | 0.2\% |
| 73 | 84.0\% | 6.5\% | 7.2\% | 2.0\% | 0.6\% | 0.1\% |
| 74 | 79.9\% | 5.1\% | 13.4\% | 1.3\% | 0.8\% | 0.0\% |
| 75 | 74.2\% | 8.8\% | 14.5\% | 2.4\% | 0.8\% | 0.1\% |
| 76 | 72.8\% | 5.4\% | 20.0\% | 1.2\% | 0.9\% | 0.1\% |
| 77 | 84.7\% | 5.5\% | 8.7\% | 0.7\% | 0.7\% | 0.1\% |
| 78 | 86.2\% | 6.0\% | 6.5\% | 0.6\% | 1.1\% | 0.1\% |
| 79 | 70.2\% | 4.6\% | 24.3\% | 0.5\% | 0.9\% | 0.1\% |
| 80 | 84.9\% | 5.1\% | 8.4\% | 0.9\% | 0.9\% | 0.0\% |
| 81 | 83.7\% | 4.8\% | 9.1\% | 1.6\% | 0.9\% | 0.1\% |
| 82 | 75.7\% | 6.7\% | 14.1\% | 3.2\% | 0.7\% | 0.1\% |
| 83 | 71.6\% | 10.3\% | 16.8\% | 1.1\% | 0.8\% | 0.1\% |
| 84 | 78.4\% | 6.1\% | 13.9\% | 1.3\% | 0.7\% | 0.1\% |
| 85 | 91.5\% | 3.7\% | 3.5\% | 0.6\% | 0.8\% | 0.0\% |
| 86 | 85.7\% | 4.4\% | 6.3\% | 3.0\% | 0.8\% | 0.4\% |
| 87 | 90.6\% | 3.4\% | 4.9\% | 0.6\% | 0.7\% | 0.1\% |
| 88 | 41.5\% | 15.2\% | 38.4\% | 5.0\% | 1.1\% | 0.2\% |
| 89 | 82.8\% | 5.5\% | 8.6\% | 2.7\% | 0.7\% | 0.0\% |
| 90 | 90.0\% | 5.5\% | 3.4\% | 0.5\% | 0.7\% | 0.0\% |
| 91 | 90.1\% | 3.9\% | 5.1\% | 0.3\% | 0.7\% | 0.0\% |
| 92 | 46.0\% | 18.0\% | 30.2\% | 6.0\% | 1.1\% | 0.2\% |
| 93 | 93.5\% | 3.3\% | 1.6\% | 0.9\% | 0.8\% | 0.1\% |
| 94 | 88.8\% | 4.2\% | 5.7\% | 0.7\% | 0.6\% | 0.1\% |
| 95 | 82.2\% | 5.0\% | 9.9\% | 2.4\% | 0.8\% | 0.1\% |
| 96 | 80.0\% | 7.8\% | 8.4\% | 3.4\% | 0.6\% | 0.1\% |
| 97 | 87.7\% | 5.5\% | 5.7\% | 0.6\% | 0.7\% | 0.0\% |
| 98 | 83.6\% | 5.3\% | 7.7\% | 3.0\% | 0.6\% | 0.1\% |
| 99 | 31.0\% | 15.8\% | 49.5\% | 4.0\% | 1.3\% | 0.2\% |
| 100 | 47.4\% | 16.6\% | 32.1\% | 3.6\% | 1.4\% | 0.2\% |
| 101 | 38.5\% | 6.7\% | 50.8\% | 3.9\% | 1.4\% | 0.2\% |
| 102 | 37.0\% | 15.2\% | 43.9\% | 4.1\% | 1.2\% | 0.2\% |
| 103 | 82.2\% | 4.9\% | 7.7\% | 4.6\% | 0.7\% | 0.1\% |
| 104 | 86.6\% | 3.8\% | 6.2\% | 3.1\% | 0.5\% | 0.1\% |
| 105 | 76.7\% | 6.0\% | 8.3\% | 8.7\% | 0.6\% | 0.1\% |
| 106 | 42.0\% | 11.1\% | 38.0\% | 8.9\% | 1.1\% | 0.2\% |

District Demographics: Voting Age Population House 2017 Plan

| District | Non-Hispanic <br> White VAP | Hispanic VAP | Black VAP | Asian VAP | American Indian <br> VAP | Native Hawaiian <br> VAP |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 107 | $36.8 \%$ | $8.6 \%$ | $49.4 \%$ | $5.4 \%$ | $1.1 \%$ | $0.1 \%$ |
| 108 | $77.8 \%$ | $5.5 \%$ | $14.4 \%$ | $1.7 \%$ | $0.9 \%$ | $0.1 \%$ |
| 109 | $73.5 \%$ | $5.7 \%$ | $18.9 \%$ | $1.5 \%$ | $0.9 \%$ | $0.1 \%$ |
| 110 | $80.8 \%$ | $2.7 \%$ | $15.3 \%$ | $0.6 \%$ | $0.8 \%$ | $0.0 \%$ |
| 111 | $80.2 \%$ | $2.1 \%$ | $16.3 \%$ | $1.0 \%$ | $0.6 \%$ | $0.1 \%$ |
| 112 | $85.8 \%$ | $2.6 \%$ | $10.2 \%$ | $0.8 \%$ | $0.8 \%$ | $0.1 \%$ |
| 113 | $91.8 \%$ | $3.7 \%$ | $3.2 \%$ | $0.5 \%$ | $0.9 \%$ | $0.1 \%$ |
| 114 | $79.4 \%$ | $5.8 \%$ | $12.6 \%$ | $1.3 \%$ | $1.1 \%$ | $0.2 \%$ |
| 115 | $92.1 \%$ | $3.3 \%$ | $2.7 \%$ | $0.9 \%$ | $1.1 \%$ | $0.1 \%$ |
| 116 | $89.8 \%$ | $5.0 \%$ | $3.0 \%$ | $1.3 \%$ | $1.0 \%$ | $0.1 \%$ |
| 117 | $85.9 \%$ | $8.4 \%$ | $3.6 \%$ | $1.3 \%$ | $1.0 \%$ | $0.2 \%$ |
| 118 | $95.4 \%$ | $2.3 \%$ | $1.1 \%$ | $0.4 \%$ | $0.9 \%$ | $0.1 \%$ |
| 119 | $84.6 \%$ | $3.5 \%$ | $1.8 \%$ | $0.8 \%$ | $9.7 \%$ | $0.1 \%$ |
| 120 | $93.1 \%$ | $3.2 \%$ | $1.1 \%$ | $0.6 \%$ | $2.1 \%$ | $0.1 \%$ |

- Ex. 9054 -


## District Demographics: Voting Age Population

Special Master's Draft House Plan

| District | Non-Hispanic White VAP | Hispanic VAP | Black VAP | Asian VAP | American Indian VAP | Native Hawaiian VAP |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 57.2\% | 1.9\% | 39.7\% | 0.7\% | 0.8\% | 0.1\% |
| 2 | 65.8\% | 5.3\% | 27.8\% | 0.6\% | 1.1\% | 0.1\% |
| 3 | 69.9\% | 5.4\% | 21.2\% | 3.0\% | 1.0\% | 0.3\% |
| 4 | 63.0\% | 13.4\% | 22.6\% | 0.6\% | 1.0\% | 0.2\% |
| 5 | 51.3\% | 2.7\% | 44.3\% | 1.0\% | 1.2\% | 0.1\% |
| 6 | 85.2\% | 4.0\% | 9.2\% | 0.8\% | 1.0\% | 0.1\% |
| 7 | 66.2\% | 7.7\% | 25.2\% | 0.6\% | 1.1\% | 0.1\% |
| 8 | 48.2\% | 4.6\% | 44.8\% | 2.1\% | 0.8\% | 0.2\% |
| 9 | 73.0\% | 4.1\% | 20.4\% | 2.1\% | 0.7\% | 0.1\% |
| 10 | 69.0\% | 8.0\% | 21.4\% | 1.1\% | 0.9\% | 0.1\% |
| 11 | 65.0\% | 9.9\% | 16.5\% | 8.4\% | 1.2\% | 0.1\% |
| 12 | 56.5\% | 5.2\% | 37.4\% | 0.6\% | 0.7\% | 0.1\% |
| 13 | 85.8\% | 2.7\% | 9.4\% | 1.1\% | 1.1\% | 0.1\% |
| 14 | 69.3\% | 9.0\% | 17.4\% | 3.8\% | 1.6\% | 0.6\% |
| 15 | 71.9\% | 9.5\% | 15.4\% | 2.6\% | 1.6\% | 0.5\% |
| 16 | 69.6\% | 4.4\% | 23.1\% | 0.5\% | 2.8\% | 0.1\% |
| 17 | 87.2\% | 3.4\% | 8.0\% | 0.6\% | 1.1\% | 0.1\% |
| 18 | 63.5\% | 5.4\% | 29.2\% | 1.2\% | 1.5\% | 0.1\% |
| 19 | 87.0\% | 4.5\% | 6.3\% | 1.4\% | 1.0\% | 0.1\% |
| 20 | 85.8\% | 3.7\% | 8.2\% | 1.7\% | 0.8\% | 0.2\% |
| 21 | 48.6\% | 10.1\% | 39.4\% | 1.5\% | 1.2\% | 0.2\% |
| 22 | 57.1\% | 9.3\% | 31.1\% | 0.4\% | 2.6\% | 0.1\% |
| 23 | 44.8\% | 2.8\% | 51.8\% | 0.3\% | 0.6\% | 0.1\% |
| 24 | 53.2\% | 7.6\% | 38.1\% | 0.9\% | 0.6\% | 0.1\% |
| 25 | 54.4\% | 3.1\% | 40.7\% | 1.1\% | 1.2\% | 0.1\% |
| 26 | 75.2\% | 8.7\% | 14.8\% | 1.0\% | 0.9\% | 0.1\% |
| 27 | 41.5\% | 1.5\% | 53.7\% | 0.6\% | 3.1\% | 0.1\% |
| 28 | 69.3\% | 13.2\% | 16.5\% | 0.6\% | 1.1\% | 0.1\% |
| 29 | 42.3\% | 12.4\% | 37.5\% | 7.8\% | 1.1\% | 0.1\% |
| 30 | 59.1\% | 8.2\% | 28.7\% | 3.8\% | 0.9\% | 0.1\% |
| 31 | 31.9\% | 15.0\% | 49.6\% | 3.7\% | 1.3\% | 0.1\% |
| 32 | 45.0\% | 4.1\% | 49.1\% | 0.5\% | 2.0\% | 0.0\% |
| 33 | 41.6\% | 12.0\% | 45.1\% | 1.4\% | 1.2\% | 0.1\% |
| 34 | 75.1\% | 7.8\% | 13.6\% | 3.4\% | 0.8\% | 0.1\% |
| 35 | 74.6\% | 5.3\% | 16.2\% | 3.6\% | 0.8\% | 0.1\% |
| 36 | 81.0\% | 6.0\% | 7.7\% | 4.8\% | 0.9\% | 0.1\% |
| 37 | 76.2\% | 6.8\% | 13.8\% | 2.7\% | 1.1\% | 0.1\% |
| 38 | 31.8\% | 16.2\% | 48.3\% | 4.2\% | 1.4\% | 0.2\% |
| 39 | 49.3\% | 12.4\% | 35.5\% | 2.9\% | 1.4\% | 0.1\% |
| 40 | 75.9\% | 4.0\% | 10.2\% | 9.6\% | 0.8\% | 0.1\% |
| 41 | 69.7\% | 4.1\% | 7.4\% | 18.5\% | 0.7\% | 0.1\% |
| 42 | 41.7\% | 11.9\% | 42.2\% | 4.2\% | 2.2\% | 0.9\% |
| 43 | 38.6\% | 7.7\% | 50.0\% | 3.5\% | 1.9\% | 0.6\% |
| 44 | 55.5\% | 7.7\% | 31.8\% | 3.2\% | 3.0\% | 0.5\% |
| 45 | 66.1\% | 4.8\% | 24.2\% | 2.0\% | 3.8\% | 0.3\% |
| 46 | 52.5\% | 7.7\% | 24.7\% | 0.4\% | 15.3\% | 0.1\% |
| 47 | 22.0\% | 4.6\% | 25.8\% | 1.2\% | 47.3\% | 0.1\% |
| 48 | 46.4\% | 6.4\% | 36.1\% | 1.4\% | 10.6\% | 0.3\% |
| 49 | 76.7\% | 5.8\% | 12.6\% | 4.7\% | 0.9\% | 0.1\% |
| 50 | 71.3\% | 5.0\% | 21.1\% | 2.0\% | 1.1\% | 0.1\% |
| 51 | 64.5\% | 12.9\% | 20.5\% | 1.4\% | 1.4\% | 0.2\% |
| 52 | 80.4\% | 4.6\% | 13.0\% | 1.1\% | 1.2\% | 0.1\% |
| 53 | 69.0\% | 8.0\% | 20.8\% | 1.1\% | 1.9\% | 0.2\% |

- Ex. 9055 -


## District Demographics: Voting Age Population

Special Master's Draft House Plan

| District | Non-Hispanic White VAP | Hispanic VAP | Black VAP | Asian VAP | American Indian VAP | Native Hawaiian VAP |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 54 | 72.0\% | 8.8\% | 15.7\% | 3.1\% | 0.9\% | 0.1\% |
| 55 | 70.6\% | 3.9\% | 24.1\% | 0.8\% | 0.9\% | 0.1\% |
| 56 | 71.9\% | 7.4\% | 10.3\% | 9.9\% | 0.9\% | 0.1\% |
| 57 | 50.6\% | 6.0\% | 39.2\% | 4.0\% | 1.1\% | 0.1\% |
| 58 | 44.9\% | 10.2\% | 38.9\% | 5.7\% | 1.3\% | 0.2\% |
| 59 | 72.8\% | 3.8\% | 21.1\% | 1.7\% | 1.1\% | 0.1\% |
| 60 | 46.1\% | 7.5\% | 40.1\% | 6.0\% | 1.2\% | 0.1\% |
| 61 | 52.5\% | 3.4\% | 41.6\% | 2.4\% | 1.0\% | 0.1\% |
| 62 | 80.5\% | 4.2\% | 10.7\% | 4.2\% | 0.8\% | 0.1\% |
| 63 | 70.0\% | 9.1\% | 19.2\% | 1.3\% | 1.2\% | 0.1\% |
| 64 | 71.9\% | 7.7\% | 18.5\% | 1.5\% | 0.9\% | 0.1\% |
| 65 | 74.9\% | 4.3\% | 19.6\% | 0.6\% | 0.9\% | 0.1\% |
| 66 | 66.0\% | 6.2\% | 24.9\% | 1.3\% | 2.1\% | 0.1\% |
| 67 | 87.0\% | 2.5\% | 8.4\% | 1.5\% | 0.6\% | 0.1\% |
| 68 | 75.2\% | 10.1\% | 11.7\% | 2.7\% | 0.7\% | 0.1\% |
| 69 | 74.3\% | 10.5\% | 12.7\% | 1.9\% | 1.0\% | 0.1\% |
| 70 | 82.1\% | 9.4\% | 6.3\% | 1.5\% | 1.1\% | 0.1\% |
| 71 | 48.2\% | 13.7\% | 36.6\% | 2.0\% | 1.0\% | 0.1\% |
| 72 | 39.7\% | 11.2\% | 47.5\% | 1.8\% | 1.0\% | 0.2\% |
| 73 | 84.0\% | 6.5\% | 7.2\% | 2.0\% | 0.6\% | 0.1\% |
| 74 | 79.9\% | 5.1\% | 13.4\% | 1.3\% | 0.8\% | 0.0\% |
| 75 | 74.2\% | 8.8\% | 14.5\% | 2.4\% | 0.8\% | 0.1\% |
| 76 | 72.8\% | 5.4\% | 20.0\% | 1.2\% | 0.9\% | 0.1\% |
| 77 | 84.7\% | 5.5\% | 8.7\% | 0.7\% | 0.7\% | 0.1\% |
| 78 | 86.2\% | 6.0\% | 6.5\% | 0.6\% | 1.1\% | 0.1\% |
| 79 | 70.2\% | 4.6\% | 24.3\% | 0.5\% | 0.9\% | 0.1\% |
| 80 | 84.9\% | 5.1\% | 8.4\% | 0.9\% | 0.9\% | 0.0\% |
| 81 | 83.7\% | 4.8\% | 9.1\% | 1.6\% | 0.9\% | 0.1\% |
| 82 | 75.7\% | 6.7\% | 14.1\% | 3.2\% | 0.7\% | 0.1\% |
| 83 | 71.6\% | 10.3\% | 16.8\% | 1.1\% | 0.8\% | 0.1\% |
| 84 | 78.4\% | 6.1\% | 13.9\% | 1.3\% | 0.7\% | 0.1\% |
| 85 | 91.5\% | 3.7\% | 3.5\% | 0.6\% | 0.8\% | 0.0\% |
| 86 | 85.7\% | 4.4\% | 6.3\% | 3.0\% | 0.8\% | 0.4\% |
| 87 | 90.6\% | 3.4\% | 4.9\% | 0.6\% | 0.7\% | 0.1\% |
| 88 | 41.5\% | 15.2\% | 38.4\% | 5.0\% | 1.1\% | 0.2\% |
| 89 | 82.8\% | 5.5\% | 8.6\% | 2.7\% | 0.7\% | 0.0\% |
| 90 | 90.0\% | 5.5\% | 3.4\% | 0.5\% | 0.7\% | 0.0\% |
| 91 | 90.1\% | 3.9\% | 5.1\% | 0.3\% | 0.7\% | 0.0\% |
| 92 | 50.9\% | 15.7\% | 27.9\% | 5.7\% | 1.0\% | 0.2\% |
| 93 | 93.5\% | 3.3\% | 1.6\% | 0.9\% | 0.8\% | 0.1\% |
| 94 | 88.8\% | 4.2\% | 5.7\% | 0.7\% | 0.6\% | 0.1\% |
| 95 | 82.2\% | 5.0\% | 9.9\% | 2.4\% | 0.8\% | 0.1\% |
| 96 | 80.0\% | 7.8\% | 8.4\% | 3.4\% | 0.6\% | 0.1\% |
| 97 | 87.7\% | 5.5\% | 5.7\% | 0.6\% | 0.7\% | 0.0\% |
| 98 | 83.6\% | 5.3\% | 7.7\% | 3.0\% | 0.6\% | 0.1\% |
| 99 | 31.0\% | 15.8\% | 49.5\% | 4.0\% | 1.3\% | 0.2\% |
| 100 | 47.4\% | 16.6\% | 32.1\% | 3.6\% | 1.4\% | 0.2\% |
| 101 | 38.5\% | 6.7\% | 50.8\% | 3.9\% | 1.4\% | 0.2\% |
| 102 | 37.0\% | 15.2\% | 43.9\% | 4.1\% | 1.2\% | 0.2\% |
| 103 | 81.7\% | 5.0\% | 8.1\% | 4.7\% | 0.7\% | 0.1\% |
| 104 | 84.7\% | 4.7\% | 6.8\% | 3.4\% | 0.6\% | 0.1\% |
| 105 | 74.1\% | 7.3\% | 9.5\% | 8.8\% | 0.6\% | 0.1\% |
| 106 | 42.0\% | 11.1\% | 38.0\% | 8.9\% | 1.1\% | 0.2\% |

District Demographics: Voting Age Population Special Master's Draft House Plan

| District | Non-Hispanic <br> White VAP | Hispanic VAP | Black VAP | Asian VAP | American Indian <br> VAP | Native Hawaiian <br> VAP |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 107 | $36.8 \%$ | $8.6 \%$ | $49.4 \%$ | $5.4 \%$ | $1.1 \%$ | $0.1 \%$ |
| 108 | $77.8 \%$ | $5.5 \%$ | $14.4 \%$ | $1.7 \%$ | $0.9 \%$ | $0.1 \%$ |
| 109 | $73.5 \%$ | $5.7 \%$ | $18.9 \%$ | $1.5 \%$ | $0.9 \%$ | $0.1 \%$ |
| 110 | $80.8 \%$ | $2.7 \%$ | $15.3 \%$ | $0.6 \%$ | $0.8 \%$ | $0.0 \%$ |
| 111 | $80.2 \%$ | $2.1 \%$ | $16.3 \%$ | $1.0 \%$ | $0.6 \%$ | $0.1 \%$ |
| 112 | $85.8 \%$ | $2.6 \%$ | $10.2 \%$ | $0.8 \%$ | $0.8 \%$ | $0.1 \%$ |
| 113 | $91.8 \%$ | $3.7 \%$ | $3.2 \%$ | $0.5 \%$ | $0.9 \%$ | $0.1 \%$ |
| 114 | $79.4 \%$ | $5.8 \%$ | $12.6 \%$ | $1.3 \%$ | $1.1 \%$ | $0.2 \%$ |
| 115 | $92.1 \%$ | $3.3 \%$ | $2.7 \%$ | $0.9 \%$ | $1.1 \%$ | $0.1 \%$ |
| 116 | $89.8 \%$ | $5.0 \%$ | $3.0 \%$ | $1.3 \%$ | $1.0 \%$ | $0.1 \%$ |
| 117 | $85.9 \%$ | $8.4 \%$ | $3.6 \%$ | $1.3 \%$ | $1.0 \%$ | $0.2 \%$ |
| 118 | $95.4 \%$ | $2.3 \%$ | $1.1 \%$ | $0.4 \%$ | $0.9 \%$ | $0.1 \%$ |
| 119 | $84.6 \%$ | $3.5 \%$ | $1.8 \%$ | $0.8 \%$ | $9.7 \%$ | $0.1 \%$ |
| 120 | $93.1 \%$ | $3.2 \%$ | $1.1 \%$ | $0.6 \%$ | $2.1 \%$ | $0.1 \%$ |

- Ex. 9057 -


## District Demographics: Voting Age Population

## Special Master's Recommended House Plan

| District | Non-Hispanic White VAP | Hispanic VAP | Black VAP | Asian VAP | American Indian VAP | Native Hawaiian VAP |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 57.2\% | 1.9\% | 39.7\% | 0.7\% | 0.8\% | 0.1\% |
| 2 | 65.8\% | 5.3\% | 27.8\% | 0.6\% | 1.1\% | 0.1\% |
| 3 | 69.9\% | 5.4\% | 21.2\% | 3.0\% | 1.0\% | 0.3\% |
| 4 | 63.0\% | 13.4\% | 22.6\% | 0.6\% | 1.0\% | 0.2\% |
| 5 | 51.3\% | 2.7\% | 44.3\% | 1.0\% | 1.2\% | 0.1\% |
| 6 | 85.2\% | 4.0\% | 9.2\% | 0.8\% | 1.0\% | 0.1\% |
| 7 | 66.2\% | 7.7\% | 25.2\% | 0.6\% | 1.1\% | 0.1\% |
| 8 | 48.2\% | 4.6\% | 44.8\% | 2.1\% | 0.8\% | 0.2\% |
| 9 | 73.0\% | 4.1\% | 20.4\% | 2.1\% | 0.7\% | 0.1\% |
| 10 | 69.0\% | 8.0\% | 21.4\% | 1.1\% | 0.9\% | 0.1\% |
| 11 | 65.0\% | 9.9\% | 16.5\% | 8.4\% | 1.2\% | 0.1\% |
| 12 | 56.5\% | 5.2\% | 37.4\% | 0.6\% | 0.7\% | 0.1\% |
| 13 | 85.8\% | 2.7\% | 9.4\% | 1.1\% | 1.1\% | 0.1\% |
| 14 | 69.3\% | 9.0\% | 17.4\% | 3.8\% | 1.6\% | 0.6\% |
| 15 | 71.9\% | 9.5\% | 15.4\% | 2.6\% | 1.6\% | 0.5\% |
| 16 | 69.6\% | 4.4\% | 23.1\% | 0.5\% | 2.8\% | 0.1\% |
| 17 | 87.2\% | 3.4\% | 8.0\% | 0.6\% | 1.1\% | 0.1\% |
| 18 | 63.5\% | 5.4\% | 29.2\% | 1.2\% | 1.5\% | 0.1\% |
| 19 | 87.0\% | 4.5\% | 6.3\% | 1.4\% | 1.0\% | 0.1\% |
| 20 | 85.8\% | 3.7\% | 8.2\% | 1.7\% | 0.8\% | 0.2\% |
| 21 | 48.9\% | 10.1\% | 39.0\% | 1.5\% | 1.4\% | 0.2\% |
| 22 | 56.9\% | 9.3\% | 31.5\% | 0.4\% | 2.4\% | 0.1\% |
| 23 | 44.8\% | 2.8\% | 51.8\% | 0.3\% | 0.6\% | 0.1\% |
| 24 | 53.2\% | 7.6\% | 38.1\% | 0.9\% | 0.6\% | 0.1\% |
| 25 | 54.4\% | 3.1\% | 40.7\% | 1.1\% | 1.2\% | 0.1\% |
| 26 | 75.2\% | 8.7\% | 14.8\% | 1.0\% | 0.9\% | 0.1\% |
| 27 | 41.5\% | 1.5\% | 53.7\% | 0.6\% | 3.1\% | 0.1\% |
| 28 | 69.3\% | 13.2\% | 16.5\% | 0.6\% | 1.1\% | 0.1\% |
| 29 | 42.3\% | 12.4\% | 37.5\% | 7.8\% | 1.1\% | 0.1\% |
| 30 | 59.1\% | 8.2\% | 28.7\% | 3.8\% | 0.9\% | 0.1\% |
| 31 | 31.9\% | 15.0\% | 49.6\% | 3.7\% | 1.3\% | 0.1\% |
| 32 | 45.0\% | 4.1\% | 49.1\% | 0.5\% | 2.0\% | 0.0\% |
| 33 | 41.6\% | 12.0\% | 45.1\% | 1.4\% | 1.2\% | 0.1\% |
| 34 | 76.7\% | 7.0\% | 13.1\% | 3.1\% | 0.7\% | 0.1\% |
| 35 | 74.6\% | 5.3\% | 16.2\% | 3.6\% | 0.8\% | 0.1\% |
| 36 | 81.0\% | 6.0\% | 7.7\% | 4.8\% | 0.9\% | 0.1\% |
| 37 | 76.2\% | 6.8\% | 13.8\% | 2.7\% | 1.1\% | 0.1\% |
| 38 | 31.8\% | 16.2\% | 48.3\% | 4.2\% | 1.4\% | 0.2\% |
| 39 | 49.3\% | 12.4\% | 35.5\% | 2.9\% | 1.4\% | 0.1\% |
| 40 | 76.2\% | 4.0\% | 9.8\% | 9.8\% | 0.8\% | 0.1\% |
| 41 | 69.7\% | 4.1\% | 7.4\% | 18.5\% | 0.7\% | 0.1\% |
| 42 | 41.7\% | 11.9\% | 42.2\% | 4.2\% | 2.2\% | 0.9\% |
| 43 | 38.6\% | 7.7\% | 50.0\% | 3.5\% | 1.9\% | 0.6\% |
| 44 | 55.5\% | 7.7\% | 31.8\% | 3.2\% | 3.0\% | 0.5\% |
| 45 | 66.1\% | 4.8\% | 24.2\% | 2.0\% | 3.8\% | 0.3\% |
| 46 | 52.5\% | 7.7\% | 24.7\% | 0.4\% | 15.3\% | 0.1\% |
| 47 | 22.0\% | 4.6\% | 25.8\% | 1.2\% | 47.3\% | 0.1\% |
| 48 | 46.4\% | 6.4\% | 36.1\% | 1.4\% | 10.6\% | 0.3\% |
| 49 | 75.0\% | 6.5\% | 13.3\% | 5.0\% | 0.9\% | 0.1\% |
| 50 | 71.3\% | 5.0\% | 21.1\% | 2.0\% | 1.1\% | 0.1\% |
| 51 | 64.5\% | 12.9\% | 20.5\% | 1.4\% | 1.4\% | 0.2\% |
| 52 | 80.4\% | 4.6\% | 13.0\% | 1.1\% | 1.2\% | 0.1\% |
| 53 | 69.0\% | 8.0\% | 20.8\% | 1.1\% | 1.9\% | 0.2\% |

- Ex. 9058 -


## District Demographics: Voting Age Population

Special Master's Recommended House Plan

| District | Non-Hispanic White VAP | Hispanic VAP | Black VAP | Asian VAP | American Indian VAP | Native Hawaiian VAP |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 54 | 72.0\% | 8.8\% | 15.7\% | 3.1\% | 0.9\% | 0.1\% |
| 55 | 70.6\% | 3.9\% | 24.1\% | 0.8\% | 0.9\% | 0.1\% |
| 56 | 71.9\% | 7.4\% | 10.3\% | 9.9\% | 0.9\% | 0.1\% |
| 57 | 51.3\% | 6.0\% | 38.4\% | 4.1\% | 1.1\% | 0.1\% |
| 58 | 41.2\% | 10.0\% | 42.7\% | 5.8\% | 1.4\% | 0.2\% |
| 59 | 75.6\% | 3.5\% | 18.8\% | 1.4\% | 1.0\% | 0.1\% |
| 60 | 46.1\% | 7.5\% | 40.1\% | 6.0\% | 1.2\% | 0.1\% |
| 61 | 54.1\% | 3.4\% | 40.3\% | 2.2\% | 1.0\% | 0.1\% |
| 62 | 79.5\% | 4.4\% | 11.5\% | 4.2\% | 0.8\% | 0.1\% |
| 63 | 70.0\% | 9.1\% | 19.2\% | 1.3\% | 1.2\% | 0.1\% |
| 64 | 71.9\% | 7.7\% | 18.5\% | 1.5\% | 0.9\% | 0.1\% |
| 65 | 74.9\% | 4.3\% | 19.6\% | 0.6\% | 0.9\% | 0.1\% |
| 66 | 66.0\% | 6.2\% | 24.9\% | 1.3\% | 2.1\% | 0.1\% |
| 67 | 87.0\% | 2.5\% | 8.4\% | 1.5\% | 0.6\% | 0.1\% |
| 68 | 75.2\% | 10.1\% | 11.7\% | 2.7\% | 0.7\% | 0.1\% |
| 69 | 74.3\% | 10.5\% | 12.7\% | 1.9\% | 1.0\% | 0.1\% |
| 70 | 82.1\% | 9.4\% | 6.3\% | 1.5\% | 1.1\% | 0.1\% |
| 71 | 48.2\% | 13.7\% | 36.6\% | 2.0\% | 1.0\% | 0.1\% |
| 72 | 39.7\% | 11.2\% | 47.5\% | 1.8\% | 1.0\% | 0.2\% |
| 73 | 84.0\% | 6.5\% | 7.2\% | 2.0\% | 0.6\% | 0.1\% |
| 74 | 79.9\% | 5.1\% | 13.4\% | 1.3\% | 0.8\% | 0.0\% |
| 75 | 74.2\% | 8.8\% | 14.5\% | 2.4\% | 0.8\% | 0.1\% |
| 76 | 72.8\% | 5.4\% | 20.0\% | 1.2\% | 0.9\% | 0.1\% |
| 77 | 84.7\% | 5.5\% | 8.7\% | 0.7\% | 0.7\% | 0.1\% |
| 78 | 86.2\% | 6.0\% | 6.5\% | 0.6\% | 1.1\% | 0.1\% |
| 79 | 70.2\% | 4.6\% | 24.3\% | 0.5\% | 0.9\% | 0.1\% |
| 80 | 84.9\% | 5.1\% | 8.4\% | 0.9\% | 0.9\% | 0.0\% |
| 81 | 83.7\% | 4.8\% | 9.1\% | 1.6\% | 0.9\% | 0.1\% |
| 82 | 75.7\% | 6.7\% | 14.1\% | 3.2\% | 0.7\% | 0.1\% |
| 83 | 71.6\% | 10.3\% | 16.8\% | 1.1\% | 0.8\% | 0.1\% |
| 84 | 78.4\% | 6.1\% | 13.9\% | 1.3\% | 0.7\% | 0.1\% |
| 85 | 91.5\% | 3.7\% | 3.5\% | 0.6\% | 0.8\% | 0.0\% |
| 86 | 85.7\% | 4.4\% | 6.3\% | 3.0\% | 0.8\% | 0.4\% |
| 87 | 90.6\% | 3.4\% | 4.9\% | 0.6\% | 0.7\% | 0.1\% |
| 88 | 41.5\% | 15.2\% | 38.4\% | 5.0\% | 1.1\% | 0.2\% |
| 89 | 82.8\% | 5.5\% | 8.6\% | 2.7\% | 0.7\% | 0.0\% |
| 90 | 90.0\% | 5.5\% | 3.4\% | 0.5\% | 0.7\% | 0.0\% |
| 91 | 90.1\% | 3.9\% | 5.1\% | 0.3\% | 0.7\% | 0.0\% |
| 92 | 50.9\% | 15.7\% | 27.9\% | 5.7\% | 1.0\% | 0.2\% |
| 93 | 93.5\% | 3.3\% | 1.6\% | 0.9\% | 0.8\% | 0.1\% |
| 94 | 88.8\% | 4.2\% | 5.7\% | 0.7\% | 0.6\% | 0.1\% |
| 95 | 82.2\% | 5.0\% | 9.9\% | 2.4\% | 0.8\% | 0.1\% |
| 96 | 80.0\% | 7.8\% | 8.4\% | 3.4\% | 0.6\% | 0.1\% |
| 97 | 87.7\% | 5.5\% | 5.7\% | 0.6\% | 0.7\% | 0.0\% |
| 98 | 83.6\% | 5.3\% | 7.7\% | 3.0\% | 0.6\% | 0.1\% |
| 99 | 31.0\% | 15.8\% | 49.5\% | 4.0\% | 1.3\% | 0.2\% |
| 100 | 47.4\% | 16.6\% | 32.1\% | 3.6\% | 1.4\% | 0.2\% |
| 101 | 38.5\% | 6.7\% | 50.8\% | 3.9\% | 1.4\% | 0.2\% |
| 102 | 37.0\% | 15.2\% | 43.9\% | 4.1\% | 1.2\% | 0.2\% |
| 103 | 81.7\% | 5.0\% | 8.1\% | 4.7\% | 0.7\% | 0.1\% |
| 104 | 84.7\% | 4.7\% | 6.8\% | 3.4\% | 0.6\% | 0.1\% |
| 105 | 74.1\% | 7.3\% | 9.5\% | 8.8\% | 0.6\% | 0.1\% |
| 106 | 42.0\% | 11.1\% | 38.0\% | 8.9\% | 1.1\% | 0.2\% |

District Demographics: Voting Age Population

## Special Master's Recommended House Plan

| District | Non-Hispanic <br> White VAP | Hispanic VAP | Black VAP | Asian VAP | American Indian <br> VAP | Native Hawaiian <br> VAP |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 107 | $36.8 \%$ | $8.6 \%$ | $49.4 \%$ | $5.4 \%$ | $1.1 \%$ | $0.1 \%$ |
| 108 | $77.8 \%$ | $5.5 \%$ | $14.4 \%$ | $1.7 \%$ | $0.9 \%$ | $0.1 \%$ |
| 109 | $73.5 \%$ | $5.7 \%$ | $18.9 \%$ | $1.5 \%$ | $0.9 \%$ | $0.1 \%$ |
| 110 | $80.8 \%$ | $2.7 \%$ | $15.3 \%$ | $0.6 \%$ | $0.8 \%$ | $0.0 \%$ |
| 111 | $80.2 \%$ | $2.1 \%$ | $16.3 \%$ | $1.0 \%$ | $0.6 \%$ | $0.1 \%$ |
| 112 | $85.8 \%$ | $2.6 \%$ | $10.2 \%$ | $0.8 \%$ | $0.8 \%$ | $0.1 \%$ |
| 113 | $91.8 \%$ | $3.7 \%$ | $3.2 \%$ | $0.5 \%$ | $0.9 \%$ | $0.1 \%$ |
| 114 | $79.4 \%$ | $5.8 \%$ | $12.6 \%$ | $1.3 \%$ | $1.1 \%$ | $0.2 \%$ |
| 115 | $92.1 \%$ | $3.3 \%$ | $2.7 \%$ | $0.9 \%$ | $1.1 \%$ | $0.1 \%$ |
| 116 | $89.8 \%$ | $5.0 \%$ | $3.0 \%$ | $1.3 \%$ | $1.0 \%$ | $0.1 \%$ |
| 117 | $85.9 \%$ | $8.4 \%$ | $3.6 \%$ | $1.3 \%$ | $1.0 \%$ | $0.2 \%$ |
| 118 | $95.4 \%$ | $2.3 \%$ | $1.1 \%$ | $0.4 \%$ | $0.9 \%$ | $0.1 \%$ |
| 119 | $84.6 \%$ | $3.5 \%$ | $1.8 \%$ | $0.8 \%$ | $9.7 \%$ | $0.1 \%$ |
| 120 | $93.1 \%$ | $3.2 \%$ | $1.1 \%$ | $0.6 \%$ | $2.1 \%$ | $0.1 \%$ |

## Exhibit 7

## IN THE UNITED STATES DISTRICT COURT FOR THE MIDDLE DISTRICT OF NORTH CAROLINA

| SANDRA LITTLE COVINGTON, et al., | ) |
| :---: | :--- |
| Plaintiffs, | ) |
| v. | ) |
| THE STATE OF NORTH CAROLINA, et al., | ) |
| Defendants. ) |  |

## SPECIAL MASTER'S CORRECTED DRAFT PLAN AND ORDER

On November 1, 2017, the United States District Court for the Middle District of North Carolina appointed me as Special Master in the above captioned case. (Doc. 206) In the order appointing a Special Master, the Court expressed "serious concerns" with the redistricting plans for the North Carolina Senate and House of Representatives passed by the General Assembly on August 31, 2017 ("2017 plans"). The Court ordered the Special Master to develop, by December 1, 2017, redistricting plans that addressed these concerns, which related to the 2017 plans' potential violations of the United States and North Carolina Constitutions.

Provided herein are draft redistricting plans and summary explanations of the principles that guided their creation. The Special Master is releasing these draft plans in the immediate wake of the defendants identifying, also pursuant to the November 1st order, the residences of incumbents who will be running for reelection. As described further below, these draft plans are provided at this early date to give the parties time to lodge objections and to make suggestions, as to unpairing incumbents or otherwise, that might be accommodated in the final plan to be delivered to the Court by December 1. Accompanying the final plan will be a report providing greater detail as to the plan's compliance with applicable law, a more complete explanation of
the rationale for the Special Master's Plan, and evaluation of the plan according to the metrics required by the Court's order. The shapefiles and census block equivalency files for these draft plans have been provided to the Court through its public ECF system. Statewide maps of the Special Master's Draft Plan are attached at the end of this document.

## The Charge to the Special Master

The Court has ordered the Special Master to develop a plan that remedies specific legal violations in a limited number of districts. It has not empowered the Special Master to develop a redistricting plan for the entire state, nor has it authorized the Special Master to exercise unbounded discretion in order to remedy the unconstitutional districts. Rather, the Court has ordered the Special Master to redraw Enacted 2017 State Senate Districts 21 and 28 and State House Districts 21 and 57 in order to remedy those districts' violation of the Equal Protection Clause of the Fourteenth Amendment. It has also ordered redrawing of Enacted 2017 State House Districts 36, 37, 40, 41, and 105 because the General Assembly, in redrawing those districts in the 2017 Plan, may have violated the provision of the North Carolina State Constitution prohibiting redistricting more than once a decade.

In formulating a remedial plan, the Special Master is constrained by the applicable law and redistricting principles that guide remedial plans of this type. In its November 1st Order, the Court set forth the principles that would define the Special Master's plan:
a. Redraw district lines for the Subject Districts and any other districts within the applicable 2017 county grouping necessary to cure the unconstitutional racial gerrymanders. As to House District 57, the redrawn lines shall also ensure that the unconstitutional racial gerrymanders in 2011 Enacted House Districts 58 and 60 are cured. As to 2011 Enacted House Districts 33, 38, 99, 102, and 107, no 2011 Enacted House Districts which do not adjoin those districts shall be redrawn unless it is
necessary to do so to meet the mandatory requirements set forth in Paragraphs 2(b) through 2(e) of this Order, and if the Special Master concludes that it is necessary to adjust the lines of a non-adjoining district, the Special Master shall include in his report an explanation as to why such adjustment is necessary.
b. Use the 2010 Federal Decennial Census Data;
c. Draw contiguous districts with a population as close as possible to 79,462 persons for the House Districts and 190,710 persons for the Senate Districts, though a variance up to $+/-5 \%$ is permitted and authorized if it would not conflict with the primary obligations to ensure that remedial districts remedy the constitutional violations and otherwise comply with state and federal law, would enhance compliance with state policy as set forth in subsection (f) below, and would not require redrawing lines for an additional district.
d. Adhere to the county groupings used by the General Assembly in the 2017 Enacted Senate and House Plans;
e. Subject to any requirements imposed by the United States Constitution or federal law, comply with North Carolina constitutional requirements including, without limitation, the Whole County Provision as interpreted by the North Carolina Supreme Court.
f. Make reasonable efforts to adhere to the following state policy objectives, so long as adherence to those policy objectives does not conflict with the primary obligations of ensuring that remedial districts remedy the constitutional violations and otherwise comply with state and federal law:
i. Split fewer precincts than the 2011 Enacted Districts;
ii. Draw districts that are more compact than the 2011 Enacted Districts, using as a guide the minimum Reock ("dispersion") and Polsby-Popper ("perimeter") scores identified by Richard Pildes \& Richard Niemi, Expressive Harms, "Bizarre Districts," and Voting Rights: Evaluating Election-District Appearances After Shaw v. Reno, 92 Mich. L. Rev. 483 (1993); and
iii. Consider municipal boundaries and precinct lines.
g. After redrawing the districts, in view of the policy decision by the General Assembly that efforts to avoid pairing incumbents are in the interest of North Carolina voters, the Special Master may adjust district lines to avoid pairing any incumbents who have not publicly announced their intention not to run in 2018, but only to the extent that such adjustment of district lines does not interfere with remedying the constitutional violations and otherwise complying with federal and state law. Additionally, the Special Master shall treat preventing the pairing of incumbents as "a distinctly subordinate consideration" to the other traditional redistricting policy objectives followed by the State. Ga. State Conf. of NAACP v. Fayette Cty. Bd. of Comm'rs, 996 F. Supp. 2d 1353, 1363 (N.D. Ga. 2014) (collecting cases).
h. Except as authorized in Paragraph 2(g), the Special Master shall not consider incumbency or election results in drawing the districts.

Underlying the Court's prohibition on examining election returns or prioritizing incumbency is reliance on a bedrock principle that the Special Master's Plan shall be constructed in a nonpartisan fashion. This is not to say that the plan will not have partisan, incumbencyrelated, or other electoral effects - all redistricting plans do. Rather, the principles that guide the production of the plan must be nonpartisan in nature and the changes to the districts must be explainable on that basis. The Special Master's Draft Plan was drawn without consideration of the location of incumbents' residences, so that the incorporation of incumbency in the final plan can be achieved on a nonpartisan basis. As explained further in the order at the conclusion of this document, the parties are asked to propose alterations to the Special Master's Draft Plan to incorporate incumbency. However, the final plan will only accommodate such changes if they do not degrade the underlying features of the plan as expressed in the Court's November 1st Order.

## Summary Explanation of Districts in the Special Master's Draft Plan

## Senate Districts 19 and 21

The Court struck down District 21 in the 2011 Senate Plan as a violation of the Fourteenth Amendment's prohibition on excessive race consciousness in districting. The Court continues to have serious constitutional concerns with the district as redrawn in 2017. The Special Master's Draft Plan attempts to remedy the suspected constitutional infirmity by removing any residuum of racial predominance that may have been expressed in the 2017 configuration of the district.

As newly drawn in the Special Master's Draft Plan, District 21 is a compact district spanning Hoke and Cumberland counties. By moving north and taking in Spring Lake, District 21 avoids the jutting arm into Fayetteville that characterizes the 2017 version of the district. It is constructed of whole precincts - not a single one is divided in the construction of this district. It takes in the entire town of Spring Lake (as defined by the boundaries identifying it as a "Census Designated Place" or CDP) and just enough of Fayetteville so as to comply with one person one vote. The boundaries of the district are determined by the shape of the precinct boundaries.

## North Carolina Senate: Hoke and Cumberland Counties

2011 Plan


## Senate District 28 and the surrounding districts in Guilford County

For similar reasons explained above as to District 19, the Court struck down the 2011 version of Senate District 28 and continues to harbor constitutional concerns as to racial predominance with regard to the district's 2017 configuration. As expressed in the Special Master's draft plan, the newly configured district is a compact district -- almost a perfect circle, which is the shape privileged by the Roeck and Polsby-Popper compactness measures features in the Court's Order. The newly drawn district is contained almost completely within the city (CDP) of Greensboro, and is made up of whole precincts. 2017 Enacted District 26 remains untouched, per the Court's order that the Special Master's Plan may only alter districts necessary to remedy the legal infirmity of the subject districts. District 24 is slightly changed by moving west to the Greensboro CDP border to accommodate the new boundaries of District 28. District 27 "retreats" from most of central Greensboro so as to contain much of the outskirts of Greensboro along with nearby towns of Summerfield, Oak Ridge and Stokesdale.

North Carolina Senate: Guilford County

2011 Plan


2017 Plan


Special Master's Draft Plan


## House Districts 21 and 22

As with the Senate Districts described above, the Court struck down House District 21 as a violation of the Equal Protection Clause of the Fourteenth Amendment. Because of the district's continued non-compactness, the Court's concerns as to excessive race-consciousness appear to remain in Enacted 2017 District 21. The Special Master's Draft Plan addresses this lack of compactness by smoothing out the border in Sampson County, thereby avoiding the selective inclusion of heavily African American precincts that characterized the 2011 and 2017 versions of the district. The District continues to retain its configuration in Wayne County, which is principally defined by the boundaries of Goldsboro. Because Districts 21 and 10 approach the upper limit (exactly five percent deviation) of what is permissible under oneperson, one-vote, a few precincts needed to be split in Sampson, but are configured in such a way as to maximize the compactness of the district.

North Carolina House: Bladen, Sampson and Wayne Counties


2017 Plan

Special Master's Draft Plan


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## House District 57 and Surrounding Districts in Guilford County

The Court continues to harbor concerns as to the constitutionality of Enacted 2017 House District 57. Because the District retains a backwards "L shape" along the eastern side of Greensboro, according to the Court, it perpetuates the racial predominance of its predecessor district by over-concentrating the African American population in the area. The Special Master's Draft Plan addresses the legal infirmity in this district by moving the district north and west so as to create a compact district in north Greensboro.

The directions from the Court with respect to redrawing this district are more specific than for others in the remedial plan. "As to House District 57," the Court's Order directs, "the redrawn lines shall also ensure that the unconstitutional racial gerrymanders in 2011 Enacted House Districts 58 and 60 are cured." This direction presents additional constraints as to how the districts adjoining District 57 must be drawn. In particular, there is a danger that once District 57 moves north, that the districts below it will move north and assume a similar configuration to those struck down in the 2011 plan. In addition, because District 60 does not abut the Subject District and therefore need not be redrawn, it places a "floor" that determines the shape of the remaining districts in Greensboro.

Districts 58 and 61 in the Special Master's Draft Plan, therefore, move from southeast to northwest, but remain entirely within the CDP of Greensboro. Their configuration is determined by four factors: (1) avoiding replication of the constitutional defects in the analogous 2011 districts; (2) staying within the boundaries of Greensboro, (3) not altering the boundaries of District 60, and (4) doing so by not splitting any new precincts with the redrawn districts. District

59 retains most of its current configuration, except that it now more closely "hugs" the southern border of Greensboro. Because newly redrawn District 57 moves northwest, it "pushes" District 62 west and south along the border with Forsyth County thereby taking up the territory there that had been included in 2017 Enacted District 61.

North Carolina House: Guilford County


## Wake County Districts

The legal infirmity in the districts in Wake County and Mecklenburg County is characteristically different than those in the previous districts described and therefore requires a different type of remedy. The Court has not called into question any of the 2017 districts that themselves were redrawn to address the racial predominance in their prior incarnation. Rather, in those two counties, the Court has called into question under the state constitution the 2017 Enacted Districts that were unnecessarily redrawn to address constitutional infirmities as to racial predominance in several of the 2011 Enacted Districts. In Wake County, the districts deemed unnecessary to be redrawn are 2011 House Districts 36, 37, 40 and 41. By redrawing those districts, which did not adjoin the unconstitutional districts in Wake County, the plan raises concerns for the Court under the provision of the state constitution that prohibits redistricting more than once a decade.

To address this violation of the state constitution, the Court has ordered the Special Master to recreate the 2011 House Districts 36, 37, 40 and 41. Once redrawn, it becomes necessary to reallocate populations among the districts that did, in fact, adjoin the previously unconstitutional districts. Reinstating the old districts, most of which adhere to the county boundary, provides an exterior frame within which the reallocation of population must occur. The remaining Enacted 2017 districts are the basemap from which the Special Master's Draft Plan is created, but significant redrawing must occur in some districts because of the "leftover" population that remains once the 2011 districts are reinstated. For the most part, the configurations of the districts are determined by moving District 33 to the county border and then shifting the remaining interior districts clockwise until they achieve population equality. By reinstating the 2011 districts, several precincts are now split that were not under the 2017 plan.

However, the Special Master's Draft Plan does not add any more split precincts and in, fact, recombines some precincts that were split with the 2011 or 2017 plan.

## North Carolina House: Wake County

2011 Plan


2017 Plan


Special Master's Draft Plan


## Mecklenburg County Districts

The dynamic in Mecklenburg County is the same as in Wake, but fewer districts need to be redrawn to address the 2017 Enacted Plan's violation of the state constitution. Only 2017 Enacted District 105 raised concerns for the Court and needs to be reinstated. As a result, only 2017 Enacted Districts 92, 103, 104, and 105 need to be redrawn to cure the state constitutional violation. As District 105 moves south, Districts 92, 103, and 104 move into the territory closest to each one of those districts. The exact configurations are determined by a decision to keep precincts whole (outside of those already broken by 2011 Enacted District 105), to keep the districts in the area relatively compact and contiguous, and to make only the changes necessary to remedy the constitutional violation.

## North Carolina House: Mecklenberg County



2017 Plan


Special Master's Draft Plan


## ORDER

1. The parties are ordered to submit to the Special Master proposed objections and revisions to the Special Master's Draft Plan by November 17, 2017. Briefs are limited to 25,000 words. In particular, the parties are encouraged to include in these submissions suggestions as to how incumbents shall be unpaired without degrading the underlying features of the plan, as specified in the Court order. The parties shall also then specify any disagreements they have as to which incumbents are seeking reelection in 2018. Reply briefs shall be submitted by November 21, 2017 and shall not exceed 10,000 words. In their replies, the parties are encouraged to identify which proposed changes of the plaintiffs and defendants, if any, are jointly supported by the parties.
2. The parties are further ordered to supply to the Special Master by November 14, 2017, in electronic form, a geographic layer to be incorporated into Maptitude for Redistricting, that includes and identifies the location of the residences of all current incumbents in the North Carolina General Assembly.

SO ORDERED, this the 13th day of November, 2017.

Nathaniel Persily<br>Special Master

# IN THE UNITED STATES DISTRICT COURT 

 FOR THE MIDDLE DISTRICT OF NORTH CAROLINASANDRA LITTLE COVINGTON, et al., Plaintiffs, v.

THE STATE OF NORTH CAROLINA, et al, Defendants.

## PLAINTIFFS' RESPONSE AND PROPOSED MODIFICATIONS TO THE SPECIAL MASTER'S DRAFT PLAN

Plaintiffs have carefully analyzed the Special Master's Draft Plan (hereinafter, "Draft Plan") and have concluded that the plan does remedy the constitutional flaws in the legislature's 2017 enacted plan. Because the Special Master has invited "suggestions as to unpairing incumbents or otherwise," ECF 212 at 1, Plaintiffs here offer some suggestions to unpair incumbents, and a few other slight proposed revisions to the Draft Plan. Such suggestions are offered only where, in accordance with the Court's and Special Master's instructions, those modifications take into account the state's legislative policy preferences as expressed in the state's adopted redistricting criteria, see ECF 212 at 3, and "do not degrade the underlying features of the plan as expressed in the Court's November $1^{\text {st }}$ order." ECF 212 at 4.

## I. House Districts 57 and Surrounding Districts in Guilford County

Plaintiffs' analysis of the proposed changes to House Districts in Guilford County indicates that the racial gerrymandering has been cured. However, the reconfigured
districts do pair two sets of incumbents: African-American Democrat Amos Quick, currently representing House District 58, and White Republican Jon Hardister, currently representing House District 59, are paired in Draft Plan House District 59; White Democrat Pricey Harrison, currently representing House District 57, and White Republican John Blust, currently representing House District 62, are paired in Draft Plan House District 61. Districts 57 and 58 in the Draft Plan are left with no incumbent.

Plaintiffs believe that Representative Quick and Representative Hardister can be unpaired easily without degrading the underlying features of the plan. Representative Quick lives in Precinct SUM2, which is immediately adjacent to Draft Plan House District 58, which has no incumbent. There are two options for moving Representative Quick to open District 58:
(1) Rep. Quick's entire precinct could be added to HD 58. This change would not make HD 59 or HD 58 over- or under-populated.
(2) Rep. Quick lives at the northern end of Precinct SUM2, closer to the border with HD 58, so the precinct could be split to add only the top portion of SUM2 to HD 58.

Moving the entire precinct SUM2 to HD 58 does make HD 58 less compact than it is in the Draft Plan, but it is still within acceptable compactness ranges and much more compact than districts in the 2011 Plan. ${ }^{1}$ Splitting the SUM2 precinct would make HD

[^91]58 more compact-comparable to the version in the Draft Plan ${ }^{2}$ —but it would split a precinct where the Draft Plan in Guilford County currently split no precincts. In Plaintiffs' view, both options are acceptable-neither significantly degrades the underlying plan in terms of compactness or respect for precincts and municipal boundaries. Plaintiffs offer both options to the Special Master-the maps presented in Exhibit A (the whole precinct map is at page 1 and the split precinct map is at page 2) and the shapefiles being served via email—but express no preference in terms of which option best complies with the Court's directives to the Special Master.

## II. Wake County Districts

Plaintiffs propose two small modifications to the Wake County Districts in the Special Master's Draft Plan. First, and most importantly, Plaintiffs have observed an apparently inadvertent violation of the North Carolina Constitution's prohibition on middecade redistricting. The Special Master was instructed by the Court to "recreate the 2011 House Districts 36, 37, 40 and 41" because the modification of those districts in the 2017 plan exceeded the court's order to remedy the two districts found to be racial gerrymanders. ECF 212 at 14 (Special Master's Order on Draft Plan); see also ECF 206 at 2-3 (Court's Order Appointing Special Master). It appears that the Draft Plan
is slightly less compact than the Draft Plan, but not in a way that degrades the plan in any significant way.
${ }^{2}$ In the Draft Plan, HD 58 scores 0.27 on Reock and 0.15 on Polsby-Popper. Plaintiffs' proposed version of HD 58 that adds only the northern part of precinct SUM2 scores 0.24 on Reock and 0.14 on Polsby-Popper. Plaintiffs' proposed split-precinct modification is thus more compact than the whole-precinct modification, and essentially comparable to the Special Master's Draft Plan version of the district.
inadvertently makes one precinct whole that was split in the 2011 version of HD 40. See Ex. A at 3. That is precinct $08-10$, which is split in the 2011 version of HD 40 but is whole in the Draft Plan version of HD 40. Plaintiffs recommend slightly modifying the Draft Plan's version of HD 40 to restore it entirely to its 2011 version, including that split precinct. Significantly, restoring HD 40 to its 2011 form has ripple effects on at least two additional districts-certainly HD 49 and potentially HD 34. Splitting the precinct in HD 40 means that population is moved to HD 49 , which then becomes overpopulated, and some population must be moved to an adjacent district. HD 34 is an obvious choice to receive that additional population from HD 49. The other districts that were to be restored to their 2011 versions (36, 37 and 41) have been perfectly restored.

Second, in the Draft Plan, two incumbents are paired. Democrat Cynthia Ball, currently representing House District 49, and Democrat Grier Martin, currently representing House District 34, are now paired in Draft Plan House District 49, while House District 34 is left with no incumbent. Representative Martin lives in Precinct 0110, which is near the edge of Draft Plan District 49, making it easy to move him out of that district. Plaintiffs' proposed modification moves only six precincts between the two affected districts—Precincts 07-03 and 07-09 are moved from District 34 to District 49, and Precincts 01-10, 01-11, 01-12 and 01-36 are moved from District 49 to District 34 . These modifications unpair the incumbents, keep the two districts within acceptable population deviations, have no impact on municipal boundary splits, do not split any precincts, and create two districts that are comparably compact to the same two districts
in the Draft Plan. ${ }^{3}$ The two districts are maintained in the same region and retain the same general shape as they have in the Draft Plan. The map displaying Plaintiffs' proposed modifications to Wake County House Districts is can be seen in Exhibit A at page 4.

## III. Plaintiffs Make No Suggested Changes to the Following Districts

## A. Mecklenburg County - HD 92, 103, 104, and 105

Plaintiffs' analysis of the proposed changes in this county in the Draft Plan indicates that the racial gerrymandering has been cured and that no incumbents intending to run in 2018 are paired by the configuration of the districts. Thus, Plaintiffs lodge no objections or proposed modifications to House Districts 92, 103, 104, and 105 in the Draft Plan.

## B. Guilford County - HD 61

While Plaintiffs are able to recommend changes to the pairing of Representatives
Hardister and Quick in Guilford county, see supra at Section I, at 1-3, unpairing
Representative Blust and Representative Harrison is much more challenging.

[^92]Representative Blust lives in Precinct FR3, which is at the edge of Draft Plan House District 61 and directly adjacent to House District 62. But moving Representative Blust into that District pairs Rep. Blust with Republican Representative John Faircloth, and has no other added advantages in terms of compactness or municipal boundaries. In addition, based on where Rep. Blust and Rep. Harrison live, it is not possible to move either of them into the open HD 57 without significantly degrading the underlying features of the plan. Thus, it seems like this pairing may be unavoidable, particularly given the fact that the Court has instructed that preventing the unpairing of incumbents is a "distinctly subordinate consideration." ECF 212 at 3.

## C. Sampson, Wayne, and Bladen Counties - HD 21 and 22

Plaintiffs' analysis of the proposed changes in this area of the state in the Draft Plan indicates that the racial gerrymandering has been cured and that no incumbents intending to run in 2018 are paired by the configuration of the districts. Thus, Plaintiffs lodge no objections to House Districts 21 and 22 in the Draft Plan nor have any proposed modifications.

## D. Cumberland and Hoke Counties - SD 19 and 21

Plaintiffs have no objection or proposed modification to Senate Districts 19 and 21 in the Draft Plan, although there is a potential pairing of Senators Clark (African-American Democrat) and Meredith (White Republican), using Senator Clark's new house in Fayetteville. See ECF 208, Ex. 2. Plaintiffs have not been able to create a map that cures
the racial gerrymander, unpairs Senator Clark's new home from Senator Meredith's residence, and maintains the underlying features of the plan.

## E. Guilford County - SD 28

Plaintiffs' analysis of the proposed changes to Senate District 28 indicates that the racial gerrymandering has been adequately cured. As with the Senate Districts in Cumberland County, there are two incumbents paired-African-American Democrat Gladys Robinson, currently representing Senate District 28, and White Republican Senator Trudy Wade, currently representing Senate District 27, are paired in Draft Plan Senate District 27.

Plaintiffs have not been able to design a configuration of Senate Districts in this cluster that would both cure the racial gerrymandering in Senate District 28, leave Senate District 26 untouched, see ECF 212 at 7, not degrade the underlying features of the plan, and not pair these two incumbents.

## CONCLUSION

Therefore Plaintiffs respectfully make the foregoing proposed slight adjustments to the Special Master's draft plan. Shapefiles with these proposed changes are being served upon the parties and the Special Master with the filing of this brief.

Respectfully submitted this 17th day of November, 2017.

## POYNER SPRUILL LLP

By: /s/ Edwin M. Speas, Jr.<br>Edwin M. Speas, Jr.<br>N.C. State Bar No. 4112<br>espeas@poynerspruill.com<br>Caroline P. Mackie<br>N.C. State Bar No. 41512<br>cmackie@poynerspruill.com<br>P.O. Box 1801 (27602-1801)<br>301 Fayetteville St., Suite 1900<br>Raleigh, NC 27601<br>Telephone: 919-783-6400<br>Facsimile: 919-783-1075<br>Counsel for Plaintiffs

SOUTHERN COALITION FOR SOCIAL JUSTICE

## CERTIFICATE OF SERVICE

I hereby certify that on this date I have electronically filed the foregoing with the Clerk of Court using the CM/ECF system, which will provide electronic notification of the same to the following:

Alexander M. Peters<br>James Bernier<br>Special Deputy Attorney<br>General<br>Office of the Attorney<br>General<br>P.O. Box 629<br>Raleigh, NC 27602<br>apeters@ncdoj.gov<br>Counsel for Defendants

Thomas A. Farr
Phillip J. Strach
Michael D. McKnight
Ogletree, Deakins, Nash, Smoak \& Stewart, P.C.
4208 Six Forks Road, Suite 1100
Raleigh, NC 27602
thomas.farr@ogletreedeakins.com
phillip.strach@ogletreedeakins.com
michael.mcknight@ogletreedeakins.com
Counsel for Defendants

This 17th day of November, 2017.
/s/ Allison J. Riggs
Allison J. Riggs
Counsel for Plaintiffs

## Exhibit A

- Ex. 9091 -

Plaintiffs' Suggested Modification to House Districts 58 and 59 in Guilford County
(Whole precinct SUM2 moved)


Plaintiffs' Suggested Modification to House Districts 58 and 59 in Guilford County
(Precinct SUM2 split)


## Special Master's House Draft Plan in Wake County

(Red lines are 2011 House district borders)


- Ex. 9094 -

Plaintiffs' Suggested Modifications to House Districts 34, 40, and 49 in Wake County
(Red lines are 2011 district borders)


# IN THE UNITED STATES DISTRICT COURT FOR THE MIDDLE DISTRICT OF NORTH CAROLINA 

SANDRA LITTLE COVINGTON, et al.,

Plaintiffs,
v.

THE STATE OF NORTH CAROLINA, et al, Defendants.

## PLAINTIFFS' RESPONSE TO LEGISLATIVE DEFENDANTS' NOVEMBER 17, 2017 FILING

The Special Master instructed the parties to provide proposed objections and revisions to the Draft Plan and specifically encouraged the parties to include suggestions as to how incumbents should be unpaired. ECF 212 at 19. Legislative Defendants provide only abstract objections, not meaningfully engaging with any element of the Draft Plan, and offer no alternative plan or suggestions for unpairing incumbents for the Special Master's consideration (or upon which Plaintiffs could comment). Indeed, this lack of meaningful response from Legislative Defendants is surprising since a large portion of their brief complains about the absence of another chance to remedy the continued unconstitutionality in the 2017 enacted plan. When presented with an opportunity by the Special Master to do just that, Legislative Defendants declined.

Nonetheless, Plaintiffs submit the following observations to assist the Special Master in completing the task assigned to him.

## I. UNDER THE NORTH CAROLINA CONSTITUTION, THE COURT DID NOT AUTHORIZE THE LEGISLATURE TO ENGAGE IN MIDDECADE REDISTRICTING BEYOND THAT WHICH WAS NECESSARY TO REMEDY RACIAL GERRYMANDERING, AND THUS THE SPECIAL MASTER'S MODIFICATIONS ARE APPROPRIATE

Legislative Defendants' continued protestations that the legislature was free to make any changes it saw fit to all Wake and Mecklenburg County House Districts during the 2017 remedial process defies all logic and legal reasoning. A federal court can only authorize a legislature to depart from state constitutional demands insofar as is necessary to correct violations of federal law. See Cleveland Cnty. Ass'n for Gov't by the People v. Cleveland Cnty. Bd. of Comm'rs, 142 F.3d 468, 477 (D.C. Cir. 1998) (per curiam) ("[I]f a violation of federal law necessitates a remedy barred by state law, the state law must give way; if no such violation exists, principles of federalism dictate that state law governs."). The Court's reading of Article II, Sections 3(4) and 5(4) of the North Carolina constitution is neither "novel," Defs' Br. at 13, nor inconsistent with North Carolina state law precedent. It is difficult to imagine any directive more "clear, complete, and unmistakable," Kornegay v. Goldsboro, 180 N.C. 441, 445, 105 S.E. 187, 189 (1920), than the plainly-worded rule that legislative districts "shall remain unaltered until the return of another decennial census." N.C. Const. art. II §§3(4) and 5(4).

In Wake and Mecklenburg Counties, it is factually incorrect that "the shapes and locations of the non-adjoining districts were directly caused by the location of the illegal districts," Defs' Br. at 13-14, and thus must somehow be altered in correcting the racial gerrymanders. Plaintiffs' proposed maps for these two counties, introduced during the
legislative session and presented to this Court, demonstrate that the racial gerrymanders can be remedied without touching the five implicated districts, and there is no "domino effect" on every district in the county. Defs' Br. at 14. Were the Special Master to suggest to the court that the legislature should have free rein to redistrict county-wide, even where such alterations are not necessary to remedy a federal law violation, then the Court would commit the very errors that were central in Perry v. Perez, 565 U.S. 388, 392 (2012), where a federal court erroneously disregarded state law and policy. The Special Master should decline to offer such poor advice.

## II. THE AVAILABILITY OR USE OF RACIAL DATA DOES NOT EQUATE TO RACIAL PREDOMINANCE IN REDISTRICTING

Legislative Defendants' only remotely-specific condemnation of the Draft Plan is that the Special Master employed "racial sorting" in the plan. Defs' Br. at 15. As Legislative Defendants should know—after years of litigation over its 2011 maps and three recent United States Supreme Court decisions reiterating the standards for the appropriate use of race-the consideration of race in redistricting does not condemn a plan as an unconstitutional racial gerrymander. See Bush v. Vera, 517 U.S. 952, 993 (1996) (O’Connor, J., concurring); see also Doe v. Lower Merion Sch. Dist., 665 F.3d 524, 555 (3d Cir. 2011); Prejean v. Foster, 227 F.3d 504, 509 (5th Cir. 2000); Shirt v. Hazeltine, 461 F.3d 1011, 1019 (8th Cir. 2006). The use of race in drawing district lines only triggers heightened scrutiny where race is "the predominant factor motivating the [mapdrawer's] decision to place a significant number of voters within or without a particular district." Ala. Legis. Black Caucus v. Alabama, 135 S. Ct. 1257, 1267 (2015) (quoting Miller v. Johnson,

515 U.S. 900, 916 (1995)) ("ALBC"); see also Cooper v. Harris, 137 S. Ct. 1455, 1463 (2017); Bethune-Hill v. Va. State Bd. of Elections, 137 S. Ct. 788, 794 (2016).

These three recent cases paint a detailed picture of what actually constitutes a mechanical racial target. See $A L B C, 135 \mathrm{~S} . \mathrm{Ct}$. at 1257, 1271 (finding that the "primary redistricting goal [] to maintain existing racial percentages in each majority-minority district" was a mechanical racial target); Cooper, $137 \mathrm{~S} . \mathrm{Ct}$. at 1468-69 (holding that a prerequisite that certain districts "must include a sufficient number of African-Americans" to make the "majority black district[s]," regardless of the level of racially polarized voting in the region, is a "textbook example of race-based districting") (internal quotations omitted); Bethune-Hill, $137 \mathrm{~S} . \mathrm{Ct}$. at 802 (ruling that the legislature's predetermination that each district that elected an African-American representative must have, as redrawn, at least $55 \%$ black voting age population was, in all but one instance, an unjustified racial target). Contrary to Legislative Defendants' allegations, mechanical racial targets do not exist and predominate in the redistricting process where, in areas of the state with substantial African-American populations, compact districts drawn from whole precincts and respecting political subdivisions might have black voting age populations ranging from $39 \%$ to $43.6 \%$. Defs' Br . at 15 . This geographically-predictable outcome is neither surprising nor constitutionally suspect. There is no racial gerrymandering or racial sorting in the Draft Plan because there is neither "circumstantial evidence of a district's shape and demographics" that race predominated "or more direct evidence going to [] purpose." Bethune-Hill, 137 S. Ct. at 797. In making these specious claims, Legislative Defendants
can point to no evidence that the Special Master "subordinated traditional race-neutral districting principles . . . to racial considerations," because none exists. Id.

## CONCLUSION

The three-judge panel provided the Special Master with detailed instructions on how to construct a proposed remedial map, see, e.g., Court Order, ECF 206 at 5-13 (detailing, among other things, the data the Special Master was to obtain or refrain from using, the traditional redistricting criteria he was to respect, and many others). The Special Master's Draft Plan evidences that he understood the detailed instructions from the Court and has a firm grasp on compliance with the United States Supreme Court's precedent on racial gerrymandering.

Therefore, Plaintiffs respectfully urge the Special Master to reject Legislative Defendants' broad and abstract objections, make only the proposed slight adjustments proposed by Plaintiffs to the Draft Plan, and otherwise present the Draft Plan to the Court for its consideration in its current form.

Respectfully submitted this 21st day of November, 2017.

## POYNER SPRUILL LLP

By: /s/ Edwin M. Speas, Jr.
By.
N.C. State Bar No. 4112
espeas@poynerspruill.com
Caroline P. Mackie
N.C. State Bar No. 41512
cmackie@poynerspruill.com
P.O. Box 1801 (27602-1801)
P.O. Box 1801 (27602-1801)
301 Fayetteville St., Suite 1900

Raleigh, NC 27601
Telephone: 919-783-6400
Telephone: 919-783-6400
Facsimile: 919-783-1075
Counsel for Plaintiffs

## SOUTHERN COALITION FOR SOCIAL JUSTICE

By: /s/ Allison J. Riggs
Allison J. Riggs
N.C. State Bar No. 40028
allisonriggs@southerncoalition.org
1415 Highway 54, Suite 101
Durham, NC 27707
Telephone: 919-794-4198
Facsimile: 919-323-3942

Counsel for Plaintiffs

## CERTIFICATE OF SERVICE

I hereby certify that on this date I have electronically filed the foregoing with the Clerk of Court using the CM/ECF system, which will provide electronic notification of the same to the following:

Alexander M. Peters<br>James Bernier<br>Special Deputy<br>Attorney General<br>Office of the Attorney<br>General<br>P.O. Box 629<br>Raleigh, NC 27602<br>apeters@ncdoj.gov<br>Counsel for Defendants

Thomas A. Farr
Phillip J. Strach
Michael D. McKnight
Ogletree, Deakins, Nash, Smoak \& Stewart, P.C.
4208 Six Forks Road, Suite 1100
Raleigh, NC 27602
thomas.farr@ogletreedeakins.com
phillip.strach@ogletreedeakins.com michael.mcknight@ogletreedeakins.com

Counsel for Defendants

This 21st day of November, 2017.
/s/ Allison J. Riggs
Allison J. Riggs
Counsel for Plaintiffs

SANDRA LITTLE COVINGTON, et al., )
v.

STATE OF NORTH CAROLINA, et al.
Defendants.

LEGISLATIVE DEFENDANTS’ RESPONSE TO SPECIAL MASTER'S DRAFT REPORT

## INTRODUCTION

Legislative defendants continue to object to the irregular and inappropriate process the Court has adopted in this case. The Court, and therefore, the special master, lack jurisdiction over the districts enacted by the legislature on August 31, 2017 ("2017 plans") because the legislature fully complied with this Court's judgment and the case is now moot.

In any event, none of the special master's proposed districts should be adopted until the Court explains how all of the districts challenged by plaintiffs in their objections ("Subject Districts") fail to remedy constitutional violations and gives North Carolina an opportunity to either correct them or seek appellate review. ${ }^{1}$

[^93]Indeed, absent a definitive ruling from the Court explaining how and why the 2017
Senate Districts 21 and 28 and House Districts 21 and 57 fail to remedy federal constitutional violations found by the Court, the special master has been left to speculate on the criteria that the Court might ultimately approve for redrawing these districts. While it is not completely clear what specific criteria the special master followed because they have not been articulated, it appears that the special master has engaged in racial sorting to establish districts with racial targets for black voting age population ("BVAP") without citing or developing any evidence of legally significant racially polarized voting that might otherwise justify the use of race. ${ }^{2}$ Because the special master has considered race-without justification or standard articulated by the Court or by him-in the drawing of his districts, those proposed districts—not the Subject Districts—are racial gerrymanders.

The special master should also recommend that the 2017 plans' changes to House Districts 36, 37, 40, and 41 in Wake County and House District 105 in Mecklenburg County not be enjoined by the Court. Neither the Court nor the special master has

[^94]jurisdiction to consider state constitutional claims made against the State of North Carolina, nor may the Court defer addressing the issue of its jurisdiction, once asserted, while it conducts an analysis of the merits of those claims. But, in any case, the special master has modified these districts based upon an erroneous interpretation of the North Carolina Constitution apparently adopted by the Court. Nothing under federal law would prevent the North Carolina General Assembly from adopting completely new, statewide districting plans at any time - much less changing "non-adjoining" districts whose shape and location were directly caused by the placement of the illegal districts. Whether any such action would violate the North Carolina Constitution is a question reserved to the Supreme Court of North Carolina and should not be decided by the special master or the Court.

## 1. This case is moot.

As previously explained by legislative defendants, this matter is moot and if plaintiffs want to pursue additional claims, they must file a new lawsuit. "[A]n actual controversy must be extant at all stages of review, not merely at the time the complaint is filed." Arizonans for Official English v. Arizona, 520 U.S. 43, 67 (1997). "A case is moot when the issues presented are no longer 'live' or the parties lack a legally cognizable interest in the outcome." City of Erie v. Pap's A.M., 529 U.S. 277, 287 (2000) (quoting County of Los Angeles v. Davis, 440 U.S. 625, 631 (1979)). Here, the Court has enjoined the use of the 2011 legislative plans and those plans will not be used. Moreover,
the legislature has now enacted new plans for the 2018 elections. There is therefore nothing left for the Court or the special master to do. ${ }^{3}$

Similarly, plaintiffs no longer have a concrete stake in the outcome of the case because they face no realistic threat of injury from the 2011 legislative plans. To maintain a live case or controversy:
[ $t$ ]he parties must continue to have a "personal stake in the outcome" of the lawsuit. . . . . This means that, throughout the litigation, the plaintiff "must have suffered, or be threatened with, an actual injury traceable to the defendant and likely to be redressed by a favorable judicial decision."

Spencer v. Kemna, 523 U.S. 1, 7 (1998) (quoting Lewis v. Continental Bank Corp., 494 U.S. 472, 477-78 (1990)). For this reason, the doctrine of mootness is often characterized as "the doctrine of standing set in a time frame: The requisite personal interest that must exist at the commencement of the litigation (standing) must continue throughout its existence (mootness)." Arizonans for Official English, 520 U.S. at 68 n.22; cf. Lujan v. Defenders of Wildlife, 504 U.S. 555, 560 (1992) (explaining that Article III standing requires the plaintiff to identify "a concrete and imminent invasion of a legally protected

3 The so-called "objections" filed by plaintiffs do not change this result. While the Court has the authority ultimately to enjoin some or all of the 2017 plans, it may only do so in the context of an actual live case or controversy between the parties, which does not exist absent a new lawsuit. Of course, a new lawsuit would permit the parties to engage in discovery and develop a factual record that the Court is preventing through the irregular process it has adopted in this case.

Moreover, plaintiffs have not cited any authority for the proposition that filing "objections" to a new redistricting plan may substitute for a live case or controversy created by a new lawsuit. Of course, had the Court (improperly) taken it upon itself to draw districts in the first instance, such authority would have been exercised under the case or controversy that previously existed between the parties. However, now that the legislature has adopted new plans to replace the 2011 plans, the case filed by plaintiffs over those plans is moot. See Stephenson v. Bartlett, 358 N.C. 219, 595 S.E.2d 112 (2004) ("Stephenson III").
interest that is neither conjectural nor hypothetical"); Ashwander v. Tennessee Valley Authority, 297 U.S. 288, 347 (1936) (Brandeis, J., concurring) ("The Court will not pass upon the validity of a statute upon complaint of one who fails to show that he is injured by its operation."). Because the claims asserted by all plaintiffs are directed at legislation that has now been repealed and replaced, plaintiffs cannot demonstrate that they are likely to be harmed by the challenged redistricting plans. Plaintiffs' inability to identify any threat of injury deprives them of a concrete stake in the outcome of this case, rendering the case moot and divesting this Court of subject matter jurisdiction.
2. It is an abuse of discretion for the special master to propose a plan before a final ruling on the constitutionality of the Subject Districts and without giving the General Assembly a chance to remedy any allegedly unlawful districts.

The special master should recommend to the Court that no districts be drawn by the special master or adopted by the Court until: (1) the Court makes a definitive ruling that explains why any of the specific subject districts are illegal; and (2) gives the State an opportunity to either remedy these new illegalities or seek appellate review.

First, it is inappropriate for the Court to authorize the special master to ask the legislative defendants to comment on, or propose revisions of, districts drawn by the special master when the legislative defendants do not themselves speak for the entire General Assembly. The General Assembly speaks for itself through legislation it enacts on a majority-rule basis. A few members of the legislature, even if they are leaders, are not authorized to state how the entire legislature would vote on, or amend, draft districts proposed by a law professor. The General Assembly spoke with one voice on August 31,

2017 when it adopted the 2017 plans, and those plans are the plans supported by the General Assembly.

In any event, it is inappropriate for the special master, or a Court, to fashion a remedy before a legal violation has been found. It is axiomatic in our legal system that a remedy may not be fashioned until a legal violation has been found. That settled order of operations exists not just because there is no entitlement to a remedy until a wrong has been proven, but because "the scope of the remedy is determined by the nature and extent of the constitutional violation." Milliken v. Bradley, 418 U.S. 717, 745 (1974). A remedy is " $[t]$ he means of enforcing a right or preventing or redressing a wrong." Remedy, Black's Law Dictionary (10th ed. 2014). A remedy, by its nature, thus cannot be crafted without first identifying the wrong to which it is addressed.

Basic examples illustrate this commonsense principle: judges do not issue provisional sentences before a defendant is found guilty; juries do not make provisional damages awards before adjudicating liability; and courts do not craft provisional remedies before finding a constitutional violation. ${ }^{4}$ Those kinds of anticipatory remedial proceedings are alien to our legal system not only because of the presumption of innocence that applies across all legal contexts, but also because of the fundamental unfairness that would result from forcing a defendant to expend resources helping to craft an anticipatory judicial remedy for a wrong that has not even been proven to exist.

[^95]The principle that a defendant may not be forced to help craft a judicial remedy for a violation that has not yet been found holds particular force in the redistricting context. The Supreme Court has repeatedly admonished that "reapportionment is primarily the duty and responsibility of the State through its legislature or other body, rather than of a federal court." Chapman v. Meier, 420 U.S. 1, 27 (1975); accord Perry v. Perez, 565 U.S. 388, 392 (2012); League of United Latin Am. Citizens v. Perry, 548 U.S. 399, 414 (2006) (plurality opinion); Miller v. Johnson, 515 U.S. 900, 915 (1995). Accordingly, courts have no business drawing maps (or empowering special masters to do so) unless and until the State's own maps have been adjudicated invalid, or "an intervening eventmost commonly ... a census-renders the current plan unusable." Perry, 565 U.S. at 392.

Even then, if the State itself is "fully prepared to adopt a [districting] plan" in time for the next regularly scheduled election should its existing plan be invalidated, it is the obligation of the judiciary to give the State the opportunity to do so. Growe v. Emison, 507 U.S. 25, 37 (1993). Only "when the governmental body is unable or unwilling to fulfill its legislative duties" does it become "the 'unwelcome obligation' of the court to devise and impose a plan" of its own. Ramos v. Koebig, 638 F.2d 838, 844 (5th Cir. 1981) (emphasis added) (citation omitted).

Indeed, most of the time judicial intervention occurs when the legislature has failed to enact a remedial plan by a court-imposed deadline. See, e.g., Personhuballah v. Alcorn, 155 F. Supp. 3d 552, 555-56 (E.D. Va. 2016) (district court appointed special master after Virginia General Assembly "convened but failed to act"); Larios v. Cox, 306
F. Supp. 2d 1212, 1213 (N.D. Ga. 2004) (district court appointed special master after Georgia General Assembly proved "unable to meet [court-imposed] deadline"); Jackson v. Nassau Cty. Bd. of Supervisors, 157 F.R.D. 612, 614-15 (E.D.N.Y. 1994) (district court appointed special master after "deadlock and consequential failure" of Nassau County Board of Supervisors to recommend redistricting plan). Beyond that, such intervention has occurred only in the rare instance when there is no time for the legislature to convene and enact a new plan before the next election, see, e.g., Rodriguez v. Pataki, 207 F.Supp.2d 123, 124-25 (S.D.N.Y. 2002) (district court appointed special master because "the 'eleventh hour' is upon us, if indeed it has not already passed"); Beens v. Erdahl, 336 F.Supp. 715, 719 (D. Minn. 1972) (district court appointed special masters after state legislature adjourned "and was not scheduled to reconvene until after the 1972 general elections").

Moreover, even in the rare instance when a district court is compelled to draw maps itself, the Supreme Court has made abundantly clear that the Court does not possess some freewheeling power to "substitute[] its own concept of 'the collective public good' for the [State] Legislature's determination of which policies serve 'the interests of [its] citizens." Perry, 565 U.S. at 396. Instead, the Court's task is to draw "maps that comply with the Constitution and the Voting Rights Act, without displacing legitimate state policy judgments with the court's own preferences." Id. (emphasis added). Accordingly, while a court must "take care not to incorporate into the interim plan any legal defects in the state plan," it may not go beyond that and "modify" aspects of the plan that do not suffer from "any legal flaw." Id.

A fortiori, a court may not draw new maps (or empower a special master to do so) before even finding a violation to remedy. ${ }^{5}$ Indeed, drawing remedial maps in the absence of an adjudicated or admitted problem with the existing maps is a recipe for precisely the kind of constitutional disaster that Perry is supposed to prevent. After all, a court cannot ensure that it is confining itself to its assigned task of remedying "legal defects in the state plan," id., if it does not first identify what the legal defects are. Drawing remedial maps in the absence of an adjudicated or acknowledged wrong to remedy is therefore bound to devolve into an impermissible effort to "displac[e] legitimate state policy judgments with the court's own preferences." Id.

The Court did not and could not identify any authority that supports the flawed approach the special master is now working under. Instead, the Court cited Reynolds $v$. Sims, 377 U.S. 533, 585-87 (1964), which it described in a parenthetical as "affirming remedial districting map drawn by a district court after district court found state legislature's first proposed remedial map failed to remedy constitutional violation." D.E. 206 at 4 . That is a plainly inaccurate description of Reynolds, which actually forecloses the district court's one-chance-only rule.

In Reynolds, the district court announced in April 1962 that the state's districting plan—which had not been adjusted since 1901—was invalid. Id. at 545. By July 1962,

[^96]the legislature still had not enacted any remedial plan for the upcoming November 1962 election; instead, it had enacted only two alternative reapportionment plans that would "take effect for the 1966 elections." Id. at 543 (emphasis added). The district court was thus faced with the unwelcome task of deciding what districts should govern the 1962 election. The court concluded that it could not use either of the plans drawn for the 1966 elections because both contained fatal defects. Id. at 546-51. So the court combined "the best parts" of the two "as a temporary and provisional measure" for the 1962 election only—a solution that the Supreme Court approved, noting that the district court had "properly refrained from acting ... until the Alabama Legislature had been given an opportunity to remedy the admitted discrepancies" itself. Id. at 586-87. Thus, as to the 1962 election, Reynolds stands only for the proposition (undisputed here) that a district court may impose temporary districts when a state legislature is given a reasonable opportunity to redistrict but fails to timely act.

More important here is Reynolds' discussion of the 1966 election, which plainly forecloses the existence of any one-chance-only rule. If there really was such a rule, then the state legislature had already wasted its one chance by enacting the two alternative plans that the district court and the Supreme Court held "constitutionally invalid." Id. at 568-69. But instead of holding that the district court was now free to impose its own plan for the 1966 election, the Supreme Court made clear that the state had a sovereign right to try again, and that the district court could intervene only if the "Legislature fail to enact a constitutionally valid, permanent apportionment scheme." Id. at 587.

Reynolds thus serves only to reinforce the rule that district courts may impose court-drawn maps only in the truly rare circumstance when, after a state's own plan has been adjudicated or admitted legally deficient, the State is unwilling or unable to produce a remedial map-i.e., only when "a last-minute federal-court rescue" is the only option. Growe, 507 U.S. at 37. Indeed, legislative defendants are aware of no other redistricting case in which a district court has taken upon itself, over the objection of the State, the "unwelcome obligation" of imposing court-drawn maps, Connor v. Finch, 431 U.S. 407, 415 (1977), when the legislature concededly stands ready and willing to do so itself. The Court's outright refusal to give the legislature a chance to remedy any perceived deficiencies in the 2017 plan itself is therefore entirely unprecedented-presumably because it is impossible to reconcile with the Supreme Court's repeated admonishments that "reapportionment is primarily the duty and responsibility of the State." Chapman, 420 U.S. at 27.

The Court essentially asked the special master for an advisory opinion prior to making any findings on liability. As legislative defendants have argued previously, this is at best an improper delegation of authority to the special master under Rule 53, Fed. R. Civ. P. Regardless, the special master should assist the Court by explaining why none of the Subject Districts violate the federal constitution. In the alternative, the special master should request the Court to first make a final judgment concerning the 2017 plan and then give defendants an opportunity to cure these new defects or seek appropriate appellate review.
3. The Court's direction to the special master to modify House Districts 36, 37, 40, 41, and 105 is based upon an incorrect interpretation of North Carolina's State Constitution and constitutes a new claim not previously alleged over which the Court and the special master lack jurisdiction.

The special master should advise the Court that no changes should be made in House Districts 36, 37, 40, and 41 in Wake County and House District 105 in Mecklenburg County. See D.E. 204, Legislative Defendants’ Opposition to Appointment of Nathaniel Persily as Special Master, at 6. The Court has directed the special master to revise these districts based upon a new claim, not previously raised in any pleadings, that these districts violate N.C. Const. art. IV §§ 3(4) and 5(4). Neither the Court nor the special master have jurisdiction to consider these claims. Pennhurst State Sch. and Hosp. v. Holderman, 465 U.S. 89, 117 (1984); Ala. Legislative Black Caucus v. Ala., No. 12-CV-691 (July 27, 2015) (Doc. 265) (reaffirming holding that court lacked subject matter jurisdiction to decide whether a state complied with its own state constitution in creating a redistricting plan). Moreover, this jurisdictional question having been raised, it is fundamental error for the Court to conduct merits proceedings, such as the special master's district drawing, as to this state-law issue without first deciding subject matter jurisdiction. Sinochem Int'l Co. v. Malay Int'l Shipping Corp., 549 U.S. 422, 430-31 (2007) ("[A] federal court has leeway 'to choose among threshold grounds for denying audience to a case on the merits'" but "[d]ismissal short of reaching the merits means that the court will not 'proceed at all' to an adjudication of the cause").

Besides lacking-and needing to first rule on- jurisdiction to consider this state law claim, the Court's interpretation of these constitutional processes is erroneous. Both of
these sections of the North Carolina Constitution state that legislative districts "shall remain unaltered until the return of another decennial census . . . " N.C. Const. art. II §§ 3(3) and 5(1). Read literally, this provision would bar the State from drawing any districts even those declared illegal by a federal court. But of course state constitutional law obligates the Supreme Court of North Carolina to harmonize the State Constitution with all federal requirements. Stephenson v. Bartlett, 355 N.C. 354, 368-70, 562 S.E.2d 377, 388-89 (2002) ("Stephenson I"). The General Assembly has also exercised broad discretion to revise district plans found illegal by federal courts and the federal courts have acknowledged this broad discretion. Gingles v. Edmiston, 590 F.Supp. 345, 377-84 (E.D.N.C. 1984), aff'd in part and rev'd in part sub nom., Thornburg v. Gingles, 478 U.S. 30 (1986).

Neither the plaintiffs nor the Court cite any precedent to support their novel construction of the North Carolina Constitution that would allow the General Assembly to change illegal districts and districts that adjoin illegal districts, but not allow the General Assembly to modify districts that do not adjoin illegal districts. It is obvious from a review of the 2017 plans that the General Assembly’s location and construction of all of the 2017 districts in Wake and Mecklenburg Counties was the result of the way the General Assembly constructed the districts found to be illegal. For example, to comply with the equal population requirements of the North Carolina Constitution, "nonadjoining" districts had to be based in part on divided precincts because precincts were divided in both the illegal districts and the districts that adjoined illegal districts. Further, the shapes and locations of the non-adjoining districts were directly caused by the
location of the illegal districts because of the General Assembly's then-understanding that majority-black districts had to be created before any other districts in both Wake and Mecklenburg Counties. Stephenson I, 355 N.C. at 383, 562 S.E.2d at 397. This created a domino effect on all districts within Wake and Mecklenburg Counties of the placement and location of the majority-black districts that have now been declared unconstitutional.

Finally, the Court's erroneous construction of the North Carolina Constitution violates several principles of State law regarding the proper interpretation of the State Constitution. The North Carolina Supreme Court has often said that "[e]very presumption favors the validity of a statute. It will not be declared invalid unless its unconstitutionality be determined beyond reasonable doubt." Baker v. Martin, 330 N.C. 331, 334, 410 S.E.2d 887, 889 (1991) (quoting Gardner v. Reidsville, 269 N.C. 581, 595, 153 S.E.2d 139, 150 (1967)). This is so because the acts of the legislature are effectively the acts of the people. State ex rel. Martin, 325 N.C. 438, 448-49, 385 S.E.2d 473, 478 (1989). See also Pope v. Easley, 354 N.C. 544, 546, 556 S.E.2d 265, 267 (2001) (The legislative power rests "with the people and is exercised through the General Assembly, which functions as the arm of the electorate).

An act of the people's elected representatives is thus an act of the people and is presumed valid unless it conflicts with the Constitution.") (citation omitted) (emphasis added)). "[I]f there is any doubt as to the Legislature's power to act in any given case, the doubt should be resolved in favor of the Legislature's action." Baker, 330 N.C. at 338, 410 S.E.2d at 891 (citations omitted). The 2017 legislative districts must be presumed as satisfying North Carolina law unless it can be shown beyond a reasonable
doubt that the subject districts exceed an express limitation of legislative power contained in the Constitution. Indeed, it is well established that "a court will not adjudge an act of the Legislature invalid, unless its violation of the Constitution is . . . clear, complete, and unmistakable". Kornegay v. City of Goldsboro, 180 N.C. 441, 445, 105 S.E. 187, 189 (1920) (citations omitted) (emphasis added). "And, as between two permissible interpretations, that should always be adopted which will uphold the law." Id. (citations omitted). This is because the "propriety, wisdom, and expediency of legislation is exclusively a legislative question" and there is no ground for judicial interference "unless the act . . . is unmistakably in excess of legislative power." Id. (citations omitted) (emphasis added). Under these mandates of state law, there is no basis for the special master to recommend to the Court that the subject non-adjoining districts in Wake and Mecklenburg Counties be replaced by the versions proposed by the special master.

## 4. The special master has improperly engaged in racial sorting to create districts with a mechanical target of black voting age population between $39 \%$ and $\mathbf{4 3 . 6 \%}$.

In its order of November 1, 2017, the Court authorized the special master to "consider data identifying the race of individuals or voters to the extent necessary to ensure that his plan cures the unconstitutional racial gerrymanders and otherwise complies with federal law." D.E. 206 at 9 . In so doing, the Court not only preemptively usurped the legislature's power to remedy any deficiencies in the 2017 plan, but empowered the special master to draw remedial maps that will not abide by the Supreme Court's command to "take guidance from the State's recently enacted plan in drafting an interim plan." Perry, 565 U.S. at 393. Nowhere is this clearer than in the legislature's
policy decision not to consider race. We are aware of no precedent supporting the proposition that a legislature must consider race when enacting districts to replace illegal racial gerrymanders. The only legitimate reason for a legislature to consider race relates to a state's potential liability under Section 2 of the Voting Rights Act. But, there is no authority that obligates a state to draw new districts either based upon race or designed to avoid future Section 2 claims.

Of course a state can elect to run the risk of using race to draw districts to avoid potential Section 2 liability. But a state may do so only where there is a strong basis in evidence that the minority group is geographically compact and in sufficient numbers to constitute a majority in a single member district, is politically cohesive, and there is evidence of legally significant racially polarized voting. Harris, 137 S.Ct. at 1470-1471; Bartlett v. Strickland, 556 U.S. 1, 8-11 (2009). There is no authority for using race to draw Section 2 districts with a majority black voting age population absent the presence of legally significant racially polarized voting. This is the heart of the Court's prior decision in this case. Further, in the absence of Section 5, there is no authority for the State or a special master to sort voters based upon race to create districts with less than 50\% BVAP. Georgia v. Ashcroft, 529 U.S. 461, 491-92 (Kennedy, J., concurring).

Yet racial sorting is exactly what the Court authorized the special master to do when it directed him to "consider data identifying the race of individuals or voters to the extent necessary to ensure that his plan cures the unconstitutional racial gerrymanders ...." D.E. 206 at 8, 9. Respectfully, legislative defendants believe this instruction was erroneous and an improper delegation of authority to the special master prior to any final
ruling by the Court explaining why each of the Subject Districts is unconstitutional. The Court did not explain to the parties or the special master how Senate Districts 21 and 28 and House Districts 21 and 57 remain racial gerrymanders or fail to cure federal constitutional violations. Instead, the Court expressed concerns - without explaining them - that those districts "preserve the core shape of the unconstitutional district, divide counties and municipalities along racial lines, and are less compact than their benchmark version." No explanation or evidence was cited by the Court to support these "concerns," as they relate to any of those four districts.

Nor did the Court explain how the General Assembly's use of incumbency and political data in drawing its proposed remedial districts "embedded, incorporated and perpetuated the impermissible use of race." D.E. 206 at 2. There is no precedent for this holding. It cannot be reconciled to the General Assembly's use of incumbency and political data to create the 1997 version of North Carolina's Twelfth Congressional District. This district retained most of the population centers found in the illegal 1992 Twelfth Congressional District and was intentionally designed to elect a Democratic candidate and protect a Democratic incumbent. Yet the 1997 Twelfth Congressional District was affirmed by the Supreme Court even though - unlike the 2017 legislative districts - it did not follow traditional districting principles other than political affiliation. Easley v. Cromartie, 532 U.S. 234 (2000); Hunt v. Cromartie, 526 U.S. 541, 551 ("Our prior decisions have made clear that a jurisdiction may engage in constitutional political gerrymandering, even if it so happens that the most loyal Democrats happen to be black Democrats and even if the state was conscious of that fact.") It is difficult if not
impossible to reconcile this Court's ruling that the General Assembly's consideration of incumbency "perpetuated the impermissible use of race" given the holding in Cromartie affirming a district that was based solely on political criteria.

As disadvantaged as the special master is by the Court's failure to explain how any specific Subject District fails to cure the federal constitutional remedies, the special master candidly stated that his proposed districts are "attempts to remedy the suspected constitutional infirmity by removing any residuum of racial predominance that may have been expressed in the 2017 configuration of that district." D.E. 213 at p. 5 (emphasis added). The special master exacerbated the Court's lack of guidance to the parties by giving only a "summary explanation of the principles that guided" the creation of his proposed districts. D.E. 213 at 1. The special master conceded that "greater detail as to the plan's compliance with applicable law" and a "more complete explanation of the rationale" for his plans would only be provided after the parties commented on the plans without that information. In this sense, the special master is simply perpetuating the Court's legal error in not disclosing the evidence relied upon by the Court and how that evidence applied to the Subject Districts before forcing the legislative defendants to comment on the special master's premature draft plans.

In any event, leaving aside the question of what constitutes an acceptable or unacceptable "racial residuum" - an issue that has not yet been explained by the Court it is clear that one of the steps taken by the special master was to sort voters by race - to decrease the BVAP in his proposed districts to a mechanically targeted range between $39 \%$ and $43 \%$.

The legislature clearly did not consider a target range for the "right" percentage of BVAP to include in each district. Instead, the General Assembly adopted a criterion that race should not be considered in constructing the 2017 districts. And, unlike the 2011 redistricting process (where the legislature required VRA districts to have at least $50 \%$ BVAP based on its understanding of the extent of legally sufficient racially polarized voting) the percentage BVAP in each of the 2017 Subject Districts was the natural result of non-racial criteria used by the General Assembly to draw them. Ala. Legislative Black Caucus v. Ala., 135 S.Ct. 1257, 1270 (2015) (plaintiffs must prove that the legislature subordinated traditional districting principles including respect for political subdivisions, incumbency, and political affiliation to race); Bush v. Vera, 517 U.S. 952, 967 (1996) (where traditional redistricting principles are followed they cannot be said to have been "subordinated to race.")

In contrast to the legislature's decision that race should not be considered, the special master apparently has attempted to remove the "residuum" of "racial predominance" by reducing the BVAP in the Subject Districts to a range of $39 \%$ to $43 \%$. This was expressly authorized by the Court, which allowed the special master to engage in racial sorting so long as the percentage BVAP hits a target that might be more acceptable to the Court.

There is no precedent for authorizing racial sorting as a remedy for "correcting" allegedly racially gerrymandered districts. Nor is there any precedent to support a finding that the BVAP in the enacted districts is "too much" of a "residuum" but that the BVAP in the special master's proposed districts is "just right." It defies precedent to
express a "concern" about racial predominance where race was not used to draw the districts and the districts were instead obviously based upon whole counties, whole precincts, municipal lines, and incumbency protection. The only rational way to understand the Court's "concern" is that the special master has been directed to sort voters because of their race to create districts with lower BVAP and which allegedly bear less of a resemblance to the challenged districts. That is certainly how it appears the special master has interpreted the concern, and in doing so he, like the Court, has not articulated any standard other than referencing a nebulous "residuum." Such standards, which amount to no standards at all, will lead to the federal judiciary judging racial "beauty contests" much like the Supreme Court has warned against in assessing the geographic appearance of districts. Bush, 517 U.S. at 977.

## CONCLUSION

The process under which the special master is proceeding is irregular and inappropriate. It defies precedent, ignores state sovereignty, and imposes race-based redistricting on the State against its will. Unless and until the Court issues a final ruling on the constitutionality of the Subject Districts, the special master should propose in his report to the Court the districts as drawn in 2017 by the North Carolina General Assembly.

This $17^{\text {th }}$ day of November, 2017.
OGLETREE, DEAKINS, NASH, SMOAK \& STEWART, P.C.
/s/ Phillip J. Strach
Phillip J. Strach
N.C. Bar No. 29456

Michael D. McKnight
N.C. Bar No. 36932

4208 Six Forks Road, Suite 1100
Raleigh, North Carolina 27609
Phone: (919) 787-9700
Facsimile: (919) 783-9412
Email:phil.strach@ogletreedeakins.com
Attorneys for Legislative Defendants

## CERTIFICATE OF SERVICE

I hereby certify that on this 17th day of November, 2017, I have served the foregoing LEGISLATIVE DEFENDANTS' RESPONSE TO SPECIAL MASTER'S

DRAFT REPORT with the Clerk of the Court using the CM/ECF system which will send notification of such filing to the following:

Edwin M. Speas, Jr. Carolina P. Mackie Poyner Spruill LLP P.O. Box 1801 (27602-1801)

301 Fayetteville St., Suite 1900
Raleigh, NC 27601
espeas@poynerspruill.com
johale@poynerspruill.com
cmackie@poymerspruill.com
Attorneys for Plaintiffs

Anita S. Earls
Allison J. Riggs
Southern Coalition for Social Justice
1415 Highway 54, Suite 101
Durham, NC 27707
anita@southerncoalition.org
allisonriggs@southerncoalition.org
Attorneys for Plaintiffs

Alexander McC. Peters
Senior Deputy Attorney General
N.C. Department of Justice
P.O. Box 629

Raleigh, NC 27602
OGLETREE, DEAKINS, NASH, SMOAK \& STEWART, P.C.
/s/ Phillip J. Strach
Phillip J. Strach
N.C. Bar No. 29456

4208 Six Forks Road, Suite 1100
Raleigh, North Carolina 27609
Phone: (919) 787-9700
Facsimile: (919) 783-9412
Email: phil.strach@ogletreedeakins.com
32056372.1

SANDRA LITTLE COVINGTON, et al., ) Plaintiffs, )
v.

STATE OF NORTH CAROLINA, et al.
Defendants.

LEGISLATIVE DEFENDANTS' RESPONSE TO PLAINTIFFS' PROPOSED MODIFICATIONS TO SPECIAL MASTER'S DRAFT PLAN

## INTRODUCTION

Plaintiffs' requested modifications to the special master's draft plans demonstrate why the legislature's 2017 plans should be adopted by the special master and the Court. The special master should submit to the Court the enacted 2017 plans and, at a minimum, reject plaintiffs' proposed political modifications to his plans.

The modifications that plaintiffs' request highlight how the Court has substituted its policy choices for those of the legislature. The legislature chose not to use race in drawing the 2017 plans; the Court has placed the special master in the position of making the predominant criterion in his map the drawing of districts to a particular racial quota. In addition, the legislature adopted a policy preference of using election data to ensure that incumbents of both parties were drawn into districts they could potentially win. The Court instructed the special master not to use election data (D.E. 206 at 7) and limited the non-pairing of incumbents to a "distinctly subordinate consideration" to other criteria (D.E. 206 at 7).

In following the Court's criteria, the special master's draft plan apparently causes political problems for numerous Democratic incumbents. Plaintiffs now seek political relief for those political problems. As legislative defendants have explained previously, however, all line-drawing in redistricting has political consequences, even when the mapdrawer purportedly uses only "nonpartisan" criteria. That is why the Constitution commits this task to the political branches and the Supreme Court has repeatedly affirmed that it must be performed by those who are politically accountable, not unelected judges or special masters. In adopting its incumbency protection criteria, the legislature established a policy designed to avoid the very problem plaintiffs’ legislative allies are now faced with. If the special master is going to follow the State's policy preferences, then he should recommend the enacted 2017 plans to the Court. At a minimum, the special master should reject the political modifications requested by plaintiffs.

## 1. The State's policy preferences have been displaced.

The special master's draft plans, and the plaintiffs' response to them, offer a stark picture of how many of the State's redistricting policies have been negated by the Court in favor of its preferences. The legislature adopted a criterion expressly declining to consider race in the drawing of districts, but the Court has allowed the special master to consider race anyway. ${ }^{1}$ As a result of the legislature's race-neutral approach, the black

[^97]voting age population ("BVAP") of House Districts 21 and 57 and Senate Districts 21 and 28 were randomly distributed, from a low of $42.34 \%$ to a high of $60.75 \%$. Unlike the legislature's plans, these districts in the special master's plan are in a narrow range of $39 \%$ to $43 \%$ BVAP. In order to draw districts within this range, the special master often had to sacrifice other redistricting policies followed by the State. For instance, the special master split numerous precincts in House District 21, gave less consideration to the Greensboro municipal lines in House District 57 and Senate District 28, moved House District 61 to the center of Greensboro (thereby creating less compact districts in Greensboro), ${ }^{2}$ and gave less consideration to the Fayetteville municipal lines in Senate District $21 .{ }^{3}$

More importantly, in service of his predominant goal of eliminating any alleged "residuum" of race from the legislature's plans, ${ }^{4}$ which resulted in adherence to an apparent target BVAP between $39 \%$ and $43 \%$, the special master's version of these

Court instructed the special master to use the county groupings adopted by the legislature. (D.E. 206 at 6 )
${ }^{2}$ In moving House District 61 from suburban Greensboro to central Greensboro, the special master negated the legislature's policy choice to create a suburban district that followed city lines. By doing so, the special master was also apparently able to achieve a racial target of $39 \%$ to $43 \%$ in the three districts he drew in the center of Greensboro, most dramatically in House District 61, in which the special master ramped up the BVAP from $11.47 \%$ in the 2017 plan to $41.64 \%$ in his draft plan.
${ }^{3}$ In Cumberland County, the special master also made a different policy choice than the legislature related to Senate Districts 19 and 21. For unknown reasons, the special master removed a precinct containing most of Fort Bragg that the legislature had placed in Senate District 19 and placed it into Senate District 21 instead.
${ }^{4}$ To the extent the special master is referring to an alleged "residuum" of race in the 2017 plans from the 2011 version of the districts, it is unclear why the 2011 plans have any relevance to the special master's work. Absent a Section 5 preclearance requirement, the baseline plans for analysis are the 2017 plans enacted by the legislature. The 2017 plans stand or fall on their own as to any alleged racial gerrymandering.
districts shifted some of the core of the districts to other locations in the county. The effect of this in Guilford was to double-bunk Representative Quick and Representative Hardister in House District 59; Representative Harrison and Representative Blust in House District 61; and Senator Wade and Senator Robinson in Senate District 27. In Wake County, the special master's effort to comply with the Court's ruling on a state constitutional issue caused the double-bunking of Representative Ball and Representative Martin in House District 49.

Under the 2017 plans, no double-bunking occurs that was not required by following state county-grouping constitutional requirements. Moreover, incumbents of both parties were drawn into districts in which the 2016 incumbents had a reasonable chance of being elected (based on prior election results). Under the Supreme Court's most recent pronouncements on these issues, the legislature's criteria should have been followed. The Supreme Court has made abundantly clear that the Court does not possess some freewheeling power to "substitute[] its own concept of 'the collective public good' for the [State] Legislature's determination of which policies serve 'the interests of [its] citizens.'" Perry v. Perez, 565 U.S. 388, 396 (2012). Instead, the Court's task is to draw "maps that comply with the Constitution and the Voting Rights Act, without displacing legitimate state policy judgments with the court's own preferences." Id. (emphasis added). Accordingly, while a court must "take care not to incorporate into the interim plan any legal defects in the state plan," it may not go beyond that and "modify" aspects of the plan that do not suffer from "any legal flaw." Id. To date, neither the Court nor the special master have explained any specific "legal flaw" in the State adopting that matter. The cases cited by the Court recognize that fact. (D.E. 206 at 8 (citing Wyche v. Madison Par. Police Jury, 769 F.2d 265, 268 (5 ${ }^{\text {th }}$ Cir. 1985) (noting that "the protection of incumbents" is a factor that is "appropriate in the legislative development of an apportionment plan"))

## 2. The special master should reject plaintiffs' requested political relief.

The Court and the special master having displaced the legislature's chosen policy preferences, it is not surprising that the draft plans would pair incumbents and have other political ramifications. The Supreme Court has repeatedly noted that it would be "mindless" to think that districting can ever be a neutral process. As explained by the Court:

Politics and political consideration are inseparable from districting and apportionment. The political profile of a State, its party registration, and voting records are available precinct by precinct, ward by ward. These subdivisions may not be identical with census tracts but, when overlaid on a census map, it requires no special genius to recognize the political consequences of drawing a district line along one street rather than another. It is not only obvious, but absolutely unavoidable, that the location and shape of districts may determine the political complexion of the area. District lines are rarely neutral phenomena. They can well determine what district will be predominantly Democratic, predominantly Republican, or make a close race likely. Redistricting may put incumbents against one another or make very difficult the election of the most experienced legislator. The reality is that districting inevitably has and is intended to have substantial political consequences.

It may be suggested that those who redistrict and reapportion should work with census, not political, data and achieve population equity without regard for political impact. But the politically mindless approach may produce, whether intended or not, the most grossly gerrymandered results; and, in any case, it is most unlikely that the political impact of such a plan would remain undiscovered by the time it was proposed or adopted, in which event the results would be both known and, if not changed, intended.

Davis v. Bandemer, 478 U.S. 109, 128-29 (1986) (quoting Gaffney v. Cummings, 412
U.S. 735, 752-53 (1973)) (emphasis added).

The self-evident fact that there is no such thing as a politically neutral district line has been repeatedly recognized by the Supreme Court and its Justices. Bandemer, 478 U.S. at 129 n. 10 (""The key concept to grasp is that there are no neutral lines for legislative districts . . . every line drawn aligns partisans and interest blocs in a particular way different from putting the line in some other place.'") (citation omitted); Vieth $v$. Jubelirer, 541 U.S. 267, 302-09 (2004) (criteria such as contiguity and compactness are not politically neutral) (Kennedy, J., concurring in judgment) (citations omitted); Id. at 343 ("the choice to draw a district line one way, not another, always carries some consequence for politics, save in a mythical state with voters of every political identity distributed in an absolutely growing uniformity) (Souter, Ginsburg, J. J., dissenting); Id. at 359 (in a system of single-member districts the use of traditional districting principles is rarely, if ever, politically neutral) (Breyer, J., dissenting).

Plaintiffs now ask the special master to rescue some incumbents but not others. All of the incumbents for whom plaintiffs seek relief are Democrats. Plaintiffs do not seek relief for any affected Republican incumbents. ${ }^{5}$ Plaintiffs' political motivations have already been recognized and rejected by the Court. (D.E. 206 at 2 ("The Court is concerned that, among other things, some of the districts proposed by the Plaintiffs may

[^98]be the result of impermissible political considerations.")) These requests should be rejected.

First, the Court instructed the special master that non-pairing of incumbents should be a "distinctly subordinate consideration" in his plans. Plaintiffs do not offer any nonpolitical justification for their request to un-pair the Democratic incumbents for whom they seek relief. Un-pairing these incumbents cannot be justified as a state redistricting policy because the state's policy was to draw separate districts in which the incumbents had a reasonable opportunity to be elected. Justifying plaintiffs' modifications by referencing the State's criteria would not only violate that criteria, it would amount to cherry-picking incumbents who benefit from the criteria in favor of one political party.

Next, plaintiffs' proposed modifications would, by their own admission, violate other traditional redistricting criteria. For instance, placing Representative Quick into an adjoining House district would require the special master to either split a new precinct or make his existing district less compact. (D.E. 216 at 2-3) In Wake County, plaintiffs propose re-splitting a precinct that had not been split by the special master. (D.E. 216 at 3-4) In requesting that Democratic Representatives Ball and Martin be un-paired, plaintiffs reduce several of the compactness scores in multiple districts. ${ }^{6}$ (D.E. 216 at 4-

[^99]5) Given the lack of any non-political reason justifying plaintiffs' proposed modifications, the special master should certainly not violate neutral criteria to further a political outcome. In protecting incumbents, the special master should "take guidance from the State's recently enacted plan in drafting an interim plan," Perry, 565 U.S. at 393, and submit the State's 2017 plans.

## CONCLUSION

Plaintiffs' requested modifications and the special master's proposed plans demonstrate why the legislature's 2017 plans should be adopted by the special master and the Court. If the special master is going to follow the state's policy preferences, then he should recommend the enacted 2017 plans to the Court. At a minimum, the special master should reject plaintiffs' proposed political modifications.
originally adjoin House District 40. Plaintiffs' claim that the "obvious" choice to receive the extra population is House District 34 (D.E. 216 at 4) but it would be just as legitimate for a legislature to choose a different non-adjoining district to receive the population caused by the change to House District 40. In this respect, the Court's mandate to the special master not to change districts that did not adjoin unconstitutional districts is a substitution of the Courts' policy preference for the legislature's preference, under the guise of state law.

This $21^{\text {st }}$ day of November, 2017.

# OGLETREE, DEAKINS, NASH, SMOAK \& STEWART, P.C. 

/s/ Phillip J. Strach
Phillip J. Strach
N.C. Bar No. 29456

Michael D. McKnight
N.C. Bar No. 36932

4208 Six Forks Road, Suite 1100
Raleigh, North Carolina 27609
Phone: (919) 787-9700
Facsimile: (919) 783-9412
Email:phil.strach@ogletreedeakins.com
Attorneys for Legislative Defendants

## CERTIFICATE OF SERVICE

I hereby certify that on this $21^{\text {st }}$ day of November, 2017, I have served the foregoing LEGISLATIVE DEFENDANTS' RESPONSE TO PLAINTIFFS' PROPOSED MODIFICATIONS TO SPECIAL MASTER'S DRAFT REPORT with the Clerk of the Court using the CM/ECF system which will send notification of such filing to the following:

Edwin M. Speas, Jr.
Carolina P. Mackie
Poyner Spruill LLP
P.O. Box 1801 (27602-1801)

301 Fayetteville St., Suite 1900
Raleigh, NC 27601
espeas@poynerspruill.com
johale@poynerspruill.com
cmackie@poymerspruill.com
Attorneys for Plaintiffs

Anita S. Earls
Allison J. Riggs
Southern Coalition for Social Justice 1415 Highway 54, Suite 101
Durham, NC 27707
anita@southerncoalition.org
allisonriggs@southerncoalition.org
Attorneys for Plaintiffs

Alexander McC. Peters
Senior Deputy Attorney General
N.C. Department of Justice
P.O. Box 629

Raleigh, NC 27602
OGLETREE, DEAKINS, NASH, SMOAK \& STEWART, P.C.
/s/ Phillip J. Strach
Phillip J. Strach
N.C. Bar No. 29456

4208 Six Forks Road, Suite 1100
Raleigh, North Carolina 27609
Phone: (919) 787-9700
Facsimile: (919) 783-9412
Email: phil.strach@ogletreedeakins.com


- Ex. 9136 -




Plan Name:
Plan Type:
Date:
Time:
Administrator:

11/28/2017
10:18:17PM

## Measures of Compactness

11/28/2017

|  |  |  |
| :--- | :---: | :---: |
| Sum | N/A |  |
| Min | 0.19 | 0.11 |
| Max | 0.62 | 0.62 |
| Mean | 0.42 | 0.35 |
| Std. Dev. | 0.10 | 0.12 |


| DISTRICT | Reock | Polsby- <br> Popper |
| :--- | :---: | :---: |
| 1 | 0.46 | 0.46 |
| 2 | 0.48 | 0.42 |
| 3 | 0.23 | 0.15 |
| 4 | 0.45 | 0.31 |
| 5 | 0.62 | 0.44 |
| 6 | 0.52 | 0.55 |
| 7 | 0.46 | 0.35 |
| 8 | 0.41 | 0.18 |
| 9 | 0.24 | 0.27 |
| 10 | 0.48 | 0.29 |
| 11 | 0.22 | 0.24 |
| 12 | 0.46 | 0.40 |
| 13 | 0.41 | 0.33 |
| 14 | 0.41 | 0.27 |
| 15 | 0.38 | 0.11 |
| 16 | 0.50 | 0.48 |
| 17 | 0.39 | 0.34 |
| 18 | 0.41 | 0.28 |
| 19 | 0.51 | 0.30 |
| 20 | 0.44 | 0.49 |
| 21 | 0.48 | 0.35 |
| 22 | 0.58 | 0.54 |
| 23 | 0.39 | 0.37 |
| 24 | 0.59 | 0.62 |
| 25 | 0.46 | 0.28 |
| 26 | 0.56 | 0.55 |
| 27 | 0.46 | 0.18 |
| 28 | 0.48 | 0.28 |
| 29 | 0.27 | 0.27 |
| 30 | 0.27 | 0.40 |
| 31 | 0.32 | 0.14 |
| 32 | 0.58 | 0.23 |
| 33 | 0.32 | 0.30 |
| 34 | 0.33 | 0.34 |
| 35 | 0.49 | 0.56 |
| 36 | 0.42 | 0.39 |
| 37 | 0.37 | 0.42 |
| 38 | 0.24 |  |
| 39 |  |  |
|  |  |  |

- Ex. 9140 -
Plan Name: Guilford Sen Alt 1
Plan Type:

Administrator: User:

| DISTRICT | Reock | Polsby- <br> Popper |
| :--- | :---: | :---: |
| 41 | 0.19 | 0.13 |
| 42 | 0.45 | 0.48 |
| 43 | 0.43 | 0.50 |
| 44 | 0.38 | 0.32 |
| 45 | 0.44 | 0.41 |
| 46 | 0.54 | 0.45 |
| 47 | 0.42 | 0.24 |
| 48 | 0.40 | 0.32 |
| 49 | 0.39 | 0.30 |
| 50 | 0.42 | 0.46 |

Plan Name: Guilford Sen Alt 2
Plan Type:
Date: $\quad 11 / 28 / 2017$
Time:
Administrator:

## Measures of Compactness

11/28/2017

| Sum | N/A | N/A |
| :--- | :---: | :---: |
| Min | 0.19 | 0.11 |
| Max | 0.62 | 0.62 |
| Mean | 0.42 | 0.35 |
| Std. Dev. | 0.10 | 0.12 |


| DISTRICT | Reock | Polsby- <br> Popper |
| :--- | :---: | :---: |
| 1 | 0.46 | 0.46 |
| 2 | 0.48 | 0.42 |
| 3 | 0.23 | 0.15 |
| 4 | 0.45 | 0.31 |
| 5 | 0.62 | 0.44 |
| 6 | 0.52 | 0.55 |
| 7 | 0.46 | 0.35 |
| 8 | 0.41 | 0.18 |
| 9 | 0.24 | 0.27 |
| 10 | 0.48 | 0.29 |
| 11 | 0.22 | 0.24 |
| 12 | 0.46 | 0.40 |
| 13 | 0.41 | 0.33 |
| 14 | 0.41 | 0.27 |
| 15 | 0.38 | 0.11 |
| 16 | 0.50 | 0.48 |
| 17 | 0.39 | 0.34 |
| 18 | 0.41 | 0.28 |
| 19 | 0.51 | 0.30 |
| 20 | 0.44 | 0.49 |
| 21 | 0.48 | 0.35 |
| 22 | 0.58 | 0.54 |
| 23 | 0.39 | 0.37 |
| 24 | 0.59 | 0.62 |
| 25 | 0.46 | 0.28 |
| 26 | 0.56 | 0.55 |
| 27 | 0.45 | 0.16 |
| 28 | 0.44 | 0.20 |
| 29 | 0.27 | 0.27 |
| 30 | 0.27 | 0.40 |
| 31 | 0.32 | 0.14 |
| 32 | 0.58 | 0.23 |
| 33 | 0.32 | 0.30 |
| 34 | 0.43 | 0.34 |
| 35 | 0.44 | 0.56 |
| 36 | 0.39 | 0.27 |
| 37 | 0.42 |  |
| 38 |  | 0.24 |
| 39 |  |  |
| 0 | 0.36 |  |

- Ex. 9142 -
$\left.\left.\begin{array}{lcll}\text { Plan Name: } & \text { Guilford Sen Alt } 2 & \text { Administrator: } \\ \text { Plan Type: } & & \\ & & \\ \text { User: }\end{array}\right] \begin{array}{l}\text { Polsby- } \\ \text { Popper }\end{array}\right]$

Plan Name:
Plan Type:
Date:
Time:
Administrator:

## Measures of Compactness

11/28/2017

|  |  |  |
| :--- | :---: | ---: |
| Sum | N/A |  |
| Min | 0.19 | 0.13 |
| Max | 0.70 | 0.71 |
| Mean | 0.41 | 0.32 |
| Std. Dev. | 0.09 | 0.10 |


| DISTRICT | Reock | Polsby- <br> Popper |
| :--- | :---: | :---: |
| 1 | 0.49 | 0.18 |
| 2 | 0.43 | 0.49 |
| 3 | 0.37 | 0.33 |
| 4 | 0.44 | 0.37 |
| 5 | 0.25 | 0.27 |
| 6 | 0.33 | 0.24 |
| 7 | 0.52 | 0.32 |
| 8 | 0.51 | 0.39 |
| 9 | 0.40 | 0.27 |
| 10 | 0.36 | 0.23 |
| 11 | 0.33 | 0.26 |
| 12 | 0.36 | 0.34 |
| 13 | 0.24 | 0.22 |
| 14 | 0.39 | 0.28 |
| 15 | 0.55 | 0.37 |
| 16 | 0.31 | 0.22 |
| 17 | 0.48 | 0.30 |
| 18 | 0.51 | 0.33 |
| 19 | 0.20 | 0.28 |
| 20 | 0.36 | 0.20 |
| 21 | 0.40 | 0.28 |
| 22 | 0.46 | 0.26 |
| 23 | 0.35 | 0.24 |
| 24 | 0.53 | 0.71 |
| 25 | 0.50 | 0.35 |
| 26 | 0.39 | 0.27 |
| 27 | 0.52 | 0.40 |
| 28 | 0.38 | 0.22 |
| 29 | 0.39 | 0.34 |
| 30 | 0.40 | 0.39 |
| 31 | 0.50 | 0.37 |
| 32 | 0.53 | 0.51 |
| 33 | 0.54 | 0.41 |
| 34 | 0.34 | 0.43 |
| 35 | 0.35 | 0.35 |
| 36 | 0.34 | 0.34 |
| 37 | 0.32 | 0.30 |
| 38 | 0.40 |  |
| 39 |  |  |
|  |  | 0.24 |
| 0 | 0 |  |

- Ex. 9144 -
Plan Name: $\quad$ Guilford House Alt
Plan Type:

Administrator:
User:
Polsby-

| DISTRICT | Reock | $\begin{aligned} & \text { Polsby- } \\ & \text { Popper } \\ & \hline \end{aligned}$ |
| :---: | :---: | :---: |
| 41 | 0.28 | 0.25 |
| 42 | 0.50 | 0.40 |
| 43 | 0.34 | 0.31 |
| 44 | 0.50 | 0.24 |
| 45 | 0.46 | 0.22 |
| 46 | 0.23 | 0.16 |
| 47 | 0.57 | 0.42 |
| 48 | 0.48 | 0.45 |
| 49 | 0.46 | 0.31 |
| 50 | 0.38 | 0.34 |
| 51 | 0.52 | 0.40 |
| 52 | 0.32 | 0.25 |
| 53 | 0.59 | 0.47 |
| 54 | 0.45 | 0.43 |
| 55 | 0.42 | 0.29 |
| 56 | 0.49 | 0.34 |
| 57 | 0.42 | 0.34 |
| 58 | 0.44 | 0.18 |
| 59 | 0.41 | 0.23 |
| 60 | 0.29 | 0.21 |
| 61 | 0.33 | 0.28 |
| 62 | 0.31 | 0.31 |
| 63 | 0.34 | 0.30 |
| 64 | 0.34 | 0.28 |
| 65 | 0.52 | 0.47 |
| 66 | 0.40 | 0.35 |
| 67 | 0.51 | 0.31 |
| 68 | 0.33 | 0.28 |
| 69 | 0.37 | 0.20 |
| 70 | 0.54 | 0.54 |
| 71 | 0.35 | 0.19 |
| 72 | 0.50 | 0.26 |
| 73 | 0.46 | 0.47 |
| 74 | 0.38 | 0.23 |
| 75 | 0.22 | 0.16 |
| 76 | 0.49 | 0.46 |
| 77 | 0.39 | 0.35 |
| 78 | 0.36 | 0.28 |
| 79 | 0.48 | 0.30 |
| 80 | 0.28 | 0.22 |
| 81 | 0.50 | 0.22 |
| 82 | 0.42 | 0.43 |
| 83 | 0.32 | 0.25 |
| 84 | 0.51 | 0.45 |
| 85 | 0.39 | 0.23 |
| 86 | 0.38 | 0.27 |
| 87 | 0.50 | 0.57 |
| 88 | 0.60 | 0.33 |
| 89 | 0.34 | 0.26 |
| 90 | 0.29 | 0.15 |
| 91 | 0.32 | 0.32 |
| 92 | 0.40 | 0.29 |
| 93 | 0.57 | 0.42 |
| 94 | 0.34 | 0.22 |
| 95 | 0.43 | 0.37 |
| 96 | 0.30 | 0.21 |

- Ex. 9145 -
Plan Name: Guilford House Alt
Plan Type:

Administrator: User:

| DISTRICT | Reock | Polsby- <br> Popper |
| :--- | :--- | :--- |
| 97 | 0.33 | 0.52 |
| 98 | 0.70 | 0.64 |
| 99 | 0.43 | 0.42 |
| 100 | 0.43 | 0.35 |
| 101 | 0.51 | 0.34 |
| 102 | 0.64 | 0.43 |
| 103 | 0.19 | 0.25 |
| 104 | 0.35 | 0.29 |
| 105 | 0.37 | 0.30 |
| 106 | 0.43 | 0.44 |
| 107 | 0.38 | 0.20 |
| 108 | 0.44 | 0.32 |
| 109 | 0.46 | 0.47 |
| 110 | 0.36 | 0.26 |
| 111 | 0.40 | 0.28 |
| 112 | 0.39 | 0.30 |
| 113 | 0.24 | 0.21 |
| 114 | 0.39 | 0.13 |
| 115 | 0.38 | 0.19 |
| 116 | 0.35 | 0.23 |
| 117 | 0.40 | 0.28 |
| 118 | 0.36 | 0.15 |
| 119 | 0.36 | 0.20 |
| 120 |  | 0.37 |

Exhibit 11

- Ex. 9147 -

North Carolina House
Assignments of Incumbents to Districts in Recommended Plan

| District | Incumbent(s) |  |
| :---: | :---: | :---: |
| 1 | Steinburg |  |
| 2 | Yarborough |  |
| 3 | Speciale |  |
| 4 | Dixon |  |
| 5 | Hunter |  |
| 6 | Boswell |  |
| 7 | Richardson |  |
| 8 |  |  |
| 9 | Murphy |  |
| 10 | Bell |  |
| 11 | Hall |  |
| 12 | Graham |  |
| 13 | McElraft |  |
| 14 | Cleveland |  |
| 15 | Shepard |  |
| 16 | Muller |  |
| 17 | Iler |  |
| 18 | Butler |  |
| 19 | Davis |  |
| 20 | Grange |  |
| 21 |  |  |
| 22 | Bell | Brisson |
| 23 | Willingham |  |
| 24 | Farmer-Butterfield | Martin |
| 25 | Collins |  |
| 26 | White |  |
| 27 | Wray |  |
| 28 | Strickland |  |
| 29 | Black |  |
| 30 | Morey |  |
| 31 | Michaux |  |
| 32 | Garrison |  |
| 33 | Gill |  |
| 34 | Martin |  |
| 35 | Malone |  |
| 36 | Dollar |  |
| 37 | Williams |  |
| 38 | Holley |  |
| 39 | Jackson |  |
| 40 | John |  |
| 41 | Adcock |  |
| 42 | Lucas |  |
| 43 | Floyd |  |
| 44 | Richardson |  |
| 45 | Szoka |  |
| 46 | Jones |  |
| 47 | Graham |  |
| 48 | Pierce |  |
| 49 | Ball |  |
| 50 | Meyer |  |

- Ex. 9148 -

North Carolina House
Assignments of Incumbents to Districts in Recommended Plan

| District | Incumbent(s) |
| :---: | :---: |
| 51 | Sauls |
| 52 | Boles |
| 53 | Lewis |
| 54 | Reives |
| 55 | Brody |
| 56 | Insko |
| 57 | Blust |
| 58 | Quick |
| 59 | Hardister |
| 60 | Brockman |
| 61 | Harrison |
| 62 | Faircloth |
| 63 | Ross |
| 64 | Riddell |
| 65 | Jones |
| 66 | Goodman |
| 67 | Burr |
| 68 | Horn |
| 69 | Arp |
| 70 | Hurley |
| 71 | Terry |
| 72 | Hanes |
| 73 | Zachary |
| 74 | Conrad |
| 75 | Lambeth |
| 76 | Warren |
| 77 | Howard |
| 78 | McNeill |
| 79 |  |
| 80 | Watford |
| 81 | Potts |
| 82 | Johnson |
| 83 | Ford Pittman |
| 84 | Turner |
| 85 | Dobson |
| 86 | Blackwell |
| 87 | Hall |
| 88 | Belk |
| 89 | Setzer |
| 90 | Stevens |
| 91 | Hall |
| 92 | Beasley |
| 93 | Jordan |
| 94 | Elmore |
| 95 | Fraley |
| 96 | Adams |
| 97 | Saine |
| 98 | Bradford |
| 99 | Moore |
| 100 | Autry |

## North Carolina House

Assignments of Incumbents to Districts in Recommended Plan

| District | Incumbent(s) |
| :---: | :--- |
| 101 | Earle |
| 102 | Carney |
| 103 | Brawley |
| 104 | Dulin |
| 105 | Stone |
| 106 | Cunningham |
| 107 | Alexander |
| 108 | Torbett |
| 109 | Bumgardner |
| 110 | Hastings |
| 111 | Moore |
| 112 | Rogers |
| 113 | Henson |
| 114 | Fisher |
| 115 | Ager |
| 116 | Turner |
| 117 | McGrady |
| 118 | Presnell |
| 119 | Clampitt |
| 120 | Corbin |

- Ex. 9150 -

North Carolina Senate
Assignments of Incumbents to Districts in Recommended Plan

| District | Incumbent(s) |  |
| :---: | :---: | :---: |
| 1 |  |  |
| 2 | Sanderson |  |
| 3 | Cook | Smith-Ingram |
| 4 | Horner |  |
| 5 | Davis |  |
| 6 | Brown |  |
| 7 | Pate |  |
| 8 | Rabon |  |
| 9 | Lee |  |
| 10 | Jackson |  |
| 11 | Bryant |  |
| 12 | Rabin |  |
| 13 | Britt |  |
| 14 | Blue |  |
| 15 | Chaudhuri |  |
| 16 |  |  |
| 17 | Barringer |  |
| 18 | Alexander | Barefoot |
| 19 | Meredith |  |
| 20 | McKissick |  |
| 21 | Clark |  |
| 22 | Woodard |  |
| 23 | Foushee |  |
| 24 | Gunn |  |
| 25 | McInnis |  |
| 26 | Tillman |  |
| 27 | Robinson | Wade |
| 28 |  |  |
| 29 | Dunn |  |
| 30 | Berger |  |
| 31 | Barrett | Krawiec |
| 32 | Lowe |  |
| 33 |  |  |
| 34 |  |  |
| 35 | Tucker |  |
| 36 | Newton |  |
| 37 | Jackson |  |
| 38 | Ford |  |
| 39 | Bishop |  |
| 40 | Waddell |  |
| 41 | Tarte |  |
| 42 | Wells |  |
| 43 | Harrington |  |
| 44 | Curtis |  |
| 45 | Ballard | Randleman |
| 46 | Daniel |  |
| 47 | Hise |  |
| 48 | Edwards |  |
| 49 | Van Duyn |  |
| 50 | Davis |  |



## STV-1-Blue-Fair, Legal and Competitive Senate Districts



Case 1:15-cv-00399-TDS-JEP Document 187-7 Filed 09/15/17 Page 66 of 107

## Covington Plaintiffs Proposed House Plan



Case 1:15-cv-00399-TDS-JEP Document 187-7 Filed 09/15/17 Page 26 of 107


## ORDER

On August 11, 2016, this Court unanimously concluded that the Defendants unjustifiably relied on race in drawing lines creating twenty-eight majority-minority districts in the 2011 state legislative districting plans, in violation of the Plaintiffs' rights under the Equal Protection Clause of the Fourteenth Amendment. Covington v. North Carolina, 316 F.R.D. 117, 176 (M.D.N.C. 2016), aff'd, 137 S. Ct. 2211 (2017) (mem.). To remedy the constitutional violation, the North Carolina General Assembly enacted proposed remedial plans on August 31, 2017. On September 15, 2017, the Plaintiffs filed objections to three Senate districts and nine House districts created by the proposed remedial plans. Thereafter, the Legislative Defendants filed a response to Plaintiffs' objections. This Court held a hearing concerning the objections on October 12, 2017.

After careful review of the parties' written submissions, arguments, and evidence, the Court has serious concerns that 2017 Enacted Senate Districts 21 and 28 and 2017 Enacted House Districts 21 and 57 fail to remedy the identified constitutional violation.

See id. at 146-47 (Senate District 21); id. at 147-48 (Senate District 28); id. at 155-56 (House District 21); id. at 163-64 (House District 57). Among other concerns, some or all of the proposed remedial districts preserve the core shape of the unconstitutional version of the district, divide counties and municipalities along racial lines, and are less compact than their benchmark version. In some cases, the General Assembly's use of incumbency and political data in drawing its proposed remedial districts embedded, incorporated, and perpetuated the impermissible use of race that rendered unconstitutional the 2011 districts. The 2017 Enacted Districts do not appear to cure the constitutional violations found as to 2011 Enacted House Districts 21 and 57 and Senate Districts 21 and 28. The Court is concerned that, among other things, some of the districts proposed by the Plaintiffs may be the result of impermissible political considerations. See infra 『 1 2(h).

The Court further has serious concerns that the 2017 redrawing of 2011 Enacted House Districts 36, 37, 40, and 41 in Wake County and House District 105 in Mecklenburg County exceeded the authorization to redistrict provided in the Court's previous orders. None of these districts as enacted in 2011 was found to be an unconstitutional racial gerrymander, nor do any of these districts adjoin such a district. The Legislative Defendants have not provided any evidence that it was necessary to redraw these districts in order to cure the constitutional violations found by the Court as to 2011 House Districts 33 and 38 in Wake County or House Districts 99, 102, or 107 in Mecklenburg County. Unless required by court order, the General Assembly was prohibited by the North Carolina Constitution from redrawing these districts. N.C. Const.
art. II §§ 3(4), 5(4). If these 2017 Enacted Districts cannot be used, it also becomes impossible to use the other 2017 Enacted Districts in Mecklenburg and Wake Counties, thus necessitating the redrawing of the 2011 unconstitutional districts - House Districts $33,38,99,102$, and 107 - and only such adjoining districts as are necessary to remedy the violations found as to those districts. See Covington, 316 F.R.D. at 159-61 (House Districts 33 and 38); id. at 164-66 (House Districts 99, 102, and 107); see also Cleveland Cnty. Ass'n for Gov't by the People v. Cleveland Cnty. Bd. of Comm'rs, 142 F.3d 468, 477 (D.C. Cir. 1998) (per curiam) ("[I]f a violation of federal law necessitates a remedy barred by state law, the state law must give way; if no such violation exists, principles of federalism dictate that state law governs." (emphasis added)).

Constitutionally adequate districts must be in place in time for the 2018 election, and the Court finds it appropriate to appoint a Special Master to assist the Court in drawing such districts, should the Court ultimately determine they are necessary. See Doc. 202 at 2. After reviewing the Special Master's report, and with the benefit of his analysis, this Court will issue an order finally deciding whether the Plaintiffs' objections will be sustained and determining the districting plan to be used going forward. See Personhuballah v. Alcorn, 155 F. Supp. 3d 552, 562-65 (E.D. Va. 2016) (relying on special master report and remedial districting plan to assess proposed legislative remedial plan); Order Appointing Special Master, Navajo Nation v. Ariz. Indep. Redistricting, Nos. CV 02-0799, 02-0807 (D. Ariz. May 17, 2002) (appointing special master "to evaluate evidence regarding proposed redistricting plans," including remedial plan adopted by state redistricting body, and to "assist the court in developing an appropriate plan").

In view of the fast-approaching filing period for the 2018 election cycle and the specialized expertise necessary to draw district maps, the Court has previously given notice of its intent to appoint Professor Nathaniel Persily as Special Master pursuant to Federal Rule of Civil Procedure 53(a)(1)(C). See Doc. 202. The Court's selected Special Master has filed the affidavit required by Federal Rule of Civil Procedure 53(b)(3)(A). Doc. 203.

The parties have had an opportunity to object to the Court's selection of a Special Master. The Legislative Defendants filed objections, Doc. 204, and the Plaintiffs have responded. Doc. 205. The Court has considered those objections and overrules them. The State is not entitled to multiple opportunities to remedy its unconstitutional districts. See Reynolds v. Sims, 377 U.S. 533, 585-87 (1964) (affirming remedial districting map drawn by a district court after district court found state legislature's first proposed remedial map failed to remedy constitutional violation). Additionally, the fastapproaching candidate filing deadline necessitates an expedited schedule. In light of the need for an expedited schedule, the Court's two notices of its intent to appoint a special master, the first of which was issued approximately three weeks ago, provided the parties with more than adequate notice and opportunity to be heard. It is comparable to the timeline followed in similar cases. See Order, Personhuballah v. Alcorn, No. 3:13cv678, Doc. No. 241 (E.D. Va. Sept 25, 2015) (appointing special master approximately three weeks after first notifying parties of its intent to appoint special master); see also Order, Personhuballah v. Alcorn, No. 3:13cv678, Doc. No. 207 (E.D. Va. Sept. 3, 2015) (notifying parties of intent to appoint special master). The Legislative Defendants'
specific objections to the identified Special Master are speculative and insubstantial, and they have not made an alternative suggestion despite the Court's invitation to do so.

Pursuant to Federal Rule of Civil Procedure 53, it is hereby ORDERED that:

1. Dr. Nathaniel Persily is appointed as a Special Master to submit a report and proposed plans to remedy the unconstitutional racial gerrymander of 2011 Enacted Senate Districts 21 and 28 and House Districts 21, 33, 38, 57, 99, 102, and 107 (hereinafter the "Subject Districts"), as more specifically identified in this Court's opinion in Covington v. North Carolina, 316 F.R.D. 117
(M.D.N.C. 2016), aff'd in relevant part, 137 S. Ct. 2211 (2017) (mem.). His report is due no later than December 1, 2017.
2. In drawing remedial districts, the Special Master shall:
a. Redraw district lines for the Subject Districts and any other districts within the applicable 2017 county grouping necessary to cure the unconstitutional racial gerrymanders. As to House District 57, the redrawn lines shall also ensure that the unconstitutional racial gerrymanders in 2011 Enacted House Districts 58 and 60 are cured. As to 2011 Enacted House Districts 33, 38, 99, 102, and 107, no 2011 Enacted House Districts which do not adjoin those districts shall be redrawn unless it is necessary to do so to meet the mandatory requirements set forth in Paragraphs 2(b) through 2(e) of this Order, and if the Special Master concludes that it is necessary to adjust the lines of
a non-adjoining district, the Special Master shall include in his report an explanation as to why such adjustment is necessary.
b. Use the 2010 Federal Decennial Census Data;
c. Draw contiguous districts with a population as close as possible to 79,462 persons for the House Districts and 190,710 persons for the Senate Districts, though a variance up to $+/-5 \%$ is permitted and authorized if it would not conflict with the primary obligations to ensure that remedial districts remedy the constitutional violations and otherwise comply with state and federal law, would enhance compliance with state policy as set forth in subsection (f) below, and would not require redrawing lines for an additional district.
d. Adhere to the county groupings used by the General Assembly in the 2017 Enacted Senate and House Plans;
e. Subject to any requirements imposed by the United States Constitution or federal law, comply with North Carolina constitutional requirements including, without limitation, the Whole County Provision as interpreted by the North Carolina Supreme Court.
f. Make reasonable efforts to adhere to the following state policy objectives, so long as adherence to those policy objectives does not conflict with the primary obligations of ensuring that remedial districts remedy the constitutional violations and otherwise comply with state and federal law:
i. Split fewer precincts than the 2011 Enacted Districts;
ii. Draw districts that are more compact than the 2011 Enacted Districts, using as a guide the minimum Reock ("dispersion") and Polsby-Popper ("perimeter") scores identified by Richard Pildes \& Richard Neimi, Expressive Harms, "Bizarre Districts," and Voting Rights: Evaluating Election-District Appearances After Shaw v. Reno, 92 Mich. L. Rev. 483 (1993); and
iii. Consider municipal boundaries and precinct lines.
g. After redrawing the districts, in view of the policy decision by the General Assembly that efforts to avoid pairing incumbents are in the interest of North Carolina voters, the Special Master may adjust district lines to avoid pairing any incumbents who have not publicly announced their intention not to run in 2018, but only to the extent that such adjustment of district lines does not interfere with remedying the constitutional violations and otherwise complying with federal and state law. Additionally, the Special Master shall treat preventing the pairing of incumbents as "a distinctly subordinate consideration" to the other traditional redistricting policy objectives followed by the State. Ga. State Conf. of NAACP v. Fayette Cty. Bd. of Comm'rs, 996 F. Supp. 2d 1353, 1363 (N.D. Ga. 2014) (collecting cases).
h. Except as authorized in Paragraph 2(g), the Special Master shall not consider incumbency or election results in drawing the districts. See,
e.g., Wise v. Lipscomb, 437 U.S. 535, 541 (1978) (noting that courts lack "political authoritativeness" and must act "in a manner free from any taint of arbitrariness or discrimination" in drawing remedial districts) (quoting Connor v. Finch, 431 U.S. 408, 417 (1977)); Wyche v. Madison Par. Police Jury, 769 F.2d 265, 268 (5th Cir. 1985) ("Many factors, such as the protection of incumbents, that are appropriate in the legislative development of an apportionment plan have no place in a plan formulated by the courts."); Wyche v. Madison Par. Police Jury, 635 F.2d 1151, 1160 (5th Cir. 1981) (noting that "a court is forbidden to take into account the purely political considerations that might be appropriate for legislative bodies"); Favors v. Cuomo, Docket No. 11-cv-5632, 2012 WL 928216, at * 18 (E.D.N.Y. Mar. 12, 2012), report and recommendation adopted as modified, No. 11-cv-5632, 2012 WL 928223, at *6 (E.D.N.Y Mar. 19, 2012); Molina v. Cty. of Orange, No. 13CV3018, 2013 WL 3039589, at *8 (S.D.N.Y. June 3, 2013), supplemented, No. 13CV3018, 2013 WL 3039741 (S.D.N.Y. June 13, 2013), report and recommendation adopted, No. 13 CIV. 3018 ER, 2013 WL 3009716 (S.D.N.Y. June 14, 2013); Larios v. Cox, 306 F. Supp. 2d 1214, 1218 (N.D. Ga. 2004); Balderas v. Texas, No. 6:01CV158, 2001 WL 36403750, at *4 (E.D. Tex. Nov. 14, 2001).
i. The Special Master may consider data identifying the race of individuals or voters to the extent necessary to ensure that his plan cures federal law.
3. The Special Master may consider the plans submitted by the Plaintiffs and the 2017 Enacted plans as background. Because any remedy must be narrowly tailored to address the harm, he further should use any 2017 Enacted Districts within a relevant county grouping which do not abut or overlap with a Subject District, except to the extent modification of such district is necessary to comply with and meet the requirements of this Order. See Personhuballah, 155 F. Supp. 3d at 563 (discussing Supreme Court precedent and concluding that in remedying a violation, the only districts which should be changed are those that are "require[d]" to be changed). Any such decisions shall be explained in his report. Otherwise, he shall draw his own plans using the criteria set forth herein.
4. The Special Master is authorized to hire research and technical assistants and advisors reasonably necessary to facilitate his work, who shall be reasonably compensated by the State of North Carolina in the same way as the Special Master. He is authorized to buy any specialized software reasonably necessary to facilitate his work.
5. To facilitate the consideration of incumbency authorized by Paragraph 2(g), the parties shall confer and, no later than November 8, 2017, shall file a Joint Submission identifying incumbents covered by Paragraph 2(g) by name, address, and date first elected.
6. Upon request from the Special Master, the parties shall promptly make available to the Special Master electronic copies of trial and hearing transcripts, trial exhibits, motions, briefs, and evidentiary material otherwise submitted to the Court. Such a request shall be communicated by way of an email message to counsel of record for all parties.
7. The parties, including the North Carolina Legislative Analysis Division, shall promptly respond to the best of their ability to any reasonable request by the Special Master for supporting data or information as is reasonably necessary to carry out his assignment. All such requests and responses shall be made by email, with all counsel copied. Upon such a request, the requested party shall respond promptly to the best of its ability. The Special Master may, but is not required to, request briefs on such background matters as he would find helpful. The Special Master is not authorized to take new evidence, absent request to do so and approval from the Court.
8. The Special Master may, but is not required to, convene the parties for a discussion about logistics, software, data, and other housekeeping or technical issues, including whether it would or might save time or other resources to use computers, software, data, or other facilities and materials controlled by the State and to have technical assistance from a support person employed by the State in the use of such materials. He may convene such a discussion upon reasonable notice at a time and place and in a method convenient to him, though if an in-person meeting or hearing is convened it shall occur in North

Carolina. He shall advise the parties of the time and other details by way of an email message to counsel of record for all parties.
9. If the Special Master determines that it would save time and otherwise facilitate prompt completion of his work to use state technical resources and so long as the parties consent to such use under terms which would not give the State advance or ex parte knowledge of the Special Master's work and which would prevent the State from accessing such work or communicating with its support employee about such work, the Court will entertain a request to supplement this Order.
10.If time permits and the Special Master would find it helpful, he may publicly release preliminary maps or plans and convene a hearing, meeting, or informal conference to evaluate whether the preliminary maps meet the criteria set forth herein or raise unanticipated problems. The Special Master shall advise the parties of the time and other details by way of an email message to counsel of record for all parties and shall file notice with the court. A transcript shall be prepared of any such hearing, meeting, or conference, and, if it does not occur in open court, be made available on the Court's docket.
11. The Special Master is prohibited from engaging in any ex parte communication with the parties or their counsel, except as specifically authorized by this Order.
12. The Special Master is prohibited from discussing this matter with anyone else, other than assistants or advisors he retains to complete his work, except as
specifically authorized by this Order. Any assistants or advisors retained by the Special Master may discuss the matter only with the Special Master.
13. The Special Master may communicate ex parte with the Clerk of Court, the Clerk's staff, and the Court about housekeeping, scheduling, and logistical matters. If necessary to clarify or supplement these instructions, the Special Master may communicate ex parte with the Court, provided he promptly advises the parties that the communication has occurred and discloses any material guidance he has received.
14. Pursuant to Rule 53(b)(2)(C), the Special Master shall maintain orderly files consisting of all documents submitted to him by the parties and any written orders, findings, and recommendations. All other materials relating to the Special Master's work should be preserved until relieved of this obligation by the court. The Special Master shall preserve all datasets used in the formulation of redistricting plans, and any drafts considered but not recommended to the court, in their native format.
15. The Special Master's final report shall contain:
a. At least one recommended redistricting plan for each Subject District;
b. For each county or county grouping encompassing a Subject District, a color map showing the recommended remedial plan;
c. For each Subject District, an analysis (i) explaining the proposed remedial plan and the recommendation of that plan over the 2017 Enacted Districts or the Plaintiffs' proposed districts; (ii) covering any
matters required elsewhere in this Order; and (iii) discussing any criteria, issues, or questions which the Special Master believes may arise or which will otherwise aid the Court;
d. A comparison of the Special Master's districts with the related 2011 and 2017 Enacted Districts as to population deviations; compactness; county, municipal, and precinct splits; incumbency pairing; Black Voting Age Population; and any other relevant criteria; and
e. A "stat pack" for the recommended plans.
16. If any party believes the report should contain additional information, it shall meet and confer with other parties and thereafter file an appropriate request no later than November 6, 2017. In lieu of a brief in support, the request shall be accompanied by a Joint Submission including the positions of all parties so that responses will not be needed.
17. The Special Master shall file his report electronically on the Court's CM/ECF system. The Legislative Defendants shall promptly post the Special Master's report and supporting electronic files to its redistricting website.
18. The Court will review the report pursuant to Fed. R . Civ. P. 53(f).
19. If any party or non-party believes that one or more proposed districts set forth in the Special Master's report is legally unacceptable or otherwise should not be adopted, specific objections must be filed within five business days. Any response must be filed within three business days. Briefs are limited to 5000 words. Reply briefs limited to 2500 words may thereafter be filed within two
business days. The Court anticipates scheduling a hearing on the report in early January 2018. Fed. R. Civ. P. 53(f)(1).
20. The Court understands the candidate filing period to be from February 12 to February 28, 2018. Doc. 162-1. If that is or becomes incorrect, the Defendant State Board of Elections shall immediately advise the Court.
21. The Court may modify this order pursuant to Federal Rule of Civil Procedure 53(b)(4). The parties may seek to modify this order for good cause shown, but no such motion shall be filed without meeting and conferring in person with all other counsel. Absent agreement, the time to respond to such a motion is two business days and no reply will be permitted.

Entered by the Court, this the 1st day of November, 2017.


Federal | Council of State | NC Senate | NC House |Judicial | Referenda Cross-County Local

## 11/03/2020 OFFICIAL LOCAL ELECTION RESULTS STATEWIDE



## US PRESIDENT (VOTE FOR 1)

Precincts Reported: 2662 of 2662

| NAME ON BALLOT | PARTY | BALLOT COUNT | PERCENT |
| :--- | :--- | ---: | ---: |
| Donald J. Trump | REP | $2,758,775$ | $49.93 \%$ |
| Joseph R. Biden | DEM | $2,684,292$ | $48.59 \%$ |
| Jo Jorgensen | LIB | 48,678 | $0.88 \%$ |
| Write-In (Miscellaneous) |  | 13,196 | $0.24 \%$ |
| Howie Hawkins | GRE | 12,195 | $0.22 \%$ |
| Don Blankenship | CST | 7,549 | $0.14 \%$ |

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US SENATE (VOTE FOR 1)
    Precincts Reported: 2662 of 2662
```

| NAME ON BALLOT | PARTY |
| :--- | :--- |
| Thom Tillis | REP |
| Cal Cunningham | DEM |
| Shannon W. Bray | LIB |
| Kevin E. Hayes | CST |
| US HOUSE OF REPRESENTATIVES DISTRICT 01 (VOTE FOR 1) |  |
| Precincts Reported: 244 of 244 |  |


| NAME ON BALLOT | PARTY | BALLOT COUNT | PERCENT |
| :--- | :--- | ---: | ---: |
| G. K. Butterfield | DEM | 188,870 | $54.18 \%$ |
| Sandy Smith | REP | 159,748 | $45.82 \%$ |

## US HOUSE OF REPRESENTATIVES DISTRICT 02 (VOTE FOR 1) Precincts Reported: 168 of 168

| NAME ON BALLOT | PARTY |
| :--- | :--- |
| Deborah K. Ross | DEM |
| Alan D. Swain | REP |
| Jeff Matemu | LIB |
| US HOUSE OF REPRESENTATIVES DISTRICT 03 (VOTE FOR 1) |  |
| Precincts Reported: 228 of 228 |  |


| NAME ON BALLOT | PARTY | BALLOT COUNT | PERCENT |
| :--- | :--- | ---: | ---: |
| Greg Murphy | REP | 229,800 | $63.38 \%$ |
| Daryl Farrow | DEM | 132,752 | $36.62 \%$ |

## US HOUSE OF REPRESENTATIVES DISTRICT 04 (VOTE FOR 1) Precincts Reported: 183 of 183

| NAME ON BALLOT | PARTY | BALLOT COUNT | PERCENT |
| :--- | :--- | ---: | ---: |
| David E. Price | DEM | 332,421 | $67.33 \%$ |
| Robert Thomas | REP | 161,298 | $32.67 \%$ |

US HOUSE OF REPRESENTATIVES DISTRICT 05 (VOTE FOR 1)
Precincts Reported: 215 of 215

NAME ON BALLOT
PARTY
BALLOT COUNT
PERCENT
Virginia Foxx
REP
257,843
66.93\%

| David Wilson Brown | DEM |
| :--- | :---: |
| Jeff Gregory | CST |
| US HOUSE OF REPRESENTATIVES DISTRICT 06 (VOTE FOR 1) |  |
| Precincts Reported: 239 of 239 |  |


| NAME ON BALLOT | PARTY | BALLOT COUNT | PERCENT |
| :--- | :--- | ---: | ---: |
| Kathy Manning | DEM | 253,531 | $62.27 \%$ |
| Lee Haywood | REP | 153,598 | $37.73 \%$ |

## US HOUSE OF REPRESENTATIVES DISTRICT 07 (VOTE FOR 1)

 Precincts Reported: 195 of 195NAME ON BALLOT
PARTY
BALLOT COUNT
REP
272,443
PERCENT
David Rouzer
DEM
179,045
60.25\%

Christopher M. Ward
39.59\%
0.09\%
0.07\%

## US HOUSE OF REPRESENTATIVES DISTRICT 08 (VOTE FOR 1) Precincts Reported: 176 of 176

| NAME ON BALLOT | PARTY |
| :--- | :--- |
| Richard Hudson | REP |
| Patricia Timmons-Goodson | DEM |
| US HOUSE OF REPRESENTATIVES DISTRICT 09 (VOTE FOR 1) |  |
| Precincts Reported: 203 of 203 |  |


| NAME ON BALLOT | PARTY | BALLOT COUNT | PERCENT |
| :--- | :--- | ---: | ---: |
| Dan Bishop | REP | 224,661 | $55.59 \%$ |
| Cynthia L. Wallace | DEM | 179,463 | $44.41 \%$ |

## US HOUSE OF REPRESENTATIVES DISTRICT 10 (VOTE FOR 1) Precincts Reported: 186 of 186

| NAME ON BALLOT | PARTY |
| :--- | :--- |
| Patrick McHenry | REP |
| David Parker | DEM |
| US HOUSE OF REPRESENTATIVES DISTRICT 11 (VOTE FOR 1) |  |
| Precincts Reported: 304 of 304 |  |


| NAME ON BALLOT | PARTY | BALLOT COUNT | PERCENT |
| :--- | :--- | ---: | ---: |
| Madison Cawthorn | REP | 245,351 | $54.50 \%$ |
| Moe Davis | DEM | 190,609 | $42.34 \%$ |


| Tracey DeBruhl | LIB | 8,682 | 1.93\% |
| :---: | :---: | :---: | :---: |
| Tamara Zwinak | GRE | 5,503 | 1.22\% |
| US HOUSE OF REPRESENTATIVES DISTRICT 12 (VOTE FOR 1) Precincts Reported: 151 of 151 |  |  |  |
| NAME ON BALLOT | PARTY | BALLOT COUNT | PERCENT |
| Alma Adams | DEM | 341,457 | 100.00\% |
| US HOUSE OF REPRESENTATIVES DISTRICT 13 (VOTE FOR 1) Precincts Reported: 189 of 189 |  |  |  |
| NAME ON BALLOT | PARTY | BALLOT COUNT | PERCENT |
| Ted Budd | REP | 267,181 | 68.18\% |
| Scott Huffman | DEM | 124,684 | 31.82\% |

Federal | Council of State | NC Senate | NC House Judicial | Referenda Cross-County Local

## 11/03/2020 OFFICIAL LOCAL ELECTION RESULTS STATEWIDE



NC GOVERNOR (VOTE FOR 1)
Precincts Reported: 2662 of 2662

| NAME ON BALLOT | PARTY | BALLOT COUNT | PERCENT |
| :--- | :--- | ---: | ---: |
| Roy Cooper | DEM | $2,834,790$ | $51.52 \%$ |
| Dan Forest | REP | $2,586,605$ | $47.01 \%$ |
| Steven J. DiFiore | LIB | 60,449 | $1.10 \%$ |
| AI Pisano | CST | 20,934 | $0.38 \%$ |

NC LIEUTENANT GOVERNOR (VOTE FOR 1)
Precincts Reported: 2662 of 2662
NAME ON BALLOT
Mark Robinson
Yvonne Lewis Holley
NC ATTORNEY GENERAL (VOTE FOR 1)
Precincts Reported: 2662 of 2662
NAME ON BALLOT
Josh Stein
Jim O'Neill
NC AUDITOR (VOTE FOR 1)

$\quad$| Precincts Reported: 2662 of 2662 |
| :--- |

NAME ON BALLOT
Beth A. Wood
Anthony Wayne (Tony) Street
NC COMMISSIONER OF AGRICULTURE (VOTE FOR 1)
Precincts Reported: 2662 of 2662
NAME ON BALLOT
Steve Troxler
Jenna Wadsworth

## NC COMMISSIONER OF INSURANCE (VOTE FOR 1) <br> Precincts Reported: 2662 of 2662

NAME ON BALLOT
Mike Causey
Wayne Goodwin
NC COMMISSIONER OF LABOR (VOTE FOR 1)
Precincts Reported: 2662 of 2662

NAME ON BALLOT
Josh Dobson
Jessica Holmes
NC SECRETARY OF STATE (VOTE FOR 1)
Precincts Reported: 2662 of 2662
NAME ON BALLOT
Elaine Marshall
E.C. Sykes

PARTY
REP
DEM

## PARTY

DEM
REP

## BALLOT COUNT

2,730,175

## PERCENT

50.88\%

2,635,825
49.12\%

BALLOT COUNT
2,901,849
2,485,722
46.14\%

PERCENT
53.86\%

教

## NC SUPERINTENDENT OF PUBLIC INSTRUCTION (VOTE FOR 1) Precincts Reported: 2662 of 2662

| NAME ON BALLOT | PARTY | BALLOT COUNT | PERCENT |
| :--- | :--- | ---: | ---: | ---: |
| Catherine Truitt | REP | $2,753,220$ | $51.38 \%$ |
| Jen Mangrum | DEM | $2,605,169$ | $48.62 \%$ |
| NC TREASURER (VOTE FOR 1) |  |  |  |
| Precincts Reported: 2662 of 2662 |  |  |  |
| NAME ON BALLOT | PARTY | BALLOT COUNT | PERCENT |
| Dale R. Folwell | REP | $2,812,799$ | $52.58 \%$ |
| Ronnie Chatterji | DEM | $2,537,019$ | $47.42 \%$ |

## 11/03/2020 OFFICIAL LOCAL ELECTION RESULTS STATEWIDE

| Text Size: A A Options \| Downloads |  |
| :---: | :---: |
| Criteria |  |
| Election: 11/03/2020 | $\checkmark$ |
| County: STATE | $V$ |
| Office: NC SENATE | $V$ |
| Contest: ALL | $V$ |
| Display Results Refresh |  |
| Statewide Info |  |
| Last County Submit: <br> February 3, 2021 11:30 am |  |
| Last County Upload: <br> February 3, 2021 11:30 am |  |
| Precincts Reported: <br> $100.00 \%(2,662$ out of 2,662$)$ |  |
|  | 100.00\% |
| Ballots Cast: <br> 75.35\% (5,545,848 out of $7,359,798$ ) |  |
|  | 75.35\% |

```
NC STATE SENATE DISTRICT 01 (VOTE FOR 1)
    Precincts Reported: 90 of 90
\begin{tabular}{llrr} 
NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
Bob Steinburg & REP & 58,319 & \(55.24 \%\) \\
Tess Judge & DEM & 47,248 & \(44.76 \%\)
\end{tabular}
Norman W. Sanderson
Libbie Griffin
Tim Harris
NC STATE SENATE DISTRICT 03 (VOTE FOR 1)
Precincts Reported: 85 of 85
NAME ON BALLOT
Ernestine (Byrd) Bazemore
Thomas S. Hester, Jr.
NC STATE SENATE DISTRICT 04 (VOTE FOR 1)
Precincts Reported: 64 of 64
NAME ON BALLOT
Milton F. (Toby) Fitch, Jr.
Sammy Davis Webb
NC STATE SENATE DISTRICT 05 (VOTE FOR 1)
Precincts Reported: 50 of 50
NAME ON BALLOT
Don Davis
Karen Kozel
NC STATE SENATE DISTRICT 06 (VOTE FOR 1)
Precincts Reported: 31 of 31
NAME ON BALLOT
Michael A. Lazzara
Ike Johnson
NC STATE SENATE DISTRICT 07 (VOTE FOR 1)
Precincts Reported: 50 of 50
NAME ON BALLOT
Jim Perry
Donna Lake
NC STATE SENATE DISTRICT 08 (VOTE FOR 1 )
Precincts Reported: 62 of 62
NAME ON BALLOT
\begin{tabular}{lrr} 
PARTY & BALLOT COUNT & PERCENT \\
REP & 85,484 & \(62.01 \%\) \\
DEM & 48,040 & \(34.85 \%\) \\
LIB & 4,335 & \(3.14 \%\)
\end{tabular}

NC STATE SENATE DISTRICT 09 (VOTE FOR 1)
Precincts Reported: 42 of 42
NAME ON BALLOT
Michael Lee
Harper Peterson
NC STATE SENATE DISTRICT 10 (VOTE FOR 1)
Precincts Reported: 56 of 56
NAME ON BALLOT
Brent Jackson
Vernon R. Moore
NC STATE SENATE DISTRICT 11 (VOTE FOR 1)
Precincts Reported: 43 of 43
NAME ON BALLOT
Lisa Stone Barnes
Allen Wellons
NC STATE SENATE DISTRICT 12 (VOTE FOR 1 )
Precincts Reported: 26 of 26
NAME ON BALLOT
Jim Burgin
John Kirkman
NC STATE SENATE DISTRICT 13 (VOTE FOR 1)
Precincts Reported: 65 of 65

NAME ON BALLOT
Danny Earl Britt, Jr.
Barbara Yates-Lockamy
NC STATE SENATE DISTRICT 14 (VOTE FOR 1) Precincts Reported: 41 of 41
\begin{tabular}{llrr} 
NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
Dan Blue & DEM & 78,811 & \(72.68 \%\) \\
Alan David Michael & REP & 24,678 & \(22.76 \%\) \\
Justin Walczak & LIB & 4,949 & \(4.56 \%\)
\end{tabular}

PARTY
REP
DEM

PARTY
REP
DEM

PARTY
REP
DEM
BALLOT COUNT
61,287
PERCENT

50,193
54.98\%
45.02\%
\begin{tabular}{lrr} 
PARTY & BALLOT COUNT & PERCENT \\
REP & 57,295 & \(60.84 \%\) \\
DEM & 36,875 & \(39.16 \%\)
\end{tabular}

PARTY
BALLOT COUNT
PERCENT
REP
DEM
45,264 63.56\%

25,949 36.44\%

Dan Blue
Alan David Michael
Justin Walczak

PARTY
DEM

LIB
4,949
4.56\%

Precincts Reported: 52 of 52

NAME ON BALLOT
Jay J. Chaudhuri
Mario J. Lomuscio
Kat McDonald

\section*{NC STATE SENATE DISTRICT 16 (VOTE FOR 1) Precincts Reported: 44 of 44}
NAME ON BALLOT
Wiley Nickel
Will Marsh
NC STATE SENATE DISTRICT 17 (VOTE FOR 1)
Precincts Reported: 42 of 42

NAME ON BALLOT
Sam Searcy
Mark Cavaliero
Travis Groo
NC STATE SENATE DISTRICT 18 (VOTE FOR 1)
Precincts Reported: 45 of 45
NAME ON BALLOT
Sarah Crawford
Larry E. Norman
Jason Loeback
NC STATE SENATE DISTRICT 19 (VOTE FOR 1)
\(\quad\) Precincts Reported: 49 of 49
NAME ON BALLOT
Kirk DeViere
Wesley Meredith
NC STATE SENATE DISTRICT 20 (VOTE FOR 1)
Precincts Reported: 40 of 40

NAME ON BALLOT
Natalie Murdock
John Tarantino

\section*{NC STATE SENATE DISTRICT 21 (VOTE FOR 1) Precincts Reported: 41 of 41}

PARTY
DEM
REP
LIB

PARTY
DEM
REP

PARTY
DEM
REP
LIB
BALLOT COUNT
83,564
72,774
6,204
PERCENT
51.41\%
44.77\%
3.82\%

PARTY
DEM
REP
LIB
BALLOT COUNT
67,912
57,890
52.08\%
44.40\%

4,595
3.52\%

BALLOT COUNT
46,740
PERCENT
51.53\%

43,966
48.47\%

PARTY BALLOT COUNT
DEM
REP

102,732
20,143

PERCENT
83.61\%
16.39\%
Ben Clark
Sev Palacios
NC STATE SENATE DISTRICT 22 (VOTE FOR 1 )
Precincts Reported: 43 of 43
NAME ON BALLOT
Mike Woodard
Rick Padgett
Ray Ubinger
NC STATE SENATE DISTRICT 23 (VOTE FOR 1)
Precincts Reported: 59 of 59
NAME ON BALLOT
Valerie P. Foushee
Tom Glendinning
NC STATE SENATE DISTRICT 24 (VOTE FOR 1)
Precincts Reported: 53 of 53
NAME ON BALLOT
Amy S. Galey
J.D. Wooten
NC STATE SENATE DISTRICT 25 (VOTE FOR 1)
Precincts Reported: 58 of 58
NAME ON BALLOT
Tom McInnis
Helen Probst Mills
NC STATE SENATE DISTRICT 26 (VOTE FOR 1)
Precincts Reported: 36 of 36
NAME ON BALLOT
David (Dave) Craven
Jane Ledwell Gant
NC STATE SENATE DISTRICT 27 (VOTE FOR 1)
Precincts Reported: 67 of 67
NAME ON BALLOT
\begin{tabular}{lrr} 
PARTY & BALLOT COUNT & PERCENT \\
REP & 63,077 & \(70.33 \%\) \\
DEM & 26,609 & \(29.67 \%\)
\end{tabular}
NAME ON BALLOT
Gladys A. Robinson
D.R. King
NC STATE SENATE DISTRICT 29 (VOTE FOR 1)
Precincts Reported: 57 of 57
NAME ON BALLOT
Steve Jarvis
Duskin Lassiter
NC STATE SENATE DISTRICT 30 (VOTE FOR 1)
Precincts Reported: 54 of 54
NAME ON BALLOT
Philip E. (Phil) Berger
Wally White
NC STATE SENATE DISTRICT 31 (VOTE FOR 1)
Precincts Reported: 52 of 52
NAME ON BALLOT
Joyce Krawiec
Terri Elizabeth LeGrand
NC STATE SENATE DISTRICT 32 (VOTE FOR 1)
Precincts Reported: 63 of 63
NAME ON BALLOT
Paul Lowe, Jr.
Ven Challa
NC STATE SENATE DISTRICT 33 (VOTE FOR 1)
Precincts Reported: 63 of 63
NAME ON BALLOT
Carl Ford
Tarsha Ellis
NC STATE SENATE DISTRICT 34 (VOTE FOR 1)
Precincts Reported: 41 of 41
\begin{tabular}{llll} 
Vickie Sawyer & REP & 83,707 & \(71.01 \%\) \\
Barry Templeton & DEM & 34,172 & \(28.99 \%\)
\end{tabular}
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NC STATE SENATE DISTRICT 35 (VOTE FOR 1)
Precincts Reported: 48 of 48

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NAME ON BALLOT
Todd Johnson
Jose Santiago
NC STATE SENATE DISTRICT 36 (VOTE FOR 1)
Precincts Reported: 43 of 43
NAME ON BALLOT
Paul Newton
Marcus J. Singleton
NC STATE SENATE DISTRICT 37 (VOTE FOR 1)
Precincts Reported: 56 of 56
NAME ON BALLOT
Jeff Jackson
Sonja P. Nichols
Jeff Scott
NC STATE SENATE DISTRICT 38 (VOTE FOR 1)
Precincts Reported: 39 of 39
NAME ON BALLOT
Mujtaba A. Mohammed
Jack W. Brosch
NC STATE SENATE DISTRICT 39 (VOTE FOR 1)
Precincts Reported: 33 of 33
NAME ON BALLOT
DeAndrea Salvador
Joshua Niday
NC STATE SENATE DISTRICT 40 (VOTE FOR 1 )
Precincts Reported: 39 of 39

NAME ON BALLOT
PARTY
BALLOT COUNT
PERCENT
DEM
64,278
72.07\%

Joyce Waddell
REP
24,906
27.93\%
NAME ON BALLOT
Natasha Marcus
Christopher Cole
NC STATE SENATE DISTRICT 42 (VOTE FOR 1)
Precincts Reported: 50 of 50
NAME ON BALLOT
H. Dean Proctor
Tina R. Miles
NC STATE SENATE DISTRICT 43 (VOTE FOR 1)
Precincts Reported: 44 of 44
NAME ON BALLOT
Kathy Harrington
William Young
NC STATE SENATE DISTRICT 44 (VOTE FOR 1)
Precincts Reported: 46 of 46
NAME ON BALLOT
Ted Alexander
David Lee Lattimore
NC STATE SENATE DISTRICT 45 (VOTE FOR 1)
Precincts Reported: 80 of 80
NAME ON BALLOT
Deanna Ballard
Jeanne Supin
NC STATE SENATE DISTRICT 46 (VOTE FOR 1)
Precincts Reported: 72 of 72
NAME ON BALLOT
Warren Daniel
Edward Phifer
NC STATE SENATE DISTRICT 47 (VOTE FOR 1)
Precincts Reported: 73 of 73
Ralph Hise
David Brian Wheeler
NC STATE SENATE DISTRICT 48 (VOTE FOR 1)
Precincts Reported: 67 of 67
NAME ON BALLOT
Chuck Edwards
Brian Caskey
NC STATE SENATE DISTRICT 49 (VOTE FOR 1)
Precincts Reported: 63 of 63

NAME ON BALLOT
Julie Mayfield
Bob Penland
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NC STATE SENATE DISTRICT 50 (VOTE FOR 1)
Precincts Reported: 91 of 91

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NAME ON BALLOT
Kevin Corbin
Victoria Fox

REP
DEM

68,440
31,554
68.44\%
31.56\%
\begin{tabular}{lrr} 
PARTY & BALLOT COUNT & PERCENT \\
REP & 68,197 & \(58.90 \%\) \\
DEM & 47,580 & \(41.10 \%\)
\end{tabular}
\begin{tabular}{lrr} 
PARTY & BALLOT COUNT & PERCENT \\
DEM & 80,159 & \(62.72 \%\) \\
REP & 47,647 & \(37.28 \%\)
\end{tabular}
\begin{tabular}{lrr} 
PARTY & BALLOT COUNT & PERCENT \\
REP & 73,875 & \(66.66 \%\) \\
DEM & 36,954 & \(33.34 \%\)
\end{tabular}

\section*{11/03/2020 OFFICIAL LOCAL ELECTION RESULTS STATEWIDE}

\begin{tabular}{|c|c|c|c|}
\hline NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
\hline Edward C. Goodwin & REP & 20,688 & 54.46\% \\
\hline Emily Bunch Nicholson & DEM & 17,299 & 45.54\% \\
\hline
\end{tabular}
```

NC HOUSE OF REPRESENTATIVES DISTRICT 002 (VOTE FOR 1)
Precincts Reported: 20 of 20
NAME ON BALLOT PARTY BALLOT COUNT PERCENT

```
\begin{tabular}{ll} 
Larry Yarborough & REP \\
Cindy Deporter & DEM \\
NC HOUSE OF REPRESENTATIVES DISTRICT 003 (VOTE FOR 1) \\
Precincts Reported: 14 of 14
\end{tabular}
\begin{tabular}{llrr} 
NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
Steve Tyson & REP & 22,585 & \(60.78 \%\) \\
Dorothea Downing White & DEM & 14,575 & \(39.22 \%\)
\end{tabular}

\section*{NC HOUSE OF REPRESENTATIVES DISTRICT 004 (VOTE FOR 1) \\ Precincts Reported: 23 of \(\mathbf{2 3}\)}
\begin{tabular}{llrr} 
NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
Jimmy Dixon & REP & 21,282 & \(65.72 \%\) \\
Christopher Schulte & DEM & 11,099 & \(34.28 \%\)
\end{tabular}

NC HOUSE OF REPRESENTATIVES DISTRICT 005 (VOTE FOR 1) Precincts Reported: 28 of 28
\begin{tabular}{ll} 
NAME ON BALLOT & PARTY BAL \\
Howard J. Hunter III & DEM \\
Donald Kirkland & REP \\
NC HOUSE OF REPRESENTATIVES DISTRICT 006 (VOTE FOR 1) \\
\begin{tabular}{l} 
Precincts Reported: 44 of 44
\end{tabular}
\end{tabular}
\begin{tabular}{llrr} 
NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
Bobby Hanig & REP & 31,063 & \(64.34 \%\) \\
Tommy Fulcher & DEM & 17,216 & \(35.66 \%\)
\end{tabular}

NC HOUSE OF REPRESENTATIVES DISTRICT 007 (VOTE FOR 1) Precincts Reported: \(\mathbf{2 3}\) of 23
\begin{tabular}{llrr} 
NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
Matthew Winslow & REP & 26,166 & \(58.97 \%\) \\
Phil Stover & DEM & 18,208 & \(41.03 \%\)
\end{tabular}

NC HOUSE OF REPRESENTATIVES DISTRICT 008 (VOTE FOR 1) Precincts Reported: 19 of 19
\begin{tabular}{ll} 
NAME ON BALLOT & PARTY BAL \\
Kandie D. Smith & DEM \\
Tony Moore & REP \\
\begin{tabular}{l} 
NC HOUSE OF REPRESENTATIVES DISTRICT 009 \\
\\
(Vrecincts Reported: 17 of 17
\end{tabular}
\end{tabular}
\begin{tabular}{ll} 
NAME ON BALLOT & PARTY \\
Brian Farkas & DEM \\
Perrin Jones & REP \\
NC HOUSE OF REPRESENTATIVES DISTRICT 010 (VOTE FOR 1) \\
\(\quad\) Precincts Reported: 24 of 24
\end{tabular}
\begin{tabular}{ll} 
NAME ON BALLOT & PARTY \\
John Bell & REP \\
Carl Martin & DEM \\
NC HOUSE OF REPRESENTATIVES DISTRICT 011 (VOTE FOR 1) \\
\(\quad\) Precincts Reported: 18 of 18
\end{tabular}
\begin{tabular}{llrr} 
NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
Allison Dahle & DEM & 26,798 & \(68.44 \%\) \\
Clark Pope & REP & 10,175 & \(25.98 \%\) \\
Adrian Lee Travers & LIB & 2,185 & \(5.58 \%\)
\end{tabular}
NC HOUSE OF REPRESENTATIVES DISTRICT 012 (VOTE FOR 1)
Precincts Reported: 28 of 28
\begin{tabular}{ll} 
NAME ON BALLOT & PARTY \\
Chris Humphrey & REP \\
Virginia Cox-Daugherty & DEM \\
NC HOUSE OF REPRESENTATIVES DISTRICT 013 (VOTE FOR 1) \\
\(\quad\) Precincts Reported: 33 of 33
\end{tabular}
\begin{tabular}{ll} 
NAME ON BALLOT & PARTY \\
Patricia (Pat) McElraft & REP \\
Buck Bayliff & DEM \\
NC HOUSE OF REPRESENTATIVES DISTRICT 014 (VOTE FOR 1) \\
\(\quad\) Precincts Reported: 10 of 10
\end{tabular}
\begin{tabular}{llrr} 
NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
George G. Cleveland & REP & 19,666 & \(60.02 \%\) \\
Marcy Wofford & DEM & 13,100 & \(39.98 \%\)
\end{tabular}
NC HOUSE OF REPRESENTATIVES DISTRICT 015 (VOTE FOR 1)
Precincts Reported: 10 of 10
\begin{tabular}{lllr} 
NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
Phillip Shepard & REP & 17,818 & \(69.49 \%\)
\end{tabular}

NC HOUSE OF REPRESENTATIVES DISTRICT 016 (VOTE FOR 1)
Precincts Reported: 33 of 33
\begin{tabular}{llrr} 
NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
Carson Smith & REP & 30,161 & \(64.40 \%\) \\
Debbi Fintak & DEM & 16,674 & \(35.60 \%\)
\end{tabular}

NC HOUSE OF REPRESENTATIVES DISTRICT 017 (VOTE FOR 1) Precincts Reported: 16 of 16
\begin{tabular}{ll} 
NAME ON BALLOT & PARTY \\
Frank Iler & REP \\
Tom Simmons & DEM \\
NC HOUSE OF REPRESENTATIVES DISTRICT 018 (VOTE FOR 1 ) \\
\begin{tabular}{l} 
Precincts Reported: \(\mathbf{1 7}\) of 17
\end{tabular}
\end{tabular}
\begin{tabular}{ll} 
NAME ON BALLOT & PARTY BAL \\
Deb Butler & DEM \\
Warren Kennedy & REP \\
\begin{tabular}{l} 
NC HOUSE OF REPRESENTATIVES DISTRICT 019 \\
(Vrecincts Reported: 19 of 19
\end{tabular}
\end{tabular}
\begin{tabular}{llrr} 
NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
Charlie Miller & REP & 34,259 & \(57.96 \%\) \\
Marcia Morgan & DEM & 24,845 & \(42.04 \%\)
\end{tabular}

NC HOUSE OF REPRESENTATIVES DISTRICT 020 (VOTE FOR 1) Precincts Reported: 16 of 16
\begin{tabular}{ll} 
NAME ON BALLOT & PARTY B \\
Ted Davis, Jr. & REP \\
Adam Ericson & DEM \\
NC HOUSE OF REPRESENTATIVES DISTRICT 021 (VOTE FOR 1) \\
\begin{tabular}{l} 
Precincts Reported: 24 of 24
\end{tabular}
\end{tabular}
\begin{tabular}{llrr} 
NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
Raymond E. Smith, Jr. & DEM & 17,632 & \(53.00 \%\) \\
Brent Heath & REP & 15,633 & \(47.00 \%\)
\end{tabular}

\footnotetext{
NC HOUSE OF REPRESENTATIVES DISTRICT 022 (VOTE FOR 1)
Precincts Reported: 35 of 35
}
\begin{tabular}{ll} 
NAME ON BALLOT & PARTY B \\
William Brisson & REP \\
Albert D. Kirby, Jr. & DEM \\
\begin{tabular}{l} 
NC HOUSE OF REPRESENTATIVES DISTRICT 023 (VOTE FOR 1) \\
(Vrecincts Reported: 34 of 34
\end{tabular}
\end{tabular}
\begin{tabular}{llrr} 
NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
Shelly Willingham & DEM & 21,754 & \(58.76 \%\) \\
Claiborne Holtzman & REP & 14,656 & \(39.59 \%\) \\
Abbie (Bud) Lane & GRE & 612 & \(1.65 \%\)
\end{tabular}

\section*{NC HOUSE OF REPRESENTATIVES DISTRICT 024 (VOTE FOR 1) Precincts Reported: 24 of 24}
\begin{tabular}{ll} 
NAME ON BALLOT & PARTY BAL \\
Linda Cooper-Suggs & DEM \\
Mick Rankin & REP \\
\begin{tabular}{l} 
NC HOUSE OF REPRESENTATIVES DISTRICT 025 (VOTE FOR 1) \\
(Vrecincts Reported: 20 of 20
\end{tabular}
\end{tabular}
\begin{tabular}{llrr} 
NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
James D. Gailliard & DEM & 22,364 & \(51.62 \%\) \\
John M. Check & REP & 19,372 & \(44.71 \%\) \\
Nick Taylor & LIB & 1,589 & \(3.67 \%\)
\end{tabular}
NC HOUSE OF REPRESENTATIVES DISTRICT 026 (VOTE FOR 1) Precincts Reported: 17 of 17
\begin{tabular}{ll} 
NAME ON BALLOT & PARTY \\
Donna McDowell White & REP \\
Linda Bennett & DEM \\
Denton Lee & UNA \\
\begin{tabular}{l} 
NC HOUSE OF REPRESENTATIVES DISTRICT 027 \\
(VIrecincts Reported: 32 of 32
\end{tabular}
\end{tabular}
\begin{tabular}{llrr} 
NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
Michael H. Wray & DEM & 23,169 & \(66.78 \%\) \\
Warren Scott Nail & REP & 11,527 & \(33.22 \%\)
\end{tabular}

\footnotetext{
NC HOUSE OF REPRESENTATIVES DISTRICT 028 (VOTE FOR 1)
Precincts Reported: 19 of 19
}
\begin{tabular}{ll} 
Larry C. Strickland & REP \\
Corey Stephens & DEM \\
\\
NC HOUSE OF REPRESENTATIVES DISTRICT 029 (VOTE FOR 1) \\
Precincts Reported: 22 of 22
\end{tabular}
\begin{tabular}{llrr} 
NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
Vernetta Alston & DEM & 44,930 & \(100.00 \%\)
\end{tabular}
NC HOUSE OF REPRESENTATIVES DISTRICT 030 (VOTE FOR 1)
    Precincts Reported: 16 of 16
\begin{tabular}{ll} 
NAME ON BALLOT & PARTY BALL \\
Marcia Morey & DEM \\
Gavin Bell & LIB \\
NC HOUSE OF REPRESENTATIVES DISTRICT 031 (VOTE FOR 1) \\
\(\quad\)\begin{tabular}{l} 
Precincts Reported: 17 of 17
\end{tabular}
\end{tabular}
\begin{tabular}{llrr} 
NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
Zack Hawkins & DEM & 46,341 & \(85.51 \%\) \\
Sean Haugh & LIB & 7,850 & \(14.49 \%\)
\end{tabular}
NC HOUSE OF REPRESENTATIVES DISTRICT 032 (VOTE FOR 1)
Precincts Reported: 33 of 33
\begin{tabular}{llrr} 
NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
Terry E. Garrison & DEM & 24,078 & \(61.21 \%\) \\
David Woodson & REP & 15,260 & \(38.79 \%\)
\end{tabular}
NC HOUSE OF REPRESENTATIVES DISTRICT 033 (VOTE FOR 1)
Precincts Reported: \(\mathbf{2 0}\) of \(\mathbf{2 0}\)
\begin{tabular}{llrr} 
NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
Rosa U. Gill & DEM & 33,194 & \(70.76 \%\) \\
Frann Sarpolus & REP & 11,659 & \(24.85 \%\) \\
Sammie Brooks & LIB & 2,057 & \(4.38 \%\)
\end{tabular}
NC HOUSE OF REPRESENTATIVES DISTRICT 034 (VOTE FOR 1) Precincts Reported: 28 of 28
\begin{tabular}{llrr} 
NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
Grier Martin & DEM & 31,784 & \(56.53 \%\) \\
Ronald L. Smith & REP & 21,989 & \(39.11 \%\) \\
Michael C. Munger & LIB & 2,449 & \(4.36 \%\)
\end{tabular}
\begin{tabular}{|c|c|c|c|}
\hline NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
\hline Terence Everitt & DEM & 31,630 & 50.67\% \\
\hline Fred Von Canon & REP & 28,528 & 45.70\% \\
\hline Michael Nelson & LIB & 2,262 & 3.62\% \\
\hline \multicolumn{4}{|l|}{NC HOUSE OF REPRESENTATIVES DISTRICT 036 (VOTE FOR 1) Precincts Reported: 20 of 20} \\
\hline NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
\hline Julie von Haefen & DEM & 31,644 & 53.18\% \\
\hline Kim Coley & REP & 25,656 & 43.11\% \\
\hline Bruce Basson & LIB & 2,206 & 3.71\% \\
\hline \multicolumn{4}{|l|}{NC HOUSE OF REPRESENTATIVES DISTRICT 037 (VOTE FOR 1) Precincts Reported: 18 of 18} \\
\hline NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
\hline Erin Pare & REP & 35,136 & 50.06\% \\
\hline Mrs. Sydney Batch & DEM & 32,842 & 46.79\% \\
\hline Liam Leaver & LIB & 2,208 & 3.15\% \\
\hline
\end{tabular}
```

NC HOUSE OF REPRESENTATIVES DISTRICT 038 (VOTE FOR 1)
Precincts Reported: 17 of 17

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NAME ON BALLOT
PARTY BALLOT COUNT
\begin{tabular}{ll} 
Abe Jones & DEM \\
Kenneth Bagnal & REP \\
Richard Haygood & LIB \\
NC HOUSE OF REPRESENTATIVES DISTRICT 039 (VOTE FOR 1) \\
\(\quad\) Precincts Reported: \(\mathbf{1 5}\) of \(\mathbf{1 5}\)
\end{tabular}
\begin{tabular}{llrr} 
NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
Darren Jackson & DEM & 41,783 & \(100.00 \%\)
\end{tabular}
NC HOUSE OF REPRESENTATIVES DISTRICT 040 (VOTE FOR 1) Precincts Reported: 17 of 17
\begin{tabular}{ll} 
NAME ON BALLOT & PARTY BAL \\
Joe John & DEM \\
Gerard Falzon & REP \\
NC HOUSE OF REPRESENTATIVES DISTRICT 041 (VOTE FOR 1)
\end{tabular}
\begin{tabular}{llrr} 
NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
Gale Adcock & DEM & 40,934 & \(61.99 \%\) \\
Scott Populorum & REP & 23,040 & \(34.89 \%\) \\
Guy Meilleur & LIB & 2,057 & \(3.12 \%\)
\end{tabular}

\section*{NC HOUSE OF REPRESENTATIVES DISTRICT 042 (VOTE FOR 1) Precincts Reported: 13 of 13}
\begin{tabular}{llrr} 
NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
Marvin W. Lucas & DEM & 19,024 & \(67.39 \%\) \\
Jon Blake & REP & 9,206 & \(32.61 \%\)
\end{tabular}
```

NC HOUSE OF REPRESENTATIVES DISTRICT 043 (VOTE FOR 1)
Precincts Reported: 27 of 27

```
\begin{tabular}{llrr} 
NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
Diane Wheatley & REP & 20,408 & \(51.80 \%\) \\
Kimberly Hardy & DEM & 18,988 & \(48.20 \%\)
\end{tabular}
```

NC HOUSE OF REPRESENTATIVES DISTRICT 044 (VOTE FOR 1)
Precincts Reported: 21 of 21

```
\begin{tabular}{ll} 
NAME ON BALLOT & PARTY B \\
Billy Richardson & DEM \\
Heather S. Holmes & REP \\
\begin{tabular}{l} 
NC HOUSE OF REPRESENTATIVES DISTRICT 045 (VOTE FOR 1) \\
Precincts Reported: 19 of 19
\end{tabular}
\end{tabular}
\begin{tabular}{llrr} 
NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
John Szoka & REP & 20,260 & \(50.88 \%\) \\
Frances Vinell Jackson & DEM & 19,557 & \(49.12 \%\)
\end{tabular}
```

NC HOUSE OF REPRESENTATIVES DISTRICT 046 (VOTE FOR 1)
Precincts Reported: }28\mathrm{ of 28

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\begin{tabular}{llrr} 
NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
Brenden H. Jones & REP & 17,555 & \(60.69 \%\) \\
Tim Heath & DEM & 11,369 & \(39.31 \%\)
\end{tabular}

\footnotetext{
NC HOUSE OF REPRESENTATIVES DISTRICT 047 (VOTE FOR 1) Precincts Reported: 23 of 23
}
\begin{tabular}{llll} 
Charles Graham & DEM & 14,470 & \(52.44 \%\) \\
Olivia Oxendine & REP & 13,126 & \(47.56 \%\)
\end{tabular}

\section*{NC HOUSE OF REPRESENTATIVES DISTRICT 048 (VOTE FOR 1) Precincts Reported: 22 of 22}
\begin{tabular}{llrr} 
NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
Garland E. Pierce & DEM & 19,674 & \(55.93 \%\) \\
Johnny H. Boyles & REP & 15,504 & \(44.07 \%\)
\end{tabular}

NC HOUSE OF REPRESENTATIVES DISTRICT 049 (VOTE FOR 1) Precincts Reported: 29 of 29
\begin{tabular}{llrr} 
NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
Cynthia Ball & DEM & 37,807 & \(65.05 \%\) \\
David Robertson & REP & 17,564 & \(30.22 \%\) \\
Dee Watson & LIB & 2,752 & \(4.73 \%\)
\end{tabular}

\section*{NC HOUSE OF REPRESENTATIVES DISTRICT 050 (VOTE FOR 1) Precincts Reported: 28 of 28}
\begin{tabular}{lc} 
NAME ON BALLOT & PARTY \\
Graig R. Meyer & DEM \\
\begin{tabular}{ll} 
NC HOUSE OF REPRESENTATIVES DISTRICT 051 (VOTE FOR 1) \\
Precincts Reported: 12 of 12
\end{tabular}
\end{tabular}
\begin{tabular}{ll} 
NAME ON BALLOT & PARTY \\
John Sauls & REP \\
Jason Cain & DEM \\
NC HOUSE OF REPRESENTATIVES DISTRICT 052 (VOTE FOR 1) \\
\(\quad\) Precincts Reported: 24 of 24
\end{tabular}
\begin{tabular}{llrr} 
NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
James L. (Jamie) Boles, Jr. & REP & 32,216 & \(64.41 \%\) \\
Lowell Simon & DEM & 17,803 & \(35.59 \%\)
\end{tabular}

\section*{NC HOUSE OF REPRESENTATIVES DISTRICT 053 (VOTE FOR 1) \\ Precincts Reported: 12 of 12}
\begin{tabular}{llrr} 
NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
Howard Penny, Jr. & REP & 26,228 & \(60.97 \%\) \\
Sally Weeks Benson & DEM & 15,129 & \(35.17 \%\) \\
Zach Berly & LIB & 1,658 & \(3.85 \%\)
\end{tabular}
\begin{tabular}{|c|c|c|c|}
\hline NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
\hline Robert T. Reives II & DEM & 37,825 & 61.22\% \\
\hline George T. Gilson, Jr. & REP & 23,957 & 38.78\% \\
\hline \multicolumn{4}{|l|}{NC HOUSE OF REPRESENTATIVES DISTRICT 055 (VOTE FOR 1) Precincts Reported: 24 of 24} \\
\hline NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
\hline Mark Brody & REP & 20,800 & 58.32\% \\
\hline Gloria Harrington Overcash & DEM & 14,865 & 41.68\% \\
\hline \multicolumn{4}{|l|}{NC HOUSE OF REPRESENTATIVES DISTRICT 056 (VOTE FOR 1) Precincts Reported: 23 of 23} \\
\hline NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
\hline Verla C. Insko & DEM & 38,428 & 100.00\% \\
\hline \multicolumn{4}{|l|}{NC HOUSE OF REPRESENTATIVES DISTRICT 057 (VOTE FOR 1) Precincts Reported: 27 of 27} \\
\hline NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
\hline Ashton Clemmons & DEM & 31,138 & 68.34\% \\
\hline Chris Meadows & REP & 14,427 & 31.66\% \\
\hline
\end{tabular}
NC HOUSE OF REPRESENTATIVES DISTRICT 058 (VOTE FOR 1)
    Precincts Reported: 23 of 23
\begin{tabular}{llrr} 
NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
Amos Quick & DEM & 28,943 & \(76.16 \%\) \\
Clinton Honey & REP & 9,060 & \(23.84 \%\)
\end{tabular}
NC HOUSE OF REPRESENTATIVES DISTRICT 059 (VOTE FOR 1)
    Precincts Reported: 25 of 25
\begin{tabular}{llrr} 
NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
Jon Hardister & REP & 28,474 & \(52.26 \%\) \\
Nicole Quick & DEM & 26,016 & \(47.74 \%\)
\end{tabular}
NC HOUSE OF REPRESENTATIVES DISTRICT 060 (VOTE FOR 1) Precincts Reported: 27 of 27

NAME ON BALLOT
PARTY
BALLOT COUNT PERCENT

Cecil Brockman
DEM
25,120
64.06\%

\section*{NC HOUSE OF REPRESENTATIVES DISTRICT 061 (VOTE FOR 1)}

Precincts Reported: 33 of 33
\begin{tabular}{llrl} 
NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
Mary Price (Pricey) Harrison & DEM & 33,983 & \(100.00 \%\)
\end{tabular}

NC HOUSE OF REPRESENTATIVES DISTRICT 062 (VOTE FOR 1)
Precincts Reported: 30 of 30
\begin{tabular}{llrr} 
NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
John Faircloth & REP & 30,735 & \(57.41 \%\) \\
Brandon Gray & DEM & 22,801 & \(42.59 \%\)
\end{tabular}

\section*{NC HOUSE OF REPRESENTATIVES DISTRICT 063 (VOTE FOR 1) \\ Precincts Reported: 20 of 20}
\begin{tabular}{llrr} 
NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
Ricky Hurtado & DEM & 20,584 & \(50.59 \%\) \\
Stephen Ross & REP & 20,107 & \(49.41 \%\)
\end{tabular}

NC HOUSE OF REPRESENTATIVES DISTRICT 064 (VOTE FOR 1)
Precincts Reported: 19 of 19
\begin{tabular}{ll} 
NAME ON BALLOT & PARTY B \\
Dennis Riddell & REP \\
Eric Henry & DEM \\
NC HOUSE OF REPRESENTATIVES DISTRICT 065 (VOTE FOR 1 ) \\
\begin{tabular}{l} 
Precincts Reported: 14 of 14
\end{tabular}
\end{tabular}
\begin{tabular}{llrr} 
NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
Jerry Carter & REP & 26,784 & \(64.74 \%\) \\
Amanda Joann Bell & DEM & 14,590 & \(35.26 \%\)
\end{tabular}
```

NC HOUSE OF REPRESENTATIVES DISTRICT 066 (VOTE FOR 1)
Precincts Reported: 34 of 34

```
\begin{tabular}{ll} 
NAME ON BALLOT & PARTY BAL \\
Ben Moss & REP \\
Scott T. Brewer & DEM \\
\begin{tabular}{l} 
NC HOUSE OF REPRESENTATIVES DISTRICT 067 (VOTE FOR 1) \\
Precincts Reported: 27 of 27
\end{tabular}
\end{tabular}

\section*{NC HOUSE OF REPRESENTATIVES DISTRICT 068 (VOTE FOR 1) Precincts Reported: 18 of 18}
\begin{tabular}{ll} 
NAME ON BALLOT & PARTY B \\
David Willis & REP \\
Ericka L. McKnight & DEM \\
\begin{tabular}{l} 
NC HOUSE OF REPRESENTATIVES DISTRICT 069 (VOTE FOR 1 ) \\
Precincts Reported: 19 of 19
\end{tabular}
\end{tabular}
\begin{tabular}{llrr} 
NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
Dean Arp & REP & 27,981 & \(64.94 \%\) \\
Pam De Maria & DEM & 15,106 & \(35.06 \%\)
\end{tabular}

\section*{NC HOUSE OF REPRESENTATIVES DISTRICT 070 (VOTE FOR 1) Precincts Reported: 10 of 10}
\begin{tabular}{ll} 
NAME ON BALLOT & PARTY B \\
Pat B. Hurley & REP \\
Susan Lee (Susie) Scott & DEM \\
\begin{tabular}{l} 
NC HOUSE OF REPRESENTATIVES DISTRICT 071 (VOTE FOR 1 ) \\
Precincts Reported: 19 of 19
\end{tabular}
\end{tabular}
\begin{tabular}{ll} 
NAME ON BALLOT & PARTY B \\
Evelyn Terry & DEM \\
NC HOUSE OF REPRESENTATIVES DISTRICT 072 (VOTE FOR 1) \\
Precincts Reported: 31 of 31
\end{tabular}

NAME ON BALLOT
PARTY
BALLOT COUNT
Amber M. Baker
DEM
29,524
71.33\%

Dan Lawlor
REP
11,868
28.67\%

\section*{NC HOUSE OF REPRESENTATIVES DISTRICT 073 (VOTE FOR 1) Precincts Reported: 23 of 23}
\begin{tabular}{llrr} 
NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
Lee Zachary & REP & 24,703 & \(64.54 \%\) \\
William Stinson & DEM & 13,570 & \(35.46 \%\)
\end{tabular}

\footnotetext{
NC HOUSE OF REPRESENTATIVES DISTRICT 074 (VOTE FOR 1) Precincts Reported: 21 of 21
}
\begin{tabular}{ll} 
Jeff Zenger & REP \\
Dan Besse & DEM \\
NC HOUSE OF REPRESENTATIVES DISTRICT 075 (VOTE FOR 1) \\
Precincts Reported: 19 of 19
\end{tabular}
\begin{tabular}{llrr} 
NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
Donny C. Lambeth & REP & 26,693 & \(60.31 \%\) \\
Elisabeth Motsinger & DEM & 17,564 & \(39.69 \%\)
\end{tabular}

\section*{NC HOUSE OF REPRESENTATIVES DISTRICT 076 (VOTE FOR 1) \\ Precincts Reported: 23 of 23}
\begin{tabular}{llrr} 
NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
Harry Warren & REP & 25,479 & \(61.06 \%\) \\
Al Heggins & DEM & 16,250 & \(38.94 \%\)
\end{tabular}
NC HOUSE OF REPRESENTATIVES DISTRICT 077 (VOTE FOR 1)
Precincts Reported: 27 of 27
\begin{tabular}{ll} 
NAME ON BALLOT & PARTY B \\
Julia Craven Howard & REP \\
Keith Townsend & DEM \\
\begin{tabular}{l} 
NC HOUSE OF REPRESENTATIVES DISTRICT 078 (VOTE FOR 1) \\
Precincts Reported: 16 of 16
\end{tabular}
\end{tabular}
\begin{tabular}{ll} 
NAME ON BALLOT & PARTY B \\
Allen Ray McNeill & REP \\
NC HOUSE OF REPRESENTATIVES DISTRICT 079 (VOTE FOR 1) \\
Precincts Reported: 30 of 30
\end{tabular}
\begin{tabular}{llrr} 
NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
Keith Kidwell & REP & 25,290 & \(63.83 \%\) \\
Nick Blount & DEM & 14,330 & \(36.17 \%\)
\end{tabular}
NC HOUSE OF REPRESENTATIVES DISTRICT 080 (VOTE FOR 1) Precincts Reported: 21 of 21
\begin{tabular}{ll} 
NAME ON BALLOT & PARTY BAL \\
Sam Watford & REP \\
Wendy Sellars & DEM \\
\begin{tabular}{c} 
NC HOUSE OF REPRESENTATIVES DISTRICT 081 \\
(VoTE FOR 1) \\
Precincts Reported: 22 of 22
\end{tabular}
\end{tabular}

REP
32,092
73.00\%

Robert Lewis Jordan

DEM
11,872

NC HOUSE OF REPRESENTATIVES DISTRICT 082 (VOTE FOR 1) Precincts Reported: 17 of 17
\begin{tabular}{lll} 
NAME ON BALLOT & PARTY \\
Kristin Baker & REP \\
Aimy Steele & DEM \\
NC HOUSE OF REPRESENTATIVES DISTRICT 083 (VOTE FOR 1) \\
Precincts Reported: 19 of 19 & \\
NAME ON BALLOT & PARTY & BALL \\
Larry G. Pittman & REP \\
\begin{tabular}{ll} 
Gail Young & DEM \\
NC HOUSE OF REPRESENTATIVES DISTRICT 084 (VOTE FOR 1) \\
Precincts Reported: 18 of \(\mathbf{1 8}\)
\end{tabular}
\end{tabular}
\begin{tabular}{llrr} 
NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
Jeffrey C. McNeely & REP & 29,630 & \(69.12 \%\) \\
Gayle Wesley Harris & DEM & 13,235 & \(30.88 \%\)
\end{tabular}
NC HOUSE OF REPRESENTATIVES DISTRICT 085 (VOTE FOR 1)
    Precincts Reported: 45 of 45
\begin{tabular}{ll} 
NAME ON BALLOT & PARTY BALL \\
Dudley Greene & REP \\
Ted Remington & DEM \\
NC HOUSE OF REPRESENTATIVES DISTRICT 086 (VOTE FOR 1) \\
\begin{tabular}{l} 
Precincts Reported: 28 of 28
\end{tabular}
\end{tabular}
\begin{tabular}{llrr} 
NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
Hugh Blackwell & REP & 27,154 & \(69.88 \%\) \\
Cecelia Surratt & DEM & 11,705 & \(30.12 \%\)
\end{tabular}

\section*{NC HOUSE OF REPRESENTATIVES DISTRICT 087 (VOTE FOR 1) \\ Precincts Reported: \(\mathbf{2 0}\) of \(\mathbf{2 0}\)}
\begin{tabular}{llrr} 
NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
Destin Hall & REP & 31,830 & \(76.93 \%\) \\
Corie Schreiber & DEM & 9,544 & \(23.07 \%\)
\end{tabular}

NC HOUSE OF REPRESENTATIVES DISTRICT 088 (VOTE FOR 1) Precincts Reported: 23 of 23
\begin{tabular}{llrr} 
NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
Mary Belk & DEM & 31,647 & \(63.11 \%\) \\
David Tondreau & REP & 18,497 & \(36.89 \%\)
\end{tabular}

NC HOUSE OF REPRESENTATIVES DISTRICT 089 (VOTE FOR 1) Precincts Reported: 20 of 20
\begin{tabular}{llrr} 
NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
Mitchell Smith Setzer & REP & 31,044 & \(74.35 \%\) \\
Greg Cranford & DEM & 10,711 & \(25.65 \%\)
\end{tabular}

NC HOUSE OF REPRESENTATIVES DISTRICT 090 (VOTE FOR 1) Precincts Reported: 29 of 29
\begin{tabular}{llrr} 
NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
Sarah Stevens & REP & 30,028 & \(74.57 \%\) \\
Beth Shaw & DEM & 10,242 & \(25.43 \%\)
\end{tabular}

NC HOUSE OF REPRESENTATIVES DISTRICT 091 (VOTE FOR 1) Precincts Reported: 30 of 30
\begin{tabular}{llrr} 
NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
Kyle Hall & REP & 33,538 & \(78.38 \%\) \\
Rita Cruise & DEM & 9,252 & \(21.62 \%\)
\end{tabular}

NC HOUSE OF REPRESENTATIVES DISTRICT 092 (VOTE FOR 1) Precincts Reported: 13 of 13
\begin{tabular}{ll} 
NAME ON BALLOT & PARTY BA \\
Terry Brown & DEM \\
Jerry Munden & REP \\
NC HOUSE OF REPRESENTATIVES DISTRICT 093 (VOTE FOR 1) \\
\begin{tabular}{l} 
Precincts Reported: 37 of 37
\end{tabular}
\end{tabular}
\begin{tabular}{llrr} 
NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
Ray Pickett & REP & 24,680 & \(53.01 \%\) \\
Ray Russell & DEM & 21,875 & \(46.99 \%\)
\end{tabular}

\footnotetext{
NC HOUSE OF REPRESENTATIVES DISTRICT 094 (VOTE FOR 1) Precincts Reported: 26 of 26
}

\section*{NC HOUSE OF REPRESENTATIVES DISTRICT 095 (VOTE FOR 1) \\ Precincts Reported: 11 of 11}
\begin{tabular}{llrr} 
NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
Grey Mills & REP & 36,557 & \(65.69 \%\) \\
Amanda Brown Kotis & DEM & 19,098 & \(34.31 \%\)
\end{tabular}

\section*{NC HOUSE OF REPRESENTATIVES DISTRICT 096 (VOTE FOR 1)}

Precincts Reported: 20 of \(\mathbf{2 0}\)
\begin{tabular}{llrr} 
NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
Jay Adams & REP & 25,370 & \(62.95 \%\) \\
Kim Bost & DEM & 14,929 & \(37.05 \%\)
\end{tabular}

NC HOUSE OF REPRESENTATIVES DISTRICT 097 (VOTE FOR 1)
Precincts Reported: 23 of 23
\begin{tabular}{ll} 
NAME ON BALLOT & PARTY BAL \\
Jason R. Saine & REP \\
Greg McBryde & DEM \\
\begin{tabular}{l} 
NC HOUSE OF REPRESENTATIVES DISTRICT 098 (VOTE FOR 1) \\
Precincts Reported: 12 of 12
\end{tabular}
\end{tabular}
\begin{tabular}{ll} 
NAME ON BALLOT & PARTY \\
John R. Bradford III & REP \\
Christy Clark & DEM \\
\begin{tabular}{l} 
NC HOUSE OF REPRESENTATIVES DISTRICT 099 (VOTE FOR 1 ) \\
Precincts Reported: 16 of 16
\end{tabular}
\end{tabular}
\begin{tabular}{llrr} 
NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
Nasif Majeed & DEM & 28,226 & \(64.57 \%\) \\
Russell Rowe & REP & 15,486 & \(35.43 \%\)
\end{tabular}

\section*{NC HOUSE OF REPRESENTATIVES DISTRICT 100 (VOTE FOR 1) \\ Precincts Reported: 21 of 21}
\begin{tabular}{llrr} 
NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
John Autry & DEM & 23,805 & \(71.94 \%\) \\
Kalle Thompson & REP & 9,285 & \(28.06 \%\)
\end{tabular}

\footnotetext{
NC HOUSE OF REPRESENTATIVES DISTRICT 101 (VOTE FOR 1)
Precincts Reported: 13 of 13
}

NAME ON BALLOT
Carolyn G. Logan
Steve Mauney

PARTY
DEM
BALLOT COUNT
31,646
REP
11,183
PERCENT
73.89\%
26.11\%

NC HOUSE OF REPRESENTATIVES DISTRICT 102 (VOTE FOR 1) Precincts Reported: 19 of 19
\begin{tabular}{ll} 
NAME ON BALLOT & PARTY BAL \\
Becky Carney & DEM \\
Kyle Kirby & REP \\
\begin{tabular}{l} 
NC HOUSE OF REPRESENTATIVES DISTRICT 103 (VOTE FOR 1) \\
Precincts Reported: 17 of 17
\end{tabular}
\end{tabular}
\begin{tabular}{ll} 
NAME ON BALLOT & PARTY B \\
Rachel Hunt & DEM \\
Bill Brawley & REP \\
NC HOUSE OF REPRESENTATIVES DISTRICT 104 (VOTE FOR 1) \\
\begin{tabular}{l} 
Precincts Reported: 24 of 24
\end{tabular}
\end{tabular}
\begin{tabular}{llrr} 
NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
Brandon Lofton & DEM & 25,513 & \(53.86 \%\) \\
Don Pomeroy & REP & 21,854 & \(46.14 \%\)
\end{tabular}

NC HOUSE OF REPRESENTATIVES DISTRICT 105 (VOTE FOR 1)
Precincts Reported: 14 of 14
NAME ON BALLOT
PARTY
BALLOT COUNT
PERCENT
DEM
25,732
54.78\%

Wesley Harris
REP
21,245
45.22\%

\section*{NC HOUSE OF REPRESENTATIVES DISTRICT 106 (VOTE FOR 1) Precincts Reported: 11 of 11}
\begin{tabular}{llrr} 
NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
Carla Cunningham & DEM & 34,510 & \(100.00 \%\)
\end{tabular}

NC HOUSE OF REPRESENTATIVES DISTRICT 107 (VOTE FOR 1)
Precincts Reported: 14 of 14
\begin{tabular}{llrr} 
NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
Kelly Alexander & DEM & 37,421 & \(81.33 \%\) \\
Richard Rivette & REP & 8,591 & \(18.67 \%\)
\end{tabular}
\begin{tabular}{llrr} 
NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
John A. Torbett & REP & 24,960 & \(63.17 \%\) \\
Daniel Caudill & DEM & 14,555 & \(36.83 \%\)
\end{tabular}

\section*{NC HOUSE OF REPRESENTATIVES DISTRICT 109 (VOTE FOR 1) Precincts Reported: 16 of 16}
\begin{tabular}{llrr} 
NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
Dana Bumgardner & REP & 29,143 & \(62.13 \%\) \\
Susan Maxon & DEM & 17,767 & \(37.87 \%\)
\end{tabular}
NC HOUSE OF REPRESENTATIVES DISTRICT 110 (VOTE FOR 1)
Precincts Reported: 20 of 20
\begin{tabular}{llrr} 
NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
Kelly E. Hastings & REP & 29,399 & \(100.00 \%\)
\end{tabular}
NC HOUSE OF REPRESENTATIVES DISTRICT 111 (VOTE FOR 1)
Precincts Reported: 14 of 14
\begin{tabular}{llrr} 
NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
Tim Moore & REP & 24,491 & \(63.52 \%\) \\
Jennifer Childers & DEM & 14,063 & \(36.48 \%\)
\end{tabular}

\section*{NC HOUSE OF REPRESENTATIVES DISTRICT 112 (VOTE FOR 1)} Precincts Reported: 22 of 22
\begin{tabular}{llrr} 
NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
David Rogers & REP & 28,059 & \(73.90 \%\) \\
Ed Hallyburton & DEM & 9,836 & \(25.90 \%\) \\
Write-In (Miscellaneous) & & 50 & \(0.13 \%\) \\
Darren Joiner (Write-In) & & 25 & \(0.07 \%\)
\end{tabular}
```

NC HOUSE OF REPRESENTATIVES DISTRICT 113 (VOTE FOR 1)
Precincts Reported: 32 of 32

```
\begin{tabular}{ll} 
NAME ON BALLOT & PARTY BALL \\
Jake Johnson & REP \\
Sam Edney & DEM \\
\begin{tabular}{l} 
NC HOUSE OF REPRESENTATIVES DISTRICT 114 (VOTE FOR 1) \\
Precincts Reported: 27 of 27
\end{tabular}
\end{tabular}
\begin{tabular}{llrr} 
Susan C. Fisher & DEM & 30,584 & \(58.24 \%\) \\
Tim Hyatt & REP & 20,132 & \(38.34 \%\) \\
Lyndon John Smith & LIB & 1,794 & \(3.42 \%\)
\end{tabular}

\section*{NC HOUSE OF REPRESENTATIVES DISTRICT 115 (VOTE FOR 1) Precincts Reported: 31 of 31}
\begin{tabular}{llrrr} 
NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
John Ager & DEM & 31,650 & \(62.31 \%\) \\
Mark Crawford & REP & 19,145 & \(37.69 \%\) \\
NC HOUSE OF REPRESENTATIVES DISTRICT 116 (VOTE FOR 1) \\
\multicolumn{1}{l}{\begin{tabular}{l} 
Precincts Reported: 24 of 24
\end{tabular}} & & & \\
NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
Brian Turner & DEM & 33,024 & \(61.90 \%\) \\
Eric Burns & REP & 20,324 & \(38.10 \%\)
\end{tabular}

\section*{NC HOUSE OF REPRESENTATIVES DISTRICT 117 (VOTE FOR 1) Precincts Reported: 25 of 25}
\begin{tabular}{llrr} 
NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
Tim Moffitt & REP & 29,087 & \(60.63 \%\) \\
Josh Remillard & DEM & 18,887 & \(39.37 \%\)
\end{tabular}

\section*{NC HOUSE OF REPRESENTATIVES DISTRICT 118 (VOTE FOR 1) Precincts Reported: 42 of 42}
\begin{tabular}{llrr} 
NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
Mark Pless & REP & 29,321 & \(63.60 \%\) \\
Alan Jones & DEM & 16,782 & \(36.40 \%\)
\end{tabular}

\section*{NC HOUSE OF REPRESENTATIVES DISTRICT 119 (VOTE FOR 1) Precincts Reported: 29 of 29}
\begin{tabular}{ll} 
NAME ON BALLOT & PARTY BAL \\
Mike Clampitt & REP \\
Joe Sam Queen & DEM \\
\begin{tabular}{l} 
NC HOUSE OF REPRESENTATIVES DISTRICT 120 (VOTE FOR 1) \\
Precincts Reported: 44 of 44
\end{tabular}
\end{tabular}
\begin{tabular}{llrr} 
NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
Karl Gillespie & REP & 34,933 & \(74.19 \%\) \\
Susan Landis & DEM & 12,155 & \(25.81 \%\)
\end{tabular}

Federal | Council of State \(\operatorname{NC}\) Senate | NC House Judicial Referenda Cross-County Local

\section*{11/03/2020 OFFICIAL LOCAL ELECTION RESULTS STATEWIDE}

- Ex. 9205 -

\section*{11/03/2020 OFFICIAL LOCAL ELECTION RESULTS STATEWIDE}

- Ex. 9207 -

\section*{11/03/2020 OFFICIAL LOCAL ELECTION RESULTS STATEWIDE}
\begin{tabular}{|c|c|}
\hline \multicolumn{2}{|l|}{Criteria} \\
\hline Election: 11/03/2020 & \(V\) \\
\hline County: STATE & \(V\) \\
\hline Office: JUDICIAL & \(V\) \\
\hline Contest: NC COURT OF APPEALS JUDGE SEAT 06 & \(V\) \\
\hline Display Results Refresh & \\
\hline \multicolumn{2}{|l|}{Statewide Info} \\
\hline \multicolumn{2}{|l|}{\begin{tabular}{l}
Last County Submit: \\
February 3, 2021 11:30 am
\end{tabular}} \\
\hline \multicolumn{2}{|l|}{\begin{tabular}{l}
Last County Upload: \\
February 3, 2021 11:30 am
\end{tabular}} \\
\hline \multicolumn{2}{|l|}{\begin{tabular}{l}
Precincts Reported: \\
\(100.00 \%(2,662\) out of 2,662\()\)
\end{tabular}} \\
\hline & 100.00\% \\
\hline \multicolumn{2}{|l|}{\begin{tabular}{l}
Ballots Cast: \\
75.35\% (5,545,848 out of \(7,359,798\) )
\end{tabular}} \\
\hline & 75.35\% \\
\hline
\end{tabular}

\section*{NC COURT OF APPEALS JUDGE SEAT 06 (VOTE FOR 1)}

Precincts Reported: 2662 of 2662
\begin{tabular}{llrr} 
NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
Chris Dillon & REP & \(2,769,020\) & \(51.95 \%\) \\
Gray Styers & DEM & \(2,561,090\) & \(48.05 \%\)
\end{tabular}
- Ex. 9209 -

Federal | Council of State | NC Senate | NC House Judicial | Referenda Cross-County Local

\section*{11/03/2020 OFFICIAL LOCAL ELECTION RESULTS STATEWIDE}

- Ex. 9211 -

\section*{11/03/2020 OFFICIAL LOCAL ELECTION RESULTS STATEWIDE}
\begin{tabular}{|c|c|c|c|}
\hline \multicolumn{4}{|c|}{Criteria} \\
\hline Election: 11/03/2020 & & & \(\checkmark\) \\
\hline County: STATE & & & \(V\) \\
\hline Office: JUDICIAL & & & \(V\) \\
\hline Contest: NC COURT OF APPEALS JUDGE SEAT 13 & & & \(\checkmark\) \\
\hline Display Results & Refresh & & \\
\hline \multicolumn{4}{|c|}{Statewide Info} \\
\hline \multicolumn{4}{|l|}{\begin{tabular}{l}
Last County Submit: \\
February 3, 2021 11:30 am
\end{tabular}} \\
\hline \multicolumn{4}{|l|}{\begin{tabular}{l}
Last County Upload: \\
February 3, 2021 11:30 am
\end{tabular}} \\
\hline \multicolumn{4}{|l|}{\begin{tabular}{l}
Precincts Reported: \\
\(100.00 \%\) ( 2,662 out of 2,662 )
\end{tabular}} \\
\hline & & & 100.00\% \\
\hline \multicolumn{4}{|l|}{\begin{tabular}{l}
Ballots Cast: \\
\(75.35 \%\) ( \(5,545,848\) out of \(7,359,798\) )
\end{tabular}} \\
\hline & & & 75.35\% \\
\hline \multicolumn{4}{|l|}{NC COURT OF APPEALS JUDGE SEAT 13 (VOTE FOR 1) Precincts Reported: 2662 of 2662} \\
\hline NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
\hline Jefferson G. Griffin & REP & 2,720,503 & 51.16\% \\
\hline Chris Brook & DEM & 2,597,573 & 48.84\% \\
\hline
\end{tabular}
- Ex. 9213 -

Federal | Council of State | NC Senate | NC House Judicial | Referenda Cross-County Local

\section*{11/03/2020 OFFICIAL LOCAL ELECTION RESULTS STATEWIDE}

- Ex. 9215 -

Federal | Council of State | NC Senate | NC House Judicial | Referenda Cross-County Local

\section*{11/03/2020 OFFICIAL LOCAL ELECTION RESULTS STATEWIDE}

- Ex. 9217 -

Federal | Council of State | NC Senate | NC House Judicial | Referenda Cross-County Local

\section*{11/03/2020 OFFICIAL LOCAL ELECTION RESULTS STATEWIDE}


\section*{NC SUPREME COURT ASSOCIATE JUSTICE SEAT 04 (VOTE FOR 1)} Precincts Reported: 2662 of 2662
\begin{tabular}{llrr} 
NAME ON BALLOT & PARTY & BALLOT COUNT & PERCENT \\
Tamara Barringer & REP & \(2,746,362\) & \(51.21 \%\) \\
Mark Davis & DEM & \(2,616,265\) & \(48.79 \%\)
\end{tabular}
- Ex. 9219 -

STATE OF NORTH CAROLINA

\section*{COUNTY OF WAKE}

IN THE GENERAL COURT OF JUSTICE SUPERIOR COURT DIVISION 21 CVS 015426

NORTH CAROLINA LEAGUE OF CONSERVATION VOTERS, et al.,

Plaintiffs,
vs.
REPRESENTATIVE DESTIN HALL, in his official capacity as Chair of the House Standing Committee on Redistricting, et al.,

Defendants.

\section*{AFFIDAVIT OF SEAN P. TRENDE}

Now comes affiant Sean P. Trende, having been first duly cautioned and sworn, deposes and states as follows:
1. I am over the age of 18 and am competent to testify regarding the matters
discussed below.
2. I currently reside at 1146 Elderberry Loop, Delaware, OH 43015. My e-mail is trende.3@buckeyemail.osu.edu.
3. I have been retained in this matter by the Legislative Defendants, and am being compensated at \(\$ 400.00\) per hour for my work in this case.
4. My curriculum vitae is attached to this report as Exhibit 1.

\section*{EXPERT CREDENTIALS}
5. I am currently enrolled as a doctoral candidate in political science at The Ohio

State University. I have completed all of my coursework and have passed comprehensive
examinations in both methods and American Politics. My coursework for my Ph.D. and
M.A.S. included, among other things, classes on G.I.S. systems, spatial statistics, issues in contemporary redistricting, machine learning, non-parametric hypothesis tests and probability theory. I expect to receive my Ph.D. in May of 2021. My dissertation focuses on applications of spatial statistics to political questions.
6. I joined RealClearPolitics in January of 2009. I assumed a fulltime position with RealClearPolitics in March of 2010. My title is Senior Elections Analyst. RealClearPolitics is a company of around 40 employees, with offices in Washington D.C. It produces one of the most heavily trafficked political websites in the world, which serves as a one-stop shop for political analysis from all sides of the political spectrum and is recognized as a pioneer in the field of poll aggregation. It produces original content, including both data analysis and traditional reporting. It is routinely cited by the most influential voices in politics, including David Brooks of The New York Times, Brit Hume of Fox News, Michael Barone of The Almanac of American Politics, Paul Gigot of The Wall Street Journal, and Peter Beinart of The Atlantic.
7. My main responsibilities with RealClearPolitics consist of tracking, analyzing, and writing about elections. I collaborate in rating the competitiveness of Presidential, Senate, House, and gubernatorial races. As a part of carrying out these responsibilities, I have studied and written extensively about demographic trends in the country, exit poll data at the state and federal level, public opinion polling, and voter turnout and voting behavior.
8. In particular, understanding the way that districts are drawn and how geography and demographics interact is crucial to predicting United States House of Representatives races, so much of my time is dedicated to that task.
9. I am currently a Visiting Scholar at the American Enterprise Institute, where my publications focus on the demographic and coalitional aspects of American Politics. My first paper focused on the efficiency gap, a metric for measuring the fairness of redistricting plans.
10. I am the author of The Lost Majority: Why the Future of Government is up For Grabs and Who Will Take It. In this book, I explore realignment theory. It argues that realignments are a poor concept that should be abandoned. As part of this analysis, I conducted a thorough analysis of demographic and political trends beginning in the 1920s and continuing through the modern times, noting the fluidity and fragility of the coalitions built by the major political parties and their candidates.
11. I co-authored the 2014 Almanac of American Politics. The Almanac is considered the foundational text for understanding congressional districts and the representatives of those districts, as well as the dynamics in play behind the elections. PBS's Judy Woodruff described the book as "the oxygen of the political world," while NBC's Chuck Todd noted that " \([r] e a l\) political junkies get two Almanacs: one for the home and one for the office." My focus was researching the history of and writing descriptions for many of the newly-drawn districts, including tracing the history of how and why they were drawn the way that they were drawn.
12. I have spoken on these subjects before audiences from across the political spectrum, including at the Heritage Foundation, the American Enterprise Institute, the CATO Institute, the Bipartisan Policy Center, and the Brookings Institution. In 2012, I was invited to Brussels to speak about American elections to the European External Action Service, which is the European Union's diplomatic corps. I was selected by the United States Embassy in Sweden to discuss the 2016 elections to a series of audiences there, and was selected by the United

States Embassy in Spain to fulfil a similar mission in 2018. I was invited to present by the United States Embassy in Italy, but was unable to do so because of my teaching schedule.
13. In the winter of 2018, I taught American Politics and the Mass Media at Ohio Wesleyan University. I taught Introduction to American Politics at The Ohio State University for three semesters from Fall of 2018 to Fall of 2019. In the Springs of 2020 and 2021, I taught Political Participation and Voting Behavior at The Ohio State University. This course spent several weeks covering all facets of redistricting: How maps are drawn, debates over what constitutes a fair map, measures of redistricting quality, and similar topics.
14. It is my policy to appear on any major news outlet that invites me, barring scheduling conflicts. I have appeared on both Fox News and MSNBC to discuss electoral and demographic trends. I have been cited in major news publications, including The New York Times, The Washington Post, The Los Angeles Times, The Wall Street Journal, and USA Today.
15. I sit on the advisory panel for the "States of Change: Demographics and Democracy" project. This project is sponsored by the Hewlett Foundation and involves three premier think tanks: The Brookings Institution, the Bipartisan Policy Center, and the Center for American Progress. The group takes a detailed look at trends among eligible voters and the overall population, both nationally and in key states, to explain the impact of these changes on American politics, and to create population projections, which the Census Bureau abandoned in 1995. In 2018, I authored one of the lead papers for the project: "In the Long Run, We're All Wrong," available at https://bipartisanpolicy.org/wp-content/uploads/2018/04/BPC-Democracy-States-of-Change-Demographics-April-2018.pdf.
16. I previously authored an expert report in Dickson v. Rucho, No. 11-CVS-16896 (N.C. Super Ct., Wake County), which involved North Carolina's 2012 General Assembly and

Senate maps. Although I was not called to testify, it is my understanding that my expert report was accepted without objection. I also authored an expert report in Covington v. North Carolina, Case No. 1:15-CV-00399 (M.D.N.C.), which involved almost identical challenges in a different forum. Due to what I understand to be a procedural quirk, where my largely identical report from Dickson had been inadvertently accepted by the plaintiffs into the record when they incorporated parts of the Dickson record into the case, I was not called to testify.
17. I authored two expert reports in NAACP v. McCrory, No. 1:13CV658 (M.D.N.C.), which involved challenges to multiple changes to North Carolina's voter laws, including the elimination of a law allowing for the counting of ballots cast in the wrong precinct. I was admitted as an expert witness and testified at trial. My testimony discussed the "effect" prong of the Voting Rights Act claim. I did not examine the issues relating to intent.
18. I authored reports in NAACP v. Husted, No. 2:14-cv-404 (S.D. Ohio), and Ohio Democratic Party v. Husted, Case \(15-\mathrm{cv}-01802\) (S.D. Ohio), which dealt with challenges to various Ohio voting laws. I was admitted and testified at trial in the latter case (the former case settled). The judge in the latter case ultimately refused to consider one opinion, where I used an internet map-drawing tool to show precinct locations in the state. Though no challenge to the accuracy of the data was raised, the judge believed I should have done more work to check that the data behind the application was accurate.
19. I served as a consulting expert in Lee v. Virginia Board of Elections, No. 3:15-cv357 (E.D. Va. 2016), a voter identification case. Although I would not normally disclose consulting expert work, I was asked by defense counsel to sit in the courtroom during the case and review testimony. I would therefore consider my work de facto disclosed.
20. I filed an expert report in Mecinas v. Hobbs, No. CV-19-05547-PHX-DJH (D. Ariz. 2020). That case involved a challenge to Arizona's ballot order statute. Although the judge ultimately did not rule on a motion in limine in rendering her decision, I was allowed to testify at the hearing.
21. I authored two expert reports in Feldman v. Arizona, No. CV-16-1065-PHX-DLR (D. Ariz.). Plaintiffs in that case challenged an Arizona law prohibiting the collection of voted ballots by third parties that were not family members or caregivers and the practice of most of the state's counties to require voters to vote in their assigned precinct. My reports and testimony were admitted. Part of my trial testimony was struck in that case for reasons unrelated to the merits of the opinion; counsel for the state elicited it while I was on the witness stand and it was struck after Plaintiffs were not able to provide a rebuttal to the new evidence.
22. I authored an expert report in Smith v. Perrera, No. 55 of 2019 (Belize). In that case I was appointed as the court's expert by the Supreme Court of Belize. In that case I was asked to identify international standards of democracy as they relate to malapportionment claims, to determine whether Belize's electoral divisions (similar to our congressional districts) conformed with those standards, and to draw alternative maps that would remedy any existing malapportionment.
23. I authored expert reports in A. Philip Randolph Institute v. Smith, No. 1:18-cv-00357-TSB (S.D. Ohio), Whitford v. Nichol, No. 15-cv-421-bbc (W.D. Wisc.), and Common Cause v. Rucho, NO. 1:16-CV-1026-WO-JEP (M.D.N.C.), which were efficiency gap-based redistricting cases filed in Ohio, Wisconsin and North Carolina.
24. I also authored an expert report in the cases of Ohio Organizing Collaborative, et al v. Ohio Redistricting Commission, et al (No. 2021-1210); League of Women Voters of Ohio, et al v. Ohio Redistricting Commission, et al (No. 2021-1192); Bria Bennett, et al v. Ohio Redistricting Commission, et al (No. 2021-1198). These cases are pending in original action before the Supreme Court of Ohio.
25. I currently serve as one of two special masters appointed by the Supreme Court of Virginia to redraw the districts that will elect the commonwealth's representatives to the House of Delegates, state Senate, and U.S. Congress.

\section*{SUMMARY OF WORK PERFORMED}
26. I certify that the images attached as Exhibit 2 are true and correct copies of images that I created and that I describe below.
27. To create these images, I first downloaded county-level shapefiles from the United States Census Bureau. Using R, a widely utilized statistical programming tool, I joined county-level vote totals for U.S. presidential races in 2012, 2016 and 2020.
28. Attached as Exhibit 2-A are maps I generated with counties colored red if the Republican candidate won that county, and blue if the Democratic candidate won that county.
29. I then centered these results on national popular vote results for the respective years, an accepted mechanism that is used to enable analysts to compare results that occur in differing electoral environments. See, e.g., Bernard Fraga, "Candidates or Districts? Reevaluating the Role of Race in Voter Turnout," 60 Am. Jrnl. Pol. Sci. 97, 115 (2016). Because the national popular vote reflected reasonably close Democratic wins in all four years, the effect of doing this computation is marginal.
30. Attached as Exhibit 2-B are maps I generated with counties colored red if the Republican candidate performed better in the county than they did nationally, and blue if the Republican candidate performed worse in the county that they did nationally. If the Republican candidate performed better in the county than they did nationally, I refer to that performance as "leaning" Republican.
31. As shown in Table 1 below, in 2012, the Republican presidential candidate won 70 of North Carolina's 100 counties. In 2016, the Republican presidential candidate won 76 counties, and in 2020, the Republican presidential candidate won 75 counties.
32. As shown in Table 1 below, in 2012, the number of counties in North Carolina that leaned \({ }^{1}\) Republican in the Presidential Election was 73 out of 100 , in 2016 that figure was 77 out of 100 , and in 2020 that figure was 80 out of 100 .

TABLE 1
\begin{tabular}{|c|c|c|}
\hline Election Year & \begin{tabular}{c} 
\# of N.C. Counties that voted \\
Republican
\end{tabular} & \begin{tabular}{c} 
\# of N.C. Counties that leaned \\
Republican
\end{tabular} \\
\hline 2012 & \(70 / 100\) & \(73 / 100\) \\
\hline 2016 & \(76 / 100\) & \(77 / 100\) \\
\hline 2020 & \(75 / 100\) & \(80 / 100\) \\
\hline
\end{tabular}

\footnotetext{
1 "Leaned" is as defined in 930 .
}
Socusigned by:
Sean P. Trende
Sean P. Trende

Sworn or affirmed before me and subscribed in the presence the 1 st day of December, 2021, in the state of Texas and County of Harris

\[
\frac{\int_{\text {2FAD7787555D439... }}^{\text {Mocusigned by: }}}{\text { Notary Public }}
\]

\section*{Exhibit 1}

\author{
SEAN P. TRENDE \\ 1146 Elderberry Loop \\ Delaware, OH 43015 \\ strende@realclearpolitics.com
}

\section*{EDUCATION}

Ph.D., The Ohio State University, Political Science, expected 2022.
M.A.S. (Master of Applied Statistics), The Ohio State University, 2019.
J.D., Duke University School of Law, cum laude, 2001; Duke Law Journal, Research Editor.
M.A., Duke University, cum laude, Political Science, 2001. Thesis titled The Making of an Ideological Court: Application of Non-parametric Scaling Techniques to Explain Supreme Court Voting Patterns from 1900-1941, June 2001.
B.A., Yale University, with distinction, History and Political Science, 1995.

\section*{PROFESSIONAL EXPERIENCE}

Law Clerk, Hon. Deanell R. Tacha, U.S. Court of Appeals for the Tenth Circuit, 2001-02.
Associate, Kirkland \& Ellis, LLP, Washington, DC, 2002-05.
Associate, Hunton \& Williams, LLP, Richmond, Virginia, 2005-09.
Associate, David, Kamp \& Frank, P.C., Newport News, Virginia, 2009-10.
Senior Elections Analyst, RealClearPolitics, 2009-present.
Columnist, Center for Politics Crystal Ball, 2014-17.
Gerald R. Ford Visiting Scholar, American Enterprise Institute, 2018-present.

\section*{BOOKS}

Larry J. Sabato, ed., The Blue Wave, Ch. 14 (2019).
Larry J. Sabato, ed., Trumped: The 2016 Election that Broke all the Rules (2017).
Larry J. Sabato, ed., The Surge:2014's Big GOP Win and What It Means for the Next Presidential Election, Ch. 12 (2015).

Larry J. Sabato, ed., Barack Obama and the New America, Ch. 12 (2013).
Barone, Kraushaar, McCutcheon \& Trende, The Almanac of American Politics 2014 (2013).
The Lost Majority: Why the Future of Government is up for Grabs - And Who Will Take It (2012).

\section*{PREVIOUS EXPERT TESTIMONY}

Dickson v. Rucho, No. 11-CVS-16896 (N.C. Super. Ct., Wake County) (racial gerrymandering).

Covington v. North Carolina, No. 1:15-CV-00399 (M.D.N.C.) (racial gerrymandering).
NAACP v. McCrory, No. 1:13CV658 (M.D.N.C.) (early voting).

NAACP v. Husted, No. 2:14-cv-404 (S.D. Ohio) (early voting).
Ohio Democratic Party v. Husted, Case 15-cv-01802 (S.D. Ohio) (early voting).
Lee v. Virginia Bd. of Elections, No. 3:15-cv-357 (E.D. Va.) (early voting).
Feldman v. Arizona, No. CV-16-1065-PHX-DLR (D. Ariz.) (absentee voting).
A. Philip Randolph Institute v. Smith, No. 1:18-cv-00357-TSB (S.D. Ohio) (political gerrymandering).

Whitford v. Nichol, No. 15-cv-421-bbc (W.D. Wisc.) (political gerrymandering).
Common Cause v. Rucho, No. 1:16-CV-1026-WO-JEP (M.D.N.C.) (political gerrymandering).
Mecinas v. Hobbs, No. CV-19-05547-PHX-DJH (D. Ariz.) (ballot order effect).
Fair Fight Action v. Raffensperger, No. 1:18-cv-05391-SCJ (N.D. Ga.) (statistical analysis).
Pascua Yaqui Tribe v. Rodriguez, No. 4:20-CV-00432-TUC-JAS (D. Ariz.) (early voting).

\section*{COURT APPOINTMENTS}

Appointed as Voting Rights Act expert by Arizona Independent Redistricting Commission
Appointed redistricting expert by the Supreme Court of Belize in Smith v. Perrera, No. 55 of 2019 (one-person-one-vote).

\section*{INTERNATIONAL PRESENTATIONS AND EXPERIENCE}

Panel Discussion, European External Action Service, Brussels, Belgium, Likely Outcomes of 2012 American Elections.

Selected by U.S. Embassies in Sweden, Spain, and Italy to discuss 2016 and 2018 elections to think tanks and universities in area (declined Italy due to teaching responsibilities).

Selected by EEAS to discuss 2018 elections in private session with European Ambassadors.
- Ex. 9232 -

\section*{TEACHING}

American Democracy and Mass Media, Ohio Wesleyan University, Spring 2018.
Introduction to American Politics, The Ohio State University, Autumn 2018, 2019, 2020, Spring 2018.

Political Participation and Voting Behavior, Spring 2020, Spring 2021.

\section*{REAL CLEAR POLITICS COLUMNS}

Full archives available at http://www.realclearpolitics.com/authors/sean_trende/

\section*{Exhibit 2}


Exhibit 2-A


STATE OF NORTH CAROLINA

COUNTY OF WAKE
NORTH CAROLINA LEAGUE OF CONSERVATION VOTERS, et al.,

REBECCA HARPER, et al.,

Plaintiffs,
vs.

REPRESENTATIVE DESTIN HALL, in his official capacity as Chair of the House Standing Committee on Redistricting, et al.,

Defendants.

IN THE GENERAL COURT OF JUSTICE SUPERIOR COURT DIVISION 21 CVS 015426

Consolidated with
21 CVS 500085

\section*{AFFIDAVIT OF MICHAEL BARBER}

Now comes affiant Michael Barber, having been first duly cautioned and sworn, deposes and states as follows:
1. I am over the age of 18 and am competent to testify regarding the matters discussed below.
2. For the purposes of this litigation, I have been asked by counsel for Legislative

Defendants to analyze relevant data and provide my expert opinions.
3. To that end, I have personally prepared the report attached to this affidavit as

Exhibit A, and swear to its authenticity and to the faithfulness of the opinions.

DocuSigned by:
Michael Barber
—82F8BEв03413425..
Michael Barber

Sworn or affirmed before me and subscribed in the presence the \(22^{\text {nd }}\) day of December, 2021, in the State of Texas and County of Harris.


Notary Public
- Ex. 9238 -

\title{
Exhibit A: \\ Expert Report of Michael Barber, PhD
}

\author{
Dr. Michael Barber \\ Brigham Young University \\ 724 Spencer W. Kimball Tower \\ Provo, UT 84604 \\ barber@byu.edu
}

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\section*{1 Introduction and Qualifications}

I have been asked by counsel for the Legislative Defendants to analyze North Carolina's recently enacted redistricting plans for the General Assembly (the "Enacted Plans") and the plans submitted by the North Carolina League of Conservation Voters (the "Duchin Plans") in the context of the partisan gerrymandering claims brought against the Legislative Defendants. \({ }^{1}\) To do this, I implement a publicly available and peer-reviewed redistricting simulation algorithm to generate 50,000 simulated district maps in each county grouping in which there are multiple districts in both the North Carolina House of Representatives and the North Carolina Senate. The redistricting algorithm generates a representative sample of districts by following neutral redistricting criteria without regard to racial or partisan data. In this way, the simulated districts establish a comparison set of plans that use purely non-partisan redistricting inputs. I then compare the simulated plans against the Enacted Plans and the Duchin Plans by reference to election results to assess whether the partisan effects of those plans are consistent with what one would expect to see in a redistricting plan composed without reference to any partisan considerations.

In the House, these simulations show that the Enacted Plans consistently score more often within the range of the non-partisan simulated maps than the Duchin Plans. In addition, the simulations show that the Enacted Plans contain one county grouping, the Guilford County grouping in the House of Representative, that is a partisan outlier. However, this grouping largely follows the boundaries of a 2019 court-approved district plan. In contrast, the Duchin Plans generate partisan outliers in four county groupings.

In the Senate analysis both the Enacted and Duchin plans generate partisan outliers when compared to the simulated district maps in two clusters each. Furthermore, neutral redistricting criteria such as following municipal lines support the decisions by the map drawers in the Enacted Plan in more districts, while in these same districts the Duchin Plan divides Democratic-leaning municipalities into more pieces in order to combine Democratic-

\footnotetext{
\({ }^{1}\) These plans were attached to the NCLCV complaint, filed on November 16, 2021.
}
leaning voters in cities with Republican voters in suburban and rural parts of North Carolina to create additional competitive or Democratic-leaning districts. Given these results, as well as the otherwise high degree of agreement between the Enacted and Duchin maps, it is my opinion that the Enacted Maps are not "extreme partisan gerrymanders" as plaintiffs allege.

I am an associate professor of political science at Brigham Young University and faculty fellow at the Center for the Study of Elections and Democracy in Provo, Utah. I received my PhD in political science from Princeton University in 2014 with emphases in American politics and quantitative methods/statistical analyses. My dissertation was awarded the 2014 Carl Albert Award for best dissertation in the area of American Politics by the American Political Science Association.

I teach a number of undergraduate courses in American politics and quantitative research methods. \({ }^{2}\) These include classes about political representation, Congressional elections, statistical methods, and research design.

I have worked as an expert witness in a number of cases in which I have been asked to analyze and evaluate various political and elections-related data and statistical methods. Cases in which I have testified at trial or by deposition are listed in my CV, which is attached to the end of this report. I have previously provided expert reports in a number of cases related to voting, redistricting, and election-related issues: Nancy Carola Jacobson, et al., Plaintiffs, vs. Laurel M. Lee, et al., Defendants. Case No. 4:18-cv-00262 MW-CAS (U.S. District Court for the Northern District of Florida); Common Cause, et al., Plaintiffs, vs. Lewis, et al., Defendants. Case No. 18-CVS-14001 (Wake County, North Carolina); Kelvin Jones, et al., Plaintiffs, v. Ron DeSantis, et al., Defendants, Consolidated Case No. 4:19-cv-300 (U.S. District Court for the Northern District of Florida); Community Success Initiative, et al., Plaintiffs, v. Timothy K. Moore, et al., Defendants, Case No. 19-cv-15941 (Wake County, North Carolina); Richard Rose et al., Plaintiffs, v. Brad Raffensperger, Defendant, Civil Action No. 1:20-cv-02921-SDG (U.S. District Court for the Northern Dis-

\footnotetext{
\({ }^{2}\) The political science department at Brigham Young University does not offer any graduate degrees.
}
trict of Georgia); Georgia Coalition for the People's Agenda, Inc., et. al., Plaintiffs, v. Brad Raffensberger, Defendant. Civil Action No. 1:18-cv-04727-ELR (U.S. District Court for the Northern District of Georgia); Alabama, et al., Plaintiffs, v. United States Department of Commerce; Gina Raimondo, et al., Defendants. Case No. CASE NO. 3:21-cv-00211-RAH-ECM-KCN (U.S. District Court for the Middle District of Alabama Eastern Division); League of Women Voters of Ohio, et al., Relators, v. Ohio Redistricting Commission, et al., Respondents. Case No. 2021-1193 (Supreme Court of Ohio).

In my position as a professor of political science, I have conducted research on a variety of election- and voting-related topics in American politics and public opinion. Much of my research uses advanced statistical methods for the analysis of quantitative data. I have worked on a number of research projects that use "big data" that include millions of observations, including a number of state voter files, campaign contribution lists, and data from the US Census. I have also used geographic information systems and other mapping techniques in my work with political data.

Much of this research has been published in peer-reviewed journals. I have published nearly 20 peer-reviewed articles, including in our discipline's flagship journal, The American Political Science Review as well as the inter-disciplinary journal,Science Advances. My CV, which details my complete publication record, is attached to this report as Appendix A.

The analysis and opinions I provide in this report are consistent with my education, training in statistical analysis, and knowledge of the relevant academic literature. These skills are well-suited for this type of analysis in political science and quantitative analysis more generally. My conclusions stated herein are based upon my review of the information available to me at this time. I reserve the right to alter, amend, or supplement these conclusions based upon further study or based upon the availability of additional information. I am being compensated for my time in preparing this report at an hourly rate of \(\$ 400 /\) hour. My compensation is in no way contingent on the conclusions reached as a result of my analysis. The opinions in this report are my own, and do note represent the view of Brigham Young

University.

\section*{2 Summary of Conclusions}

Based on the evidence and analysis presented below, my opinions regarding the 2021 enacted redistricting plans in the North Carolina General Assembly can be summarized as follows:
- The contemporary political geography of North Carolina is such that Democratic majorities are often geographically clustered in the largest cities of the state while Republican voters often dominate the suburban and rural portions of the state.
- This is not the case in the rural northeastern region of the state, where there are also significant Democratic majorities.
- This geographic clustering in cities an in the rural northeast puts the Democratic Party at a natural disadvantage when single-member districts are drawn.
- This is further amplified by the 'county grouping' process that is unique to North Carolina's redistricting process where districts are constrained to remain within county groups.
- This disadvantage partially arises from the difficulty, and in many cases impossibility, of drawing Democratic-leaning districts in many of the county groupings that comply with constitutional requirements, even though Democratic voters make up roughly \(40 \%\) of voters in these parts of the state.
- Based on a comparison between the Enacted Plan, the Duchin Plan, and a set of 50,000 simulated maps, the Enacted Plan is less of a partisan outlier than the Duchin Plan in the State House. In 39 of the 40 clusters the Enacted Plan is not a partisan outlier in
comparison to the simulation results. In 36 of the 40 clusters the Duchin Plan is not a partisan outlier in comparison to the simulation results.
- In the Senate analysis both the Enacted and Duchin plans generate partisan outliers when compared to the simulated district maps in two clusters each.
- Areas of disagreement between proposed plans often arise because the Duchin plan divides Democratic leaning municipalities into more pieces in order to combine Democraticleaning voters with Republican voters in suburban and rural parts of the state to create additional competitive or Democratic leaning districts.
- Given these results, as well as the otherwise high degree of agreement between the Enacted and Duchin maps, it is my opinion that the Enacted Maps are not "extreme partisan gerrymanders" as plaintiffs allege.

\section*{3 Political Geography of North Carolina}

For the last several decades, North Carolina has been relatively competitive in statewide elections. Democratic and Republican candidates have won the state at the presidential, gubernatorial, congressional, and state level. Figure 1 below shows the results of the average of all statewide elections in North Carolina from 2000 through 2020. These races include: president, US Senate, governor, lieutenant governor, attorney general, secretary of state, state auditor, treasurer, superintendent, commissioner of agriculture, commissioner of labor, insurance commissioner, and partisan judicial elections in 2018. \({ }^{3}\) While not all races are up for election in each year, I create the index by averaging the two-party vote share of those races that occurred in each two-year cycle. State-level races in North Carolina occur in presidential election years while US senate races occur every six years. There were no statewide partisan races in 2006. As can be seen in the figure, the statewide Democratic margin in North Carolina peaked in 2008 at \(55 \%\) of the two-party vote and reached its nadir in 2010 with \(44 \%\) of the vote.

The relative stability of the statewide results over the last 10 years masks a dramatic variation in the spatial location of Democratic and Republican voters within the state. The following section details this and shows in a variety of different ways that Democratic voters are more likely to be spatially clustered in the state while Republican voters tend to live in more politically diverse areas.

Scholarship in political science has noted that the spatial distribution of voters throughout a state can have an impact on the partisan outcomes of elections when a state is, by necessity, divided into a number of legislative districts. This is largely the case because Democratic-leaning voters tend to cluster in dense, urban areas while Republican-leaning voters tend to be more equally distributed across the remainder of the state. \({ }^{4}\) One prominent

\footnotetext{
\({ }^{3}\) To create the index I sum by party all votes cast for each candidate in each race by year. I then take the fraction of votes cast for candidates of the two major parties that were cast for Democratic candidates in that year. There are other possible measures and methods one could use, such as considering candidate percentages before averaging or including third party voters.
\({ }^{4}\) See for example Stephanopoulos, N. O. and McGhee, E. M., Partisan Gerrymandering and the Efficiency
}

\section*{Proportion of Votes in Statewide Elections Won by Democrats over Time}


Figure 1: Democratic Proportion of Statewide Election Contests, 2000-2020
study of the topic (Chen and Rodden, 2013) finds that "Democrats are highly clustered in dense central city areas, while Republicans are scattered more evenly through the suburban, exurban, and rural periphery...Precincts in which Democrats typically form majorities tend to be more homogenous and extreme than Republican-leaning precincts. When these Democratic precincts are combined with neighboring precincts to form legislative districts, the nearest neighbors of extremely Democratic precincts are more likely to be similarly extreme than is true for Republican precincts. As a result, when districting plans are completed, Democrats tend to be inefficiently packed into homogenous districts." \({ }^{5}\)

The upshot of this pattern is that political parties stand at a disadvantage when their voters are not "efficiently" distributed across the state. To understand what I mean

\footnotetext{
Gap, The University of Chicago Law Review 82: 831-900, (2015); Chen, J. and Rodden, J., Unintentional Gerrymandering: Political Geography and Electoral Bias in Legislatures, Quarterly Journal of Political Science 8: 239-269, (2013); Nall, C., The Political Consequences of Spatial Policies: How Interstate Highways Facilitated Geographic Polarization, Journal of Politics, 77(2): 394-406, (2015); Gimple, J. and Hui, I., . Seeking politically compatible neighbors? The role of neighborhood partisan composition in residential sorting, Political Geography 48: 130-142 (2015); Bishop, B., The Big Sort: Why the Clustering of LikeMinded America is Tearing Us Apart, Houghton Mifflin Press (2008); and Jacobson, G. C., and Carson, J. L., The Politics of Congressional Elections, 9th ed. Lanham, MD: Rowman and Littlefield (2016).
\({ }^{5}\) Chen, J. and Rodden, J., Unintentional Gerrymandering: Political Geography and Electoral Bias in Legislatures, Quarterly Journal of Political Science 8: 239-269, (2013)
}
by efficient, imagine two different scenarios. First, imagine a party with a slim majority of voters statewide in which every precinct's vote share perfectly reflected the overall state. In other words, the party has a slight majority in every precinct that adds up to a slight majority statewide. In this case, this party's voters are extremely efficiently distributed in such a way that the party will win every single district despite only a slim majority statewide. Now imagine a different arrangement, a party who still holds a slim majority statewide, but whose voters are heavily concentrated in a few areas and sparsely populated throughout the rest of the state. In this case, despite holding a majority of votes statewide, the party will only win a few seats where their voters are heavily concentrated. The political geography of North Carolina more closely resembles the second scenario.

Figure 2 shows two maps of North Carolina. The top map shows the population density across counties. The bottom map shows the distribution of partisan preference across the state. Comparing the two shows that the most dense and urban counties (Wake, Mecklenburg, Durham, Guilford, Forsyth, New Hanover) in the state tend to also be where we see clusters of Blue on the bottom map.

North Carolina adds an additional wrinkle to this trend that also works to create heavily Democratic state legislative districts. Figure 2 shows that the rural counties of north eastern North Carolina are strongly Democratic. \({ }^{6}\) This further works to facilitate the creation of strongly Democratic state legislative districts because each of these rural counties, and sometimes in combination with other adjacent rural counties, can form a legislative district. This is because the state constitution again emphasizes that counties be kept together when drawing district boundaries, and when grouping counties to collect a sufficient number of people, the minimum grouping of contiguous counties should be used. Because these rural counties all share the common feature of being strongly Democratic, any grouping of these counties together will further generate legislative districts with large majorities in support of Democratic candidates.

\footnotetext{
\({ }^{6}\) This would include Vance, Warren, Halifax, Northampton, Hertford, Bertie, and Edgecomb counties.
}

Figure 2: Distribution of People and Partisan Preferences in North Carolina.


Note: Blue \(=\) Democratic, Red \(=\) Republican

Thus, the geographic concentration of a party's voters tends to harm that party when single-member districts are drawn by creating districts that favor that party by very large majorities, thus 'wasting' many votes in running up large majorities far beyond \(50 \%+1 .{ }^{7}\) This occurs in North Carolina in the urban counties of the state as well as the northeastern counties of the state where there are also sizeable Democratic majorities. Importantly, the discussion is not about where Democratic voters are heavily clustered together, but simply that they are. It is less important if this clustering takes place in large urban cities or in

\footnotetext{
\({ }^{7}\) McGhee, E. (2017). Measuring Efficiency in Redistricting. Election Law Journal: Rules, Politics, and Policy, 16(4), 417-442. doi:10.1089/elj.2017.0453
}
rural portions of the state. The overwhelming margins for the party are what drives 'wasted votes,' which, in turn translate to fewer seats than the statewide proportion of the vote would suggest.

Another way to consider this is to look at a lower level of geography, the Voter Tabulation District (VTD), which is similar to a precinct. Figure 3 shows the distribution of partisan preferences for 11 statewide partisan elections for all VTDs in North Carolina. \({ }^{8}\) The left panel notes VTDs where there are strong majorities for either party and labels them as "inefficient" VTDs. They are inefficient based on the discussion above that a party wastes votes if it builds majorities far beyond the needed \(50 \%+1\). Note that the distribution is not symmetric and that there are more VTDs with very large democratic majorities than there are VTDs with equally large Democratic majorities. The right panel shows the same distribution by labels "efficient" VTDs - those where a party has a majority, but not an overwhelming majority. Note here that there are many more VTDs with efficient Republican majorities than there are VTDs with efficient Democratic majorities.

This inefficient distribution of votes would not be a problem for Democrats if districts were able to amble about the state so as to create districts that had less overwhelming Democratic support. Rodden (2019) notes this by saying: "Democrats would need a redistricting process that intentionally carved up large cities like pizza slices or spokes of a wheel, so as to combine some very Democratic urban neighborhoods with some republican exurbs in an effort to spread Democrats more efficiently across districts (pg. 155).9" Alternatively, as districts get larger in size (i.e. congressional districts) "Democratic communities can easily string together and overwhelm the surrounding rural Republicans (pg. 149)." However, the laws governing redistricting in North Carolina run counter to either of these strategies.

\footnotetext{
\({ }^{8}\) I use these elections because they were the most comprehensive set of statewide elections I could obtain, given the tight time constraints, that were aggregated and matched to the level of the VTD. The elections are 2020: President, Senate, Governor, Lieutenant Governor, Attorney General; 2016: President, Senate, Governor, Lieutenant Governor, Attorney General; 2014: Senate.
\({ }^{9}\) Rodden, Jonathan A. Why cities lose: The deep roots of the urban-rural political divide. Hachette UK, 2019.. While Rodden is specifically discussing Pennsylvania in this quote, the statement is true of any location with Democrats clustered in urban areas.
}

Figure 3: Distribution of Votes Across VTDs in North Carolina.


Note: Partisan Index based on the average of 11 statewide partisan races between 2014-2020.

North Carolina's strict rules that require districts to remain within pre-determined county clusters prohibit the type of meandering districts that Rodden describes above. Furthermore, additional restrictions requiring geographic compactness and minimizing the splitting of municipalities further eliminates the possibility of taking the strategy described above. In the end, this means that Republicans begin the redistricting process with a natural advantage due to the combination of laws requiring where and how districts are drawn combined with the particular spatial distribution of their voters. Thus, as I will show below, the advantage we observe between the expected Republican seat share in the state legislature compared to the statewide Republican vote share in the recent past is more due to geography than partisan activity by Republican map drawers. \({ }^{10}\)

\footnotetext{
\({ }^{10}\) Rodden (2019) notes regarding North Carolina, "Due to the presence of a sprawling knowledge-economy corridor, a series of smaller automobile cities with relatively low partisan gradients, and the distribution of rural African Americans, Democrats are relatively efficiently distributed in North Carolina at the scale of congressional districts (pg. 173)." It is important to note that this statement is not true for state legislative districts, which contain much smaller populations than congressional districts (and thus often cannot span
}

To measure the expected seat share in the state House and Senate, I compute a partisan index of statewide elections for 11 statewide partisan elections between 2014-2020. \({ }^{11}\)

Figure 4 shows this for the 120 House seats. Districts are ordered from least Democratic at the bottom to most Democratic at the top. Districts with a partisan index less than 0.50 (i.e. Republican leaning) are shown as squares and districts with a partisan index greater than 0.50 (i.e. Democratic leaning) are displayed as triangles. In the House there are 71 districts with an index less than 0.50 (shown as squares) and 49 districts with an index greater than 0.50 (shown as triangles). A vertical dashed line is placed at 0.50 in each panel for reference. The grey lines around each point show the range of election outcomes for all of the 11 statewide elections used to generate the index. Districts in which the Republican candidate for statewide elections won the majority of the two-party vote share in all 11 races are colored red while districts where the Democratic candidate for statewide elections won the majority of the two-party vote share in all 11 races are colored blue. Districts where both parties have won a majority of the two-party vote share in these 11 races are colored green. Looking at the range across the index, there are 60 districts colored red (reliably Republican) in the House figure, 40 blue districts (reliable Democratic), and 20 green districts (competitive) in the House map. Using an alternative definition of competitiveness based on the closeness of the index to 0.50 , there are 57 districts with an index less than \(0.45,24\) districts between 0.45 and 0.55 (a commonly used range to define competitive seats), and 39 districts with an index of greater than 0.55.

Using the same method for the Senate, there are 30 squares (i.e. Republican leaning districts) and 20 triangles in the figure (i.e. Democratic leaning districts). Using the color scheme described above, there are 26 red districts (reliably Republican), 17 blue districts (reliable Democratic), and 7 green districts in the Senate map (competitive). Using an alternative definition of competitiveness based on the closeness of the index to 0.50 , there
across multiple cities) and are much more constrained to remain within the county clusters, unlike the congressional district maps.
\({ }^{11}\) The elections are 2020: President, Senate, Governor, Lieutenant Governor, Attorney General; 2016: President, Senate, Governor, Lieutenant Governor, Attorney General; 2014: Senate
are 24 districts with an index less than \(0.45,17\) districts between 0.45 and 0.55 , and 9 districts with an index of greater than 0.55 . Figure 5 shows this for the 50 Senate seats.

When looking at these figures, we cannot make any immediate determinations about why this distribution of seats, which has more Republican leaning districts than Democratic leaning districts, does not exactly reflect the statewide of average of votes in the state, which is much closer to parity between the parties. The reason for this is that, as discussed above, the distribution of voters who favor one party or the other is not even across the state. Furthermore, districts in North Carolina are restricted to remain within the predetermined county clusters, further complicating the connection between district boundaries and statewide vote shares. This unique feature of North Carolina's redistricting process significantly constrains any map maker and can furthermore exacerbate the geographic disparities that exist across the state.

Figure 4: Partisan Index of Senate Districts in 2021 Enacted Plan


Note: Partisan Index based on the average of 11 statewide partisan races between 2014-2020. Districts with a partisan index less than .50 (i.e. Republican leaning) are shown as squares and districts with a partisan index greater than .50 (i.e. Democratic leaning) are displayed as triangles. A vertical dashed line is placed at .50 in each panel for reference. The grey lines around each point show the range of election outcomes for all of the 11 statewide elections used to generate the index. Districts in which the Republican candidate for statewide elections won the majority of the two-party vote share in all 11 races are colored red while districts where the Democratic candidate for statewide elections won the majority of the two-party vote share in all 11 races are colored blue. Districts where both parties have won a majority of the two-party vote share in these 11 races are colored green.

Figure 5: Partisan Index of Senate Districts in 2021 Enacted Plan


Note: Partisan Index based on the average of 11 statewide partisan races between 2014-2020. Districts with a partisan index less than .50 (i.e. Republican leaning) are shown as squares and districts with a partisan index greater than .50 (i.e. Democratic leaning) are displayed as triangles. A vertical dashed line is placed at .50 in each panel for reference. The grey lines around each point show the range of election outcomes for all of the 11 statewide elections used to generate the index. Districts in which the Republican candidate for statewide elections won the majority of the two-party vote share in all 11 races are colored red while districts where the Democratic candidate for statewide elections won the majority of the two-party vote share in all 11 races are colored blue. Districts where both parties have won a majority of the two-party vote share in these 11 races are colored green.

\section*{4 Introduction to Simulations Analysis}

To gauge the range of partisan outcomes in the North Carolina General Assembly, I conduct simulated districting analyses to allow me to produce a large number of districting plans that follow traditional districting criteria using small geographic units as building blocks for hypothetical legislative districts (voting tabulation districts, or VTDs). This simulation process ignores all partisan and racial considerations when drawing districts. Instead, the computer simulations are programmed to create districting plans that follow traditional districting goals without paying attention to partisanship, race, or the location of incumbent legislators.

The process of simulating districting plans has been recognized and used in a variety of redistricting cases, including in North Carolina. \({ }^{12}\) While different people employ slightly different methods, the overall process is much the same. For my simulations, I use a program developed by Fifield et al. (2020). \({ }^{13}\)

A significant advantage of the simulation-based approach in general is the ability to compare a proposed map to a set of maps that are drawn without consideration of criteria such as partisanship or race. If the proposed map is similar to the set of simulated maps, it is reasonable to assume that the proposed map was not drawn primarily with partisan intent. If the map differs from the simulations, it is important to recognize that a variety of factors could have played into the deviation, but the underlying idea is that a deviation from the simulations reflects a choice by the map-maker to prioritize some factor that was not

\footnotetext{
\({ }^{12}\) See League of Women Voters of Ohio v. Ohio Redistricting Commission (2021); Harper v. Hall (2021); Common Cause v. Lewis (2019); Harper v. Lewis (2019); League of Women Voters of Pennsylvania v. Commonwealth of Pennsylvania (2018).
\({ }^{13}\) Fifield, Benjamin, , Michael Higgins, Kosuke Imai, and Alexander Tarr. "Automated redistricting simulation using Markov chain Monte Carlo." Journal of Computational and Graphical Statistics 29, no. 4 (2020): 715-728.

Fifield, Benjamin, Kosuke Imai, Jun Kawahara, and Christopher T Kenny. 2020. "The essential role of empirical validation in legislative redistricting simulation." Statistics and Public Policy 7 (1): 52-68.

Kenny, Christopher T., Cory McCartan, Benjamin Fifield, and Kosuke Imai. 2020. redist: Computational Algorithms for Redistricting Simulation. https://CRAN.R-project.org/package= redist.

McCartan, Cory, and Kosuke Imai. 2020. "Sequential Monte Carlo for sampling balanced and compact redistricting plans." arXiv preprint arXiv:2008.06131.
}
made a priority in the simulations. This could include partisanship, but could also include incumbency protection, preservation of media markets, keeping particular counties, cities, or neighborhoods together that have historically been joined in districts, or some other factor that is important to a map maker or legislator involved in the process.

A major factor in the validity of the simulated maps is whether or not they constitute a representative sample of the trillions of possible maps that could be drawn. \({ }^{14}\) If the sample produced by the simulations is not representative, then we may be comparing a proposed map to a biased selection of alternative maps, which renders the value of the comparison meaningless.

A specific benefit of the particular algorithm I use here is that the authors show mathematically and in a small-scale validation study that their method produces a representative sample of maps. With regards to this issue, the authors state:

Yet, until recently, surprisingly few simulation algorithms have existed in the published scholarship. In fact, most of these existing studies use essentially the same Monte Carlo simulation algorithm where a geographical unit is randomly selected as a "seed" for each district and then neighboring units are added to contiguously grow this district until it reaches the pre-specified population threshold (e.g., Cirincione, Darling, and O'Rourke 2000; Chen and Rodden 2013). Unfortunately, no theoretical justification is given for these simulation algorithms, and hence they are unlikely to yield a representative sample of redistricting plans for a target population....Unlike the aforementioned standard simulation algorithms, the proposed algorithms are designed to yield a representative sample of redistricting plans under contiguity and equal population constraints. \({ }^{15}\)

\footnotetext{
\({ }^{14}\) Tam Cho, Wendy K., and Yan Y. Liu. "Toward a talismanic redistricting tool: A computational method for identifying extreme redistricting plans." Election Law Journal 15, no. 4 (2016): 351-366. Cho, Wendy K. Tam, and Bruce E. Cain. "Human-centered redistricting automation in the age of AI." Science 369, no. 6508 (2020): 1179-1181. McCartan, Cory, and Kosuke Imai. "Sequential Monte Carlo for sampling balanced and compact redistricting plans." arXiv preprint arXiv:2008.06131 (2020).
\({ }^{15}\) Cirincione, C., Darling, T. A., and O'Rourke, T. G. (2000), "Assessing South Carolina's 1990s Congressional Districting," Political Geography, 19, 189-211. DOI: 10.1016/S0962-6298(99)00047-5. Chen, J., and
}

With a representative set of maps in hand, we can then analyze the difference between the proposed map and the simulated maps on a variety of metrics. As discussed above, it is well established that the party whose voters are more geographically compact stands at a natural disadvantage when single member districts are drawn. "The party that's more spread out has a geographic advantage," says applied mathematician Jonathan Mattingly of Duke University. "That's our system. \({ }^{16}\) " The comparison between the simulated districts and the proposed map overcomes this hurdle and allows for an apples-to-apples comparison that accounts for the unique political geography of a state, such as the spatial distribution of voters or the location and number of administrative boundaries, such a counties. Simulation methods can also incorporate a state's other unique redistricting rules. The simulationbased approach therefore permits us to compare a particular plan to a large number of representative districting plans in the North Carolina House and Senate using criteria specific to North Carolina. In the simulations I run, I instruct the model to generate plans that adhere to the restrictions included in the North Carolina Constitution as well as the Stephenson criteria of roughly equal population, adherence to county cluster boundaries, minimization of county traversals within clusters, and geographic compactness.

Specifically, the model is constrained to conduct 50,000 simulations separately in each county cluster by assembling VTDs into districts that meet the redistricting criteria of equal population, contiguity, compactness, and minimal county and municipal divisions. \({ }^{17}\) Within each cluster the model generates 50,000 maps with the number of districts equal to the number of districts allocated to that cluster that are of roughly equal population \((<5 \%\) deviation above or below the target population of 86,995 in the House and 208,788 in the Senate). The model is also instructed to generate districts that cross county boundaries as few times as possible. Of course, county populations do not always add up to round units

Rodden, J. (2013), "Unintentional Gerrymandering: Political Geography and Electoral Bias in Legislatures," Quarterly Journal of Political Science, 8, 239-269. DOI: 10.1561/100.00012033.
\({ }^{16}\) https://www.sciencenews.org/article/gerrymandering-elections-next-gen-computer-generated-maps
\({ }^{17}\) The simulations are not allowed to split VTDs as this is the lowest level of geography for which I have election results.
of districts, and so of necessity some county boundaries will be split. The model is further instructed that when a county boundary needs to be crossed, it should avoid splitting the county more times than necessary. After the model is run, I discard any simulations that include more county traversals than the Enacted Plan.

I also instruct the model to generate districts that are geographically compact. After the model is run, I compute the average geographic compactness of the simulated districts in the county cluster and compare that to the average geographic compactness of the Enacted Plan. I use the Polsby-Popper measure of compactness, which is a common measure of geographic compactness. \({ }^{18}\) After the model is run, I also discard any simulations that are less compact, on average, than the Enacted Plan.

The final constraint is an instruction to avoid splitting municipal boundaries. This constraint is second order to the constraint to avoid county boundaries. In other words, the model prioritizes avoiding county splits over municipal splits. Once the county split constraint is accounted for, then the model places priority on avoidance of municipal splits. Because municipalities and VTDs do not perfectly overlap, it is difficult to calculate the exact number of municipal splits from the model. I make a simplifying assumption and assign each VTD to a municipality if any part of the VTD intersects that municipality. Furthermore, if a VTD overlaps multiple municipalities, I assign the VTD to the municipality in which the most area of the VTD is contained. In a few cases a city spans multiple counties. Here I consider each portion of the city as a separate municipality.

Once the simulated district plans are complete, I then compute the partisan lean of each district in each plan. For the partisan composition of each district I rely on the two-party election results from statewide elections disaggregated to the level of the VTD. I then reassemble these election results at the district level to compute the proportion of votes

\footnotetext{
\({ }^{18}\) The Polsby-Popper measure is computed by taking is 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, Daniel D., and Robert D. Popper. 1991. "The Third Criterion: Compactness as a procedural safeguard against partisan gerrymandering." Yale Law \& Policy Review 9 (2): 301-353.
}
in each statewide election that were won by the Democratic and Republican candidates in those districts. I compute the index of district partisanship using the two-party vote share in eleven elections from the past ten years. \({ }^{19}\) The index is an average of all eleven of these statewide races in North Carolina from 2012-2020. Averages of multiple elections have the benefit of "washing out" the impact of any particular election, since individual elections can vary due to particular candidate features and other idiosyncrasies and particular years can vary due to national electoral waves (i.e. 2020 was a good electoral year for Democrats while 2016 was a good year for Republicans nationwide). As such, my preferred metric is the partisan index. However, I also compute the two-party vote share for each of the 11 statewide elections individually and report these as well for completeness. Occasionally, seeing how a plan or set of simulations varies across individual elections can shed light on the variation and shifts in political preferences in a locality.

\section*{5 NC House Analysis}

A unique feature of the redistricting process in North Carolina is the use of "county grouping (or clusters)" wherein redistricting takes place entirely inside of each cluster. In essence, this means that the process of redistricting the state House (or Senate) in North Carolina is not a single problem in which a map maker draws 120 (or 50 for the Senate) districts throughout the state. Instead, the map maker faces many distinct redistricting problems that are all self contained. Cooper et al. (2021, "The Duke Study"), have addressed this issue using the 2020 census data and reported on the optimal set of clusters in both the House and Senate. They state, "Determining the county clusters for the NC House and for the NC Senate is the first step in the redistricting process for the NC General Assembly. The county clusters are largely algorithmically determined through an optimization procedure

\footnotetext{
\({ }^{19}\) The particular races are 2020: President, US Senate, Governor, Lieutenant Governor, and Attorney General; 2016: President, US Senate, Governor, Lieutenant Governor, and Attorney General; 2014: US Senate. There are other partisan statewide races in these years, but I was unable to locate election results disaggregated to the VTD level.
}
outlined by the NC Supreme Court in Stephenson v. Bartlett. \({ }^{20}\) " While there are a few choices that a map maker can make in choosing between different sets of clusters, the county cluster design significantly constrains any map maker as he or she is forced to work only within the counties contained in a given cluster. Because of this, any analysis of the Enacted Plan must consider each cluster separately, as they are independent of one another.

In the state House, there are 40 county clusters. 33 clusters containing 107 of the 120 districts are fixed based on the county cluster arrangement determined by Cooper et al. (2021, "Duke Study"). The remaining 7 clusters were selected by the General Assembly from three sets of choices between clusters.

\subsection*{5.1 House Groupings with only 1 District}

Of the 40 county clusters, there are 13 of them composed of 31 counties in which the cluster contains only 1 House district. In these clusters there is no discretion for any map maker. The district is simply the boundaries of the county cluster. These counties collectively have a population of \(1,128,328\), or approximately \(11 \%\) of the state's total population and account for 13 of the 120 seats in the state House.

Figure 6 shows a map of the counties that constitute these single-district clusters. Table 1 below shows each cluster, the counties included in the cluster, and the corresponding districts in the House Enacted Plan. The final two columns of the table show the partisan lean of the cluster using the 11 statewide partisan elections index discussed above and whether or not, based on that index, the cluster leans Democratic (or Republican). I classify a district (in the Enacted Plan and in the simulations as well) as being Democratic leaning if the partisan index for that district is greater than 0.50 . In other words, if more than fifty percent of the ballots cast for the two major parties were for Democratic candidates, that district is classified as a Democratic leaning district. Obviously, districts with index values much larger than (smaller than) 0.50 will be more likely to elect a Democrat (Republican)

\footnotetext{
\({ }^{20}\) https://sites.duke.edu/quantifyinggerrymandering/files/2021/08/countyClusters2020.pdf
}
than districts that are very close to 0.50 .
The bottom row of the Table 1 shows the results for all 13 clusters together. Collectively these counties have a partisan index of 0.43 , meaning roughly four in ten voters in these counties cast ballots for Democratic candidates in the 11 statewide races I consider here. However, the location of voters for the different parties is not uniformly distributed across these counties. Given this spatial distribution of voters across the counties, 4 of the 13 clusters lean Democratic, or roughly 30 percent. In this case, the proportion of Democratic leaning districts is lower that the proportion of voters in these counties who favor Democratic candidates. However, this is not due to any district boundaries. It is purely a function of the political geography of the state since all of these districts are entire county units and are, as such, fixed.


Table 1: County Grouping Containing 1 House District
\begin{tabular}{|r|c|c|c|c|c|}
\hline County Cluster & \# Counties & \# Districts & District \# & \begin{tabular}{c} 
County Cluster \\
Democratic \\
Partisan \\
Index
\end{tabular} & \begin{tabular}{c} 
\# of districts \\
that are \\
Democratic \\
leaning
\end{tabular} \\
\hline \hline Rockingham & 1 & 1 & 65 & 0.36 & 0 \\
\hline Lincoln & 1 & 1 & 97 & 0.28 & 0 \\
\hline Burke & 1 & 1 & 86 & 0.32 & 0 \\
\hline Bladen-Sampson & 2 & 1 & 22 & 0.43 & 0 \\
\hline Hoke-Scotland & 2 & 1 & 48 & 0.55 & 1 \\
\hline Haywood-Madison & 2 & 1 & 118 & 0.40 & 0 \\
\hline Montgomery-Stanly & 2 & 1 & 67 & 0.30 & 0 \\
\hline \begin{tabular}{r} 
Bertie-Edgecomb- \\
Martin
\end{tabular} & 3 & 1 & 23 & 0.61 & 1 \\
\hline \begin{tabular}{r} 
Greene-Jones- \\
Lenoir
\end{tabular} & 3 & 1 & 12 & 0.47 & 0 \\
\hline \begin{tabular}{r} 
Jackson-Swain- \\
Transylvania
\end{tabular} & 3 & 1 & 119 & 0.44 & 0 \\
\hline \begin{tabular}{r} 
Halifax-
\end{tabular} & 3 & 1 & 27 & 0.64 & 1 \\
\hline \begin{tabular}{r} 
Northampton-Warren
\end{tabular} & 4 & 1 & 120 & 0.28 & 0 \\
\hline \begin{tabular}{r} 
Cherokee-Clay- \\
Graham-Macon
\end{tabular} & 4 & 13 & 0.52 & 1 \\
\hline \begin{tabular}{r} 
Camden-Gates- \\
Hertford-Pasquotank
\end{tabular} & 4 & 31 & & 0.43 & 4 \\
\hline \hline Total: & 31 & & & \\
\hline
\end{tabular}

\section*{6 House Groupings with More than 1 District:}

There are 27 county clusters that contain multiple districts where a map drawer has some discretion to draw district boundaries. I consider each cluster separately in the simulations analysis because the districts are constrained to remain within each county cluster.

These clusters collectively account for 107 of the 120 districts in the North Carolina House of Representatives. In addition to calculating the number of Democratic leaning districts for the Enacted Plan, I also compute the same partisan index for the plaintiffs proposed map (hereafter, 'Duchin Map') and compare how the Enacted Map and the Duchin Map perform on this same metric. \({ }^{21}\) An overview of the results are as follows. In these 107 districts, the Enacted Plan creates 62 districts that lean Republican and 45 districts that lean Democratic according to the statewide partisan elections index. The Duchin Plan creates 52 districts that lean Republican and 52 districts that lean Democratic according to the statewide partisan elections index.

I then place both maps in relation to the distribution of partisan outcomes from the simulated districts. In each cluster I consider the number of Democratic districts generated by each plan in comparison to the distribution of results from the simulations. I consider a plan to be a partisan outlier if the number of Democratic districts generated by the plan falls outside the middle \(50 \%\) of simulation results. This is a conservative definition of an outlier. In the social sciences, medicine, and other disciplines it is traditional to consider something an outlier if it falls outside the middle \(95 \%\) or \(90 \%\) of the comparison distribution.

In 26 of the 27 clusters, the Enacted Map produces a number of Democratic districts that falls within the middle \(50 \%\) of simulation results and are not partisan outliers. This leaves 1 cluster in which the Enacted Plan is a partisan outlier in comparison to the simulation results. \({ }^{22}\) The Enacted Map also produces the same number of Democratic leaning districts as the modal (most common) number of Democratic leaning districts in the simulations in

\footnotetext{
\({ }^{21}\) Plaintiffs refer to this as an "optimized map." It is unclear what this means as optimization is a choice made by the researcher as to which factors to prioritize at the expense of others.
\({ }^{22}\) This occurs in Guilford County.
}

22 of the 27 clusters.
In 23 of the 27 clusters, the Duchin Map produces a number of Democratic districts that fall within the middle \(50 \%\) of simulation results and are not partisan outliers. This leaves 4 clusters in which the Duchan Plan is a partisan outlier in comparison to the simulation results. \({ }^{23}\) This is three more clusters that are partisan outliers than the Enacted Map. The Duchin Map also produces the same number of Democratic leaning districts as the modal (most common) number of Democratic leaning districts in the simulations in 20 of the 27 clusters.

By these metrics the Duchin Map is less in alignment with the results of the nonpartisan simulations than the Enacted Map and is a greater partisan outlier.

In 20 of the 27 clusters the Enacted Map and the Duchin map are in agreement on the number of Democratic leaning districts. \({ }^{24}\) This means there is disagreement in 7 of the 40 total clusters. Figure 7 shows a map of the locations in which the Enacted Plan and the Duchin Plan are in agreement on the number of Democratic leaning districts. Figure 8 shows a map of the locations in which the Enacted Plan and the Duchin Plan disagreement on the number of Democratic leaning districts.

Table 2 summarizes the results of the simulation analysis for these 27 House clusters with multiple districts. Thereafter, I present the results cluster-by-cluster.

\footnotetext{
\({ }^{23}\) These are Brunswick-New Hanover, Cumberland, Duplin-Wayne, and Pitt
\({ }^{24}\) These county groupings are: Davidson, Columbus-Robeson, Carteret-Craven, Nash-Wilson, CaswellOrange, Alexander et al., Franklin et al., Alleghany et al., Beaufort et al., Anson-Union, Onslow-Pender, Harnett-Johnston, Catawba-Iredell, Durham-Person, Forsyth-Stokes, Cabarrus et al., Chatham et al., Avery et al., Mecklenburg, and Wake.
}

Table 2: House County Grouping Analysis Summary
\begin{tabular}{|c|c|c|c|c|c|}
\hline & & & \multicolumn{3}{|l|}{\# of Districts that are Democratic Leaning} \\
\hline County Cluster & Cluster Democratic Partisan Index & \# Districts & Enacted Map & Duchin Map & Simulations \\
\hline Davidson & 0.27 & 2 & 0 & 0 & 0 \\
\hline Pitt & 0.54 & 2 & 1 & 2 & 1 \\
\hline Alamance & 0.45 & 2 & 0 & 1 & 0-1 \\
\hline Columbus-Robeson & 0.45 & 2 & 0 & 0 & 0 \\
\hline Carteret-Craven & 0.35 & 2 & 0 & 0 & XXX \\
\hline Duplin-Wayne & 0.43 & 2 & 0 & 1 & 0 \\
\hline Nash-Wilson & 0.52 & 2 & 2 & 2 & 2 \\
\hline Caswell-Orange & 0.71 & 2 & 2 & 2 & 2 \\
\hline Alexander-Surry-Wilkes & 0.25 & 2 & 0 & 0 & 0 \\
\hline Franklin-Granville-Vance & 0.51 & 2 & 1 & 1 & 1 \\
\hline Alleghany-Ashe-Caldwell-Watauga & 0.36 & 2 & 0 & 0 & 0 \\
\hline Beaufort-Chowan-Currituck
Dare-Hyde-Pamlico
Perquimans-Tyrrell-Washington & 0.39 & 2 & 0 & 0 & 0 \\
\hline Buncombe & 0.60 & 3 & 2 & 3 & 2-3 \\
\hline Anson-Union & 0.37 & 3 & 0 & 0 & 0 \\
\hline Onslow-Pender & 0.35 & 3 & 0 & 0 & 0 \\
\hline Cumberland & 0.59 & 4 & 3 & 4 & 3 \\
\hline Harnett-Johnston & 0.38 & 4 & 0 & 0 & 0 \\
\hline Catawba-Iredell & 0.33 & 4 & 0 & 0 & 0 \\
\hline Durham-Person & 0.76 & 4 & 4 & 4 & 4 \\
\hline Brunswick-New Hanover & 0.45 & 4 & 1 & 2 & 1 \\
\hline Forsyth-Stokes & 0.52 & 5 & 2 & 2 & 2-3 \\
\hline Cabarrus-Davie-Rowan-Yadkin & 0.36 & 5 & 0 & 0 & 0 \\
\hline Chatham-Lee-Moore-Randolph-Richmond & 0.38 & 5 & 1 & 1 & 1 \\
\hline Guilford & 0.61 & 6 & 4 & 5 & 5 \\
\hline Avery-Cleveland-Gaston-Henderson-McDowell-Mitchell-Polk-Rutherford-Yancey & 0.35 & 7 & 0 & 0 & 0 \\
\hline Mecklenburg & 0.65 & 13 & 11 & 11 & 11-12 \\
\hline Wake & 0.61 & 13 & 11 & 11 & 11-12 \\
\hline Total: & & 107 & 45 & 52 & 46-51 \\
\hline
\end{tabular}

Note: Number of Democratic leaning districts is measured using the average two-party vote share in each district from the 11 statewide races noted earlier. Simulations range represents the middle \(50 \%\) of outcomes from the simulations results. There are no simulations results conducted in Carteret-Craven cluster, see later section for explanation. Groupings where a plan falls outside the middle \(50 \%\) range of the simulations are bolded.



\subsection*{6.1 Davidson House County Grouping}

Davidson County contains 2 districts. In the Enacted Map these are Districts 80 and 81. The county cluster has an overall partisan index of 0.27 , which is strongly Republican. After conducting 50,000 initial simulations to create two districts in this cluster, I would normally discard any simulations that contain more county traversals than the Enacted Plan. However, in this case the county cluster is only one county (Davidson) and so the simulations are constrained to keep both districts entirely within the county, and thus, by definition there will be no county traversals in all 50,000 simulations as well as in the Enacted Map. Next, I discard any simulations in which the average compactness score of the districts in the simulations is not as large or larger than the compactness score of the Enacted Map. This leaves 37,252 simulated maps, each containing two districts.

A map of the location of this county cluster in relation to the rest of the state is shown in Figure 9. A map of the Enacted Plan's districts within this cluster is shown in Figure 10.

The distribution of likely district partisanship based on the statewide partisan elections index calculated for each of the simulation results is shown in Figure 11. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The red vertical line shows the number of Democratic leaning seats in the Enacted Map in the same cluster, and the vertical dashed green line shows the number of Democratic leaning seats in the Duchin Map in the cluster. In this cluster the simulations, the Enacted Map, and the Duchin Map are in agreement, and all generate 0 Democratic leaning districts.

Table 3 breaks apart the partisan index into the 11 constituent elections and shows the distribution of Democratic leaning seats generated if one were to look at each election separately. Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded
number in each row is the number of Democratic leaning districts produced by the Enacted Plan using the equivalent election. In this case there is unanimous agreement across all 11 elections.

Figure 9: Map of Davidson House County Cluster


Figure 10: Map of House Enacted Plan in Davidson County Cluster
(a) Enacted Map
(b) Duchin Map


Note: The left map shows the district lines for the Enacted Map and the right map shows the district lines for the Duchin Map.

Partisan Lean of Districts
\begin{tabular}{|c|c|c|}
\hline District: & Enacted Plan & Duchin Plan \\
\hline 80 & 0.26 & 0.28 \\
\hline 81 & 0.29 & 0.27 \\
\hline \hline
\end{tabular}

Note: Partisan index is based on the two-party vote average of 11 statewide partisan elections between 2014-2020.

Figure 11: Distribution of Partisan Districts from Simulations in Davidson House County Cluster


Note: Distribution of likely district partisanship based on the statewide partisan elections index calculated for each of the simulation results. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The red vertical line shows the number of Democratic leaning seats in the Enacted Map in the same cluster, and the vertical dashed green line shows the number of Democratic leaning seats in the Duchin Map in the cluster.

Table 3: Simulation Results by Individual Elections
Davidson House County Cluster
\begin{tabular}{|l|c|c|c|}
\hline \multicolumn{4}{|c|}{ Number of Democratic Leaning Districts: } \\
\hline & 0 & 1 & 2 \\
\hline Individual Elections: & \multicolumn{3}{|c|}{} \\
\hline 2020 President & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Senate & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Governor & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Lt. Governor & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Attorney General & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 President & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Senate & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Governor & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Lt. Governor & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Attorney General & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2014 Senate & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline
\end{tabular}

Note: Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded number in each row is the number of Democratic leaning districts produced by the Enacted Plan using the equivalent election. For example, using the 2020 Presidential election \(100 \%\) of the simulations produce 0 Democratic leaning districts. The Enacted Plan does as well, as the ' 0 District' cell is bolded in that row.

\subsection*{6.2 Pitt House County Grouping}

Pitt County contains 2 districts. In the Enacted Map these are Districts 8 and 9 . The county cluster has an overall partisan index of 0.54 , which is slightly Democratic. After conducting 50,000 initial simulations to create two districts in this cluster, I would normally discard any simulations that contain more county traversals than the Enacted Plan. However, in this case the county cluster is only one county and so the simulations are constrained to keep both districts entirely within the county, and thus, by definition there will be no county traversals in all 50,000 simulations as well as in the Enacted Map. Next, I discard any simulations in which the average compactness score of the districts in the simulations is not as large or larger than the compactness score of the Enacted Map. This leaves 5,189 simulated maps, each containing two districts.

A map of the location of this county cluster in relation to the rest of the state is shown in Figure 12. A map of the Enacted Maps' districts and the Duchin Map's district boundaries within this cluster are shown in Figure 13.

The distribution of district partisanship based on the statewide partisan elections index calculated for each of the simulation results is shown in Figure 14. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The red vertical line shows the number of Democratic leaning seats in the Enacted Map in the same cluster, and the vertical dashed green line shows the number of Democratic leaning seats in the Duchin Map in the cluster. In \(91 \%\) of the simulations there is 1 Democratic leaning district and in the remaining \(9 \%\) of the simulations there are two Democratic leaning districts. The Enacted Map is in alignment with the modal outcome of the simulations by creating one Democratic district. The Duchin Map generates two Democratic districts.

Table 4 breaks apart the partisan index into the 11 constituent elections and shows the distribution of Democratic leaning seats generated if one were to look at each election separately. Each row shows the percent of simulations that produce the number of Demo-
cratic leaning districts using the election or election index indicated in the row. The bolded number in each row is the number of Democratic leaning districts produced by the Enacted Plan using the equivalent election. In this case there is unanimous agreement between the modal outcome in the simulations and the Enacted Map across all 11 elections.

Figure 12: Map of Pitt House County Cluster


Figure 13: Enacted Map and Duchin Map in Pitt House County Cluster


Partisan Lean of Districts
\begin{tabular}{|c|c|c|}
\hline District: & Enacted Plan & Duchin Plan \\
\hline 8 & 0.64 & 0.55 \\
\hline 9 & 0.46 & 0.53 \\
\hline \hline
\end{tabular}

Note: Partisan index is based on the two-party vote average of 11 statewide partisan elections between 2014-2020.

Figure 14: Distribution of Partisan Districts from Simulations in Pitt House County Cluster


Note: Distribution of likely district partisanship based on the statewide partisan elections index calculated for each of the simulation results. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The red vertical line shows the number of Democratic leaning seats in the Enacted Map in the same cluster, and the vertical dashed green line shows the number of Democratic leaning seats in the Duchin Map in the cluster.

Table 4: Simulation Results by Individual Elections
Pitt House County Cluster
\begin{tabular}{|l|c|c|c|}
\hline \multicolumn{4}{|c|}{ Number of Democratic Leaning Districts: } \\
\hline & 0 & 1 & 2 \\
\hline Individual Elections: & \multicolumn{3}{|c|}{} \\
\hline 2020 President & \(0 \%\) & \(\mathbf{8 9 \%}\) & \(11 \%\) \\
\hline 2020 Senate & \(0 \%\) & \(\mathbf{9 1 \%}\) & \(9 \%\) \\
\hline 2020 Governor & \(0 \%\) & \(\mathbf{4 4 \%}\) & \(56 \%\) \\
\hline 2020 Lt. Governor & \(0 \%\) & \(\mathbf{9 4 \%}\) & \(6 \%\) \\
\hline 2020 Attorney General & \(0 \%\) & \(\mathbf{7 1 \%}\) & \(29 \%\) \\
\hline 2016 President & \(0 \%\) & \(\mathbf{9 7 \%}\) & \(3 \%\) \\
\hline 2016 Senate & \(0 \%\) & \(\mathbf{1 0 0 \%}\) & \(0 \%\) \\
\hline 2016 Governor & \(0 \%\) & \(\mathbf{9 7 \%}\) & \(3 \%\) \\
\hline 2016 Lt. Governor & \(0 \%\) & \(\mathbf{1 0 0 \%}\) & \(0 \%\) \\
\hline 2016 Attorney General & \(0 \%\) & \(\mathbf{8 3 \%}\) & \(17 \%\) \\
\hline 2014 Senate & \(0 \%\) & \(\mathbf{1 0 0 \%}\) & \(0 \%\) \\
\hline
\end{tabular}

Note: Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded number in each row is the number of Democratic leaning districts produced by the Enacted Plan using the equivalent election. For example, using the 2020 Presidential election \(89 \%\) of the simulations produce 1 Democratic leaning district. The Enacted Plan does as well, as the ' 1 District' cell is bolded in that row.

\subsection*{6.3 Alamance House County Grouping}

Alamance County contains 2 districts. In the Enacted Map these are Districts 63 and 64. The county cluster has an overall partisan index of 0.45 , which is slightly Republican. After conducting 50,000 initial simulations to create two districts in this cluster, I would normally discard any simulations that contain more county traversals than the Enacted Plan. However, in this case the county cluster is only one county and so the simulations are constrained to keep both districts entirely within the county, and thus, by definition there will be no county traversals in all 50,000 simulations as well as in the Enacted Map. Next, I discard any simulations in which the average compactness score of the districts in the simulations is not as large or larger than the compactness score of the Enacted Map. This leaves 47,482 simulated maps, each containing two districts.

A map of the location of this county cluster in relation to the rest of the state is shown in Figure 15. A map of the Enacted Maps' districts and the Duchin Map's district boundaries within this cluster are shown in Figure 16. I also include the map of districts in this county from the 2020 plan for comparison here.

The distribution of district partisanship based on the statewide partisan elections index calculated for each of the simulation results is shown in Figure 17. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The red vertical line shows the number of Democratic leaning seats in the Enacted Map in the same cluster, and the vertical dashed green line shows the number of Democratic leaning seats in the Duchin Map in the cluster. In \(44 \%\) of the simulations there are 0 Democratic leaning districts and in the remaining \(56 \%\) of the simulations there is 1 Democratic leaning district. The Enacted Map is within the middle \(50 \%\) if the simulation results, but is not in alignment with the modal outcome of the simulations. The Duchin Map generates 1 Democratic district.

Table 5 breaks apart the partisan index into the 11 constituent elections and shows
the distribution of Democratic leaning seats generated if one were to look at each election separately. Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded number in each row is the number of Democratic leaning districts produced by the Enacted Plan using the equivalent election. In 10 of the 11 elections considered the Enacted Plan agrees with the modal outcome of the simulations. The only case in which it does not agree with the modal result is in the 2020 Lt. Governor's race. However, in this race the simulations were nearly equally split between generating 0 and 1 Democratic district.

The Enacted Plan is also extremely similar to the maps used in Alamance County in the 2020 elections. These districts were approved by a court in 2019. The Enacted Plan is different by only two and one half precincts - South Burlington precinct is now placed in District 64 (it was in District 63 in the 2020 map) and North Thompson and the part of Melville 3 precinct that was split into District 64 is now placed into District 63, making it whole and keeping the municipality of Swepsonville entirely in District 63.

Another consideration is that while the Enacted Plan does not generate a Democratic leaning district using the partisan index, there is one district that is effectively a \(50 / 50\) split between Republicans and Democrats. The partisan index of District 63 is 0.4994 , which is about as close to a perfect split between Republican and Democratic votes as a district could get. It is very likely that both parties will win this district a number of times over the next several years.

Figure 15: Map of Alamance House County Cluster


Figure 16: Enacted Map, 2020 Map, and Duchin Map in Pitt House County Cluster
(a) Enacted Map
(b) 2020 Map
(c) Duchin Map


Partisan Lean of Districts
\begin{tabular}{|c|c|c|}
\hline District: & Enacted Plan & Duchin Plan \\
\hline 63 & 0.50 & 0.54 \\
\hline 64 & 0.41 & 0.38 \\
\hline \hline
\end{tabular}

Note: Partisan index is based on the two-party vote average of 11 statewide partisan elections between 2014-2020.

Figure 17: Distribution of Partisan Districts from Simulations in Alamance House County Cluster


Note: Distribution of likely district partisanship based on the statewide partisan elections index calculated for each of the simulation results. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The red vertical line shows the number of Democratic leaning seats in the Enacted Map in the same cluster, and the vertical dashed green line shows the number of Democratic leaning seats in the Duchin Map in the cluster.

Table 5: Simulation Results by Individual Elections
Alamance House County Cluster
\begin{tabular}{|l|c|c|c|}
\hline \multicolumn{4}{|c|}{ Number of Democratic Leaning Districts: } \\
\hline & 0 & 1 & 2 \\
\hline Individual Elections: & \multicolumn{3}{|c|}{} \\
\hline 2020 President & \(40 \%\) & \(\mathbf{6 0 \%}\) & \(0 \%\) \\
\hline 2020 Senate & \(38 \%\) & \(\mathbf{6 2 \%}\) & \(0 \%\) \\
\hline 2020 Governor & \(3 \%\) & \(\mathbf{9 7 \%}\) & \(0 \%\) \\
\hline 2020 Lt. Governor & \(\mathbf{4 7 \%}\) & \(53 \%\) & \(0 \%\) \\
\hline 2020 Attorney General & \(13 \%\) & \(\mathbf{8 7 \%}\) & \(0 \%\) \\
\hline 2016 President & \(\mathbf{7 7 \%}\) & \(23 \%\) & \(0 \%\) \\
\hline 2016 Senate & \(\mathbf{9 8 \%}\) & \(2 \%\) & \(0 \%\) \\
\hline 2016 Governor & \(39 \%\) & \(\mathbf{6 1 \%}\) & \(0 \%\) \\
\hline 2016 Lt. Governor & \(\mathbf{9 9 \%}\) & \(1 \%\) & \(0 \%\) \\
\hline 2016 Attorney General & \(42 \%\) & \(\mathbf{5 8 \%}\) & \(0 \%\) \\
\hline 2014 Senate & \(\mathbf{9 7 \%}\) & \(3 \%\) & \(0 \%\) \\
\hline
\end{tabular}

Note: Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded number in each row is the number of Democratic leaning districts produced by the Enacted Plan using the equivalent election. For example, using the 2020 Presidential election \(60 \%\) of the simulations produce 1 Democratic leaning district. The Enacted Plan does as well, as the ' 1 District' cell is bolded in that row.

\subsection*{6.4 Columbus and Robeson House County Grouping}

The Columbus-Robeson House county grouping contains 2 districts. In the Enacted Map these are Districts 46 and 47 . The county cluster has an overall partisan index of 0.45 , which is slightly Republican. After conducting 50,000 initial simulations to create two districts in this cluster, I discard any simulations that contain more county traversals than the Enacted Plan. This leaves 46,076 remaining simulated maps. Next, I discard any simulations in which the average compactness score of the districts in the simulations is not as large or larger than the compactness score of the Enacted Map. This leaves 2,664 simulated maps, each containing two districts.

A map of the location of this county cluster in relation to the rest of the state is shown in Figure 18. A map of the Enacted Map's district boundaries and the Duchin Map's district boundaries within this county grouping are shown in Figure 19.

The distribution of district partisanship based on the statewide partisan elections index calculated for each of the simulation results is shown in Figure 20. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The red vertical line shows the number of Democratic leaning seats in the Enacted Map in the same cluster, and the vertical dashed green line shows the number of Democratic leaning seats in the Duchin Map in the cluster. In \(100 \%\) of the simulations there are 0 Democratic leaning districts. The Enacted Map is in alignment with the modal outcome of the simulations by creating 0 Democratic districts. The Duchin Map also generates 0 Democratic district.

Table 6 breaks apart the partisan index into the 11 constituent elections and shows the distribution of Democratic leaning seats generated if one were to look at each election separately. Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded number in each row is the number of Democratic leaning districts produced by the Enacted

Plan using the equivalent election. In this case there is unanimous agreement between the modal outcome in the simulations and the Enacted Map across all 11 elections.

Figure 18: Map of Columbus and Robeson House County Cluster


Figure 19: Map of House Enacted Plan and Duchin Plan in Columbus and Robeson County Cluster


Partisan Lean of Districts
\begin{tabular}{|c|c|c|}
\hline District: & Enacted Plan & Duchin Plan \\
\hline 46 & 0.42 & 0.49 \\
\hline 47 & 0.48 & 0.42 \\
\hline \hline
\end{tabular}

Note: Partisan index is based on the two-party vote average of 11 statewide partisan elections between 2014-2020.

Figure 20: Distribution of Partisan Districts from Simulations in Columbus and Robeson House County Cluster

Partisan Composition of Simulation Results from COLUMBUS, ROBESON
County Grouping Contains 2 Districts


Note: Distribution of likely district partisanship based on the statewide partisan elections index calculated for each of the simulation results. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The red vertical line shows the number of Democratic leaning seats in the Enacted Map in the same cluster, and the vertical dashed green line shows the number of Democratic leaning seats in the Duchin Map in the cluster.

Table 6: Simulation Results by Individual Elections
Columbus and Robeson House County Cluster
\begin{tabular}{|l|c|c|c|}
\hline \multicolumn{4}{|c|}{ Number of Democratic Leaning Districts: } \\
\hline & 0 & 1 & 2 \\
\hline Individual Elections: & \multicolumn{3}{|c|}{} \\
\hline 2020 President & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Senate & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Governor & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Lt. Governor & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Attorney General & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 President & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Senate & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Governor & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Lt. Governor & \(0 \%\) & \(\mathbf{1 0 0 \%}\) & \(0 \%\) \\
\hline 2016 Attorney General & \(0 \%\) & \(\mathbf{5 3 \%}\) & \(47 \%\) \\
\hline 2014 Senate & 0 & \(0 \%\) & \(\mathbf{1 0 0 \%}\) \\
\hline
\end{tabular}

Note: Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded number in each row is the number of Democratic leaning districts produced by the Enacted Plan using the equivalent election. For example, using the 2020 Presidential election \(100 \%\) of the simulations produce 0 Democratic leaning districts. The Enacted Plan does as well, as the ' 0 District' cell is bolded in that row.

\subsection*{6.5 Carteret and Craven House County Grouping}

The Carteret-Craven House county grouping contains 2 districts. In the Enacted Map these are Districts 3 and 13. The county cluster has an overall partisan index of 0.35 , which is strongly Republican. I do not conduct simulations in this cluster because there is no possible way to assemble VTDs in this county grouping and produce two districts that meet the equal population criteria. To do so requires splitting a VTD, something both the Enacted Plan and Duchin Plans do, but the simulations are not capable of. However, there is agreement between the Enacted Plan and the Duchin Plan, as both plans create two Republican leaning districts that are nearly identical in shape. Furthermore, given the strong Republican lean of the county grouping and relatively even distribution of partisan preferences in the county, it would be impossible to assemble any district that leans Democratic.

A map of the location of this county cluster in relation to the rest of the state is shown in Figure 21. A map of the Enacted Map's district boundaries and the Duchin Map's district boundaries within this county grouping are shown in Figure 22.

Figure 21: Map of Carteret and Craven County Cluster


Figure 22: Map of House Enacted Plan in Carteret and Craven County Cluster
(a) Enacted Map
(b) Duchin Map


Partisan Lean of Districts
\begin{tabular}{|c|c|c|}
\hline District: & Enacted Plan & Duchin Plan \\
\hline 3 & 0.40 & 0.40 \\
\hline 13 & 0.31 & 0.31 \\
\hline \hline
\end{tabular}

Note: Partisan index is based on the two-party vote average of 11 statewide partisan elections between 2014-2020.

\subsection*{6.6 Duplin and Wayne House County Grouping}

The Duplin-Wayne House county grouping contains 2 districts. In the Enacted Map these are Districts 4 and 10. The county cluster has an overall partisan index of 0.43 , which is moderately Republican. After conducting 50,000 initial simulations to create two districts in this cluster, I discard any maps that contain more county traversals than the Enacted Plan, leaving 23,399 maps. Next, I would normally discard any simulations in which the average compactness score of the districts in the simulations that are not as large or larger than the compactness score of the Enacted Map. However, this leaves 0 simulated maps, as the Enacted Plan is more compact than any of the simulations (an average Polsby-Popper score of .50 , which is very high). To have some simulations to compare to the Enacted Plan and the Duchin plan, I retained the \(10 \%\) of the simulated maps that have the highest compactness score (2,704 maps).

A map of the location of this county cluster in relation to the rest of the state is shown in Figure 23. A map of the Enacted Maps' districts and the Duchin Map's district boundaries within this cluster are shown in Figure 24.

The distribution of district partisanship based on the statewide partisan elections index calculated for each of the simulation results is shown in Figure 25. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The red vertical line shows the number of Democratic leaning seats in the Enacted Map in the same cluster, and the vertical dashed green line shows the number of Democratic leaning seats in the Duchin Map in the cluster. In \(100 \%\) of the simulations there are 0 Democratic leaning districts. The Enacted Map is in agreement with the simulation results and generates 0 Democratic leaning districts. The Duchin Map creates one Democratic leaning district (District 21) surrounding the town of Goldsboro. However to avoid Republican leaning VTDs in the north and western portions of Wayne County, District 4 in the Duchin Plan joins these VTDs with Duplin County to the south. This creates a district that has a
northern "hook," which is much less compact than the districts in the Enacted Plan. The average Polsby-Popper score for Districts 21 and 4 in the Duchin plan is 0.32 . What reason could there be for the shape of District 4? One possibility is that the district is attempting to keep Goldsboro, the largest city in Wayne County whole. However, both the Enacted and Duchin plans keep Goldsboro whole. \({ }^{25}\) Given this, it is hard to imagine another explanation for the unusual shape of District 4 aside from an attempt to avoid Republican precincts so as to create a Democratic leaning seat in District 21.

Table 7 breaks apart the partisan index into the 11 constituent elections and shows the distribution of Democratic leaning seats generated if one were to look at each election separately. Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded number in each row is the number of Democratic leaning districts produced by the Enacted Plan using the equivalent election. In all 11 of the elections considered the Enacted Plan agrees with the modal (most common) outcome of the simulations.

\footnotetext{
\({ }^{25}\) The Enacted Plan places 5 residents from Goldsboro and the Goldsboro wastewater treatment plant in District 4. The remaining 99.99\% of Goldsboro is in District 10.
}

Figure 23: Map of Duplin and Wayne House County Cluster


Figure 24: Map of House Enacted Plan in Duplin and Wayne County Cluster
(a) Enacted Map

(b) Duchin Map


Partisan Lean of Districts
\begin{tabular}{|c|c|c|}
\hline District: & Enacted Plan & Duchin Plan \\
\hline 4 & 0.41 & 0.36 \\
\hline 10 (21 in Duchin) & 0.46 & 0.51 \\
\hline \hline
\end{tabular}

Note: Partisan index is based on the two-party vote average of 11 statewide partisan elections between 2014-2020.

Figure 25: Distribution of Partisan Districts from Simulations in Duplin and Wayne House County Cluster


Note: Distribution of likely district partisanship based on the statewide partisan elections index calculated for each of the simulation results. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The red vertical line shows the number of Democratic leaning seats in the Enacted Map in the same cluster, and the vertical dashed green line shows the number of Democratic leaning seats in the Duchin Map in the cluster.

Table 7: Simulation Results by Individual Elections
Duplin and Wayne House County Cluster
\begin{tabular}{|l|c|c|c|}
\hline Number of Democratic Leaning Districts: \\
\hline & 0 & 1 & 2 \\
\hline Individual Elections: & \multicolumn{3}{|c|}{} \\
\hline 2020 President & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Senate & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Governor & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Lt. Governor & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Attorney General & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 President & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Senate & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Governor & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Lt. Governor & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Attorney General & \(\mathbf{9 5 \%}\) & \(5 \%\) & \(0 \%\) \\
\hline 2014 Senate & \(\mathbf{9 5 \%}\) & \(5 \%\) & \(0 \%\) \\
\hline
\end{tabular}

Note: Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded number in each row is the number of Democratic leaning districts produced by the Enacted Plan using the equivalent election. For example, using the 2020 Presidential election \(100 \%\) of the simulations produce 0 Democratic leaning districts. The Enacted Plan does as well, as the ' 0 District' cell is bolded in that row.

\subsection*{6.7 Nash and Wilson House County Grouping}

The Nash-Wilson House county grouping contains 2 districts. In the Enacted Map these are Districts 24 and 25. The county cluster has an overall partisan index of 0.52 , which is slightly Democratic. After conducting 50,000 initial simulations to create two districts in this cluster, I discard any simulations that contain more county traversals than the Enacted Plan. This leaves 41,476 remaining simulated maps. Next, I discard any simulations in which the average compactness score of the districts in the simulations is not as large or larger than the compactness score of the Enacted Map. This leaves 14,569 simulated maps, each containing two districts.

A map of the location of this county cluster in relation to the rest of the state is shown in Figure 26. A map of the Enacted Map's district boundaries and the Duchin Map's district boundaries within this county grouping are shown in Figure 27.

The distribution of district partisanship based on the statewide partisan elections index calculated for each of the simulation results is shown in Figure 28. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The red vertical line shows the number of Democratic leaning seats in the Enacted Map in the same cluster, and the vertical dashed green line shows the number of Democratic leaning seats in the Duchin Map in the cluster. In \(100 \%\) of the simulations there are 2 Democratic leaning districts. The Enacted Map is in alignment with the modal outcome of the simulations by also creating 2 Democratic districts. The Duchin Map also generates 2 Democratic districts.

Table 8 breaks apart the partisan index into the 11 constituent elections and shows the distribution of Democratic leaning seats generated if one were to look at each election separately. Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded number in each row is the number of Democratic leaning districts produced by the Enacted

Plan using the equivalent election. In this case there is unanimous agreement between the modal outcome in the simulations and the Enacted Map across all 11 elections.

Figure 26: Map of Nash and Wilson House County Cluster


Figure 27: Map of House Enacted Plan in Nash and Wilson County Cluster


Partisan Lean of Districts
\begin{tabular}{|c|c|c|}
\hline District: & Enacted Plan & Duchin Plan \\
\hline 24 & 0.52 & 0.52 \\
\hline 25 & 0.52 & 0.52 \\
\hline \hline
\end{tabular}

Note: Partisan index is based on the two-party vote average of 11 statewide partisan elections between 2014-2020.

Figure 28: Distribution of Partisan Districts from Simulations in Nash and Wilson House County Cluster


Note: Distribution of likely district partisanship based on the statewide partisan elections index calculated for each of the simulation results. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The red vertical line shows the number of Democratic leaning seats in the Enacted Map in the same cluster, and the vertical dashed green line shows the number of Democratic leaning seats in the Duchin Map in the cluster.

Table 8: Simulation Results by Individual Elections
Nash and Wilson House County Cluster
\begin{tabular}{|l|c|c|c|}
\hline \multicolumn{4}{|c|}{ Number of Democratic Leaning Districts: } \\
\hline & 0 & 1 & 2 \\
\hline Individual Elections: & \multicolumn{3}{|c|}{} \\
\hline 2020 President & \(0 \%\) & \(\mathbf{8 8 \%}\) & \(12 \%\) \\
\hline 2020 Senate & \(0 \%\) & \(0 \%\) & \(\mathbf{1 0 0 \%}\) \\
\hline 2020 Governor & \(0 \%\) & \(0 \%\) & \(\mathbf{1 0 0 \%}\) \\
\hline 2020 Lt. Governor & \(0 \%\) & \(\mathbf{8 8 \%}\) & \(12 \%\) \\
\hline 2020 Attorney General & \(0 \%\) & \(0 \%\) & \(\mathbf{1 0 0 \%}\) \\
\hline 2016 President & \(0 \%\) & \(0 \%\) & \(\mathbf{1 0 0 \%}\) \\
\hline 2016 Senate & \(0 \%\) & \(0 \%\) & \(\mathbf{1 0 0 \%}\) \\
\hline 2016 Governor & \(0 \%\) & \(0 \%\) & \(\mathbf{1 0 0 \%}\) \\
\hline 2016 Lt. Governor & \(0 \%\) & \(0 \%\) & \(\mathbf{1 0 0 \%}\) \\
\hline 2016 Attorney General & \(0 \%\) & \(0 \%\) & \(\mathbf{1 0 0 \%}\) \\
\hline 2014 Senate & \(0 \%\) & \(\mathbf{8 8 \%}\) & \(12 \%\) \\
\hline
\end{tabular}

Note: Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded number in each row is the number of Democratic leaning districts produced by the Enacted Plan using the equivalent election. For example, using the 2020 Presidential election \(88 \%\) of the simulations produce 1 Democratic leaning districts. The Enacted Plan does as well, as the ' 1 District' cell is bolded in that row.

\subsection*{6.8 Caswell and Orange House County Grouping}

The Caswell-Orange House county grouping contains 2 districts. In the Enacted Map these are Districts 50 and 56. The county cluster has an overall partisan index of 0.71 , which is strongly Democratic. After conducting 50,000 initial simulations to create two districts in this cluster, I discard any simulations that contain more county traversals than the Enacted Plan. This leaves 50,000 simulated maps since in this case all of the simulation results only include one county traversal, as does the Enacted Map. Next, I discard any simulations in which the average compactness score of the districts in the simulations is not as large or larger than the compactness score of the Enacted Map. This leaves 40,012 simulated maps, each containing two districts.

A map of the location of this county cluster in relation to the rest of the state is shown in Figure 29. A map of the Enacted Map's district boundaries and the Duchin Map's district boundaries within this county grouping are shown in Figure 30.

The distribution of district partisanship based on the statewide partisan elections index calculated for each of the simulation results is shown in Figure 31. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The red vertical line shows the number of Democratic leaning seats in the Enacted Map in the same cluster, and the vertical dashed green line shows the number of Democratic leaning seats in the Duchin Map in the cluster. In \(100 \%\) of the simulations there are 2 Democratic leaning districts. The Enacted Map is in alignment with the modal outcome of the simulations by also creating 2 Democratic districts. The Duchin Map also generates 2 Democratic districts.

Table 9 breaks apart the partisan index into the 11 constituent elections and shows the distribution of Democratic leaning seats generated if one were to look at each election separately. Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded
number in each row is the number of Democratic leaning districts produced by the Enacted Plan using the equivalent election. In this case there is unanimous agreement between the modal outcome in the simulations and the Enacted Map across all 11 elections.

Figure 29: Map of Caswell and Orange House County Cluster


Partisan Lean of Districts
\begin{tabular}{|c|c|c|}
\hline District: & Enacted Plan & Duchin Plan \\
\hline 50 & 0.57 & 0.56 \\
\hline 56 & 0.85 & 0.85 \\
\hline \hline
\end{tabular}

Note: Partisan index is based on the two-party vote average of 11 statewide partisan elections between 2014-2020.

Figure 30: Map of House Enacted Plan in Caswell and Orange County Cluster


Figure 31: Distribution of Partisan Districts from Simulations in Caswell and Orange House County Cluster

Partisan Composition of Simulation Results from
CASWELL, ORANGE
County Grouping Contains 2 Districts


Note: Distribution of likely district partisanship based on the statewide partisan elections index calculated for each of the simulation results. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The red vertical line shows the number of Democratic leaning seats in the Enacted Map in the same cluster, and the vertical dashed green line shows the number of Democratic leaning seats in the Duchin Map in the cluster.

Table 9: Simulation Results by Individual Elections
Caswell and Orange House County Cluster
\begin{tabular}{|l|c|c|c|}
\hline Number of Democratic Leaning Districts: \\
\hline & 0 & 1 & 2 \\
\hline Individual Elections: & \multicolumn{3}{|c|}{} \\
\hline 2020 President & \(0 \%\) & \(0 \%\) & \(\mathbf{1 0 0 \%}\) \\
\hline 2020 Senate & \(0 \%\) & \(0 \%\) & \(\mathbf{1 0 0 \%}\) \\
\hline 2020 Governor & \(0 \%\) & \(0 \%\) & \(\mathbf{1 0 0 \%}\) \\
\hline 2020 Lt. Governor & \(0 \%\) & \(0 \%\) & \(\mathbf{1 0 0 \%}\) \\
\hline 2020 Attorney General & \(0 \%\) & \(0 \%\) & \(\mathbf{1 0 0 \%}\) \\
\hline 2016 President & \(0 \%\) & \(0 \%\) & \(\mathbf{1 0 0 \%}\) \\
\hline 2016 Senate & \(0 \%\) & \(0 \%\) & \(\mathbf{1 0 0 \%}\) \\
\hline 2016 Governor & \(0 \%\) & \(0 \%\) & \(\mathbf{1 0 0 \%}\) \\
\hline 2016 Lt. Governor & \(0 \%\) & \(0 \%\) & \(\mathbf{1 0 0 \%}\) \\
\hline 2016 Attorney General & \(0 \%\) & \(0 \%\) & \(\mathbf{1 0 0 \%}\) \\
\hline 2014 Senate & \(0 \%\) & \(0 \%\) & \(\mathbf{1 0 0 \%}\) \\
\hline
\end{tabular}

Note: Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded number in each row is the number of Democratic leaning districts produced by the Enacted Plan using the equivalent election. For example, using the 2020 Presidential election \(100 \%\) of the simulations produce 2 Democratic leaning districts. The Enacted Plan does as well, as the ' 2 District' cell is bolded in that row.

\subsection*{6.9 Alexander, Surry, and Wilkes House County Grouping}

The Alexander-Surry-Wilkes House county grouping contains 2 districts. In the Enacted Map these are Districts 90 and 94 . The county cluster has an overall partisan index of 0.25 , which is strongly Republican. After conducting 50,000 initial simulations to create two districts in this cluster, I discard any simulations that contain more county traversals than the Enacted Plan. This leaves 49,931 simulated maps. Next, I discard any simulations in which the average compactness score of the districts in the simulations is not as large or larger than the compactness score of the Enacted Map. This leaves 20,124 simulated maps, each containing two districts.

A map of the location of this county cluster in relation to the rest of the state is shown in Figure 32. A map of the Enacted Map's district boundaries and the Duchin Map's district boundaries within this county grouping are shown in Figure 33.

The distribution of district partisanship based on the statewide partisan elections index calculated for each of the simulation results is shown in Figure 34. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The red vertical line shows the number of Democratic leaning seats in the Enacted Map in the same cluster, and the vertical dashed green line shows the number of Democratic leaning seats in the Duchin Map in the cluster. In \(100 \%\) of the simulations there are 0 Democratic leaning districts. The Enacted Map is in alignment with the modal outcome of the simulations by also creating 0 Democratic districts. The Duchin Map also generates 0 Democratic districts.

Table 10 breaks apart the partisan index into the 11 constituent elections and shows the distribution of Democratic leaning seats generated if one were to look at each election separately. Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded number in each row is the number of Democratic leaning districts produced by the Enacted

Plan using the equivalent election. In this case there is unanimous agreement between the modal outcome in the simulations and the Enacted Map across all 11 elections.

Figure 32: Map of Alexander, Surry, and Wilkes County House County Cluster


Figure 33: Map of House Enacted Plan in Alexander, Surry, and Wilkes County Cluster


Partisan Lean of Districts
\begin{tabular}{|c|c|c|}
\hline District: & Enacted Plan & Duchin Plan \\
\hline 90 & 0.26 & 0.26 \\
\hline 94 & 0.25 & 0.25 \\
\hline \hline
\end{tabular}

Note: Partisan index is based on the two-party vote average of 11 statewide partisan elections between 2014-2020.

Figure 34: Distribution of Partisan Districts from House Simulations in Alexander, Surry, and Wilkes CountyCluster

Partisan Composition of Simulation Results from
ALEXANDER, SURRY, WILKES
County Grouping Contains 2 Districts


Note: Distribution of likely district partisanship based on the statewide partisan elections index calculated for each of the simulation results. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The red vertical line shows the number of Democratic leaning seats in the Enacted Map in the same cluster, and the vertical dashed green line shows the number of Democratic leaning seats in the Duchin Map in the cluster.

Table 10: Simulation Results by Individual Elections
Alexander, Surry, and Wilkes House County Cluster
\begin{tabular}{|l|c|c|c|}
\hline \multicolumn{4}{|c|}{ Number of Democratic Leaning Districts: } \\
\hline & 0 & 1 & 2 \\
\hline Individual Elections: & \multicolumn{3}{|c|}{} \\
\hline 2020 President & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Senate & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Governor & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Lt. Governor & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Attorney General & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 President & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Senate & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Governor & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Lt. Governor & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Attorney General & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2014 Senate & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline
\end{tabular}

Note: Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded number in each row is the number of Democratic leaning districts produced by the Enacted Plan using the equivalent election. For example, using the 2020 Presidential election \(100 \%\) of the simulations produce 0 Democratic leaning districts. The Enacted Plan does as well, as the ' 0 District' cell is bolded in that row.

\subsection*{6.10 Franklin, Granville, and Vance House County Grouping}

The Franklin-Granville-Vance House county grouping contains 2 districts. In the Enacted Map these are Districts 32 and 7. The county cluster has an overall partisan index of 0.51 , which is very slightly Democratic. After conducting 50,000 initial simulations to create two districts in this cluster, I discard any simulations that contain more county traversals than the Enacted Plan. This leaves 17,823 simulated maps. Next, I discard any simulations in which the average compactness score of the districts in the simulations is not as large or larger than the compactness score of the Enacted Map. This leaves 7,682 simulated maps, each containing two districts.

A map of the location of this county cluster in relation to the rest of the state is shown in Figure 35. A map of the Enacted Map's district boundaries and the Duchin Map's district boundaries within this county grouping are shown in Figure 36.

The distribution of district partisanship based on the statewide partisan elections index calculated for each of the simulation results is shown in Figure 37. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The red vertical line shows the number of Democratic leaning seats in the Enacted Map in the same cluster, and the vertical dashed green line shows the number of Democratic leaning seats in the Duchin Map in the cluster. In \(100 \%\) of the simulations there is 1 Democratic leaning district. The Enacted Map is in alignment with the modal outcome of the simulations by also creating 1 Democratic district. The Duchin Map also generates 1 Democratic district.

Table 11 breaks apart the partisan index into the 11 constituent elections and shows the distribution of Democratic leaning seats generated if one were to look at each election separately. Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded number in each row is the number of Democratic leaning districts produced by the Enacted

Plan using the equivalent election. In this case there is unanimous agreement between the modal outcome in the simulations and the Enacted Map across all 11 elections.

Figure 35: Map of Franklin, Granville, and Vance House County Cluster


Figure 36: Map of House Enacted Plan in Franklin, Granville, and Vance County Cluster


Partisan Lean of Districts
\begin{tabular}{|c|c|c|}
\hline District: & Enacted Plan & Duchin Plan \\
\hline 7 & 0.44 & 0.44 \\
\hline 32 & 0.58 & 0.58 \\
\hline \hline
\end{tabular}

Note: Partisan index is based on the two-party vote average of 11 statewide partisan elections between 2014-2020.

Figure 37: Distribution of Partisan Districts from Simulations in Franklin, Granville, and Vance House County Cluster


Note: Distribution of likely district partisanship based on the statewide partisan elections index calculated for each of the simulation results. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The red vertical line shows the number of Democratic leaning seats in the Enacted Map in the same cluster, and the vertical dashed green line shows the number of Democratic leaning seats in the Duchin Map in the cluster.

Table 11: Simulation Results by Individual Elections
Franklin, Granville, and Vance House County Cluster
\begin{tabular}{|l|c|c|c|}
\hline \multicolumn{4}{|c|}{ Number of Democratic Leaning Districts: } \\
\hline & 0 & 1 & 2 \\
\hline Individual Elections: & \multicolumn{3}{|c|}{} \\
\hline 2020 President & \(0 \%\) & \(\mathbf{1 0 0 \%}\) & \(0 \%\) \\
\hline 2020 Senate & \(0 \%\) & \(\mathbf{1 0 0 \%}\) & \(0 \%\) \\
\hline 2020 Governor & \(0 \%\) & \(\mathbf{1 0 0 \%}\) & \(0 \%\) \\
\hline 2020 Lt. Governor & \(0 \%\) & \(\mathbf{1 0 0 \%}\) & \(0 \%\) \\
\hline 2020 Attorney General & \(0 \%\) & \(\mathbf{1 0 0 \%}\) & \(0 \%\) \\
\hline 2016 President & \(0 \%\) & \(\mathbf{1 0 0 \%}\) & \(0 \%\) \\
\hline 2016 Senate & \(0 \%\) & \(\mathbf{1 0 0 \%}\) & \(0 \%\) \\
\hline 2016 Governor & \(0 \%\) & \(\mathbf{1 0 0 \%}\) & \(0 \%\) \\
\hline 2016 Lt. Governor & \(0 \%\) & \(\mathbf{1 0 0 \%}\) & \(0 \%\) \\
\hline 2016 Attorney General & \(0 \%\) & \(\mathbf{1 0 0 \%}\) & \(0 \%\) \\
\hline 2014 Senate & \(0 \%\) & \(\mathbf{1 0 0 \%}\) & \(0 \%\) \\
\hline
\end{tabular}

Note: Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded number in each row is the number of Democratic leaning districts produced by the Enacted Plan using the equivalent election. For example, using the 2020 Presidential election \(100 \%\) of the simulations produce 1 Democratic leaning district. The Enacted Plan does as well, as the ' 1 District' cell is bolded in that row.

\subsection*{6.11 Alleghany, Ashe, Caldwell, and Watauga House County Grouping}

The Alleghany-Ashe-Caldwell-Watauga House county grouping contains 2 districts. In the Enacted Map these are Districts 93 and 87. The county cluster has an overall partisan index of 0.36 , which is strongly Republican. After conducting 50,000 initial simulations to create two districts in this cluster, I discard any simulations that contain more county traversals than the Enacted Plan. This leaves 47,843 simulated maps. Next, I discard any simulations in which the average compactness score of the districts in the simulations is not as large or larger than the compactness score of the Enacted Map. This leaves only six unique maps that are as compact as the Enacted Plan.

A map of the location of this county cluster in relation to the rest of the state is shown in Figure 38. A map of the Enacted Map's district boundaries and the Duchin Map's district boundaries within this county grouping are shown in Figure 39.

Because there are only six maps that fit the criteria I use of equal population, county traversals, and compactness equal to or better than the Enacted Map, I do not present the distribution of district partisanship for the simulations here. It is sufficient to say that in the Enacted Map, the Duchin map, and the six remaining simulations, all create 2 Republican districts and 0 Democratic leaning districts, regardless of the index or election used. Table 12 shows this below.

Figure 38: Map of Alleghany, Ashe, Caldwell, and Watauga House County Cluster


Figure 39: Map of House Enacted Plan inAlleghany, Ashe, Caldwell, and Watauga County Cluster


Partisan Lean of Districts
\begin{tabular}{|c|c|c|}
\hline District: & Enacted Plan & Duchin Plan \\
\hline 87 & 0.28 & 0.27 \\
\hline 93 & 0.43 & 0.43 \\
\hline \hline
\end{tabular}

Note: Partisan index is based on the two-party vote average of 11 statewide partisan elections between 2014-2020.

Table 12: Simulation Results by Individual Elections
Alleghany, Ashe, Caldwell, and Watauga House County Clu
\begin{tabular}{|l|c|c|c|}
\hline \multicolumn{4}{|c|}{ Number of Democratic Leaning Districts: } \\
\hline & 0 & 1 & 2 \\
\hline Election Indices: & Percentage of Simulations \\
\hline All Elections Index & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline Individual Elections: & \multicolumn{4}{|c|}{} \\
\hline 2020 President & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Senate & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Governor & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Lt. Governor & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Attorney General & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 President & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Senate & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Governor & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Lt. Governor & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Attorney General & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2014 Senate & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline
\end{tabular}

Note: Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded number in each row is the number of Democratic leaning districts produced by the Enacted Plan using the equivalent election. For example, using the 2020 Presidential election \(100 \%\) of the simulations produce 0 Democratic leaning districts. The Enacted Plan does as well, as the ' 0 District' cell is bolded in that row.

\title{
6.12 Beaufort, Chowan, Currituck, Dare, Hyde, Pamlico, Perquimans, Tyrrell, and Washington House County Grouping
}

The Beaufort-Chowan-Currituck-Dare-Hyde-Pamlico-Perquimans-Tyrrell-Washington House county grouping contains 2 districts. In the Enacted Map these are Districts 1 and 79. The county cluster has an overall partisan index of 0.39 , which is strongly Republican. After conducting 50,000 initial simulations to create two districts in this cluster, I discard any simulations that contain more county traversals than the Enacted Plan. This leaves 379 simulated maps. Next, I discard any simulations in which the average compactness score of the districts in the simulations is not as large or larger than the compactness score of the Enacted Map. This leaves only two unique maps that are as compact as the Enacted Plan.

A map of the location of this county cluster in relation to the rest of the state is shown in Figure 40. A map of the Enacted Map's district boundaries and the Duchin Map's district boundaries within this county grouping are shown in Figure 41.

Because there are only two maps that fit the criteria I use of equal population, county traversals, and compactness equal to or better than the Enacted Map, I do not present the distribution of district partisanship for the simulations here. It is sufficient to say that in the Enacted Map, the Duchin map, and the two remaining simulations, all create 2 Republican districts and 0 Democratic leaning districts, regardless of the index or election used. Table 13 shows this below.

Figure 40: Map of Beaufort, Chowan, Currituck, Dare, Hyde, Pamlico, Perquimans, Tyrrell, and Washington House County Cluster


Figure 41: Map of House Enacted Plan in Beaufort, Chowan, Currituck, Dare, Hyde, Pamlico, Perquimans, Tyrrell, and Washington County Cluster


Partisan Lean of Districts
\begin{tabular}{|c|c|c|}
\hline District: & Enacted Plan & Duchin Plan \\
\hline 1 (6 in Duchin) & 0.39 & 0.36 \\
\hline 79 & 0.39 & 0.41 \\
\hline \hline
\end{tabular}

Note: Partisan index is based on the two-party vote average of 11 statewide partisan elections between 2014-2020.

Table 13: Simulation Results by Individual Elections
Beaufort, Chowan, Currituck, Dare, Hyde, Pamlico, Perquimans, Tyrrell, and Washington House County Cluster
\begin{tabular}{|l|c|c|c|}
\hline \multicolumn{4}{|c|}{ Number of Democratic Leaning Districts: } \\
\hline & 0 & 1 & 2 \\
\hline Election Indices: & Percentage of Simulations \\
\hline All Elections Index & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline Individual Elections: & \multicolumn{3}{|c|}{} \\
\hline 2020 President & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Senate & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Governor & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Lt. Governor & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Attorney General & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 President & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Senate & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Governor & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Lt. Governor & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Attorney General & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2014 Senate & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline
\end{tabular}

Note: Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded number in each row is the number of Democratic leaning districts produced by the Enacted Plan using the equivalent election. For example, using the 2020 Presidential election \(100 \%\) of the simulations produce 0 Democratic leaning districts. The Enacted Plan does as well, as the ' 0 District' cell is bolded in that row.

\subsection*{6.13 Buncombe House County Grouping}

The Buncombe House county grouping contains 3 districts. In the Enacted Map these are Districts 114, 115, and 116. The county cluster has an overall partisan index of 0.60 , which is moderately Democratic. After conducting 50,000 initial simulations to create three districts in this cluster, I would normally discard any simulations that contain more county traversals than the Enacted Plan. However, this grouping contains only one county, so all of the simulations will contain the same number of traversals as the Enacted Map. Next, I discard any simulations in which the average compactness score of the districts in the simulations is not as large or larger than the compactness score of the Enacted Map. This leaves 38,664 simulated maps, each containing three districts.

A map of the location of this county cluster in relation to the rest of the state is shown in Figure 42. A map of the Enacted Map's district boundaries and the Duchin Map's district boundaries within this county grouping are shown in Figure 43.

The distribution of district partisanship based on the statewide partisan elections index calculated for each of the simulation results is shown in Figure 45. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The red vertical line shows the number of Democratic leaning seats in the Enacted Map in the same cluster, and the vertical dashed green line shows the number of Democratic leaning seats in the Duchin Map in the cluster. In \(28 \%\) of the simulations there are 2 Democratic leaning districts. in \(72 \%\) oft he simulations there are three Democratic leaning districts. The Enacted Map is in alignment with the minority outcome of the simulations by also creating 2 Democratic districts. The Duchin Map generates 3 Democratic districts.

Table 15 breaks apart the partisan index into the 11 constituent elections and shows the distribution of Democratic leaning seats generated if one were to look at each election separately. Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded
number in each row is the number of Democratic leaning districts produced by the Enacted Plan using the equivalent election. In this case the Enacted Plan creates 2 Democratic leaning districts, regardless of the election considered. However, the frequency with which the simulations produce 2 Democratic districts varies from a low of \(2 \%\) in the 2020 Governor race to a \(51 \%\) majority in the 2016 Presidential race.

One consideration for why the Enacted Plan diverges from the Duchin Plan and the modal outcome of the simulations is because it keeps a larger portion of the town of Asheville, the county seat and largest city in Buncombe County, in fewer districts. Figure 44 shows a map of the city and how the two different plans divide the city. The Duchin Plan splits Asheville nearly equally across all three districts in a pie shape while the Enacted Plan keeps much more of Asheville within two districts. There is a small portion of the southern most part of the city in District 116. The tactic of dividing Democratic cities in a 'pinwheel' or 'pizza' shape and grouping those 'slices' with more Republican suburban and exurban areas is a classic tactic to generate more Democratic districts and overcome the geographic clustering that is common among Democratic voters. The Enacted Plan keeps much more of Asheville within two districts. Table 14 shows the percent of Asheville voters in each district in each plan. It is clear that the Duchin plan splits Ashville into three roughly equal parts while the Enacted Plan places a much larger majority of Asheville into only two districts.

Table 14: Division of Asheville in Enacted Plan and Duchin Plan
\begin{tabular}{|c|c|c|}
\hline & \multicolumn{2}{|c|}{ Percent of Asheville in district } \\
\hline District: & Enacted Plan & Duchin Plan \\
\hline 114 & 55.6 & 27.7 \\
\hline 115 & 30.9 & 39.9 \\
\hline 116 & 13.5 & 32.5 \\
\hline \hline Total: & \(100 \%\) & \(100 \%\) \\
\hline
\end{tabular}

Note: Population number for city by district for Enacted Plan from: https: //ncleg.gov/Files/GIS/Plans_Main/Senate_2021/SL\%202021-173\%20Senate\%20-\% 20StatPack\%20Report.pdf Population numbers for city by district for Duchin Plan from Dave's Redistricting online. https://davesredistricting.org/

Figure 42: Map of Buncombe House County Cluster


Figure 43: Map of House Enacted Plan and Duchin Plan in Buncombe County Cluster


Partisan Lean of Districts
\begin{tabular}{|c|c|c|}
\hline District: & Enacted Plan & Duchin Plan \\
\hline 114 & 0.72 & 0.62 \\
\hline 115 & 0.60 & 0.60 \\
\hline 116 & 0.46 & 0.57 \\
\hline \hline
\end{tabular}

Note: Partisan index is based on the two-party vote average of 11 statewide partisan elections between 2014-2020.

Figure 44: Map of Asheville Divisions in Buncombe County Cluster
(a) Enacted Map

(b) Duchin Map


Figure 45: Distribution of Partisan Districts from Simulations in Buncombe House County Cluster


Note: Distribution of likely district partisanship based on the statewide partisan elections index calculated for each of the simulation results. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The red vertical line shows the number of Democratic leaning seats in the Enacted Map in the same cluster, and the vertical dashed green line shows the number of Democratic leaning seats in the Duchin Map in the cluster.

Table 15: Simulation Results by Individual Elections
Buncombe House County Cluster
\begin{tabular}{|l|c|c|c|c|}
\hline \multicolumn{5}{|c|}{ Number of Democratic Leaning Districts: } \\
\hline & 0 & 1 & 2 & 3 \\
\hline Individual Elections: & \multicolumn{4}{|c|}{} \\
\hline 2020 President & \(0 \%\) & \(0 \%\) & \(\mathbf{2 6 \%}\) & \(74 \%\) \\
\hline 2020 Senate & \(0 \%\) & \(0 \%\) & \(\mathbf{2 3 \%}\) & \(77 \%\) \\
\hline 2020 Governor & \(0 \%\) & \(0 \%\) & \(\mathbf{2 \%}\) & \(98 \%\) \\
\hline 2020 Lt. Governor & \(0 \%\) & \(0 \%\) & \(\mathbf{3 1 \%}\) & \(69 \%\) \\
\hline 2020 Attorney General & \(0 \%\) & \(0 \%\) & \(\mathbf{1 6 \%}\) & \(84 \%\) \\
\hline 2016 President & \(0 \%\) & \(1 \%\) & \(\mathbf{5 1 \%}\) & \(48 \%\) \\
\hline 2016 Senate & \(0 \%\) & \(1 \%\) & \(\mathbf{4 6 \%}\) & \(53 \%\) \\
\hline 2016 Governor & \(0 \%\) & \(0 \%\) & \(\mathbf{1 2 \%}\) & \(88 \%\) \\
\hline 2016 Lt. Governor & \(0 \%\) & \(1 \%\) & \(\mathbf{4 3 \%}\) & \(56 \%\) \\
\hline 2016 Attorney General & \(0 \%\) & \(0 \%\) & \(\mathbf{2 0 \%}\) & \(80 \%\) \\
\hline 2014 Senate & \(0 \%\) & \(0 \%\) & \(\mathbf{2 4 \%}\) & \(76 \%\) \\
\hline
\end{tabular}

Note: Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded number in each row is the number of Democratic leaning districts produced by the Enacted Plan using the equivalent election. For example, using the 2020 Presidential election \(26 \%\) of the simulations produce 2 Democratic leaning districts. The Enacted Plan does as well, as the ' 2 Districts' cell is bolded in that row.

\subsection*{6.14 Anson and Union House County Grouping}

The Anson-Union House county grouping contains 3 districts. In the Enacted Map these are Districts 55, 68 and 69. The county cluster has an overall partisan index of .37 , which is strongly Republican. After conducting 50,000 initial simulations to create three districts in this cluster, I discard any simulations that contain more county traversals than the Enacted Plan. This leaves 43,555 simulated maps. Next, I discard any simulations in which the average compactness score of the districts in the simulations is not as large or larger than the compactness score of the Enacted Map. This leaves 20,759 simulated maps, each containing three districts.

A map of the location of this county cluster in relation to the rest of the state is shown in Figure 46. A map of the Enacted Map's district boundaries and the Duchin Map's district boundaries within this county grouping are shown in Figure 47.

The distribution of district partisanship based on the statewide partisan elections index calculated for each of the simulation results is shown in Figure 48. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The red vertical line shows the number of Democratic leaning seats in the Enacted Map in the same cluster, and the vertical dashed green line shows the number of Democratic leaning seats in the Duchin Map in the cluster. In \(100 \%\) of the simulations there are 0 Democratic leaning districts. The Enacted Map is in alignment with the modal outcome of the simulations by also creating 0 Democratic districts. The Duchin Map also generates 0 Democratic districts.

Table 16 breaks apart the partisan index into the 11 constituent elections and shows the distribution of Democratic leaning seats generated if one were to look at each election separately. Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded number in each row is the number of Democratic leaning districts produced by the Enacted

Plan using the equivalent election. In this case there is unanimous agreement between the modal outcome in the simulations and the Enacted Map across all 11 elections.

Figure 46: Map of Anson and Union House County Cluster


Figure 47: Map of House Enacted Plan in Anson and Union House County Cluster

(b) Duchin Map

- Ex. 9339 -
Partisan Lean of Districts
\begin{tabular}{|c|c|c|}
\hline District: & Enacted Plan & Duchin Plan \\
\hline 55 & 0.41 & 0.44 \\
\hline 68 & 0.36 & 0.35 \\
\hline 69 & 0.35 & 0.34 \\
\hline \hline
\end{tabular}

Note: Partisan index is based on the two-party vote average of 11 statewide partisan elections between 2014-2020.

Figure 48: Distribution of Partisan Districts from Simulations in Anson and Union House County Cluster


Note: Distribution of likely district partisanship based on the statewide partisan elections index calculated for each of the simulation results. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The red vertical line shows the number of Democratic leaning seats in the Enacted Map in the same cluster, and the vertical dashed green line shows the number of Democratic leaning seats in the Duchin Map in the cluster.

Table 16: Simulation Results by Individual Elections
Anson and Union House County Cluster
\begin{tabular}{|l|c|c|c|c|}
\hline \multicolumn{5}{|c|}{ Number of Democratic Leaning Districts: } \\
\hline & 0 & 1 & 2 & 3 \\
\hline Individual Elections: & \multicolumn{4}{|c|}{} \\
\hline 2020 President & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Senate & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Governor & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Lt. Governor & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Attorney General & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 President & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Senate & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Governor & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Lt. Governor & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Attorney General & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2014 Senate & \(\mathbf{7 3 \%}\) & \(27 \%\) & \(0 \%\) & \(0 \%\) \\
\hline
\end{tabular}

Note: Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded number in each row is the number of Democratic leaning districts produced by the Enacted Plan using the equivalent election. For example, using the 2020 Presidential election \(100 \%\) of the simulations produce 0 Democratic leaning districts. The Enacted Plan does as well, as the ' 0 District' cell is bolded in that row.

\subsection*{6.15 Onslow and Pender House County Grouping}

The Onslow-Pender House county grouping contains 3 districts. In the Enacted Map these are Districts 14,15 , and 16 . The county cluster has an overall partisan index of .35 , which is heavily Republican. After conducting 50,000 initial simulations to create three districts in this cluster, I discard any simulations that contain more county traversals than the Enacted Plan. This leaves 48,928 simulated maps. Next, I discard any simulations in which the average compactness score of the districts in the simulations is not as large or larger than the compactness score of the Enacted Map. This leaves 35,873 simulated maps, each containing three districts.

A map of the location of this county cluster in relation to the rest of the state is shown in Figure 49. A map of the Enacted Map's district boundaries and the Duchin Map's district boundaries within this county grouping are shown in Figure 50.

The distribution of district partisanship based on the statewide partisan elections index calculated for each of the simulation results is shown in Figure 51. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The red vertical line shows the number of Democratic leaning seats in the Enacted Map in the same cluster, and the vertical dashed green line shows the number of Democratic leaning seats in the Duchin Map in the cluster. In \(100 \%\) of the simulations there are 0 Democratic leaning districts. The Enacted Map is in alignment with the modal outcome of the simulations by also creating 0 Democratic districts. The Duchin Map also generates 0 Democratic districts.

Table 17 breaks apart the partisan index into the 11 constituent elections and shows the distribution of Democratic leaning seats generated if one were to look at each election separately. Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded number in each row is the number of Democratic leaning districts produced by the Enacted

Plan using the equivalent election. In this case there is unanimous agreement between the modal outcome in the simulations and the Enacted Map across all 11 elections.

Figure 49: Map of Onslow and Pender House County Cluster


Figure 50: Map of House Enacted Plan in Onslow and Pender County Cluster


Partisan Lean of Districts
\begin{tabular}{|c|c|c|}
\hline District: & Enacted Plan & Duchin Plan \\
\hline 14 & 0.39 & 0.29 \\
\hline 15 & 0.32 & 0.49 \\
\hline 16 & 0.33 & 0.33 \\
\hline \hline
\end{tabular}

Note: Partisan index is based on the two-party vote average of 11 statewide partisan elections between 2014-2020.

Figure 51: Distribution of Partisan Districts from Simulations in Onslow and Pender House County Cluster


Note: Distribution of likely district partisanship based on the statewide partisan elections index calculated for each of the simulation results. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The red vertical line shows the number of Democratic leaning seats in the Enacted Map in the same cluster, and the vertical dashed green line shows the number of Democratic leaning seats in the Duchin Map in the cluster.

Table 17: Simulation Results by Individual Elections
Onslow and Pender House County Cluster
\begin{tabular}{|l|c|c|c|c|c|}
\hline \multicolumn{5}{|c|}{ Number of Democratic Leaning Districts: } \\
\hline & 0 & 1 & 2 & 3 \\
\hline Individual Elections: & \multicolumn{4}{|c|}{} \\
\hline 2020 President & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Senate & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Governor & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Lt. Governor & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Attorney General & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 President & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Senate & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Governor & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Lt. Governor & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Attorney General & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2014 Senate & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline
\end{tabular}

Note: Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded number in each row is the number of Democratic leaning districts produced by the Enacted Plan using the equivalent election. For example, using the 2020 Presidential election \(100 \%\) of the simulations produce 0 Democratic leaning districts. The Enacted Plan does as well, as the ' 0 District' cell is bolded in that row.

\subsection*{6.16 Cumberland House County Grouping}

The Cumberland House county group contains 4 districts. In the Enacted Map these are Districts 42, 43, 44, and 45. The county cluster has an overall partisan index of .59, which is moderately Democratic. After conducting 50,000 initial simulations to create four districts in this cluster, I would normally discard any simulations that contain more county traversals than the Enacted Plan. However, Cumberland is a single county group, and so all of the simulations have the same number of traversals as the Enacted Map. Next, I discard any simulations in which the average compactness score of the districts in the simulations is not as large or larger than the compactness score of the Enacted Map. This leaves 10,521 simulated maps, each containing four districts.

A map of the location of this county cluster in relation to the rest of the state is shown in Figure 52. A map of the Enacted Map's district boundaries and the Duchin Map's district boundaries within this county grouping are shown in Figure 53.

The distribution of district partisanship based on the statewide partisan elections index calculated for each of the simulation results is shown in Figure 55. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The red vertical line shows the number of Democratic leaning seats in the Enacted Map in the same cluster, and the vertical dashed green line shows the number of Democratic leaning seats in the Duchin Map in the cluster. In \(82 \%\) of the simulations there are 3 Democratic leaning districts. The Enacted Map is in alignment with the modal outcome of the simulations by also creating 3 Democratic districts. In \(18 \%\) of the simulations there are 4 Democratic leaning districts. The Duchin Map generates 4 Democratic districts. This falls outside of the \(50 \%\) range of simulation results and is thus classified as a partisan outlier result.

Table 19 breaks apart the partisan index into the 11 constituent elections and shows the distribution of Democratic leaning seats generated if one were to look at each election
separately. Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded number in each row is the number of Democratic leaning districts produced by the Enacted Plan using the equivalent election. In 5 of the 11 elections there is agreement between the modal outcome in the simulations and the Enacted Map. In 6 of the 11 elections the Enacted Plan results fall outside the middle \(50 \%\) range of the simulations and would be classified as outliers.

One consideration for why the Enacted Plan diverges from the Duchin Plan is because it keeps a larger portion of the town of Fayetteville, the county seat and largest city in Cumberland County, in fewer districts. Figure 54 shows a map of the city and how the two different plans divide the city. The Duchin Plan splits Fayetteville nearly equally across all four districts in a pie shape. The tactic of dividing Democratic cities in a 'pinwheel' or 'pizza' shape and grouping those 'slices' with more Republican suburban and exurban areas is a classic tactic to generate more Democratic districts and overcome the geographic clustering that is common among Democratic voters. The Enacted Plan keeps much more of Fayetteville within three districts. A small portion of the southern most part of the city is located in District 45. Table 18 shows the percent of Fayetteville voters in each district in each plan. It is clear that the Duchin plan splits Fayetteville into 4 roughly equal parts while the Enacted Plan places a much larger majority of Fayetteville into only three districts.

Table 18: Division of Fayetteville in Enacted Plan and Duchin Plan
\begin{tabular}{|c|c|c|}
\hline & \multicolumn{2}{|c|}{ Percent of Feyetville in district } \\
\hline District: & Enacted Plan & Duchin Plan \\
\hline 42 & 31.4 & 33.4 \\
\hline 43 & 21.4 & 21.5 \\
\hline 44 & 39.9 & 26.8 \\
\hline 45 & 7.3 & 18.3 \\
\hline \hline Total: & \(100 \%\) & \(100 \%\) \\
\hline
\end{tabular}

Note: Population number for city by district for Enacted Plan from: https: //ncleg.gov/Files/GIS/Plans_Main/Senate_2021/SL\%202021-173\%20Senate\%20-\% 20StatPack\%20Report.pdf Population numbers for city by district for Duchin Plan from Dave's Redistricting online. https://davesredistricting.org/

Figure 52: Map of Cumberland House County Cluster


Figure 53: Map of House Enacted Plan in Cumberland County Cluster


Partisan Lean of Districts
\begin{tabular}{|c|c|c|}
\hline District: & Enacted Plan & Duchin Plan \\
\hline 42 & 0.67 & 0.72 \\
\hline 43 & 0.50 & 0.55 \\
\hline 44 & 0.72 & 0.60 \\
\hline 45 & 0.49 & 0.53 \\
\hline \hline
\end{tabular}

Note: Partisan index is based on the two-party vote average of 11 statewide partisan elections between 2014-2020.

Figure 54: Map of Fayetteville Divisions in Cumberland County Cluster


Figure 55: Distribution of Partisan Districts from Simulations in Cumberland House County Cluster


Note: Distribution of likely district partisanship based on the statewide partisan elections index calculated for each of the simulation results. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The red vertical line shows the number of Democratic leaning seats in the Enacted Map in the same cluster, and the vertical dashed green line shows the number of Democratic leaning seats in the Duchin Map in the cluster.

Table 19: Simulation Results by Individual Elections
Cumberland House County Cluster
\begin{tabular}{|l|c|c|c|c|c|c|}
\hline & \multicolumn{5}{|c|}{ Number of Democratic Leaning Districts: } \\
\hline & 0 & 1 & 2 & 3 & 4 \\
\hline Individual Elections: & \multicolumn{5}{|c|}{} \\
\hline 2020 President & \(0 \%\) & \(0 \%\) & \(\mathbf{0 \%}\) & \(91 \%\) & \(9 \%\) \\
\hline 2020 Senate & \(0 \%\) & \(0 \%\) & \(\mathbf{0 \%}\) & \(88 \%\) & \(12 \%\) \\
\hline 2020 Governor & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(23 \%\) & \(\mathbf{7 7 \%}\) \\
\hline 2020 Lt. Governor & \(0 \%\) & \(0 \%\) & \(\mathbf{0 \%}\) & \(90 \%\) & \(10 \%\) \\
\hline 2020 Attorney General & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(49 \%\) & \(\mathbf{5 1 \%}\) \\
\hline 2016 President & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(\mathbf{9 0 \%}\) & \(10 \%\) \\
\hline 2016 Senate & \(0 \%\) & \(0 \%\) & \(\mathbf{0 \%}\) & \(94 \%\) & \(6 \%\) \\
\hline 2016 Governor & \(0 \%\) & \(0 \%\) & \(\mathbf{0 \%}\) & \(94 \%\) & \(6 \%\) \\
\hline 2016 Lt. Governor & \(0 \%\) & \(0 \%\) & \(\mathbf{0 \%}\) & \(94 \%\) & \(6 \%\) \\
\hline 2016 Attorney General & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(\mathbf{4 8 \%}\) & \(52 \%\) \\
\hline 2014 Senate & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(\mathbf{8 9 \%}\) & \(11 \%\) \\
\hline
\end{tabular}

Note: Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded number in each row is the number of Democratic leaning districts produced by the Enacted Plan using the equivalent election. For example, using the 2020 Presidential election \(0 \%\) of the simulations produce 2 Democratic leaning districts. The Enacted Plan does as well, as the ' 3 Districts' cell is bolded in that row.

One thing to note regarding the instances in which the Enacted Plan does not align with the simulation results in individual elections. In all six cases the Enacted Plan creates one district (and occasionally two districts) that is extremely competitive and is effectively tied (less than \(1 \%\) from 50/50), but is just below 0.50 and is thus not classified as a Democratic district. For example, in the 2020 Presidential race the Enacted Plan districts have a partisan lean of \(0.719,0.672,0.495\), and 0.492 . Thus, two of the districts, while not classified as Democratic leaning will be heavily contested and both parties will likely win these districts at different times in the coming years.

\subsection*{6.17 Harnett and Johnston House County Grouping}

The Harnett-Johnston House county group contains 4 districts. In the Enacted Map these are Districts \(6,26,28\), and 53 . The county cluster has an overall partisan index of .38 , which is moderately Republican. After conducting 50,000 initial simulations to create four districts in this cluster, I discard any simulations that contain more county traversals than the Enacted Plan. This leaves 34,976 simulations. Next, I discard any simulations in which the average compactness score of the districts in the simulations is not as large or larger than the compactness score of the Enacted Map. This leaves 593 simulated maps, each containing four districts.

A map of the location of this county cluster in relation to the rest of the state is shown in Figure 56. A map of the Enacted Map's district boundaries and the Duchin Map's district boundaries within this county grouping are shown in Figure 57.

The distribution of district partisanship based on the statewide partisan elections index calculated for each of the simulation results is shown in Figure 58. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The red vertical line shows the number of Democratic leaning seats in the Enacted Map in the same cluster, and the vertical dashed green line shows the number of Democratic leaning seats in the Duchin Map in the cluster. In \(100 \%\) of the simulations there are 0 Democratic leaning districts. The Enacted Map is in alignment with the modal outcome of the simulations by also creating 0 Democratic districts. The Duchin Map also generates 0 Democratic districts.

Table 20 breaks apart the partisan index into the 11 constituent elections and shows the distribution of Democratic leaning seats generated if one were to look at each election separately. Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded number in each row is the number of Democratic leaning districts produced by the Enacted

Plan using the equivalent election. In all 11 of the individual elections there is agreement between the modal outcome in the simulations and the Enacted Map.

Figure 56: Map of Harnett and Johnston House County Cluster


Figure 57: Map of House Enacted Plan in Harnett and Johnston County Cluster (a) Enacted Map
(b) Duchin Map


Partisan Lean of Districts
\begin{tabular}{|c|c|c|}
\hline District: & Enacted Plan & Duchin Plan \\
\hline 6 (51 in Duchin) & 0.40 & 0.42 \\
\hline 26 & 0.41 & 0.43 \\
\hline 28 & 0.34 & 0.35 \\
\hline 53 & 0.37 & 0.33 \\
\hline \hline
\end{tabular}

Note: Partisan index is based on the two-party vote average of 11 statewide partisan elections between 2014-2020.

Figure 58: Distribution of Partisan Districts from Simulations in Harnett and Johnston House County Cluster

\section*{Partisan Composition of Simulation Results from \\ HARNETT, JOHNSTON \\ County Grouping Contains 4 Districts}


Note: Distribution of likely district partisanship based on the statewide partisan elections index calculated for each of the simulation results. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The red vertical line shows the number of Democratic leaning seats in the Enacted Map in the same cluster, and the vertical dashed green line shows the number of Democratic leaning seats in the Duchin Map in the cluster.

Table 20: Simulation Results by Individual Elections
Harnett and Johnston House County Cluster
\begin{tabular}{|l|c|c|c|c|c|c|}
\hline & \multicolumn{5}{|c|}{ Number of Democratic Leaning Districts: } \\
\hline & 0 & 1 & 2 & 3 & 4 \\
\hline Individual Elections: & \multicolumn{5}{|c|}{} \\
\hline 2020 President & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Senate & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Governor & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Lt. Governor & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Attorney General & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 President & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Senate & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Governor & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Lt. Governor & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Attorney General & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2014 Senate & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline
\end{tabular}

Note: Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded number in each row is the number of Democratic leaning districts produced by the Enacted Plan using the equivalent election. For example, using the 2020 Presidential election \(100 \%\) of the simulations produce 0 Democratic leaning districts. The Enacted Plan does as well, as the ' 0 District' cell is bolded in that row.

\subsection*{6.18 Catawba and Iredell House County Grouping}

The Catawba-Iredell House county group contains 4 districts. In the Enacted Map these are Districts \(84,89,95\), and 96 . The county cluster has an overall partisan index of .33, which is strongly Republican. After conducting 50,000 initial simulations to create four districts in this cluster, I discard any simulations that contain more county traversals than the Enacted Plan. This leaves 14,955 simulations. Next, I discard any simulations in which the average compactness score of the districts in the simulations is not as large or larger than the compactness score of the Enacted Map. This leaves 2,944 simulated maps, each containing four districts.

A map of the location of this county cluster in relation to the rest of the state is shown in Figure 59. A map of the Enacted Map's district boundaries and the Duchin Map's district boundaries within this county grouping are shown in Figure 60.

The distribution of district partisanship based on the statewide partisan elections index calculated for each of the simulation results is shown in Figure 61. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The red vertical line shows the number of Democratic leaning seats in the Enacted Map in the same cluster, and the vertical dashed green line shows the number of Democratic leaning seats in the Duchin Map in the cluster. In \(100 \%\) of the simulations there are 0 Democratic leaning districts. The Enacted Map is in alignment with the modal outcome of the simulations by also creating 0 Democratic districts. The Duchin Map also generates 0 Democratic districts.

Table 21 breaks apart the partisan index into the 11 constituent elections and shows the distribution of Democratic leaning seats generated if one were to look at each election separately. Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded number in each row is the number of Democratic leaning districts produced by the Enacted

Plan using the equivalent election. In all 11 of the individual elections there is agreement between the modal outcome in the simulations and the Enacted Map.

Figure 59: Map of Catawba and Iredell House County Cluster


Figure 60: Map of House Enacted Plan in Catawba and Iredell County Cluster


Partisan Lean of Districts
\begin{tabular}{|c|c|c|}
\hline District: & Enacted Plan & Duchin Plan \\
\hline 84 & 0.34 & 0.34 \\
\hline 89 & 0.26 & 0.28 \\
\hline 95 & 0.34 & 0.34 \\
\hline 96 & 0.37 & 0.36 \\
\hline \hline
\end{tabular}

Note: Partisan index is based on the two-party vote average of 11 statewide partisan elections between 2014-2020.

Figure 61: Distribution of Partisan Districts from Simulations in Catawba and Iredell House County Cluster

\section*{Partisan Composition of Simulation Results from CATAWBA, IREDELL \\ County Grouping Contains 4 Districts}


Note: Distribution of likely district partisanship based on the statewide partisan elections index calculated for each of the simulation results. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The red vertical line shows the number of Democratic leaning seats in the Enacted Map in the same cluster, and the vertical dashed green line shows the number of Democratic leaning seats in the Duchin Map in the cluster.

Table 21: Simulation Results by Individual Elections
Catawba and Iredell House County Cluster
\begin{tabular}{|l|c|c|c|c|c|c|}
\hline & \multicolumn{5}{|c|}{ Number of Democratic Leaning Districts: } \\
\hline & 0 & 1 & 2 & 3 & 4 \\
\hline Individual Elections: & \multicolumn{5}{|c|}{} \\
\hline 2020 President & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Senate & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Governor & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Lt. Governor & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Attorney General & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 President & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Senate & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Governor & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Lt. Governor & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Attorney General & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2014 Senate & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline
\end{tabular}

Note: Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded number in each row is the number of Democratic leaning districts produced by the Enacted Plan using the equivalent election. For example, using the 2020 Presidential election \(100 \%\) of the simulations produce 0 Democratic leaning districts. The Enacted Plan does as well, as the ' 0 District' cell is bolded in that row.

\subsection*{6.19 Durham and Person House County Grouping}

The Durham-Person House county group contains 4 districts. In the Enacted Map these are Districts 2, 29, 30, and 31. The county cluster has an overall partisan index of .76, which is strongly Democratic. After conducting 50,000 initial simulations to create four districts in this cluster, I discard any simulations that contain more county traversals than the Enacted Plan. This leaves 49,896 simulations. Next, I discard any simulations in which the average compactness score of the districts in the simulations is not as large or larger than the compactness score of the Enacted Map. This leaves 37,800 simulated maps, each containing four districts.

A map of the location of this county cluster in relation to the rest of the state is shown in Figure 62. A map of the Enacted Map's district boundaries and the Duchin Map's district boundaries within this county grouping are shown in Figure 63.

The distribution of district partisanship based on the statewide partisan elections index calculated for each of the simulation results is shown in Figure 64. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The red vertical line shows the number of Democratic leaning seats in the Enacted Map in the same cluster, and the vertical dashed green line shows the number of Democratic leaning seats in the Duchin Map in the cluster. In \(100 \%\) of the simulations there are 4 Democratic leaning districts. The Enacted Map is in alignment with the modal outcome of the simulations by also creating 4 Democratic districts. The Duchin Map also generates 4 Democratic districts.

Table 22 breaks apart the partisan index into the 11 constituent elections and shows the distribution of Democratic leaning seats generated if one were to look at each election separately. Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded number in each row is the number of Democratic leaning districts produced by the Enacted

Plan using the equivalent election. In all 11 of the individual elections there is agreement between the modal outcome in the simulations and the Enacted Map.

Figure 62: Map of Durham and Person House County Cluster


Figure 63: Map of House Enacted Plan in Durham and Person House County Cluster
(a) Enacted Map
(b) Duchin Map


Partisan Lean of Districts
\begin{tabular}{|c|c|c|}
\hline District: & Enacted Plan & Duchin Plan \\
\hline 2 & 0.52 & 0.58 \\
\hline 29 & 0.86 & 0.83 \\
\hline 30 & 0.87 & 0.81 \\
\hline 31 & 0.81 & 0.81 \\
\hline \hline
\end{tabular}

Note: Partisan index is based on the two-party vote average of 11 statewide partisan elections between 2014-2020.

Figure 64: Distribution of Partisan Districts from Simulations in Durham and Person House County Cluster

Partisan Composition of Simulation Results from DURHAM, PERSON
County Grouping Contains 4 Districts


Note: Distribution of likely district partisanship based on the statewide partisan elections index calculated for each of the simulation results. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The red vertical line shows the number of Democratic leaning seats in the Enacted Map in the same cluster, and the vertical dashed green line shows the number of Democratic leaning seats in the Duchin Map in the cluster.

Table 22: Simulation Results by Individual Elections
Durham and Person House County Cluster
\begin{tabular}{|l|c|c|c|c|c|c|}
\hline & \multicolumn{5}{|c|}{ Number of Democratic Leaning Districts: } \\
\hline & 0 & 1 & 2 & 3 & 4 \\
\hline Individual Elections: & \multicolumn{5}{|c|}{} \\
\hline 2020 President & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(\mathbf{1 0 0 \%}\) \\
\hline 2020 Senate & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(\mathbf{1 0 0 \%}\) \\
\hline 2020 Governor & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(\mathbf{1 0 0 \%}\) \\
\hline 2020 Lt. Governor & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(\mathbf{1 0 0 \%}\) \\
\hline 2020 Attorney General & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(\mathbf{1 0 0 \%}\) \\
\hline 2016 President & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(\mathbf{1 0 0 \%}\) \\
\hline 2016 Senate & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(\mathbf{0 \%}\) & \(100 \%\) \\
\hline 2016 Governor & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(\mathbf{1 0 0 \%}\) \\
\hline 2016 Lt. Governor & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(\mathbf{0 \%}\) & \(100 \%\) \\
\hline 2016 Attorney General & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(\mathbf{1 0 0 \%}\) \\
\hline 2014 Senate & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(\mathbf{1 0 0 \%}\) \\
\hline
\end{tabular}

Note: Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded number in each row is the number of Democratic leaning districts produced by the Enacted Plan using the equivalent election. For example, using the 2020 Presidential election \(100 \%\) of the simulations produce 4 Democratic leaning districts. The Enacted Plan does as well, as the ' 4 District' cell is bolded in that row.

\subsection*{6.20 Brunswick and New Hanover House County Grouping}

The Brunswick-New Hanover House county group contains 4 districts. In the Enacted Map these are Districts 17, 18, 19, and 20. The county cluster has an overall partisan index of .45 , which is Republican leaning. After conducting 50,000 initial simulations to create four districts in this cluster, I discard any simulations that contain more county traversals than the Enacted Plan. This leaves 12,087 simulations. Next, I discard any simulations in which the average compactness score of the districts in the simulations is not as large or larger than the compactness score of the Enacted Map. This leaves 562 simulated maps, each containing four districts.

A map of the location of this county cluster in relation to the rest of the state is shown in Figure 65. A map of the Enacted Map's district boundaries and the Duchin Map's district boundaries within this county grouping are shown in Figure 66.

The distribution of district partisanship based on the statewide partisan elections index calculated for each of the simulation results is shown in Figure 67. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The red vertical line shows the number of Democratic leaning seats in the Enacted Map in the same cluster, and the vertical dashed green line shows the number of Democratic leaning seats in the Duchin Map in the cluster. In \(100 \%\) of the simulations there is 1 Democratic leaning district. The Enacted Map is in alignment with the modal outcome of the simulations by also creating 1 Democratic district. The Duchin Map generates 2 Democratic districts. The Duchin Map does not align with any of the simulations because it is less compact (average Polsby-Popper score of 0.35 ) than the Enacted Map (average Polsby-Popper score of 0.36 ) and the simulated maps, which are constrained to be at least as compact, on average, as the Enacted Map. This is evident by looking at the maps of the districts in the Duchin Plan. District 20 is a long and narrow district that begins south of Wilmington (the largest city in the cluster), takes in the eastern side of Wilmington, which
is more Republican, and then loops around to the north west. In doing this, the Duchin map then splits the more Democratic portion of Wilmington between districts 18 and 19 in order to create two Democratic leaning districts. As a result, the town of Wilmington is a part of districts 18,19 , and 20. This is also true of the Enacted Map, however, the Enacted map does this while creating more compact districts.

Table 23 breaks apart the partisan index into the 11 constituent elections and shows the distribution of Democratic leaning seats generated if one were to look at each election separately. Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded number in each row is the number of Democratic leaning districts produced by the Enacted Plan using the equivalent election. In 10 of the 11 individual elections there is agreement between the modal outcome in the simulations and the Enacted Map. In the 1 scenario in which they do not agree ( 2020 Governor race), the Enacted Map generates one more Democratic district than the simulations do.

Figure 65: Map of Brunswick and New Hanover House County Cluster


Figure 66: Map of House Enacted Plan in Brunswick and New Hanover County Cluster


Partisan Lean of Districts
\begin{tabular}{|c|c|c|}
\hline District: & Enacted Plan & Duchin Plan \\
\hline 17 & 0.39 & 0.35 \\
\hline 18 & 0.60 & 0.53 \\
\hline 19 & 0.39 & 0.55 \\
\hline 20 & 0.45 & 0.41 \\
\hline
\end{tabular}

Note: Partisan index is based on the two-party vote average of 11 statewide partisan elections between 2014-2020.

Figure 67: Distribution of Partisan Districts from Simulations in Brunswick and New Hanover House County Cluster


Note: Distribution of likely district partisanship based on the statewide partisan elections index calculated for each of the simulation results. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The red vertical line shows the number of Democratic leaning seats in the Enacted Map in the same cluster, and the vertical dashed green line shows the number of Democratic leaning seats in the Duchin Map in the cluster.

Table 23: Simulation Results by Individual Elections
Brunswick and New Hanover House County Cluster
\begin{tabular}{|l|c|c|c|c|c|c|}
\hline & \multicolumn{5}{|c|}{ Number of Democratic Leaning Districts: } \\
\hline & 0 & 1 & 2 & 3 & 4 \\
\hline Individual Elections: & \multicolumn{5}{|c|}{} \\
\hline 2020 President & \(0 \%\) & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Senate & \(0 \%\) & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Governor & \(0 \%\) & \(100 \%\) & \(\mathbf{0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Lt. Governor & \(0 \%\) & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Attorney General & \(0 \%\) & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 President & \(0 \%\) & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Senate & \(0 \%\) & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Governor & \(0 \%\) & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Lt. Governor & \(0 \%\) & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Attorney General & \(0 \%\) & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2014 Senate & \(0 \%\) & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline
\end{tabular}

Note: Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded number in each row is the number of Democratic leaning districts produced by the Enacted Plan using the equivalent election. For example, using the 2020 Presidential election \(100 \%\) of the simulations produce 1 Democratic leaning district. The Enacted Plan does as well, as the ' 1 District' cell is bolded in that row.

\subsection*{6.21 Forsyth and Stokes House County Grouping}

The Forsyth-Stokes House county group contains 5 districts. In the Enacted Map these are Districts \(71,72,74,75\), and 91 . The county cluster has an overall partisan index of .52 , which is slightly Democratic leaning. After conducting 50,000 initial simulations to create five districts in this cluster, I discard any simulations that contain more county traversals than the Enacted Plan. This leaves 17,147 simulations. Next, I discard any simulations in which the average compactness score of the districts in the simulations is not as large or larger than the compactness score of the Enacted Map. This leaves 3,726 simulated maps, each containing five districts.

A map of the location of this county cluster in relation to the rest of the state is shown in Figure 68. A map of the Enacted Map's district boundaries and the Duchin Map's district boundaries within this county grouping are shown in Figure 69. I also include the 2020 map's boundaries for comparison.

The distribution of district partisanship based on the statewide partisan elections index calculated for each of the simulation results is shown in Figure 70. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The red vertical line shows the number of Democratic leaning seats in the Enacted Map in the same cluster, and the vertical dashed green line shows the number of Democratic leaning seats in the Duchin Map in the cluster. In 33\% of the simulations there are 2 Democratic leaning districts. In \(50 \%\) of the simulations there are 3 Democratic leaning districts, and in \(17 \%\) of the simulations there are 4 Democratic leaning districts. The Enacted Map creates 2 Democratic districts. The Duchin Map also generates 2 Democratic districts.

Table 24 breaks apart the partisan index into the 11 constituent elections and shows the distribution of Democratic leaning seats generated if one were to look at each election separately. Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded
number in each row is the number of Democratic leaning districts produced by the Enacted Plan using the equivalent election. In 10 of the 11 individual elections the Enacted Map generates 2 Democratic districts. In 1 scenario (2020 Governor race), the Enacted Map generates 3 Democratic districts.

The Enacted Plan is also extremely similar to the maps used in Forsyth County in the 2020 elections. These districts were approved by a court in 2019. The county grouping was different, and Forsyth was combined with Yadkin County in 2020, however, in both plans the less populous county is kept whole and combined with a portion of Forsyth County. Within the more populated Forsyth County, the boundaries are extremely similar. The Enacted Plan is different by only 5 precincts total, and no district differs from the 2020 maps by more than a 3 precinct shift.

Figure 68: Map of Forsyth and Stokes House County Cluster


Figure 69: Map of House Enacted Plan in Forsyth and Stokes County Cluster

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\begin{tabular}{|c|c|c|}
\multicolumn{3}{c|}{ Partisan Lean of Districts } \\
\begin{tabular}{|c|c|}
\hline District: & Enacted Plan \\
Duchin Plan \\
\hline 71 & 0.71 \\
\hline 72 & 0.70 \\
0.69 \\
\hline 74 & 0.45 \\
\hline 75 & 0.39 \\
\hline 91 & 0.38 \\
\hline \hline
\end{tabular}
\end{tabular}

Note: Partisan index is based on the two-party vote average of 11 statewide partisan elections between 2014-2020.

Figure 70: Distribution of Partisan Districts from Simulations in Forsyth and Stokes House County Cluster


Note: Distribution of likely district partisanship based on the statewide partisan elections index calculated for each of the simulation results. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The red vertical line shows the number of Democratic leaning seats in the Enacted Map in the same cluster, and the vertical dashed green line shows the number of Democratic leaning seats in the Duchin Map in the cluster.

Table 24: Simulation Results by Individual Elections
Forsyth and Stokes House County Cluster
\begin{tabular}{|l|c|c|c|c|c|c|c|}
\hline & \multicolumn{6}{|c|}{ Number of Democratic Leaning Districts: } \\
\hline & 0 & 1 & 2 & 3 & 4 & 5 \\
\hline Individual Elections: & \multicolumn{7}{|c|}{} \\
\hline 2020 President & \(0 \%\) & \(0 \%\) & \(\mathbf{1 4 \%}\) & \(50 \%\) & \(35 \%\) & \(0 \%\) \\
\hline 2020 Senate & \(0 \%\) & \(0 \%\) & \(\mathbf{2 9 \%}\) & \(52 \%\) & \(19 \%\) & \(0 \%\) \\
\hline 2020 Governor & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(\mathbf{2 1 \%}\) & \(79 \%\) & \(0 \%\) \\
\hline 2020 Lt. Governor & \(0 \%\) & \(0 \%\) & \(\mathbf{4 4 \%}\) & \(44 \%\) & \(13 \%\) & \(0 \%\) \\
\hline 2020 Attorney General & \(0 \%\) & \(0 \%\) & \(\mathbf{3 0 \%}\) & \(52 \%\) & \(18 \%\) & \(0 \%\) \\
\hline 2016 President & \(0 \%\) & \(0 \%\) & \(\mathbf{4 5 \%}\) & \(45 \%\) & \(11 \%\) & \(0 \%\) \\
\hline 2016 Senate & \(0 \%\) & \(5 \%\) & \(\mathbf{6 7 \%}\) & \(28 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Governor & \(0 \%\) & \(0 \%\) & \(\mathbf{2 1 \%}\) & \(55 \%\) & \(24 \%\) & \(0 \%\) \\
\hline 2016 Lt. Governor & \(0 \%\) & \(4 \%\) & \(\mathbf{6 6 \%}\) & \(30 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Attorney General & \(0 \%\) & \(0 \%\) & \(\mathbf{2 5 \%}\) & \(56 \%\) & \(19 \%\) & \(0 \%\) \\
\hline 2014 Senate & \(0 \%\) & \(3 \%\) & \(\mathbf{5 8 \%}\) & \(38 \%\) & \(1 \%\) & \(0 \%\) \\
\hline
\end{tabular}

Note: Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded number in each row is the number of Democratic leaning districts produced by the Enacted Plan using the equivalent election. For example, using the 2020 Presidential election \(14 \%\) of the simulations produce 2 Democratic leaning districts. The Enacted Plan does as well, as the ' 2 District' cell is bolded in that row.

\subsection*{6.22 Cabarrus, Davie, Rowan, and Yadkin House County Grouping}

The Cabarrus-Davie-Rowan-Yadkin House county group contains 5 districts. In the Enacted Map these are Districts 73, 76, 77, 82, and 83. The county cluster has an overall partisan index of .36 , which is strongly Republican. After conducting 50,000 initial simulations to create five districts in this cluster, I discard any simulations that contain more county traversals than the Enacted Plan. This leaves 6,649 simulations. Next, I discard any simulations in which the average compactness score of the districts in the simulations is not as large or larger than the compactness score of the Enacted Map. This leaves 283 simulated maps, each containing five districts.

A map of the location of this county cluster in relation to the rest of the state is shown in Figure 71. A map of the Enacted Map's district boundaries and the Duchin Map's district boundaries within this county grouping are shown in Figure 72.

The distribution of district partisanship based on the statewide partisan elections index calculated for each of the simulation results is shown in Figure 73. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The red vertical line shows the number of Democratic leaning seats in the Enacted Map in the same cluster, and the vertical dashed green line shows the number of Democratic leaning seats in the Duchin Map in the cluster. In \(99 \%\) of the simulations there are 0 Democratic leaning districts. The Enacted Map creates 0 Democratic districts. The Duchin Map also generates 0 Democratic districts.

Table 25 breaks apart the partisan index into the 11 constituent elections and shows the distribution of Democratic leaning seats generated if one were to look at each election separately. Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded number in each row is the number of Democratic leaning districts produced by the Enacted

Plan using the equivalent election. In all of the 11 individual elections the Enacted Map generates 0 Democratic districts and is in agreement with the majority of the simulations results in 8 of the 11 individual elections considered.

Figure 71: Map of Cabarrus, Davie, Rowan, and Yadkin House County Cluster


Figure 72: Map of House Enacted Plan in Cabarrus, Davie, Rowan, and Yadkin County Cluster


Partisan Lean of Districts
\begin{tabular}{|c|c|c|}
\hline District: & Enacted Plan & Duchin Plan \\
\hline 73 & 0.40 & 0.25 \\
\hline 76 & 0.40 & 0.40 \\
\hline 77 & 0.25 & 0.35 \\
\hline 82 & 0.45 & 0.41 \\
\hline 83 & 0.34 & 0.43 \\
\hline \hline
\end{tabular}

Note: Partisan index is based on the two-party vote average of 11 statewide partisan elections between 2014-2020.

Figure 73: Distribution of Partisan Districts from Simulations in Cabarrus, Davie, Rowan, and Yadkin House County Cluster

Partisan Composition of Simulation Results from CABARRUS, DAVIE, ROWAN, YADKIN
County Grouping Contains 5 Districts


Note: Distribution of likely district partisanship based on the statewide partisan elections index calculated for each of the simulation results. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The red vertical line shows the number of Democratic leaning seats in the Enacted Map in the same cluster, and the vertical dashed green line shows the number of Democratic leaning seats in the Duchin Map in the cluster.

Table 25: Simulation Results by Individual Elections
Cabarrus, Davie, Rowan, and Yadkin House County Cluster
\begin{tabular}{|l|c|c|c|c|c|c|}
\hline & \multicolumn{6}{|c|}{ Number of Democratic Leaning Districts: } \\
\hline & 0 & 1 & 2 & 3 & 4 & 5 \\
\hline Individual Elections: & \multicolumn{7}{|c|}{} \\
\hline 2020 President & \(\mathbf{1 0 \%}\) & \(90 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Senate & \(\mathbf{8 5 \%}\) & \(15 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Governor & \(\mathbf{2 \%}\) & \(98 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Lt. Governor & \(\mathbf{8 7 \%}\) & \(13 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Attorney General & \(\mathbf{9 \%}\) & \(91 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 President & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Senate & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Governor & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Lt. Governor & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Attorney General & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2014 Senate & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline
\end{tabular}

Note: Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded number in each row is the number of Democratic leaning districts produced by the Enacted Plan using the equivalent election. For example, using the 2020 Presidential election \(10 \%\) of the simulations produce 0 Democratic leaning districts. The Enacted Plan does as well, as the ' 0 District' cell is bolded in that row.

\subsection*{6.23 Chatham, Lee, Moore, Randolph, and Richmond House County Grouping}

The Chatham-Lee-Moore-Randolph-Richmond House county group contains 5 districts. In the Enacted Map these are Districts 51, 52, 54, 70, and 78. The county cluster has an overall partisan index of .38 , which is strongly Republican. After conducting 50,000 initial simulations to create five districts in this cluster, I discard any simulations that contain more county traversals than the Enacted Plan. This leaves 1,868 simulations. Next, I discard any simulations in which the average compactness score of the districts in the simulations is not as large or larger than the compactness score of the Enacted Map. This leaves 939 simulated maps, each containing five districts.

A map of the location of this county cluster in relation to the rest of the state is shown in Figure 74. A map of the Enacted Map's district boundaries and the Duchin Map's district boundaries within this county grouping are shown in Figure 75.

The distribution of district partisanship based on the statewide partisan elections index calculated for each of the simulation results is shown in Figure 76. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The red vertical line shows the number of Democratic leaning seats in the Enacted Map in the same cluster, and the vertical dashed green line shows the number of Democratic leaning seats in the Duchin Map in the cluster. In \(18 \%\) of the simulations there are 0 Democratic leaning districts. In \(82 \%\) of the simulations there is 1 Democratic leaning district. The Enacted Map creates 1 Democratic district. The Duchin Map also generates 1 Democratic district.

Table 26 breaks apart the partisan index into the 11 constituent elections and shows the distribution of Democratic leaning seats generated if one were to look at each election separately. Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded
number in each row is the number of Democratic leaning districts produced by the Enacted Plan using the equivalent election. In all of the 11 individual elections the Enacted Map generates 1 Democratic district and is in agreement with the majority of the simulations results in all 11 individual elections considered.

Figure 74: Map of Chatham, Lee, Moore, Randolph, and Richmond House County Cluster


Figure 75: Map of House Enacted Plan in Chatham, Lee, Moore, Randolph, and Richmond County Cluster


Partisan Lean of Districts
\begin{tabular}{|c|c|c|}
\hline District: & Enacted Plan & Duchin Plan \\
\hline \(51(66\) in Duchin \()\) & 0.41 & 0.42 \\
\hline 52 & 0.44 & 0.35 \\
\hline 54 & 0.54 & 0.58 \\
\hline 70 & 0.25 & 0.24 \\
\hline 78 & 0.26 & 0.27 \\
\hline \hline
\end{tabular}

Note: Partisan index is based on the two-party vote average of 11 statewide partisan elections between 2014-2020.

Figure 76: Distribution of Partisan Districts from Simulations in Chatham, Lee, Moore, Randolph, and Richmond House County Cluster

Partisan Composition of Simulation Results from CHATHAM, LEE, MOORE, RANDOLPH, RICHMOND County Grouping Contains 5 Districts


Note: Distribution of likely district partisanship based on the statewide partisan elections index calculated for each of the simulation results. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The red vertical line shows the number of Democratic leaning seats in the Enacted Map in the same cluster, and the vertical dashed green line shows the number of Democratic leaning seats in the Duchin Map in the cluster.

Table 26: Simulation Results by Individual Elections
Chatham, Lee, Moore, Randolph, and Richmond House County Cluster
\begin{tabular}{|l|c|c|c|c|c|c|}
\hline & \multicolumn{6}{|c|}{ Number of Democratic Leaning Districts: } \\
\hline & 0 & 1 & 2 & 3 & 4 & 5 \\
\hline Individual Elections: & \multicolumn{6}{|c|}{} \\
\hline 2020 President & \(17 \%\) & \(\mathbf{8 3 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Senate & \(18 \%\) & \(\mathbf{8 2 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Governor & \(0 \%\) & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Lt. Governor & \(18 \%\) & \(\mathbf{8 2 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Attorney General & \(15 \%\) & \(\mathbf{8 5 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 President & \(18 \%\) & \(\mathbf{8 2 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Senate & \(19 \%\) & \(\mathbf{8 1 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Governor & \(15 \%\) & \(\mathbf{8 5 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Lt. Governor & \(29 \%\) & \(\mathbf{7 1 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Attorney General & \(14 \%\) & \(\mathbf{8 6 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2014 Senate & \(15 \%\) & \(\mathbf{8 5 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline
\end{tabular}

Note: Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded number in each row is the number of Democratic leaning districts produced by the Enacted Plan using the equivalent election. For example, using the 2020 Presidential election \(83 \%\) of the simulations produce 1 Democratic leaning district. The Enacted Plan does as well, as the ' 1 District' cell is bolded in that row.

\subsection*{6.24 Guilford House County Grouping}

The Guilford House county group contains 6 districts. In the Enacted Map these are Districts 57, 58, 59, 60, 61, and 62. The county cluster has an overall partisan index of .61, which is strongly Democratic. After conducting 50,000 initial simulations to create six districts in this cluster, I would normally discard any simulations that contain more county traversals than the Enacted Plan. However, this grouping contains only one county, and thus the Enacted Plan will contain as many traversals as all of the simulations. Next, I discard any simulations in which the average compactness score of the districts in the simulations is not as large or larger than the compactness score of the Enacted Map. This leaves 15,489 simulated maps, each containing six districts.

A map of the location of this county cluster in relation to the rest of the state is shown in Figure 77. A map of the Enacted Map's district boundaries and the Duchin Map's district boundaries within this county grouping are shown in Figure 78. I also include the map of districts in this county from the 2020 plan for comparison here.

The distribution of district partisanship based on the statewide partisan elections index calculated for each of the simulation results is shown in Figure 79. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The red vertical line shows the number of Democratic leaning seats in the Enacted Map in the same cluster, and the vertical dashed green line shows the number of Democratic leaning seats in the Duchin Map in the cluster. In \(1 \%\) of the simulations there are 4 Democratic leaning districts. In \(79 \%\) of the simulations there is 5 Democratic leaning district. in \(21 \%\) of the simulations there are 6 Democratic districts. The Enacted Map creates 4 Democratic districts. The Duchin Map generates 5 Democratic districts.

Table 27 breaks apart the partisan index into the 11 constituent elections and shows the distribution of Democratic leaning seats generated if one were to look at each election separately. Each row shows the percent of simulations that produce the number of Demo-
cratic leaning districts using the election or election index indicated in the row. The bolded number in each row is the number of Democratic leaning districts produced by the Enacted Plan using the equivalent election. In 10 of the 11 individual elections the Enacted Map generates 4 Democratic districts and in 1 election ( 2020 Governor) the map contains 5 Democratic leaning districts.

An important point to consider when looking at the Enacted Map is that it closely adheres to the map used in Guilford County the 2020 election, which was approved by a court in 2019. The Enacted Plan is different by only four precincts. District 57 is identical across the two plans. Districts 59, 61, and 62 differ from the 2020 map by only 1 precinct each. District 60 differs from the 2020 map by 2 precincts and District 58 differs by only 3 precincts.

Figure 77: Map of Guilford House County Cluster


Figure 78: Map of House Enacted Plan in Guilford County Cluster
(a) Enacted Map
(b) Duchin Map


(c) 2020 Map

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Partisan Lean of Districts
\begin{tabular}{|c|c|c|}
\hline District: & Enacted Plan & Duchin Plan \\
\hline 57 & 0.68 & 0.65 \\
\hline 58 & 0.74 & 0.65 \\
\hline 59 & 0.46 & 0.54 \\
\hline 60 & 0.64 & 0.57 \\
\hline 61 & 0.74 & 0.80 \\
\hline 62 & 0.43 & 0.48 \\
\hline \hline
\end{tabular}

Note: Partisan index is based on the two-party vote average of 11 statewide partisan elections between 2014-2020.

Figure 79: Distribution of Partisan Districts from Simulations in Guilford House County Cluster


Note: Distribution of likely district partisanship based on the statewide partisan elections index calculated for each of the simulation results. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The red vertical line shows the number of Democratic leaning seats in the Enacted Map in the same cluster, and the vertical dashed green line shows the number of Democratic leaning seats in the Duchin Map in the cluster.

Table 27: Simulation Results by Individual Elections
Guilford HouseCounty Cluster
\begin{tabular}{|l|c|c|c|c|c|c|c|}
\hline & \multicolumn{7}{|c|}{ Number of Democratic Leaning Districts: } \\
\hline & 0 & 1 & 2 & 3 & 4 & 5 & 6 \\
\hline Individual Elections: & \multicolumn{7}{|c|}{} \\
\hline 2020 President & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(\mathbf{0 \%}\) & \(41 \%\) & \(59 \%\) \\
\hline 2020 Senate & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(\mathbf{0 \%}\) & \(73 \%\) & \(27 \%\) \\
\hline 2020 Governor & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(\mathbf{1 \%}\) & \(99 \%\) \\
\hline 2020 Lt. Governor & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(\mathbf{1 \%}\) & \(80 \%\) & \(19 \%\) \\
\hline 2020 Attorney General & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(\mathbf{0 \%}\) & \(53 \%\) & \(47 \%\) \\
\hline 2016 President & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(\mathbf{2 \%}\) & \(84 \%\) & \(13 \%\) \\
\hline 2016 Senate & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(\mathbf{7 \%}\) & \(90 \%\) & \(3 \%\) \\
\hline 2016 Governor & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(\mathbf{0 \%}\) & \(44 \%\) & \(56 \%\) \\
\hline 2016 Lt. Governor & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(\mathbf{8 \%}\) & \(90 \%\) & \(3 \%\) \\
\hline 2016 Attorney General & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(\mathbf{1 \%}\) & \(82 \%\) & \(17 \%\) \\
\hline 2014 Senate & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(\mathbf{2 1 \%}\) & \(78 \%\) & \(1 \%\) \\
\hline
\end{tabular}

Note: Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded number in each row is the number of Democratic leaning districts produced by the Enacted Plan using the equivalent election. For example, using the 2020 Presidential election \(0 \%\) of the simulations produce 4 Democratic leaning districts. The Enacted Plan does, as the ' 1 District' cell is bolded in that row.

\subsection*{6.25 Avery, Cleveland, Gaston, Henderson, McDowell, Mitchell, Polk, Rutherford, and Yancey House County Grouping}

The Avery-Cleveland-Gaston-Henderson-McDowell-Mitchell-Polk-Rutherford-Yancey House county group contains 7 districts. In the Enacted Map these are Districts 85, 108, \(109,110,111,113\), and 117 . The county cluster has an overall partisan index of .35 , which is strongly Republican. After conducting 50,000 initial simulations to create seven districts in this cluster, I discard any simulations that contain more county traversals than the Enacted Plan. This leaves 14,667 simulated plans. Next, I discard any simulations in which the average compactness score of the districts in the simulations is not as large or larger than the compactness score of the Enacted Map. This leaves 11,815 simulated maps, each containing seven districts.

A map of the location of this county cluster in relation to the rest of the state is shown in Figure 80. A map of the Enacted Map's district boundaries and the Duchin Map's district boundaries within this county grouping are shown in Figure 81.

The distribution of district partisanship based on the statewide partisan elections index calculated for each of the simulation results is shown in Figure 82. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The red vertical line shows the number of Democratic leaning seats in the Enacted Map in the same cluster, and the vertical dashed green line shows the number of Democratic leaning seats in the Duchin Map in the cluster. In \(100 \%\) of the simulations there are 0 Democratic leaning districts. The Enacted Map creates 0 Democratic leaning districts. The Duchin Map generates 0 Democratic leaning districts.

Table 28 breaks apart the partisan index into the 11 constituent elections and shows the distribution of Democratic leaning seats generated if one were to look at each election separately. Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded
number in each row is the number of Democratic leaning districts produced by the Enacted Plan using the equivalent election. In all 11 of the individual elections the Enacted Map generates 0 Democratic districts and is in agreement with all of the simulated results across all 11 elections.

Figure 80: Map of Avery, Cleveland, Gaston, Henderson, McDowell, Mitchell, Polk, Rutherford, and Yancey House County Cluster


Figure 81: Map of House Enacted Plan in Avery, Cleveland, Gaston, Henderson, McDowell, Mitchell, Polk, Rutherford, and Yancey County Cluster


Partisan Lean of Districts
\begin{tabular}{|c|c|c|}
\hline District: & Enacted Plan & Duchin Plan \\
\hline 85 & 0.28 & 0.28 \\
\hline 108 & 0.38 & 0.32 \\
\hline 109 & 0.38 & 0.43 \\
\hline 110 & 0.31 & 0.32 \\
\hline 111 & 0.32 & 0.34 \\
\hline 113 & 0.35 & 0.33 \\
\hline 117 & 0.40 & 0.40 \\
\hline
\end{tabular}

Note: Partisan index is based on the two-party vote average of 11 statewide partisan elections between 2014-2020.

Figure 82: Distribution of Partisan Districts from Simulations in Avery, Cleveland, Gaston, Henderson, McDowell, Mitchell, Polk, Rutherford, and Yancey House County Cluster


Note: Distribution of likely district partisanship based on the statewide partisan elections index calculated for each of the simulation results. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The red vertical line shows the number of Democratic leaning seats in the Enacted Map in the same cluster, and the vertical dashed green line shows the number of Democratic leaning seats in the Duchin Map in the cluster.

Table 28: Simulation Results by Individual Elections
Avery, Cleveland, Gaston, Henderson, McDowell, Mitchell, Polk, Rutherford, and Yancey House County Cluster
\begin{tabular}{|l|c|c|c|}
\hline \multicolumn{4}{|c|}{ Number of Democratic Leaning Districts: } \\
\hline & 0 & 1 & \(2-7\) \\
\hline Individual Elections: & \multicolumn{3}{|c|}{} \\
\hline 2020 President & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Senate & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Governor & \(\mathbf{9 9 \%}\) & \(1 \%\) & \(0 \%\) \\
\hline 2020 Lt. Governor & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Attorney General & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 President & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Senate & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Governor & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Lt. Governor & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Attorney General & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2014 Senate & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline
\end{tabular}

Note: Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded number in each row is the number of Democratic leaning districts produced by the Enacted Plan using the equivalent election. For example, using the 2020 Presidential election \(100 \%\) of the simulations produce 0 Democratic leaning districts. The Enacted Plan does as well, as the ' 0 District' cell is bolded in that row.

\subsection*{6.26 Mecklenburg House County Grouping}

The Mecklenburg House county group contains 13 districts. In the Enacted Map these are Districts 88, 92, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, and 112. The county cluster has an overall partisan index of 65 , which is strongly Democratic. After conducting 50,000 initial simulations to create 13 districts in this cluster, I would normally discard any simulations that contain more county traversals than the Enacted Plan. However, this cluster is a single county, and thus, there are no traversals. Next, I discard any simulations in which the average compactness score of the districts in the simulations is not as large or larger than the compactness score of the Enacted Map. This leaves 3,161 simulated maps, each containing 13 districts.

A map of the location of this county cluster in relation to the rest of the state is shown in Figure 83. A map of the Enacted Map's district boundaries and the Duchin Map's district boundaries within this county grouping are shown in Figure 84.

The distribution of district partisanship based on the statewide partisan elections index calculated for each of the simulation results is shown in Figure 85. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The red vertical line shows the number of Democratic leaning seats in the Enacted Map in the same cluster, and the vertical dashed green line shows the number of Democratic leaning seats in the Duchin Map in the cluster. In \(1 \%\) of the simulations there are 10 Democratic leaning districts. In \(56 \%\) of the simulations there are 11 Democratic leaning districts, and in \(44 \%\) of the simulations there are 12 Democratic leaning districts. The Enacted Map aligns with the majority of simulations and creates 11 Democratic leaning districts. The Duchin Map generates 11 Democratic leaning districts as well.

Table 29 breaks apart the partisan index into the 11 constituent elections and shows the distribution of Democratic leaning seats generated if one were to look at each election separately. Each row shows the percent of simulations that produce the number of Demo-
cratic leaning districts using the election or election index indicated in the row. The bolded number in each row is the number of Democratic leaning districts produced by the Enacted Plan using the equivalent election. Across the 11 individual elections the Enacted Map generates between 9-13 Democratic districts and is in agreement with the majority of the simulated results in 7 of the 11 elections. In 10 of the 11 elections the Enacted Plan is within the middle \(50 \%\) of the simulation results.

Figure 83: Map of Mecklenburg House County Cluster


Figure 84: Map of House Enacted Plan in Mecklenburg County Cluster


Partisan Lean of Districts
\begin{tabular}{|c|c|c|}
\hline District: & Enacted Plan & Duchin Plan \\
\hline 88 & 0.65 & 0.75 \\
\hline 92 & 0.70 & 0.69 \\
\hline 98 & 0.47 & 0.47 \\
\hline 99 & 0.78 & 0.59 \\
\hline 100 & 0.73 & 0.68 \\
\hline 101 & 0.72 & 0.74 \\
\hline 102 & 0.82 & 0.80 \\
\hline 103 & 0.47 & 0.49 \\
\hline 104 & 0.51 & 0.55 \\
\hline 105 & 0.54 & 0.55 \\
\hline 106 & 0.80 & 0.82 \\
\hline 107 & 0.74 & 0.75 \\
\hline 112 (10 in Duchin) & 0.72 & 0.75 \\
\hline \hline
\end{tabular}

Note: Partisan index is based on the two-party vote average of 11 statewide partisan elections between 2014-2020.

Figure 85: Distribution of Partisan Districts from Simulations in Mecklenburg House County Cluster


Note: Distribution of likely district partisanship based on the statewide partisan elections index calculated for each of the simulation results. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The red vertical line shows the number of Democratic leaning seats in the Enacted Map in the same cluster, and the vertical dashed green line shows the number of Democratic leaning seats in the Duchin Map in the cluster.

Table 29: Simulation Results by Individual Elections
Mecklenburg House County Cluster
\begin{tabular}{|l|c|c|c|c|c|c|c|c|c|}
\hline & \multicolumn{7}{|c|}{ Number of Democratic Leaning Districts: } \\
\hline & \(0-7\) & 8 & 9 & 10 & 11 & 12 & 13 \\
\hline Individual Elections: & \multicolumn{7}{|c|}{} \\
\hline 2020 President & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(\mathbf{1 0 0 \%}\) \\
\hline 2020 Senate & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(\mathbf{3 9 \%}\) & \(61 \%\) & \(0 \%\) \\
\hline 2020 Governor & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(\mathbf{1 0 0 \%}\) \\
\hline 2020 Lt. Governor & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(\mathbf{3 6 \%}\) & \(64 \%\) & \(0 \%\) \\
\hline 2020 Attorney General & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(\mathbf{9 \%}\) & \(91 \%\) & \(0 \%\) \\
\hline 2016 President & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(3 \%\) & \(\mathbf{6 9 \%}\) & \(28 \%\) & \(0 \%\) \\
\hline 2016 Senate & \(0 \%\) & \(3 \%\) & \(\mathbf{5 0 \%}\) & \(45 \%\) & \(2 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Governor & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(11 \%\) & \(\mathbf{7 6 \%}\) & \(13 \%\) \\
\hline 2016 Lt. Governor & \(0 \%\) & \(4 \%\) & \(\mathbf{5 8 \%}\) & \(38 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Attorney General & \(0 \%\) & \(0 \%\) & \(5 \%\) & \(\mathbf{3 4 \%}\) & \(57 \%\) & \(4 \%\) & \(0 \%\) \\
\hline 2014 Senate & \(0 \%\) & \(4 \%\) & \(\mathbf{6 0 \%}\) & \(35 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline
\end{tabular}

Note: Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded number in each row is the number of Democratic leaning districts produced by the Enacted Plan using the equivalent election. For example, using the 2020 Presidential election \(100 \%\) of the simulations produce 13 Democratic leaning districts. The Enacted Plan does as well, as the '13 District' cell is bolded in that row.

\subsection*{6.27 Wake House County Grouping}

The Wake House county group contains 13 districts. In the Enacted Map these are Districts 11, 21, 33, 34, 35, 36, 37, 38, 39, 40, 41, 49, and 66 . The county cluster has an overall partisan index of . 61 , which is strongly Democratic. After conducting 50,000 initial simulations to create 13 districts in this cluster, I would normally discard any simulations that contain more county traversals than the Enacted Plan. However, this cluster is a single county, and thus, there are no traversals. Next, I discard any simulations in which the average compactness score of the districts in the simulations is not as large or larger than the compactness score of the Enacted Map. This leaves 14,305 simulated maps, each containing 13 districts.

A map of the location of this county cluster in relation to the rest of the state is shown in Figure 86. A map of the Enacted Map's district boundaries and the Duchin Map's district boundaries within this county grouping are shown in Figure 87.

The distribution of district partisanship based on the statewide partisan elections index calculated for each of the simulation results is shown in Figure 88. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The red vertical line shows the number of Democratic leaning seats in the Enacted Map in the same cluster, and the vertical dashed green line shows the number of Democratic leaning seats in the Duchin Map in the cluster. In \(2 \%\) of the simulations there are 10 Democratic leaning districts. In \(32 \%\) of the simulations there are 11 Democratic leaning districts, and in \(66 \%\) of the simulations there are 12 Democratic leaning districts. The Enacted Map creates 11 Democratic leaning districts. The Duchin Map generates 11 Democratic leaning districts as well.

Table 30 breaks apart the partisan index into the 11 constituent elections and shows the distribution of Democratic leaning seats generated if one were to look at each election separately. Each row shows the percent of simulations that produce the number of Demo-
cratic leaning districts using the election or election index indicated in the row. The bolded number in each row is the number of Democratic leaning districts produced by the Enacted Plan using the equivalent election. Across the 11 individual elections the Enacted Map generates between 9-13 Democratic districts and is in agreement with the majority of the simulated results in 7 of the 11 elections.

Figure 86: Map of Wake House County Cluster


Figure 87: Map of House Enacted Plan in Wake County Cluster


Partisan Lean of Districts
\begin{tabular}{|c|c|c|}
\hline District: & Enacted Plan & Duchin Plan \\
\hline 11 & 0.69 & 0.65 \\
\hline 21 (1 in Duchin) & 0.53 & 0.65 \\
\hline 33 & 0.83 & 0.65 \\
\hline 34 & 0.65 & 0.62 \\
\hline 35 & 0.47 & 0.63 \\
\hline 36 & 0.55 & 0.53 \\
\hline 37 & 0.45 & 0.46 \\
\hline 38 & 0.75 & 0.84 \\
\hline 39 & 0.59 & 0.59 \\
\hline 40 & 0.56 & 0.49 \\
\hline 41 & 0.64 & 0.58 \\
\hline 49 & 0.65 & 0.64 \\
\hline 66 (113 in Duchin) & 0.65 & 0.69 \\
\hline \hline
\end{tabular}

Note: Partisan index is based on the two-party vote average of 11 statewide partisan elections between 2014-2020.

Figure 88: Distribution of Partisan Districts from Simulations in Wake House County Cluster


Note: Distribution of likely district partisanship based on the statewide partisan elections index calculated for each of the simulation results. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The red vertical line shows the number of Democratic leaning seats in the Enacted Map in the same cluster, and the vertical dashed green line shows the number of Democratic leaning seats in the Duchin Map in the cluster.

Table 30: Simulation Results by Individual Elections
Wake House County Cluster
\begin{tabular}{|l|c|c|c|c|c|c|c|c|c|}
\hline & \multicolumn{7}{|c|}{ Number of Democratic Leaning Districts: } \\
\hline & \(0-7\) & 8 & 9 & 10 & 11 & 12 & 13 \\
\hline Individual Elections: & \multicolumn{7}{|c|}{} \\
\hline 2020 President & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(\mathbf{2 \%}\) & \(81 \%\) & \(17 \%\) \\
\hline 2020 Senate & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(\mathbf{9 \%}\) & \(88 \%\) & \(2 \%\) \\
\hline 2020 Governor & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(\mathbf{1 0 0 \%}\) \\
\hline 2020 Lt. Governor & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(\mathbf{1 4 \%}\) & \(85 \%\) & \(0 \%\) \\
\hline 2020 Attorney General & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(\mathbf{2 \%}\) & \(78 \%\) & \(20 \%\) \\
\hline 2016 President & \(0 \%\) & \(0 \%\) & \(2 \%\) & \(21 \%\) & \(\mathbf{5 8 \%}\) & \(19 \%\) & \(0 \%\) \\
\hline 2016 Senate & \(0 \%\) & \(21 \%\) & \(\mathbf{5 7 \%}\) & \(21 \%\) & \(1 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Governor & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(6 \%\) & \(\mathbf{6 0 \%}\) & \(34 \%\) & \(0 \%\) \\
\hline 2016 Lt. Governor & \(0 \%\) & \(33 \%\) & \(\mathbf{5 7 \%}\) & \(9 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Attorney General & \(0 \%\) & \(0 \%\) & \(2 \%\) & \(19 \%\) & \(\mathbf{6 2 \%}\) & \(18 \%\) & \(0 \%\) \\
\hline 2014 Senate & \(0 \%\) & \(28 \%\) & \(\mathbf{6 1 \%}\) & \(12 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline
\end{tabular}

Note: Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded number in each row is the number of Democratic leaning districts produced by the Enacted Plan using the equivalent election. For example, using the 2020 Presidential election \(2 \%\) of the simulations produce 11 Democratic leaning districts. The Enacted Plan does as well, as the ' 11 District' cell is bolded in that row.

\section*{\(7 \quad\) NC Senate Analysis}

\subsection*{7.1 Senate Groupings with only 1 District}

In the state Senate, there are 26 county clusters. 17 clusters containing 36 of the 50 districts are fixed based on the optimal county clusters determined by Cooper et al. (2021, 'Duke Study'). The remaining 9 clusters were selected by the General Assembly from four sets of choices between clusters as presented by the Duke Study.

In the Enacted Plan there are 14 county clusters composed of 48 counties in which the cluster contains only 1 Senate district. In these clusters there is no discretion for any map maker. The district is simply the boundaries of the county group. These counties collectively have a population of \(2,906,456\), or approximately \(28 \%\) of the state's total population and account for 14 of the 50 seats in the state senate.

Figure 89 shows a map of the counties that constitute these single-district clusters in the Enacted Plan. Figure 90 shows a map of the countie that constitute these single-district clusters chosen in the Duchin Plan. Table 31 below shows each cluster, the counties included in the cluster, and the corresponding districts in the Senate Enacted Plan. The final two columns of the table show the partisan lean of the cluster using the 11 statewide partisan elections index discussed above and whether or not, based on that index, the cluster leans Democratic (or Republican). I classify a district (in the Enacted Plan and in the simulations as well) as being Democratic leaning if the partisan index for that district is greater than 0.50. In other words, if more than fifty percent of the ballots cast for the two major parties were for Democratic candidates, that district is classified as a Democratic leaning district. Obviously, districts with numbers much larger than (smaller than) 0.50 will be more likely to elect a Democrat (Republican) than districts that are very close to 0.50 .

The bottom row of Table 31 shows the results for all 14 clusters together. Collectively these counties have a partisan index of 0.43 , meaning roughly four in ten voters in these counties cast ballots for Democratic candidates in the 11 statewide races I consider here.

However, the location of voters for the different parties is not uniformly distributed across these counties. Given this spatial distribution of voters across the counties, 4 of the 14 clusters lean Democratic, or roughly 30 percent. In this case, the proportion of Democratic leaning districts is lower than the proportion of voters in these counties who favor Democratic candidates. However, this is not due to any district boundaries. It is again purely a function of the political geography of the state since all of these districts are entire county units and are, as such, fixed.

In some cases the Enacted Plan and the Duchin Plan use different county groupings from one another. This occurs in 4 cases and is shown in Table 31 below. This results in a net change of 3 counties included in single district groupings. \({ }^{26}\)

In the Duchin Plan 5 of the 14 clusters lean Democratic, or approximately \(36 \%\) of the districts. As in the Enacted Plan, the proportion of Democratic leaning districts is lower that the proportion of voters in these counties who favor Democratic candidates. However, this is not due to any district boundaries. It is again purely a function of the political geography of the state since all of these districts are entire county units and are, as such, fixed.

\footnotetext{
\({ }^{26}\) Stokes replaces Yadkin, Henderson and Polk are replaced by McDowell and Cleveland.
}

Table 31: County Clusters Containing 1 Senate District
\begin{tabular}{|c|c|c|c|c|}
\hline County Cluster & \# Counties & District \# & \begin{tabular}{c} 
County Cluster \\
Democratic \\
Partisan \\
Index
\end{tabular} & \begin{tabular}{c} 
Democratic \\
District
\end{tabular} \\
\hline
\end{tabular}

\section*{Clusters Used by Both Enacted and Duchin Plans}
\begin{tabular}{|r|c|c|c|c|}
\hline Johnston & 1 & 10 & 0.37 & 0 \\
\hline Onslow & 1 & 6 & 0.34 & 0 \\
\hline Rowan-Stanly & 2 & 33 & 0.31 & 0 \\
\hline Edgecombe-Pitt & 2 & 5 & 0.57 & 1 \\
\hline Davidson-Davie & 2 & 30 & 0.27 & 0 \\
\hline Caswell-Orange-Person & 3 & 23 & 0.66 & 1 \\
\hline Franklin-Nash-Vance & 3 & 11 & 0.51 & 1 \\
\hline Beaufort-Craven-Lenoir & 3 & 3 & 0.42 & 0 \\
\hline Hoke-Robeson-Scotland & 3 & 24 & 0.51 & 1 \\
\hline Greene-Wayne-Wilson & 3 & 4 & 0.48 & 0 \\
\hline
\end{tabular}

\section*{Clusters Used by Enacted Plan}
\begin{tabular}{|r|c|c|c|c|}
\hline Henderson-Polk-Rutherford & 3 & 48 & 0.36 & 0 \\
\hline \begin{tabular}{r} 
Alexander-Surry- \\
Wilkes-Yadkin
\end{tabular} & 4 & 36 & 0.24 & 0 \\
\hline \begin{tabular}{r} 
Carteret-Chowan-Halifax- \\
Hyde-Martin-Pamlico- \\
Warren-Washington
\end{tabular} & 8 & 2 & 0.46 & 0 \\
\hline \begin{tabular}{r} 
Bertie-Camden-Currituck- \\
\begin{tabular}{r} 
Dare-Gates-Hertford- \\
Northampton-Pasquotank- \\
Perquimans-Tyrrell
\end{tabular}
\end{tabular}\((10\) & 1 & 0.47 & 0 \\
\hline
\end{tabular}

\section*{Alternative Clusters Used by Duchin Plan}
\begin{tabular}{|r|c|c|c|c|}
\hline Cleveland-McDowell-Rutherford & 3 & 47 & 0.32 & 0 \\
\hline \begin{tabular}{r} 
Alexander-Stokes- \\
Surry-Wilkes
\end{tabular} & 4 & 45 & 0.25 & 0 \\
\hline \begin{tabular}{r} 
Carteret-Chowan-Dare-
\end{tabular} & 8 & 2 & 0.39 & 0 \\
\begin{tabular}{r} 
Hyde-Pamlico-Pasquotank- \\
Perquimans-Washington
\end{tabular} & 1 & 0.54 & 1 \\
\hline \begin{tabular}{r} 
Bertie-Camden-Currituck- \\
Gates-Halifax-Hertford- \\
Martin- Northampton- \\
Tyrrell-Warren
\end{tabular} & 10 & 1 & 0.43 & 4 \\
\hline
\end{tabular}
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- Ex. 9415 -


\section*{8 Senate Groupings with More than 1 District:}

There are 12 county groups with more than 1 district where a map drawer has some discretion to draw districts. I consider each cluster separately because the districts are constrained to remain within the county cluster as the redistricting process is North Carolina is a series of discrete redistricting problems within each county cluster.

I conduct simulations in the 12 clusters that contain more than one Senate district. These clusters collectively account for 36 of the 50 districts in the North Carolina Senate. In the Enacted Plan, 20 of these districts lean Republican and 16 lean Democratic according to the statewide partisan elections index. In addition to calculating the number of Democratic leaning districts for the Enacted Plan, I also compute the same partisan index for the plaintiffs' Duchin Plan and compare how the Enacted Plan and the Duchin Plan perform on this same metric. The Duchin Plan creates 17 districts that lean Republican and 19 districts that lean Democratic according to the statewide partisan elections index in these districts.

I then place both maps in relation to the distribution of partisan outcomes from the simulated districts. In each cluster I consider the number of Democratic districts generated by each plan in comparison to the distribution of results from the simulations. I consider a plan to be a partisan outlier if the number of Democratic districts generated by the plan falls outside the middle \(50 \%\) of simulation results. This is a conservative definition of an outlier. In the social sciences, medicine, and other disciplines it is traditional to consider something an outlier if it falls outside the middle \(95 \%\) or \(90 \%\) of the comparison distribution.

In the Senate, the Duchin Map chooses a different set of county clusters from those that have an alternative option presented in the Cooper et al. (2021, 'Duke Study') report. This occurs in three different county groupings. As a result, in these three different clusters the Duchin Senate Map and the Enacted Senate Map are not comparable because they use different groupings of counties. I compare the remaining nine clusters that are common between the two proposals. An overview of the results are as follows.

In 10 of the 12 clusters, the Enacted Map produces a number of Democratic districts
that falls within the middle \(50 \%\) of simulation results and are not partisan outliers. Furthermore, the Enacted Map produces the same number of Democratic leaning districts as the modal (most common) number of Democratic leaning districts in the simulations in 10 of the 12 clusters.

In 10 of the 12 clusters, the Duchin Map produces a number of Democratic districts that fall within the middle \(50 \%\) of simulation results and are not partisan outliers. Furthermore, the Duchin Map produces the same number of Democratic leaning districts as the modal (most common) number of Democratic leaning districts in the simulations in 10 of the 12 clusters.

In 6 of the 9 clusters that are common between the Enacted Map and the Duchin Map there is agreement between the two plans on the number of Democratic leaning districts. \({ }^{27}\) This means there is disagreement in 4 of the 26 total clusters. Table 32 summarizes the results of the simulation analysis for the 12 Senate clusters with multiple districts. Figure 91 shows a map of the counties where the Enacted Plan and the Duchin Plan are in agreement on the number of Democratic leaning seats. Figure 92 shows a map of the counties where the Enacted Plan and the Duchin Plan disagree on the number of Democratic leaning seats.

Thereafter, I present the results cluster-by-cluster.

\footnotetext{
\({ }^{27}\) These groupings are: Cumberland-Moore, Chatham-Durham, Alleghany et al., Brunswick-ColumbusNew Hanover, Bladen et al., Alamance et al., and the combination of Buncombe, Burke, McDowell, Cleveland, Gaston, Lincoln, Henderson, Polk, Forsyth, Stokes, and Yadkin into four different groupings.
}

Table 32: Senate County Grouping Analysis Summary
\begin{tabular}{|c|c|c|c|c|c|}
\hline & & & \multicolumn{2}{|c|}{ \# of Districts that are Democratic Leaning } \\
\hline County Cluster & \begin{tabular}{c} 
Cluster \\
Democratic \\
Partisan \\
Index
\end{tabular} & \# Districts & Enacted Map & Duchin Map & Simulations \\
\hline
\end{tabular}

Clusters Used by both Enacted and Duchin Plans
\begin{tabular}{|r|c|c|c|c|c|}
\hline Cumberland-Moore & 0.52 & 2 & 1 & 1 & 1 \\
\hline Chatham-Durham & 0.75 & 2 & 2 & 2 & 2 \\
\hline \begin{tabular}{r} 
Alleghany-Ashe-Avery-
\end{tabular} & & & & & \\
\begin{tabular}{r} 
Caldwell-Catawba-Cherokee- \\
Clay-Graham-Haywood- \\
Jackson-Macon-Madison- \\
Mitchell-Swain-Transylvania- \\
Watauga-Yancy
\end{tabular} & 0.36 & 2 & 0 & 0 & 0 \\
\hline Brunswick-Columbus-New Hanover & 0.45 & 2 & 1 & 1 & 1 \\
\hline \begin{tabular}{r} 
Bladen-Duplin-Harnett-
\end{tabular} & 0.41 & 2 & 0 & 0 & 0 \\
\hline Jones-Lee-Pender-Sampson
\end{tabular}
Clusters Used by Enacted Plan
\begin{tabular}{|r|c|c|c|c|c|}
\hline Buncombe-Burke-McDowell & 0.51 & 2 & 1 & & 1 \\
\hline Cleveland-Gaston-Lincoln & 0.34 & 2 & 0 & & 0 \\
\hline Forsyth-Stokes & 0.52 & 2 & 1 & & 1 \\
\hline Alternative Clusters Used by Duchin Plan & & & 1 & 1 \\
\hline Buncombe-Henderson-Polk & 0.54 & 2 & & 0 & 0 \\
\hline Burke-Gaston-Lincoln & 0.34 & 2 & & 1 & 1 \\
\hline Forsyth-Yadkin & 0.54 & 2 & & 19 & 19 \\
\hline Total: & & 35 & 16 & \\
\hline
\end{tabular}

Note: Number of Democratic leaning districts is measured using the average two-party vote share in each district from the 11 statewide races noted earlier. Simulations range represents the middle \(50 \%\) of outcomes from the simulations results. Clusters that fall outside of the simulation range are bolded.
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\subsection*{8.1 Cumberland and Moore Senate County Grouping}

The Cumberland-Moore Senate county group contains 2 districts. In the Enacted Map these are Districts 19 and 21. The county cluster has an overall partisan index of .52, which is slightly Democratic. After conducting 50,000 initial simulations to create two districts in this cluster, I discard any simulations that contain more county traversals than the Enacted Plan. All 50,000 simulations meet this criteria. Next, I discard any simulations in which the average compactness score of the districts in the simulations is not as large or larger than the compactness score of the Enacted Map. This leaves 42,625 simulated maps, each containing two districts.

A map of the location of this county cluster in relation to the rest of the state is shown in Figure 93. A map of the Enacted Map's district boundaries and the Duchin Map's district boundaries within this county grouping are shown in Figure 94.

The distribution of district partisanship based on the statewide partisan elections index calculated for each of the simulation results is shown in Figure 95. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The red vertical line shows the number of Democratic leaning seats in the Enacted Map in the same cluster, and the vertical dashed green line shows the number of Democratic leaning seats in the Duchin Map in the cluster. In \(77 \%\) of the simulations there is 1 Democratic leaning district. The Enacted Map is in alignment with the modal outcome of the simulations by also creating 1 Democratic district. The Duchin Map also generates 1 Democratic district.

Table 33 breaks apart the partisan index into the 11 constituent elections and shows the distribution of Democratic leaning seats generated if one were to look at each election separately. Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded number in each row is the number of Democratic leaning districts produced by the Enacted Plan using the equivalent election. In 10 of the 11 individual elections there is agreement
between the modal outcome in the simulations and the Enacted Map.

Figure 93: Map of Cumberland and Moore Senate County Cluster


Figure 94: Map of Enacted Plan in Cumberland and Moore Senate County Cluster


Partisan Lean of Districts
\begin{tabular}{|c|c|c|}
\hline District: & Enacted Plan & Duchin Plan \\
\hline 19 & 0.66 & 0.66 \\
\hline \(25(21\) in Duchin \()\) & 0.40 & 0.40 \\
\hline \hline
\end{tabular}

Note: Partisan index is based on the two-party vote average of 11 statewide partisan elections between 2014-2020.

Figure 95: Distribution of Partisan Districts from Simulations in Cumberland and Moore Senate County Cluster

Partisan Composition of Simulation Results from CUMBERLAND, MOORE
County Grouping Contains 2 Districts


Note: Distribution of likely district partisanship based on the statewide partisan elections index calculated for each of the simulation results. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The red vertical line shows the number of Democratic leaning seats in the Enacted Map in the same cluster, and the vertical dashed green line shows the number of Democratic leaning seats in the Duchin Map in the cluster.

Table 33: Simulation Results by Individual Elections
Cumberland and Moore Senate County Cluster
\begin{tabular}{|l|c|c|c|}
\hline Number of Democratic Leaning Districts: \\
\hline & 0 & 1 & 2 \\
\hline Individual Elections: & \multicolumn{3}{|c|}{} \\
\hline 2020 President & \(0 \%\) & \(\mathbf{8 2 \%}\) & \(18 \%\) \\
\hline 2020 Senate & \(0 \%\) & \(\mathbf{9 1 \%}\) & \(9 \%\) \\
\hline 2020 Governor & \(0 \%\) & \(\mathbf{7 \%}\) & \(93 \%\) \\
\hline 2020 Lt. Governor & \(0 \%\) & \(\mathbf{9 4 \%}\) & \(6 \%\) \\
\hline 2020 Attorney General & \(0 \%\) & \(\mathbf{5 8 \%}\) & \(42 \%\) \\
\hline 2016 President & \(0 \%\) & \(\mathbf{8 4 \%}\) & \(16 \%\) \\
\hline 2016 Senate & \(0 \%\) & \(\mathbf{9 7 \%}\) & \(3 \%\) \\
\hline 2016 Governor & \(0 \%\) & \(\mathbf{7 1 \%}\) & \(29 \%\) \\
\hline 2016 Lt. Governor & \(0 \%\) & \(\mathbf{9 9 \%}\) & \(1 \%\) \\
\hline 2016 Attorney General & \(0 \%\) & \(\mathbf{5 7 \%}\) & \(43 \%\) \\
\hline 2014 Senate & \(0 \%\) & \(\mathbf{9 6 \%}\) & \(4 \%\) \\
\hline
\end{tabular}

Note: Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded number in each row is the number of Democratic leaning districts produced by the Enacted Plan using the equivalent election. For example, using the 2020 Presidential election \(82 \%\) of the simulations produce 1 Democratic leaning district. The Enacted Plan does as well, as the ' 1 District' cell is bolded in that row.

\subsection*{8.2 Chatham and Durham Senate County Grouping}

The Chatham-Durham Senate county group contains 2 districts. In the Enacted Map these are Districts 20 and 22. The county cluster has an overall partisan index of .75 , which is strongly Democratic. After conducting 50,000 initial simulations to create two districts in this cluster, I discard any simulations that contain more county traversals than the Enacted Plan. This leaves 49,721 simulations that meet this criteria. Next, I discard any simulations in which the average compactness score of the districts in the simulations is not as large or larger than the compactness score of the Enacted Map. This leaves 1,750 simulated maps, each containing two districts.

A map of the location of this county cluster in relation to the rest of the state is shown in Figure 96. A map of the Enacted Map's district boundaries and the Duchin Map's district boundaries within this county grouping are shown in Figure 97.

The distribution of district partisanship based on the statewide partisan elections index calculated for each of the simulation results is shown in Figure 98. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The red vertical line shows the number of Democratic leaning seats in the Enacted Map in the same cluster, and the vertical dashed green line shows the number of Democratic leaning seats in the Duchin Map in the cluster. In \(100 \%\) of the simulations there are 2 Democratic leaning districts. The Enacted Map is in alignment with the modal outcome of the simulations by also creating 2 Democratic leaning districts. The Duchin Map also generates 2 Democratic leaning districts.

Table 34 breaks apart the partisan index into the 11 constituent elections and shows the distribution of Democratic leaning seats generated if one were to look at each election separately. Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded number in each row is the number of Democratic leaning districts produced by the Enacted

Plan using the equivalent election. In all 11 of the 11 individual elections there is agreement between the modal outcome in the simulations and the Enacted Map.

Figure 96: Map of Chatham and Durham Senate County Cluster


Figure 97: Map of Enacted Plan in Chatham and Durham Senate County Cluster


Partisan Lean of Districts
\begin{tabular}{|c|c|c|}
\hline District: & Enacted Plan & Duchin Plan \\
\hline \(20(23\) in Duchin \()\) & 0.72 & 0.71 \\
\hline \(22(20\) in Duchin \()\) & 0.79 & 0.79 \\
\hline \hline
\end{tabular}

Note: Partisan index is based on the two-party vote average of 11 statewide partisan elections between 2014-2020.

Figure 98: Distribution of Partisan Districts from Simulations in Chatham and Durham Senate County Cluster


Note: Distribution of likely district partisanship based on the statewide partisan elections index calculated for each of the simulation results. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The red vertical line shows the number of Democratic leaning seats in the Enacted Map in the same cluster, and the vertical dashed green line shows the number of Democratic leaning seats in the Duchin Map in the cluster.

Table 34: Simulation Results by Individual Elections
Chatham and Durham Senate County Cluster
\begin{tabular}{|l|c|c|c|}
\hline \multicolumn{3}{|c|}{ Number of Democratic Leaning Districts: } \\
\hline & 0 & 1 & 2 \\
\hline Individual Elections: & \multicolumn{3}{|c|}{} \\
\hline 2020 President & \(0 \%\) & \(0 \%\) & \(\mathbf{1 0 0 \%}\) \\
\hline 2020 Senate & \(0 \%\) & \(0 \%\) & \(\mathbf{1 0 0 \%}\) \\
\hline 2020 Governor & \(0 \%\) & \(0 \%\) & \(\mathbf{1 0 0 \%}\) \\
\hline 2020 Lt. Governor & \(0 \%\) & \(0 \%\) & \(\mathbf{1 0 0 \%}\) \\
\hline 2020 Attorney General & \(0 \%\) & \(0 \%\) & \(\mathbf{1 0 0 \%}\) \\
\hline 2016 President & \(0 \%\) & \(0 \%\) & \(\mathbf{1 0 0 \%}\) \\
\hline 2016 Senate & \(0 \%\) & \(0 \%\) & \(\mathbf{1 0 0 \%}\) \\
\hline 2016 Governor & \(0 \%\) & \(0 \%\) & \(\mathbf{1 0 0 \%}\) \\
\hline 2016 Lt. Governor & \(0 \%\) & \(0 \%\) & \(\mathbf{1 0 0 \%}\) \\
\hline 2016 Attorney General & \(0 \%\) & \(0 \%\) & \(\mathbf{1 0 0 \%}\) \\
\hline 2014 Senate & \(0 \%\) & \(0 \%\) & \(\mathbf{1 0 0 \%}\) \\
\hline
\end{tabular}

Note: Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded number in each row is the number of Democratic leaning districts produced by the Enacted Plan using the equivalent election. For example, using the 2020 Presidential election \(100 \%\) of the simulations produce 2 Democratic leaning districts. The Enacted Plan does as well, as the ' 2 Districts' cell is bolded in that row.

\subsection*{8.3 Bladen, Duplin, Harnett, Jones, Lee, Pender, and Sampson Senate County Grouping}

The Bladen-Duplin-Harnett-Jones-Lee-Pender-Sampson Senate county grouping contains 2 districts. In the Enacted Map these are Districts 9 and 12. The county cluster has an overall partisan index of 0.41 , which is strongly Republican. After conducting 50,000 initial simulations to create two districts in this cluster, I discard any simulations that contain more county traversals than the Enacted Plan. All 50,000 simulated maps meet this criteria. Next, I discard any simulations in which the average compactness score of the districts in the simulations is not as large or larger than the compactness score of the Enacted Map. This leaves only one unique map that is as compact as the Enacted Plan.

A map of the location of this county cluster in relation to the rest of the state is shown in Figure 99. A map of the Enacted Map's district boundaries and the Duchin Map's district boundaries within this county grouping are shown in Figure 100.

Because there is only 1 map that fits the criteria I use of equal population, county traversals, and compactness equal to or better than the Enacted Map, I do not present the distribution of district partisanship for the simulations here. It is sufficient to say that in the Enacted Map, the Duchin map, and the remaining simulated map all create 2 Republican districts and 0 Democratic leaning districts, regardless of the index or election used. Table 35 shows this below.

Figure 99: Map of Bladen, Duplin, Harnett, Jones, Lee, Pender, and Sampson Senate County Cluster


Figure 100: Map of Enacted Plan in Bladen, Duplin, Harnett, Jones, Lee, Pender, and Sampson Senate County Cluster

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Partisan Lean of Districts
\begin{tabular}{|c|c|c|}
\hline District: & Enacted Plan & Duchin Plan \\
\hline 9 (10 in Duchin) & 0.40 & 0.41 \\
\hline 12 & 0.41 & 0.41 \\
\hline \hline
\end{tabular}

Note: Partisan index is based on the two-party vote average of 11 statewide partisan elections between 2014-2020.

Table 35: Simulation Results by Individual Elections
Bladen, Duplin, Harnett, Jones, Lee, Pender, and Sampson Senate County Cluster
\begin{tabular}{|l|c|c|c|}
\hline \multicolumn{4}{|c|}{ Number of Democratic Leaning Districts: } \\
\hline & 0 & 1 & 2 \\
\hline Individual Elections: & \multicolumn{3}{|c|}{} \\
\hline 2020 President & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Senate & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Governor & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Lt. Governor & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Attorney General & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 President & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Senate & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Governor & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Lt. Governor & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Attorney General & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2014 Senate & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline
\end{tabular}

Note: Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded number in each row is the number of Democratic leaning districts produced by the Enacted Plan using the equivalent election. For example, using the 2020 Presidential election \(100 \%\) of the simulations produce 0 Democratic leaning districts. The Enacted Plan does as well, as the ' 0 District' cell is bolded in that row.

\subsection*{8.4 Brunswick, Columbus, and New Hanover Senate County Grouping}

The Brunswick-Columbus-New Hanover Senate county group contains 2 districts. In the Enacted Map these are Districts 7 and 8. The county cluster has an overall partisan index of .45 , which is Republican leaning. After conducting 50,000 initial simulations to create two districts in this cluster, I discard any simulations that contain more county traversals than the Enacted Plan. This leaves 31,037 simulations that meet this criteria. Next, I discard any simulations in which the average compactness score of the districts in the simulations is not as large or larger than the compactness score of the Enacted Map. This leaves 30,499 simulated maps, each containing two districts.

A map of the location of this county cluster in relation to the rest of the state is shown in Figure 101. A map of the Enacted Map's district boundaries and the Duchin Map's district boundaries within this county grouping are shown in Figure 102.

The distribution of district partisanship based on the statewide partisan elections index calculated for each of the simulation results is shown in Figure 103. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The red vertical line shows the number of Democratic leaning seats in the Enacted Map in the same cluster, and the vertical dashed green line shows the number of Democratic leaning seats in the Duchin Map in the cluster. In \(77 \%\) of the simulations there is 1 Democratic leaning districts. The Enacted Map is in alignment with the modal outcome of the simulations by also creating 1 Democratic leaning district. The Duchin Map also generates 1 Democratic leaning district.

Table 36 breaks apart the partisan index into the 11 constituent elections and shows the distribution of Democratic leaning seats generated if one were to look at each election separately. Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded
number in each row is the number of Democratic leaning districts produced by the Enacted Plan using the equivalent election. In 9 of the 11 individual elections there is agreement between the modal outcome in the simulations and the Enacted Map. In all 11 of the 11 individual elections the Enacted Plan falls within the middle \(50 \%\) of the simulation results.

Figure 101: Map of Brunswick, Columbus, and New Hanover Senate County Cluster


Figure 102: Map of Enacted Plan in Brunswick, Columbus, and New Hanover Senate County Cluster


\section*{Partisan Lean of Districts}
\begin{tabular}{|c|c|c|}
\hline District: & Enacted Plan & Duchin Plan \\
\hline 7 (9 in Duchin) & 0.50 & 0.52 \\
\hline 8 & 0.39 & 0.39 \\
\hline \hline
\end{tabular}

Note: Partisan index is based on the two-party vote average of 11 statewide partisan elections between 2014-2020.

Figure 103: Distribution of Partisan Districts from Simulations in Brunswick, Columbus, and New Hanover Senate County Cluster


Note: Distribution of likely district partisanship based on the statewide partisan elections index calculated for each of the simulation results. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The red vertical line shows the number of Democratic leaning seats in the Enacted Map in the same cluster, and the vertical dashed green line shows the number of Democratic leaning seats in the Duchin Map in the cluster.

Table 36: Simulation Results by Individual Elections
Brunswick, Columbus, and New Hanover County Senate Cluster
\begin{tabular}{|l|c|c|c|}
\hline \multicolumn{4}{|c|}{ Number of Democratic Leaning Districts: } \\
\hline & 0 & 1 & 2 \\
\hline Individual Elections: & \multicolumn{3}{|c|}{} \\
\hline 2020 President & \(13 \%\) & \(\mathbf{8 7 \%}\) & \(0 \%\) \\
\hline 2020 Senate & \(24 \%\) & \(\mathbf{7 6 \%}\) & \(0 \%\) \\
\hline 2020 Governor & \(0 \%\) & \(\mathbf{1 0 0 \%}\) & \(0 \%\) \\
\hline 2020 Lt. Governor & \(\mathbf{2 8 \%}\) & \(72 \%\) & \(0 \%\) \\
\hline 2020 Attorney General & \(7 \%\) & \(\mathbf{9 3 \%}\) & \(0 \%\) \\
\hline 2016 President & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Senate & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Governor & \(3 \%\) & \(\mathbf{9 7 \%}\) & \(0 \%\) \\
\hline 2016 Lt. Governor & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Attorney General & \(16 \%\) & \(\mathbf{8 4 \%}\) & \(0 \%\) \\
\hline 2014 Senate & \(\mathbf{2 6 \%}\) & \(74 \%\) & \(0 \%\) \\
\hline
\end{tabular}

Note: Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded number in each row is the number of Democratic leaning districts produced by the Enacted Plan using the equivalent election. For example, using the 2020 Presidential election \(87 \%\) of the simulations produce 1 Democratic leaning district. The Enacted Plan does as well, as the ' 1 District' cell is bolded in that row.

\subsection*{8.5 Alleghany, Ashe, Avery, Caldwell, Catawba, Cherokee, Clay, Graham, Haywood, Jackson, Macon, Madison, Mitchell, Swain, Transylvania, Watauga, and Yancey Senate County Grouping}

The Alleghany-et al. Senate county group contains 3 districts. In the Enacted Map these are Districts 47, 45, and 50. The county cluster has an overall partisan index of .35 , which is strongly Republican. After conducting 50,000 initial simulations to create three districts in this cluster, I discard any simulations that contain more county traversals than the Enacted Plan. This leaves 37,454 simulations that meet this criteria. Next, I discard any simulations in which the average compactness score of the districts in the simulations is not as large or larger than the compactness score of the Enacted Map. This leaves 22,065 simulated maps, each containing three districts.

A map of the location of this county cluster in relation to the rest of the state is shown in Figure 104. A map of the Enacted Map's district boundaries and the Duchin Map's district boundaries within this county grouping are shown in Figure 105.

The distribution of district partisanship based on the statewide partisan elections index calculated for each of the simulation results is shown in Figure 106. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The red vertical line shows the number of Democratic leaning seats in the Enacted Map in the same cluster, and the vertical dashed green line shows the number of Democratic leaning seats in the Duchin Map in the cluster. In \(100 \%\) of the simulations there are 0 Democratic leaning districts. The Enacted Map is in alignment with the modal outcome of the simulations by also creating 0 Democratic leaning districts. The Duchin Map also generates 0 Democratic leaning districts.

Table 37 breaks apart the partisan index into the 11 constituent elections and shows the distribution of Democratic leaning seats generated if one were to look at each election
separately. Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded number in each row is the number of Democratic leaning districts produced by the Enacted Plan using the equivalent election. In all 11 of the 11 individual elections there is agreement between the modal outcome in the simulations and the Enacted Map.

Figure 104: Map of Alleghany, Ashe, Avery, Caldwell, Catawba, Cherokee, Clay, Graham, Haywood, Jackson, Macon, Madison, Mitchell, Swain, Transylvania, Watauga, and Yancey Senate County Cluster


Figure 105: Map of Enacted Plan in Alleghany, Ashe, Avery, Caldwell, Catawba, Cherokee, Clay, Graham, Haywood, Jackson, Macon, Madison, Mitchell, Swain, Transylvania, Watauga, and Yancey Senate County Cluster
(a) Enacted Map

(b) Duchin Map

\begin{tabular}{|c|c|c|}
\hline District: & Enacted Plan & Duchin Plan \\
\hline 45 (42 in Duchin) & 0.30 & 0.30 \\
\hline \(47(46\) in Duchin \()\) & 0.37 & 0.38 \\
\hline 50 & 0.37 & 0.37 \\
\hline \hline
\end{tabular}

Note: Partisan index is based on the two-party vote average of 11 statewide partisan elections between 2014-2020.

Figure 106: Distribution of Partisan Districts from Simulations in Alleghany, Ashe, Avery, Caldwell, Catawba, Cherokee, Clay, Graham, Haywood, Jackson, Macon, Madison, Mitchell, Swain, Transylvania, Watauga, and Yancey Senate County Cluster


Note: Distribution of likely district partisanship based on the statewide partisan elections index calculated for each of the simulation results. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The red vertical line shows the number of Democratic leaning seats in the Enacted Map in the same cluster, and the vertical dashed green line shows the number of Democratic leaning seats in the Duchin Map in the cluster.

Table 37: Simulation Results by Individual Elections
Alleghany, Ashe, Avery, Caldwell, Catawba, Cherokee, Clay, Graham, Haywood, Jackson, Macon, Madison, Mitchell, Swain, Transylvania, Watauga, and Yancey Senate County Cluster
\begin{tabular}{|l|c|c|c|c|}
\hline & \multicolumn{5}{|c|}{ Percentage of Simulations } \\
\hline Number of Democratic Leaning Districts: & 0 & 1 & 2 & 3 \\
\hline Individual Elections: & \multicolumn{5}{|c|}{} \\
\hline 2020 President & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Senate & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Governor & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Lt. Governor & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Attorney General & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 President & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Senate & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Governor & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Lt. Governor & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Attorney General & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2014 Senate & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline
\end{tabular}

Note: Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded number in each row is the number of Democratic leaning districts produced by the Enacted Plan using the equivalent election. For example, using the 2020 Presidential election \(100 \%\) of the simulations produce 0 Democratic leaning districts. The Enacted Plan does as well, as the ' 0 Districts' cell is bolded in that row.

\subsection*{8.6 Guilford and Rockingham Senate County Grouping}

The Guilford-Rockingham Senate county group contains 3 districts. In the Enacted Map these are Districts 26, 27, and 28. The county cluster has an overall partisan index of .57, which is solidly Democratic. After conducting 50,000 initial simulations to create three districts in this cluster, I discard any simulations that contain more county traversals than the Enacted Plan. This leaves 37,148 simulations that meet this criteria. Next, I discard any simulations in which the average compactness score of the districts in the simulations is not as large or larger than the compactness score of the Enacted Map. This leaves 24,667 simulated maps, each containing three districts.

A map of the location of this county cluster in relation to the rest of the state is shown in Figure 107. A map of the Enacted Map's district boundaries and the Duchin Map's district boundaries within this county grouping are shown in Figure 108.

The distribution of district partisanship based on the statewide partisan elections index calculated for each of the simulation results is shown in Figure 110. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The red vertical line shows the number of Democratic leaning seats in the Enacted Map in the same cluster, and the vertical dashed green line shows the number of Democratic leaning seats in the Duchin Map in the cluster. In \(94 \%\) of the simulations there are 2 Democratic leaning districts. The Enacted Map is in alignment with the modal outcome of the simulations by also creating 2 Democratic leaning districts. The Duchin Map generates 3 Democratic leaning districts, which only occurs in \(6 \%\) of the simulations. This is outside the middle \(50 \%\) of simulations and is a partisan outlier.

Table 39 breaks apart the partisan index into the 11 constituent elections and shows the distribution of Democratic leaning seats generated if one were to look at each election separately. Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded
number in each row is the number of Democratic leaning districts produced by the Enacted Plan using the equivalent election. In all 11 of the 11 individual elections there is agreement between the modal (most common) outcome in the simulations and the Enacted Map.

The Duchin Plan creates three Democratic leaning district by dividing the city of Greensboro, the county seat and largest city in Guilford County, into three relatively equal pieces. The Enacted Plan does not and instead keeps the vast majority of Greensboro in two districts. Most of the Democratic leaning voting in this cluster reside in Greensboro. This "pie" division of Greensboro by the Duchin Plan therefore spread Democratic voters more equally across the three districts. However, it comes at the expense of dividing a city into more districts than necessary. Table 38 shows the division of Greensboro residents across the districts in the two plans. Figure 109 shows a map of the divisions.

Table 38: Division of Greensboro in Enacted Plan and Duchin Plan
\begin{tabular}{|c|c|c|}
\hline & \multicolumn{2}{|c|}{ Percent of Greensboro in district } \\
\hline District: & Enacted Plan & Duchin Plan \\
\hline 26 (30 in Duchin) & 4.3 & 19.6 \\
\hline 27 & 30.8 & 20.4 \\
\hline 28 & 64.9 & 60.0 \\
\hline Total: & \(100 \%\) & \(100 \%\) \\
\hline
\end{tabular}

Note: Population number for city by district for Enacted Plan from: https: //ncleg.gov/Files/GIS/Plans_Main/Senate_2021/SL\%202021-173\%20Senate\%20-\% 20StatPack\%20Report.pdf Population numbers for city by district for Duchin Plan from Dave's Redistricting online. https://davesredistricting.org/

Figure 107: Map of Guilford and Rockingham Senate County Cluster


Figure 108: Map of Enacted Plan in Guilford and Rockingham Senate County Cluster


Partisan Lean of Districts
\begin{tabular}{|c|c|c|}
\hline District: & Enacted Plan & Duchin Plan \\
\hline 26 (30 in Duchin) & 0.37 & 0.52 \\
\hline 27 & 0.60 & 0.58 \\
\hline 28 & 0.77 & 0.62 \\
\hline \hline
\end{tabular}

Note: Partisan index is based on the two-party vote average of 11 statewide partisan elections between 2014-2020.

Figure 109: Map of Greensboro Divisions in Guilford-Rockingham Senate County Cluster


Figure 110: Distribution of Partisan Districts from Simulations in Guilford and Rockingham Senate County Cluster


Note: Distribution of likely district partisanship based on the statewide partisan elections index calculated for each of the simulation results. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The red vertical line shows the number of Democratic leaning seats in the Enacted Map in the same cluster, and the vertical dashed green line shows the number of Democratic leaning seats in the Duchin Map in the cluster.

Table 39: Simulation Results by Individual Elections
Guilford and Rockingham County Cluster
\begin{tabular}{|l|c|c|c|c|c|}
\hline \multicolumn{4}{|c|}{ Number of Democratic Leaning Districts: } \\
\hline & 0 & 1 & 2 & 3 \\
\hline Individual Elections: & \multicolumn{4}{|c|}{} \\
\hline 2020 President & \(0 \%\) & \(0 \%\) & \(\mathbf{9 5 \%}\) & \(5 \%\) \\
\hline 2020 Senate & \(0 \%\) & \(0 \%\) & \(\mathbf{9 4 \%}\) & \(6 \%\) \\
\hline 2020 Governor & \(0 \%\) & \(0 \%\) & \(\mathbf{5 7 \%}\) & \(43 \%\) \\
\hline 2020 Lt. Governor & \(0 \%\) & \(0 \%\) & \(\mathbf{9 6 \%}\) & \(4 \%\) \\
\hline 2020 Attorney General & \(0 \%\) & \(0 \%\) & \(\mathbf{9 3 \%}\) & \(7 \%\) \\
\hline 2016 President & \(0 \%\) & \(0 \%\) & \(\mathbf{9 6 \%}\) & \(4 \%\) \\
\hline 2016 Senate & \(0 \%\) & \(1 \%\) & \(\mathbf{9 6 \%}\) & \(3 \%\) \\
\hline 2016 Governor & \(0 \%\) & \(0 \%\) & \(\mathbf{8 3 \%}\) & \(17 \%\) \\
\hline 2016 Lt. Governor & \(0 \%\) & \(1 \%\) & \(\mathbf{9 6 \%}\) & \(3 \%\) \\
\hline 2016 Attorney General & \(0 \%\) & \(0 \%\) & \(\mathbf{9 1 \%}\) & \(9 \%\) \\
\hline 2014 Senate & \(0 \%\) & \(1 \%\) & \(\mathbf{9 4 \%}\) & \(5 \%\) \\
\hline
\end{tabular}

Note: Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded number in each row is the number of Democratic leaning districts produced by the Enacted Plan using the equivalent election. For example, using the 2020 Presidential election \(95 \%\) of the simulations produce 2 Democratic leaning districts. The Enacted Plan does as well, as the ' 2 Districts' cell is bolded in that row.

\title{
8.7 Alamance, Anson, Cabarrus, Montgomery, Randolph, Richmond, and Union Senate County Grouping
}

The Alamance-Anson-Cabarrus-Montgomery-Randolph-Richmond-Union Senate county group contains 4 districts. In the Enacted Map these are Districts 25, 29, 34, and 35. The county cluster has an overall partisan index of .38, which is solidly Republican. After conducting 50,000 initial simulations to create four districts in this cluster, I discard any simulations that contain more county traversals than the Enacted Plan. This leaves 35,298 simulations that meet this criteria. Next, I discard any simulations in which the average compactness score of the districts in the simulations is not as large or larger than the compactness score of the Enacted Map. This leaves 25,747 simulated maps, each containing four districts.

A map of the location of this county cluster in relation to the rest of the state is shown in Figure 111. A map of the Enacted Map's district boundaries and the Duchin Map's district boundaries within this county grouping are shown in Figure 112.

The distribution of district partisanship based on the statewide partisan elections index calculated for each of the simulation results is shown in Figure 113. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The red vertical line shows the number of Democratic leaning seats in the Enacted Map in the same cluster, and the vertical dashed green line shows the number of Democratic leaning seats in the Duchin Map in the cluster. In \(100 \%\) of the simulations there are 0 Democratic leaning districts. The Enacted Map is in alignment with the modal outcome of the simulations by also creating 0 Democratic leaning districts. The Duchin Map also generates 0 Democratic leaning districts.

Table 40 breaks apart the partisan index into the 11 constituent elections and shows the distribution of Democratic leaning seats generated if one were to look at each election separately. Each row shows the percent of simulations that produce the number of Demo-
cratic leaning districts using the election or election index indicated in the row. The bolded number in each row is the number of Democratic leaning districts produced by the Enacted Plan using the equivalent election. In all 11 of the 11 individual elections there is agreement between the modal (most common) outcome in the simulations and the Enacted Map.

Figure 111: Alamance, Anson, Cabarrus, Montgomery, Randolph, Richmond, and Union Senate County Cluster


Figure 112: Map of Enacted Plan in Alamance, Anson, Cabarrus, Montgomery, Randolph, Richmond, and Union Senate County Cluster


Partisan Lean of Districts
\begin{tabular}{|c|c|c|}
\hline District: & Enacted Plan & Duchin Plan \\
\hline 25 (24 in Duchin) & 0.40 & 0.40 \\
\hline 29 (26 in Duchin) & 0.34 & 0.34 \\
\hline 34 (36 in Duchin) & 0.44 & 0.44 \\
\hline 35 & 0.36 & 0.36 \\
\hline \hline
\end{tabular}

Note: Partisan index is based on the two-party vote average of 11 statewide partisan elections between 2014-2020.

Figure 113: Distribution of Partisan Districts from Simulations in Alamance, Anson, Cabarrus, Montgomery, Randolph, Richmond, and Union Senate County Cluster

Partisan Composition of Simulation Results from
ALAMANCE, ANSON, CABARRUS, MONTGOMERY, RANDOLPH, RICHMOND, UNION
County Grouping Contains 4 Districts


Note: Distribution of likely district partisanship based on the statewide partisan elections index calculated for each of the simulation results. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The red vertical line shows the number of Democratic leaning seats in the Enacted Map in the same cluster, and the vertical dashed green line shows the number of Democratic leaning seats in the Duchin Map in the cluster.

Table 40: Simulation Results by Individual Elections
Alamance, Anson, Cabarrus, Montgomery, Randolph, Richmond, and Union Senate County Cluster
\begin{tabular}{|l|c|c|c|c|c|}
\hline \multicolumn{6}{|c|}{ Number of Democratic Leaning Districts: } \\
\hline & 0 & 1 & 2 & 3 & 4 \\
\hline Individual Elections: & \multicolumn{5}{|c|}{} \\
\hline 2020 President & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Senate & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Governor & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Lt. Governor & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Attorney General & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 President & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Senate & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Governor & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Lt. Governor & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Attorney General & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline 2014 Senate & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) \\
\hline
\end{tabular}

Note: Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded number in each row is the number of Democratic leaning districts produced by the Enacted Plan using the equivalent election. For example, using the 2020 Presidential election \(100 \%\) of the simulations produce 0 Democratic leaning districts. The Enacted Plan does as well, as the ' 0 Districts' cell is bolded in that row.

\subsection*{8.8 Granville and Wake Senate County Grouping}

The Granville-Wake Senate county group contains 6 districts. In the Enacted Map these are Districts \(13,14,15,16,17\), and 18. The county cluster has an overall partisan index of .61 , which is solidly Democratic. After conducting 50,000 initial simulations to create six districts in this cluster, I discard any simulations that contain more county traversals than the Enacted Plan. This leaves 45,850 simulations that meet this criteria. Next, I discard any simulations in which the average compactness score of the districts in the simulations is not as large or larger than the compactness score of the Enacted Map. This leaves 2,835 simulated maps, each containing six districts.

A map of the location of this county cluster in relation to the rest of the state is shown in Figure 114. A map of the Enacted Map's district boundaries and the Duchin Map's district boundaries within this county grouping are shown in Figure 115.

The distribution of district partisanship based on the statewide partisan elections index calculated for each of the simulation results is shown in Figure 117. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The red vertical line shows the number of Democratic leaning seats in the Enacted Map in the same cluster, and the vertical dashed green line shows the number of Democratic leaning seats in the Duchin Map in the cluster. In \(1 \%\) of the simulations there are 4 Democratic leaning districts. In \(24 \%\) of the simulations there are 5 Democratic leaning districts, and in \(75 \%\) of the simulations there are 6 Democratic leaning districts. The Enacted Map generates 4 Democratic leaning districts, which is an outlier from middle \(50 \%\) of the simulations. The Duchin Map generates 5 Democratic leaning districts and is also classified as a partisan outlier.

Table 42 breaks apart the partisan index into the 11 constituent elections and shows the distribution of Democratic leaning seats generated if one were to look at each election separately. Each row shows the percent of simulations that produce the number of Demo-
cratic leaning districts using the election or election index indicated in the row. The bolded number in each row is the number of Democratic leaning districts produced by the Enacted Plan using the equivalent election. In 10 of the 11 individual elections the Enacted Plan is not in alignment with the middle \(50 \%\) of the simulation results and is therefore classified as an outlier.

Why is the Enacted Plan such an outlier in this county grouping? There are two factors to consider in explaining this divergence. First, while the Enacted Plan generates 4 solidly Democratic leaning districts, the remaining two districts are not solidly Republican. Instead, they would be best classified as highly competitive. District 13 has a partisan index of 0.481 and District 17 has a partisan index of 0.489 . These two districts will likely be very closely decided with candidates from both parties winning them with some regularity, given their narrow margins. This is actually quite close to the partisan lean of the Duchin Plan. While the Duchin Plan creates 5 Democratic leaning districts in the county group, there are also two very competitive districts (District 22 - partisan index of 0.499 and District 17 - partisan index of 0.505 ). It just happens that one of the competitive districts is just over the .50 line and is classified as Democratic leaning. Thus, both plans generate 4 solidly Democratic districts and 2 highly competitive districts. The Duchin Plan's competitive districts are just slightly more Democratic by roughly 1.7 percentage points.

The second factor to consider is that the Enacted Plan divides the city of Raleigh and groups other municipalities differently from the Duchin Plan, which has the impact of placing a greater share of its residents in fewer districts. For example, District 13 keeps the cities of Wake Forest, Rolesville, and Zebulon together in one district. Additionally, the Enacted Plan places more of Raleigh into fewer districts. This is ideal if one is trying to keep municipalities together and spread across as few districts as possible. However, because the bulk of Democratic leaning voters in this county cluster are also in the city of Raleigh, this will have the effect of creating districts that are more heavily Democratic. This, of course, has the spillover effect of making the districts that do not contain portions of Raleigh to
likewise become more Republican. Figure 116 shows how the two different plans divide the city of Raleigh, and Table 41 shows that it is the case the the Duchin Plan spreads the resident of Raleigh out across more districts than does the Enacted Plan. The tactic of dividing Democratic cities in a 'pinwheel' or 'pizza' shape and grouping those 'slices' with more Republican suburban and exurban areas is a classic tactic to generate more Democratic districts and overcome the geographic clustering that is common among Democratic voters. The Enacted Plan keeps much more of Fayetteville within three districts.

Table 41: Division of Raleigh in Enacted Plan and Duchin Plan
\begin{tabular}{|c|c|c|}
\hline & \multicolumn{2}{|c|}{ Percent of Raleigh in district } \\
\hline District: & Enacted Plan & Duchin Plan \\
\hline 13 (22 in Duchin) & 1.7 & 12.3 \\
\hline 14 & 21.1 & 27.0 \\
\hline 15 & 35.8 & 39.6 \\
\hline 16 & 0 & 0 \\
\hline 17 & 0 & 0 \\
\hline 18 & 41.0 & 20.8 \\
\hline \hline Total: & \(100 \%\) & \(100 \%\) \\
\hline
\end{tabular}

Note: Population number for city by district for Enacted Plan from: https: //ncleg.gov/Files/GIS/Plans_Main/Senate_2021/SL\%202021-173\%20Senate\%20-\% 20StatPack\%20Report.pdf Population numbers for city by district for Duchin Plan from Dave's Redistricting online. https://davesredistricting.org/

Figure 114: Granville and Wake Senate County Cluster


Figure 115: Map of Enacted Plan in Granville and Wake Senate County Cluster


Partisan Lean of Districts
\begin{tabular}{|c|c|c|}
\hline District: & Enacted Plan & Duchin Plan \\
\hline 13 (22 in Duchin) & 0.48 & 0.50 \\
\hline 14 & 0.73 & 0.73 \\
\hline 15 & 0.68 & 0.64 \\
\hline 16 & 0.63 & 0.63 \\
\hline 17 & 0.49 & 0.51 \\
\hline 18 & 0.65 & 0.65 \\
\hline \hline
\end{tabular}

Note: Partisan index is based on the two-party vote average of 11 statewide partisan elections between 2014-2020.

Figure 116: Map of Raleigh Divisions in Wake Senate County Cluster


Figure 117: Distribution of Partisan Districts from Simulations in Granville and Wake Senate County Cluster


Note: Distribution of likely district partisanship based on the statewide partisan elections index calculated for each of the simulation results. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The red vertical line shows the number of Democratic leaning seats in the Enacted Map in the same cluster, and the vertical dashed green line shows the number of Democratic leaning seats in the Duchin Map in the cluster.

Table 42: Simulation Results by Individual Elections
\begin{tabular}{l}
\multicolumn{8}{c|}{ Granville and Wake Senate County Cluster } \\
\begin{tabular}{|l|c|c|c|c|c|c|c|c|}
\hline & \multicolumn{7}{|c|}{ Number of Democratic Leaning Districts: } \\
\hline & 0 & 1 & 2 & 3 & 4 & 5 & 6 \\
\hline Individual Elections: & \multicolumn{7}{|c|}{} \\
\hline 2020 President & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(\mathbf{0 \%}\) & \(100 \%\) \\
\hline 2020 Senate & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(\mathbf{1 \%}\) & \(24 \%\) & \(75 \%\) \\
\hline 2020 Governor & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(\mathbf{1 0 0 \%}\) \\
\hline 2020 Lt. Governor & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(\mathbf{1 \%}\) & \(25 \%\) & \(74 \%\) \\
\hline 2020 Attorney General & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(\mathbf{0 \%}\) & \(100 \%\) \\
\hline 2016 President & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(\mathbf{4 \%}\) & \(35 \%\) & \(61 \%\) \\
\hline 2016 Senate & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(\mathbf{1 9 \%}\) & \(70 \%\) & \(12 \%\) \\
\hline 2016 Governor & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(\mathbf{1 \%}\) & \(24 \%\) & \(75 \%\) \\
\hline 2016 Lt. Governor & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(11 \%\) & \(\mathbf{1 3 \%}\) & \(71 \%\) & \(5 \%\) \\
\hline 2016 Attorney General & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(\mathbf{1 \%}\) & \(26 \%\) & \(73 \%\) \\
\hline 2014 Senate & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(\mathbf{9 \%}\) & \(63 \%\) & \(27 \%\) \\
\hline
\end{tabular}
\end{tabular}

Note: Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded number in each row is the number of Democratic leaning districts produced by the Enacted Plan using the equivalent election. For example, using the 2020 Presidential election \(0 \%\) of the simulations produce 5 Democratic leaning districts. The Enacted Plan does, as the ' 5 Districts' cell is bolded in that row.

\subsection*{8.9 Iredell and Mecklenburg Senate County Grouping}

The Iredell-Mecklenburg Senate county group contains 6 districts. In the Enacted Map these are Districts \(37,38,39,40,41\), and 42. The county cluster has an overall partisan index of .60, which is solidly Democratic. After conducting 50,000 initial simulations to create six districts in this cluster, I discard any simulations that contain more county traversals than the Enacted Plan. All 50,000 simulations meet this criteria. Next, I discard any simulations in which the average compactness score of the districts in the simulations is not as large or larger than the compactness score of the Enacted Map. This leaves 7,700 simulated maps, each containing six districts.

A map of the location of this county cluster in relation to the rest of the state is shown in Figure 118. A map of the Enacted Map's district boundaries and the Duchin Map's district boundaries within this county grouping are shown in Figure 119.

The distribution of district partisanship based on the statewide partisan elections index calculated for each of the simulation results is shown in Figure 120. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The red vertical line shows the number of Democratic leaning seats in the Enacted Map in the same cluster, and the vertical dashed green line shows the number of Democratic leaning seats in the Duchin Map in the cluster. In \(5 \%\) of the simulations there are 4 Democratic leaning districts. In \(95 \%\) of the simulations there are 5 Democratic leaning districts. The Enacted Map generates 4 Democratic leaning districts, which is an outlier from middle \(50 \%\) of the simulations. The Duchin Map also generates 5 Democratic leaning districts.

Table 43 breaks apart the partisan index into the 11 constituent elections and shows the distribution of Democratic leaning seats generated if one were to look at each election separately. Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded number in each row is the number of Democratic leaning districts produced by the Enacted

Plan using the equivalent election. In 9 of the 11 individual elections the Enacted Plan is in alignment with the majority outcome of the simulation results.

Why is the Enacted Plan an outlier in this county grouping? There are two factors to consider in explaining this divergence. First, while the Enacted Plan generates 4 solidly Democratic leaning districts, the remaining two districts are not solidly Republican. Instead, one is solidly Republican. District 37 in Iredell County has a partisan index of 0.36 . The other would be best classified as highly competitive. District 41 has a partisan index of 0.490. This district will likely be very closely decided with candidates from both parties winning them with some regularity, given their narrow margins. This is actually quite close to the partisan lean of the Duchin Plan. While the Duchin Plan creates 5 Democratic leaning districts in the county group, there is also one solidly Republican district. District 34 in Iredell County has a partisan index of 0.36 . The other would be best classified as highly competitive. District 37 has a partisan index of 0.526 . Thus, both plans generate 4 solidly Democratic districts, 1 solidly Republican district and 1 competitive districts. The Duchin Plan's competitive districts are just slightly more Democratic by roughly 3.6 percentage points.

The second factor to consider is that the partisan index is calculated using elections from 2014-2020. Looking at Table 43 we see that the Enacted Plan is in agreement with \(100 \%\) of the simulations in the five elections from the most recent election cycle. Given the trend in Mecklenburg towards more support for Democratic candidates, elections conducted under the Enacted Plan will align more consistently with the more recent elections in the index. That is, the Enacted Plan will more often generate 5 Democratic districts as is the case in 2020 than it will generate 4 Democratic districts as it did in the elections in 2016 and earlier.

Figure 118: Iredell and Mecklenburg County Senate Cluster


Figure 119: Map of Enacted Plan in Iredell and Mecklenburg Senate County Cluster


Partisan Lean of Districts
\begin{tabular}{|c|c|c|}
\hline District: & Enacted Plan & Duchin Plan \\
\hline 37 (34 in Duchin) & 0.36 & 0.36 \\
\hline 38 (41 in Duchin) & 0.65 & 0.66 \\
\hline 39 & 0.73 & 0.73 \\
\hline 40 & 0.83 & 0.72 \\
\hline 41 (37 in Duchin) & 0.49 & 0.53 \\
\hline 42 (38 in Duchin) & 0.65 & 0.68 \\
\hline \hline
\end{tabular}

Note: Partisan index is based on the two-party vote average of 11 statewide partisan elections between 2014-2020.

Figure 120: Distribution of Partisan Districts from Simulations in Iredell and Mecklenburg Senate County Cluster


Note: Distribution of likely district partisanship based on the statewide partisan elections index calculated for each of the simulation results. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The red vertical line shows the number of Democratic leaning seats in the Enacted Map in the same cluster, and the vertical dashed green line shows the number of Democratic leaning seats in the Duchin Map in the cluster.

Table 43: Simulation Results by Individual Elections
\begin{tabular}{l} 
Iredell and Mecklenburg Senate County Cluster \\
\multicolumn{1}{|c|}{ Number of Democratic Leaning Districts: } \\
\begin{tabular}{|l|c|c|c|c|c|c|c|c|c|}
\hline & 0 & 1 & 2 & 3 & 4 & 5 & 6 \\
\hline Individual Elections: & \multicolumn{7}{|c|}{} \\
\hline 2020 President & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(\mathbf{1 0 0 \%}\) & \(0 \%\) \\
\hline 2020 Senate & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(\mathbf{1 0 0 \%}\) & \(0 \%\) \\
\hline 2020 Governor & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(\mathbf{1 0 0 \%}\) & \(0 \%\) \\
\hline 2020 Lt. Governor & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(\mathbf{1 0 0 \%}\) & \(0 \%\) \\
\hline 2020 Attorney General & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(\mathbf{1 0 0 \%}\) & \(0 \%\) \\
\hline 2016 President & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(\mathbf{5 \%}\) & \(95 \%\) & \(0 \%\) \\
\hline 2016 Senate & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(\mathbf{9 6 \%}\) & \(4 \%\) & \(0 \%\) \\
\hline 2016 Governor & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(\mathbf{7 \%}\) & \(93 \%\) & \(0 \%\) \\
\hline 2016 Lt. Governor & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(\mathbf{9 9 \%}\) & \(1 \%\) & \(0 \%\) \\
\hline 2016 Attorney General & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(\mathbf{5 1 \%}\) & \(49 \%\) & \(0 \%\) \\
\hline 2014 Senate & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(0 \%\) & \(\mathbf{9 9 \%}\) & \(1 \%\) & \(0 \%\) \\
\hline
\end{tabular}
\end{tabular}

Note: Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded number in each row is the number of Democratic leaning districts produced by the Enacted Plan using the equivalent election. For example, using the 2020 Presidential election \(100 \%\) of the simulations produce 5 Democratic leaning districts. The Enacted Plan does as well, as the ' 5 Districts' cell is bolded in that row.

\subsection*{8.10 Buncombe, Burke, and McDowell Senate County Grouping}

The Buncombe-Burke-McDowell Senate county group contains 2 districts. In the Enacted Map these are Districts 46 and 49. The county cluster has an overall partisan index of .51 , which is very slightly Democratic. After conducting 50,000 initial simulations to create two districts in this cluster, I discard any simulations that contain more county traversals than the Enacted Plan. This leaves 49,161 simulations that meet this criteria. Next, I discard any simulations in which the average compactness score of the districts in the simulations is not as large or larger than the compactness score of the Enacted Map. This leaves 18,137 simulated maps, each containing two districts.

A map of the location of this county cluster in relation to the rest of the state is shown in Figure 121. A map of the Enacted Map's district boundaries is shown in Figure 122. The Duchin Plan uses an alternative county grouping and is therefore not comparable to this cluster in the Enacted Plan. I analyze the Duchin Plan and the alternative cluster in a later section of this report.

The distribution of district partisanship based on the statewide partisan elections index calculated for each of the simulation results is shown in Figure 123. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The red vertical line shows the number of Democratic leaning seats in the Enacted Map in the same cluster, and the vertical dashed green line shows the number of Democratic leaning seats in the Duchin Map in the cluster. In \(100 \%\) of the simulations there is 1 Democratic leaning district. The Enacted Map is in alignment with the modal outcome of the simulations by also creating 1 Democratic leaning district.

Table 44 breaks apart the partisan index into the 11 constituent elections and shows the distribution of Democratic leaning seats generated if one were to look at each election separately. Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded
number in each row is the number of Democratic leaning districts produced by the Enacted Plan using the equivalent election. In all 11 of the 11 individual elections there is agreement between the modal (most common) outcome in the simulations and the Enacted Map.

Figure 121: Map of Buncombe, Burke, and McDowell Senate County Cluster


Figure 122: Map of Enacted Plan in Buncombe, Burke, and McDowell Senate County Cluster


Partisan Lean of Districts
\begin{tabular}{|c|c|}
\hline District: & Enacted Plan \\
\hline 46 & 0.37 \\
\hline 49 & 0.65 \\
\hline \hline
\end{tabular}

Note: Partisan index is based on the two-party vote average of 11 statewide partisan elections between 2014-2020.

Figure 123: Distribution of Partisan Districts from Simulations in Buncombe, Burke, and McDowell Senate County Cluster


Note: Distribution of likely district partisanship based on the statewide partisan elections index calculated for each of the simulation results. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The red vertical line shows the number of Democratic leaning seats in the Enacted Map in the same cluster.

Table 44: Simulation Results by Individual Elections
Buncombe, Burke, and McDowell County Cluster
\begin{tabular}{|l|c|c|c|}
\hline \multicolumn{1}{|c|}{ Number of Democratic Leaning Districts: } \\
\hline & 0 & 1 & 2 \\
\hline Individual Elections: & \multicolumn{3}{|c|}{} \\
\hline 2020 President & \(0 \%\) & \(\mathbf{1 0 0 \%}\) & \(0 \%\) \\
\hline 2020 Senate & \(0 \%\) & \(\mathbf{1 0 0 \%}\) & \(0 \%\) \\
\hline 2020 Governor & \(0 \%\) & \(\mathbf{1 0 0 \%}\) & \(0 \%\) \\
\hline 2020 Lt. Governor & \(0 \%\) & \(\mathbf{1 0 0 \%}\) & \(0 \%\) \\
\hline 2020 Attorney General & \(0 \%\) & \(\mathbf{1 0 0 \%}\) & \(0 \%\) \\
\hline 2016 President & \(0 \%\) & \(\mathbf{1 0 0 \%}\) & \(0 \%\) \\
\hline 2016 Senate & \(0 \%\) & \(\mathbf{1 0 0 \%}\) & \(0 \%\) \\
\hline 2016 Governor & \(0 \%\) & \(\mathbf{1 0 0 \%}\) & \(0 \%\) \\
\hline 2016 Lt. Governor & \(0 \%\) & \(\mathbf{1 0 0 \%}\) & \(0 \%\) \\
\hline 2016 Attorney General & \(0 \%\) & \(\mathbf{1 0 0 \%}\) & \(0 \%\) \\
\hline 2014 Senate & \(0 \%\) & \(\mathbf{1 0 0 \%}\) & \(0 \%\) \\
\hline
\end{tabular}

Note: Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded number in each row is the number of Democratic leaning districts produced by the Enacted Plan using the equivalent election. For example, using the 2020 Presidential election \(100 \%\) of the simulations produce 1 Democratic leaning district. The Enacted Plan does as well, as the ' 1 District' cell is bolded in that row.

\subsection*{8.11 Cleveland, Gaston, and Lincoln Senate County Grouping}

The Cleveland-Gaston-Lincoln Senate county group contains 2 districts. In the Enacted Map these are Districts 43 and 44. The county cluster has an overall partisan index of .34, which is strongly Republican. After conducting 50,000 initial simulations to create two districts in this cluster, I discard any simulations that contain more county traversals than the Enacted Plan. This leaves 4,074 simulations that meet this criteria. Next, I discard any simulations in which the average compactness score of the districts in the simulations is not as large or larger than the compactness score of the Enacted Map. This leaves only four unique maps that are as compact as the Enacted Plan.

A map of the location of this county cluster in relation to the rest of the state is shown in Figure 124. A map of the Enacted Map's district boundaries is shown in Figure 125. The Duchin Plan uses an alternative county grouping and is therefore not comparable to this cluster in the Enacted Plan. I analyze the Duchin Plan and the alternative cluster in a later section of this report.

Because there are only four maps that fit the criteria I use of equal population, county traversals, and compactness equal to or better than the Enacted Map, I do not present the distribution of district partisanship for the simulations here. It is sufficient to say that in the Enacted Map and the four remaining simulations, all create 2 Republican districts and 0 Democratic leaning districts, regardless of the index or election used. Table 45 shows this below.

Table 45 breaks apart the partisan index into the 11 constituent elections and shows the distribution of Democratic leaning seats generated if one were to look at each election separately. Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded number in each row is the number of Democratic leaning districts produced by the Enacted Plan using the equivalent election. In all 11 of the 11 individual elections there is unanimous agreement between the simulations and the Enacted Map.

Figure 124: Map of Cleveland, Gaston, and Lincoln Senate County Cluster


Figure 125: Map of Enacted Plan in Cleveland, Gaston, and Lincoln Senate County Cluster


Partisan Lean of Districts
\begin{tabular}{|c|c|}
\hline District: & Enacted Plan \\
\hline 43 & 0.37 \\
\hline 44 & 0.31 \\
\hline
\end{tabular}

Note: Partisan index is based on the two-party vote average of 11 statewide partisan elections between 2014-2020.

Table 45: Simulation Results by Individual Elections
Cleveland, Gaston, and Lincoln Senate County Cluster
\begin{tabular}{|l|c|c|c|}
\hline \multicolumn{4}{|c|}{ Number of Democratic Leaning Districts: } \\
\hline & 0 & 1 & 2 \\
\hline Individual Elections: & \multicolumn{3}{|c|}{} \\
\hline 2020 President & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Senate & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Governor & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Lt. Governor & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Attorney General & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 President & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Senate & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Governor & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Lt. Governor & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Attorney General & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2014 Senate & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline
\end{tabular}

Note: Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded number in each row is the number of Democratic leaning districts produced by the Enacted Plan using the equivalent election. For example, using the 2020 Presidential election \(100 \%\) of the simulations produce 0 Democratic leaning districts. The Enacted Plan does as well, as the ' 0 District' cell is bolded in that row.

\subsection*{8.12 Forsyth and Stokes Senate County Grouping}

The Forsyth-Stokes Senate county group contains 2 districts. In the Enacted Map these are Districts 31 and 32 . The county cluster has an overall partisan index of .52 , which is slightly Democratic. After conducting 50,000 initial simulations to create two districts in this cluster, I discard any simulations that contain more county traversals than the Enacted Plan. This leaves 35,085 simulations that meet this criteria. Next, I discard any simulations in which the average compactness score of the districts in the simulations is not as large or larger than the compactness score of the Enacted Map. This leaves 9,601 simulated maps, each containing two districts.

A map of the location of this county cluster in relation to the rest of the state is shown in Figure 126. A map of the Enacted Map's district boundaries is shown in Figure 127. The Duchin Plan uses an alternative county grouping and is therefore not comparable to this cluster in the Enacted Plan. I analyze the Duchin Plan and the alternative cluster in a later section of this report.

The distribution of district partisanship based on the statewide partisan elections index calculated for each of the simulation results is shown in Figure 128. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The red vertical line shows the number of Democratic leaning seats in the Enacted Map in the same cluster, and the vertical dashed green line shows the number of Democratic leaning seats in the Duchin Map in the cluster. In \(100 \%\) of the simulations there is 1 Democratic leaning district. The Enacted Map is in alignment with the modal outcome of the simulations by also creating 1 Democratic leaning district.

Table 46 breaks apart the partisan index into the 11 constituent elections and shows the distribution of Democratic leaning seats generated if one were to look at each election separately. Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded
number in each row is the number of Democratic leaning districts produced by the Enacted Plan using the equivalent election. In 8 of the 11 individual elections there is agreement between the modal (most common) outcome in the simulations and the Enacted Map. In 9 of the 11 individual elections the Enacted Map falls inside the middle \(50 \%\) of simulation results.

Figure 126: Map of Forsyth and Stokes Senate County Cluster


Partisan Lean of Districts
\begin{tabular}{|c|c|}
\hline District: & Enacted Plan \\
\hline 31 & 0.38 \\
\hline 32 & 0.69 \\
\hline \hline
\end{tabular}

Note: Partisan index is based on the two-party vote average of 11 statewide partisan elections between 2014-2020.

Figure 127: Map of Enacted Plan in Forsyth and Stokes Senate County Cluster


Figure 128: Distribution of Partisan Districts from Simulations in Forsyth and Stokes Senate County Cluster


Note: Distribution of likely district partisanship based on the statewide partisan elections index calculated for each of the simulation results. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The red vertical line shows the number of Democratic leaning seats in the Enacted Map in the same cluster.

Table 46: Simulation Results by Individual Elections
Forsyth and Stokes Senate County Cluster
\begin{tabular}{|l|c|c|c|}
\hline Number of Democratic Leaning Districts: \\
\hline & 0 & 1 & 2 \\
\hline Individual Elections: & \multicolumn{3}{|c|}{} \\
\hline 2020 President & \(0 \%\) & \(\mathbf{9 8 \%}\) & \(2 \%\) \\
\hline 2020 Senate & \(0 \%\) & \(\mathbf{9 9 \%}\) & \(1 \%\) \\
\hline 2020 Governor & \(0 \%\) & \(\mathbf{4 8 \%}\) & \(52 \%\) \\
\hline 2020 Lt. Governor & \(0 \%\) & \(\mathbf{9 9 \%}\) & \(1 \%\) \\
\hline 2020 Attorney General & \(0 \%\) & \(\mathbf{9 9 \%}\) & \(1 \%\) \\
\hline 2016 President & \(0 \%\) & \(\mathbf{9 8 \%}\) & \(2 \%\) \\
\hline 2016 Senate & \(0 \%\) & \(\mathbf{6 \%}\) & \(94 \%\) \\
\hline 2016 Governor & \(0 \%\) & \(\mathbf{5 1 \%}\) & \(49 \%\) \\
\hline 2016 Lt. Governor & \(0 \%\) & \(\mathbf{2 \%}\) & \(98 \%\) \\
\hline 2016 Attorney General & \(0 \%\) & \(\mathbf{7 2 \%}\) & \(28 \%\) \\
\hline 2014 Senate & \(0 \%\) & \(\mathbf{9 4 \%}\) & \(6 \%\) \\
\hline
\end{tabular}

Note: Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded number in each row is the number of Democratic leaning districts produced by the Enacted Plan using the equivalent election. For example, using the 2020 Presidential election \(98 \%\) of the simulations produce 1 Democratic leaning district. The Enacted Plan does as well, as the ' 1 District' cell is bolded in that row.

\section*{9 Comparison of Alternative Clusters to Those Chosen by the Legislature}

In this section I compare the partisan index and simulations for the three alternative clusters chosen by the Duchin Plan and compare them to simulations in those same counties. The alternative clusters are very similar in their partisan indices as well as the partisan lean of the districts that are generated by the Enacted Map and the Duchin Map. This can be seen below in Table 47

Table 47: Senate Alternative County Grouping Analysis Summary
\begin{tabular}{|c|c|l|l|l|l|}
\hline & & & \multicolumn{2}{|c|}{ \# of Districts that are Democratic Leaning } \\
\hline County Cluster & \begin{tabular}{c} 
Cluster \\
Democratic \\
Partisan \\
Index
\end{tabular} & \# Districts & Enacted Map & Duchin Map & Simulations \\
\hline
\end{tabular}

Clusters Used by Enacted Plan
\begin{tabular}{|r|c|c|c|c|c|}
\hline Buncombe-Burke-McDowell & 0.51 & 2 & 1 & & 1 \\
\hline Cleveland-Gaston-Lincoln & 0.34 & 2 & 0 & & 0 \\
\hline Forsyth-Stokes & 0.52 & 2 & 1 & & 1 \\
\hline
\end{tabular}

Alternative Clusters Used by Duchin Plan
\begin{tabular}{|r|l|l|l|l|l|}
\hline Buncombe-Henderson-Polk & 0.54 & 2 & & 1 & 1 \\
\hline Burke-Gaston-Lincoln & 0.34 & 2 & & 0 & 0 \\
\hline Forsyth-Yadkin & 0.54 & 2 & & 1 & 1 \\
\hline \hline Total Enacted: & & 6 & 2 & 2 & 2 \\
\hline Total Duchin: & & 6 & 2 & 2 & 2 \\
\hline
\end{tabular}

Note: Number of Democratic leaning districts is measured using the average two-party vote share in each district from the 11 statewide races noted earlier. Simulations range represents the middle \(50 \%\) of outcomes from the simulations results. Clusters that fall outside of the simulation range are bolded.

\subsection*{9.1 Buncombe, Henderson, and Polk Senate Alternative County Grouping}

The Buncombe-Henderson-Polk Senate alternative county group contains 2 districts. In the Duchin Map these are Districts 48 and 49. The county cluster has an overall partisan index of .53 , which is slightly Democratic. After conducting 50,000 initial simulations to create two districts in this cluster, I discard any simulations that contain more county traversals than the Duchin Plan. This leaves 25,911 simulations that meet this criteria. Next, I discard any simulations in which the average compactness score of the districts in the simulations is not as large or larger than the compactness score of the Duchin Map. This leaves 17,474 simulated maps, each containing two districts.

A map of the location of this county cluster in relation to the rest of the state is shown in Figure 129. A map of the Duchin Map's district boundaries is shown in Figure 130.

The distribution of district partisanship based on the statewide partisan elections index calculated for each of the simulation results is shown in Figure 132. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The vertical dashed green line shows the number of Democratic leaning seats in the Duchin Map in the cluster. In \(100 \%\) of the simulations there is 1 Democratic leaning district. The Duchin Map is in alignment with the modal outcome of the simulations by creating 1 Democratic leaning district.

Table 49 breaks apart the partisan index into the 11 constituent elections and shows the distribution of Democratic leaning seats generated if one were to look at each election separately. Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded number in each row is the number of Democratic leaning districts produced by the Duchin Plan using the equivalent election. In 7 of the 11 individual elections there is agreement between the modal (most common) outcome in the simulations and the Duchin Map. In 4
of the 11 individual elections the Duchin Map falls outside the middle \(50 \%\) of simulation results and would be considered a statistical partisan outlier in these elections.

The Duchin Plan creates a solidly Democratic district and an additional very competitive district by dividing the city of Asheville. The Duchin Plan splits Asheville nearly equally across both districts while the Enacted Plan keeps the entirety of Asheville in one district. The tactic of dividing Democratic cities in a 'pinwheel' or 'pizza' shape and grouping those 'slices' with more Republican suburban and exurban areas is a classic tactic to generate more Democratic districts and overcome the geographic clustering that is common among Democratic voters. The Enacted Plan keeps the entirety of Asheville within one district. Table 48 shows the percent of Asheville voters in each district in each plan. It is clear that the Duchin plan splits Asheville into 2 roughly equal parts while the Enacted Plan places a much larger majority of Asheville into only 1 district. Figure 131 shows this division.

Table 48: Division of Asheville in Enacted Plan and Duchin Plan
\begin{tabular}{|c|c|c|}
\hline & \multicolumn{2}{|c|}{ Percent of Asheville in district } \\
\hline District: & Enacted Plan & Duchin Plan \\
\hline 46 (48 in Duchin) & 0 & 42.8 \\
\hline 49 & 100 & 57.2 \\
\hline Total: & \(100 \%\) & \(100 \%\) \\
\hline
\end{tabular}

Note: Population number for city by district for Enacted Plan from: https: //ncleg.gov/Files/GIS/Plans_Main/Senate_2021/SL\%202021-173\%20Senate\%20-\% 20StatPack\%20Report.pdf Population numbers for city by district for Duchin Plan from Dave's Redistricting online. https://davesredistricting.org/

Figure 129: Map of Buncombe, Henderson, and Polk Alternative Senate County Cluster


Figure 130: Map of Duchin Plan in Buncombe, Henderson, and Polk Alternative Senate County Cluster


Partisan Lean of Districts
\begin{tabular}{|c|c|}
\hline District: & Enacted Plan \\
\hline 48 & 0.49 \\
\hline 49 & 0.56 \\
\hline \hline
\end{tabular}

Note: Partisan index is based on the two-party vote average of 11 statewide partisan elections between 2014-2020.

Figure 131: Map of Division of Asheville in Enacted and Duchin Senate Plans


Figure 132: Distribution of Partisan Districts from Simulations in Buncombe, Henderson, and Polk Alternative Senate County Cluster


Note: Distribution of likely district partisanship based on the statewide partisan elections index calculated for each of the simulation results. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The green vertical line shows the number of Democratic leaning seats in the Duchin Map in the same cluster.

Table 49: Simulation Results by Individual Elections
Buncombe, Henderson, and Polk Alternative Senate County Cluster
\begin{tabular}{|l|c|c|c|}
\hline \multicolumn{4}{|c|}{ Number of Democratic Leaning Districts: } \\
\hline & 0 & 1 & 2 \\
\hline Individual Elections: & \multicolumn{3}{|c|}{} \\
\hline 2020 President & \(0 \%\) & \(100 \%\) & \(\mathbf{0 \%}\) \\
\hline 2020 Senate & \(0 \%\) & \(\mathbf{1 0 0 \%}\) & \(0 \%\) \\
\hline 2020 Governor & \(0 \%\) & \(93 \%\) & \(\mathbf{7 \%}\) \\
\hline 2020 Lt. Governor & \(0 \%\) & \(\mathbf{1 0 0 \%}\) & \(0 \%\) \\
\hline 2020 Attorney General & \(0 \%\) & \(100 \%\) & \(\mathbf{0 \%}\) \\
\hline 2016 President & \(0 \%\) & \(\mathbf{1 0 0 \%}\) & \(0 \%\) \\
\hline 2016 Senate & \(0 \%\) & \(\mathbf{1 0 0 \%}\) & \(0 \%\) \\
\hline 2016 Governor & \(0 \%\) & \(100 \%\) & \(\mathbf{0 \%}\) \\
\hline 2016 Lt. Governor & \(0 \%\) & \(\mathbf{1 0 0 \%}\) & \(0 \%\) \\
\hline 2016 Attorney General & \(0 \%\) & \(\mathbf{1 0 0 \%}\) & \(0 \%\) \\
\hline 2014 Senate & \(0 \%\) & \(\mathbf{1 0 0 \%}\) & \(0 \%\) \\
\hline
\end{tabular}

Note: Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded number in each row is the number of Democratic leaning districts produced by the Duchin Plan using the equivalent election. For example, using the 2020 Presidential election \(0 \%\) of the simulations produce 2 Democratic leaning district. The Duchin Plan does, as the ' 2 District' cell is bolded in that row.

\subsection*{9.2 Burke, Gaston, and Lincoln Senate Alternative County Grouping}

The Burke-Gaston-Lincoln Senate alternative county group contains 2 districts. In the Duchin Map these are Districts 43 and 44. The county cluster has an overall partisan index of .33, which is strongly Republican. After conducting 50,000 initial simulations to create two districts in this cluster, I discard any simulations that contain more county traversals than the Duchin Plan. This leaves 15,719 simulations that meet this criteria. Next, I discard any simulations in which the average compactness score of the districts in the simulations is not as large or larger than the compactness score of the Duchin Map. This leaves 13,370 simulated maps, each containing two districts.

A map of the location of this county cluster in relation to the rest of the state is shown in Figure 133. A map of the Duchin Map's district boundaries is shown in Figure 134.

The distribution of district partisanship based on the statewide partisan elections index calculated for each of the simulation results is shown in Figure 135. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The vertical dashed green line shows the number of Democratic leaning seats in the Duchin Map in the cluster. In \(100 \%\) of the simulations there are 0 Democratic leaning districts. The Duchin Map is in alignment with the modal outcome of the simulations by also creating 0 Democratic leaning districts.

Table 50 breaks apart the partisan index into the 11 constituent elections and shows the distribution of Democratic leaning seats generated if one were to look at each election separately. Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded number in each row is the number of Democratic leaning districts produced by the Duchin Plan using the equivalent election. In all of the 11 individual elections there is agreement between the modal (most common) outcome in the simulations and the Duchin Map.

Figure 133: Map of Burke, Gaston, and Lincoln Alternative Senate County Cluster


Figure 134: Map of Duchin Plan in Burke, Gaston, and Lincoln Alternative Senate County Cluster


Partisan Lean of Districts
\begin{tabular}{|c|c|}
\hline District: & Enacted Plan \\
\hline 43 & 0.38 \\
\hline 44 & 0.29 \\
\hline
\end{tabular}

Note: Partisan index is based on the two-party vote average of 11 statewide partisan elections between 2014-2020.

Figure 135: Distribution of Partisan Districts from Simulations in Burke, Gaston, and Lincoln Alternative Senate County Cluster

Partisan Composition of Simulation Results from
BURKE, GASTON, LINCOLN
County Grouping Contains 2 Districts


Note: Distribution of likely district partisanship based on the statewide partisan elections index calculated for each of the simulation results. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The green vertical line shows the number of Democratic leaning seats in the Duchin Map in the same cluster.

Table 50: Simulation Results by Individual Elections Burke, Gaston, and Lincoln Alternative Senate County Cluster
\begin{tabular}{|l|c|c|c|}
\hline \multicolumn{4}{|c|}{ Number of Democratic Leaning Districts: } \\
\hline & 0 & 1 & 2 \\
\hline Individual Elections: & \multicolumn{3}{|c|}{} \\
\hline 2020 President & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Senate & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Governor & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Lt. Governor & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2020 Attorney General & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 President & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Senate & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Governor & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Lt. Governor & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2016 Attorney General & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline 2014 Senate & \(\mathbf{1 0 0 \%}\) & \(0 \%\) & \(0 \%\) \\
\hline
\end{tabular}

Note: Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded number in each row is the number of Democratic leaning districts produced by the Duchin Plan using the equivalent election. For example, using the 2020 Presidential election \(100 \%\) of the simulations produce 0 Democratic leaning districts. The Duchin Plan does as well, as the ' 0 Districts' cell is bolded in that row.

\subsection*{9.3 Forsyth and Yadkin Senate Alternative County Grouping}

The Forsyth and Yadkin Senate alternative county group contains 2 districts. In the Duchin Map these are Districts 31 and 32. The county cluster has an overall partisan index of .53 , which is slightly Democratic. After conducting 50,000 initial simulations to create two districts in this cluster, I discard any simulations that contain more county traversals than the Duchin Plan. This leaves 48,151 simulations that meet this criteria. Next, I discard any simulations in which the average compactness score of the districts in the simulations is not as large or larger than the compactness score of the Duchin Map. This leaves 19,706 simulated maps, each containing two districts.

A map of the location of this county cluster in relation to the rest of the state is shown in Figure 136. A map of the Duchin Map's district boundaries is shown in Figure 137.

The distribution of district partisanship based on the statewide partisan elections index calculated for each of the simulation results is shown in Figure 139. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The vertical dashed green line shows the number of Democratic leaning seats in the Duchin Map in the cluster. In \(100 \%\) of the simulations there are 0 Democratic leaning districts. The Duchin Map is in alignment with the modal outcome of the simulations by also creating 0 Democratic leaning districts.

Table 52 breaks apart the partisan index into the 11 constituent elections and shows the distribution of Democratic leaning seats generated if one were to look at each election separately. Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded number in each row is the number of Democratic leaning districts produced by the Duchin Plan using the equivalent election. In all of the 11 individual elections there is agreement between the modal (most common) outcome in the simulations and the Duchin Map.

The Duchin Plan creates a solidly Democratic district and an additional very compet-
itive district by dividing the city of Winston-Salem. While Winston-Salem is too large to be a single district, the Duchin Plan splits Winston-Salem nearly equally across both districts while the Enacted Plan keeps a larger share of Winston-Salem in one district. The tactic of dividing Democratic cities in a 'pinwheel' or 'pizza' shape and grouping those 'slices' with more Republican suburban and exurban areas is a classic tactic to generate more Democratic districts and overcome the geographic clustering that is common among Democratic voters. The Enacted Plan keeps much more of Winston-Salem within one district. Table 51 shows the percent of Winston-Salem voters in each district in each plan. It is clear that the Duchin plan splits Winston-Salem into 2 roughly equal parts while the Enacted Plan places a much larger majority of Winston-Salem into only 1 district. Figure 138 shows this division.

Table 51: Division of Winton-Salem in Enacted Plan and Duchin Plan
\begin{tabular}{|c|c|c|}
\hline & \multicolumn{2}{|c|}{ Percent of Winston-Salem in district } \\
\hline District: & Enacted Plan & Duchin Plan \\
\hline 31 & 16.35 & 52.3 \\
\hline 32 & 83.65 & 47.7 \\
\hline Total: & \(100 \%\) & \(100 \%\) \\
\hline
\end{tabular}

Note: Population number for city by district for Enacted Plan from: https: //ncleg.gov/Files/GIS/Plans_Main/Senate_2021/SL\%202021-173\%20Senate\%20-\% 20StatPack\%20Report.pdf Population numbers for city by district for Duchin Plan from Dave's Redistricting online. https://davesredistricting.org/

Figure 136: Map of Forsyth and Yadkin Alternative Senate County Cluster


Figure 137: Map of Duchin Plan in Forsyth and Yadkin Alternative Senate County Cluster


Figure 138: Map of Division of Winston-Salem in Enacted and Duchin Senate Plans


Partisan Lean of Districts
\begin{tabular}{|c|c|}
\hline District: & Enacted Plan \\
\hline 31 & 0.58 \\
\hline 32 & 0.49 \\
\hline \hline
\end{tabular}

Note: Partisan index is based on the two-party vote average of 11 statewide partisan elections between 2014-2020.

Figure 139: Distribution of Partisan Districts from Simulations in Forsyth and Yadkin Alternative Senate County Cluster


Note: Distribution of likely district partisanship based on the statewide partisan elections index calculated for each of the simulation results. The black bars show the distribution from the simulation results, with the percentage of simulations that generate each of the various possible number of Democratic seats in the cluster shown below each bar. The green vertical line shows the number of Democratic leaning seats in the Duchin Map in the same cluster.

Table 52: Simulation Results by Individual Elections
Forsyth and Yadkin Alternative Senate County Cluster
\begin{tabular}{|l|c|c|c|}
\hline \multicolumn{4}{|c|}{ Number of Democratic Leaning Districts: } \\
\hline & 0 & 1 & 2 \\
\hline Individual Elections: & \multicolumn{3}{|c|}{} \\
\hline 2020 President & \(0 \%\) & \(56 \%\) & \(\mathbf{4 4 \%}\) \\
\hline 2020 Senate & \(0 \%\) & \(\mathbf{7 7 \%}\) & \(23 \%\) \\
\hline 2020 Governor & \(0 \%\) & \(0 \%\) & \(\mathbf{1 0 0} \%\) \\
\hline 2020 Lt. Governor & \(0 \%\) & \(\mathbf{9 1 \%}\) & \(9 \%\) \\
\hline 2020 Attorney General & \(0 \%\) & \(\mathbf{8 6 \%}\) & \(14 \%\) \\
\hline 2016 President & \(0 \%\) & \(\mathbf{9 2 \%}\) & \(8 \%\) \\
\hline 2016 Senate & \(4 \%\) & \(\mathbf{9 6 \%}\) & \(0 \%\) \\
\hline 2016 Governor & \(0 \%\) & \(62 \%\) & \(\mathbf{3 8 \%}\) \\
\hline 2016 Lt. Governor & \(3 \%\) & \(\mathbf{9 7 \%}\) & \(0 \%\) \\
\hline 2016 Attorney General & \(0 \%\) & \(\mathbf{8 4 \%}\) & \(16 \%\) \\
\hline 2014 Senate & \(0 \%\) & \(\mathbf{9 8 \%}\) & \(2 \%\) \\
\hline
\end{tabular}

Note: Each row shows the percent of simulations that produce the number of Democratic leaning districts using the election or election index indicated in the row. The bolded number in each row is the number of Democratic leaning districts produced by the Duchin Plan using the equivalent election. For example, using the 2020 Presidential election \(44 \%\) of the simulations produce 2 Democratic leaning districts. The Duchin Plan does as well, as the ' 2 Districts' cell is bolded in that row.

\section*{10 Conclusion}

Based upon my analysis of North Carolina's recently enacted redistricting plans for the General Assembly and the plans submitted by the North Carolina League of Conservation Voters, it is my opinion that the Enacted Maps are not "extreme partisan gerrymanders" as plaintiffs allege.

I come to this opinion through the use of a redistricting simulation algorithm to generate 50,000 simulated district maps in each county grouping in which there are multiple districts in both the North Carolina House of Representatives and the North Carolina Senate. The redistricting algorithm generates a representative sample of districts by following neutral redistricting criteria without regard to racial or partisan data. In this way, the simulated
districts establish a comparison set of plans that use purely non-partisan redistricting inputs. I then compare the simulated plans against the Enacted Plans and the Duchin Plans by reference to election results to assess whether the partisan effects of those plans are consistent with what one would expect to see in a redistricting plan composed without reference to any partisan considerations.

In the House, these simulations show that the Enacted Plans consistently score more often within the range of the non-partisan simulated maps than the Duchin Plans. In addition, the simulations show that the Enacted Plans contain one county grouping, the Guilford County grouping in the House of Representative, that is a partisan outlier. However, this grouping largely follows the boundaries of a 2019 court-approved district plan. In contrast, the Duchin Plans generate partisan outliers in four county groupings.

In the Senate analysis both the Enacted and Duchin plans generate partisan outliers when compared to the simulated district maps in two clusters each. Furthermore, neutral redistricting criteria such as following municipal lines support the decisions by the map drawers in the Enacted Plan in more districts, while in these same districts the Duchin Plan divides Democratic-leaning municipalities into more pieces in order to combine Democraticleaning voters in cities with Republican voters in suburban and rural parts of North Carolina to create additional competitive or Democratic-leaning districts.

Based on the evidence and analysis presented below, my opinions regarding the 2021 enacted redistricting plans in the North Carolina General Assembly can be summarized as follows:
- The contemporary political geography of North Carolina is such that Democratic majorities are often geographically clustered in the largest cities of the state while Republican voters often dominate the suburban and rural portions of the state.
- This is not the case in the rural northeastern region of the state, where there are also significant Democratic majorities.
- This geographic clustering in cities an in the rural northeast puts the Democratic Party at a natural disadvantage when single-member districts are drawn.
- This is further amplified by the 'county grouping' process that is unique to North Carolina's redistricting process where districts are constrained to remain within county groups.
- This disadvantage partially arises from the difficulty, and in many cases impossibility, of drawing Democratic-leaning districts in many of the county groupings that comply with constitutional requirements, even though Democratic voters make up roughly \(40 \%\) of voters in these parts of the state.
- Based on a comparison between the Enacted Plan, the Duchin Plan, and a set of 50,000 simulated maps, the Enacted Plan is less of a partisan outlier than the Duchin Plan in the State House.
- In the Senate analysis both the Enacted and Duchin plans generate partisan outliers when compared to the simulated district maps in two clusters each.
- Areas of disagreement between proposed plans often arise because the Duchin plan divides Democratic leaning municipalities into more pieces in order to combine Democraticleaning voters with Republican voters in suburban and rural parts of the state to create additional competitive or Democratic leaning districts.
- Given these results, as well as the otherwise high degree of agreement between the Enacted and Duchin maps, it is my opinion that the Enacted Maps are not "extreme partisan gerrymanders" as plaintiffs allege.

\section*{Michael Jay Barber}
\begin{tabular}{lll} 
Contact & Brigham Young University & barber@byu.edu \\
Information & Department of Political Science & http://michaeljaybarber.com \\
& 724 KMBL & \(\mathrm{Ph:(801)422-7492}\) \\
& Provo, UT 84602 &
\end{tabular}

Academic Appointments

EDUCATION

Research
InTERESTS

Brigham Young University, Provo, UT
August 2020 - present Associate Professor, Department of Political Science
2014 - July 2020 Assistant Professor, Department of Political Science
2014 - present Faculty Scholar, Center for the Study of Elections and Democracy

Princeton University Department of Politics, Princeton, NJ
Ph.D., Politics, July 2014
- Advisors: Brandice Canes-Wrone, Nolan McCarty, and Kosuke Imai
- Dissertation: "Buying Representation: the Incentives, Ideology, and Influence of Campaign Contributions on American Politics"
- 2015 Carl Albert Award for Best Dissertation, Legislative Studies Section, American Political Science Association (APSA)
M.A., Politics, December 2011

Brigham Young University, Provo, UT
B.A., International Relations - Political Economy Focus, April, 2008
- Cum Laude

American politics, congressional polarization, political ideology, campaign finance, survey research
19. "Ideological Disagreement and Pre-emption in Municipal Policymaking" with Adam Dynes
Forthcoming at American Journal of Political Science
18. "Comparing Campaign Finance and Vote Based Measures of Ideology" Forthcoming at Journal of Politics
17. "The Participatory and Partisan Impacts of Mandatory Vote-by-Mail", with John Holbein
Science Advances, 2020. Vol. 6, no. 35, DOI: 10.1126/sciadv.abc7685
16. "Issue Politicization and Interest Group Campaign Contribution Strategies", with Mandi Eatough
Journal of Politics, 2020. Vol. 82: No. 3, pp. 1008-1025
15. "Campaign Contributions and Donors' Policy Agreement with Presidential Candidates", with Brandice Canes-Wrone and Sharece Thrower Presidential Studies Quarterly, 2019, 49 (4) 770-797
14. "Conservatism in the Era of Trump", with Jeremy Pope Perspectives on Politics, 2019, 17 (3) 719-736
13. "Legislative Constraints on Executive Unilateralism in Separation of Powers Systems", with Alex Bolton and Sharece Thrower
Legislative Studies Quarterly, 2019, 44 (3) 515-548
Awarded the Jewell-Loewenberg Award for best article in the area of subnational politics published in Legislative Studies Quarterly in 2019
12. "Electoral Competitiveness and Legislative Productivity", with Soren Schmidt American Politics Research, 2019, 47 (4) 683-708
11. "Does Party Trump Ideology? Disentangling Party and Ideology in America", with Jeremy Pope
American Political Science Review, 2019, 113 (1) 38-54
10. "The Evolution of National Constitutions", with Scott Abramson Quarterly Journal of Political Science, 2019, 14 (1) 89-114
9. "Who is Ideological? Measuring Ideological Responses to Policy Questions in the American Public", with Jeremy Pope
The Forum: A Journal of Applied Research in Contemporary Politics, 2018, 16 (1) 97-122
8. "Status Quo Bias in Ballot Wording", with David Gordon, Ryan Hill, and Joe Price The Journal of Experimental Political Science, 2017, 4 (2) 151-160.
7. "Ideologically Sophisticated Donors: Which Candidates Do Individual Contributors Finance?", with Brandice Canes-Wrone and Sharece Thrower American Journal of Political Science, 2017, 61 (2) 271-288.
6. "Gender Inequalities in Campaign Finance: A Regression Discontinuity Design", with Daniel Butler and Jessica Preece Quarterly Journal of Political Science, 2016, Vol. 11, No. 2: 219-248.
5. "Representing the Preferences of Donors, Partisans, and Voters in the U.S. Senate" Public Opinion Quarterly, 2016, 80: 225-249.
4. "Donation Motivations: Testing Theories of Access and Ideology" Political Research Quarterly, 2016, 69 (1) 148-160.
3. "Ideological Donors, Contribution Limits, and the Polarization of State Legislatures"
Journal of Politics, 2016, 78 (1) 296-310.
2. "Online Polls and Registration Based Sampling: A New Method for PreElection Polling" with Quin Monson, Kelly Patterson and Chris Mann.
Political Analysis 2014, 22 (3) 321-335.
1. "Causes and Consequences of Political Polarization" In Negotiating Agreement in Politics. Jane Mansbridge and Cathie Jo Martin, eds., Washington, DC: American Political Science Association: 19-53. with Nolan McCarty. 2013.
- Reprinted in Solutions to Political Polarization in America, Cambridge University Press. Nate Persily, eds. 2015
- Reprinted in Political Negotiation: A Handbook, Brookings Institution Press. Jane Mansbridge and Cathie Jo Martin, eds. 2015

Available
"Misclassification and Bias in Predictions of Individual Ethnicity from Administrative Records" (Revise and Resubmit at American Political Science Review)
"Taking Cues When You Don't Care: Issue Importance and Partisan Cue Taking" with Jeremy Pope (Revise and Resubmit)
"A Revolution of Rights in American Founding Documents" with Scott Abramson and Jeremy Pope (Conditionally Accepted)
"410 Million Voting Records Show the Distribution of Turnout in America Today" with John Holbein (Revise and Resubmit)
"Partisanship and Trolleyology" with Ryan Davis (Under Review)
"Who's the Partisan: Are Issues or Groups More Important to Partisanship?" with Jeremy Pope (Revise and Resubmit)
"Race and Realignment in American Politics" with Jeremy Pope (Revise and Resubmit)
"The Policy Preferences of Donors and Voters"
"Estimating Neighborhood Effects on Turnout from Geocoded Voter Registration Records."
with Kosuke Imai
"Super PAC Contributions in Congressional Elections"

Works in "Collaborative Study of Democracy and Politics"

Invited
Presentations
with Brandice Canes-Wrone, Gregory Huber, and Joshua Clinton
"Preferences for Representational Styles in the American Public"
with Ryan Davis and Adam Dynes
"Representation and Issue Congruence in Congress"
with Taylor Petersen
"Education, Income, and the Vote for Trump" with Edie Ellison
"Are Mormons Breaking Up with Republicanism? The Unique Political Behavior of Mormons in the 2016 Presidential Election"
- Ivy League LDS Student Association Conference - Princeton University, November 2018, Princeton, NJ
"Issue Politicization and Access-Oriented Giving: A Theory of PAC Contribution Behavior"
- Vanderbilt University, May 2017, Nashville, TN
"Lost in Issue Space? Measuring Levels of Ideology in the American Public"
- Yale University, April 2016, New Haven, CT
"The Incentives, Ideology, and Influence of Campaign Donors in American Politics"
- University of Oklahoma, April 2016, Norman, OK
"Lost in Issue Space? Measuring Levels of Ideology in the American Public"
- University of Wisconsin - Madison, February 2016, Madison, WI
"Polarization and Campaign Contributors: Motivations, Ideology, and Policy"
- Hewlett Foundation Conference on Lobbying and Campaign Finance, October 2014, Palo Alto, CA
"Ideological Donors, Contribution Limits, and the Polarization of State Legislatures"
- Bipartisan Policy Center Meeting on Party Polarization and Campaign Finance, September 2014, Washington, DC
"Representing the Preferences of Donors, Partisans, and Voters in the U.S. Senate"
- Yale Center for the Study of American Politics Conference, May 2014, New Haven, CT

Conference Washington D.C. Political Economy Conference (PECO):

Teaching
Experience

Poli 315: Congress and the Legislative Process
- Fall 2014, Winter 2015, Fall 2015, Winter 2016, Summer 2017

Poli 328: Quantitative Analysis
- Winter 2017, Fall 2017, Fall 2019, Winter 2020, Fall 2020, Winter 2021

Poli 410: Undergraduate Research Seminar in American Politics
- Fall 2014, Winter 2015, Fall 2015, Winter 2016, Summer 2017

2017 BYU Political Science Teacher of the Year Award
2017 BYU Mentored Environment Grant (MEG), Funding American Democracy Project, \$20,000
2016 BYU Political Science Department, Political Ideology and President Trump (with Jeremy Pope), \(\$ 7,500\)

2016 BYU Office of Research and Creative Activities (ORCA) Student Mentored Grant x 3
- Hayden Galloway, Jennica Peterson, Rebecca Shuel

2015 BYU Office of Research and Creative Activities (ORCA) Student Mentored Grant x 3
- Michael-Sean Covey, Hayden Galloway, Sean Stephenson

2015 BYU Student Experiential Learning Grant, American Founding Comparative Constitutions Project (with Jeremy Pope), \(\$ 9,000\)

2015 BYU Social Science College Research Grant, \(\$ 5,000\)
2014 BYU Political Science Department, 2014 Washington DC Mayoral Pre-Election Poll (with Quin Monson and Kelly Patterson), \$3,000

2014 BYU Social Science College Award, 2014 Washington DC Mayoral Pre-Election Poll (with Quin Monson and Kelly Patterson), \(\$ 3,000\)

2014 BYU Center for the Study of Elections and Democracy, 2014 Washington DC Mayoral Pre-Election Poll (with Quin Monson and Kelly Patterson), \(\$ 2,000\)

2012 Princeton Center for the Study of Democratic Politics Dissertation Improvement Grant, \(\$ 5,000\)

2011 Princeton Mamdouha S. Bobst Center for Peace and Justice Dissertation Research Grant, \(\$ 5,000\)

2011 Princeton Political Economy Research Grant, \$1,500

Other Scholarly Expert Witness in Nancy Carola Jacobson, et al., Plaintiffs, vs. Laurel M. Lee, et al., DeActivities fendants. Case No. 4:18-cv-00262 MW-CAS (U.S. District Court for the Northern District of Florida)

Expert Witness in Common Cause, et al., Plaintiffs, vs. LEWIS, et al., Defendants. Case No. 18-CVS-14001 (Wake County, North Carolina)

Expert Witness in Kelvin Jones, et al., Plaintiffs, v. Ron DeSantis, et al., Defendants, Consolidated Case No. 4:19-cv-300 (U.S. District Court for the Northern District of Florida)

Expert Witness in Community Success Initiative, et al., Plaintiffs, v. Timothy K. Moore, et al., Defendants, Case No. 19-cv-15941 (Wake County, North Carolina)

Expert Witness in Richard Rose et al., Plaintiffs, v. Brad Raffensperger, Defendant, Civil Action No. 1:20-cv-02921-SDG (U.S. District Court for the Northern District of Georgia)

Georgia Coalition for the People's Agenda, Inc., et. al., Plaintiffs, v. Brad Raffensberger, Defendant. Civil Action No. 1:18-cv-04727-ELR (U.S. District Court for the Northern District of Georgia)

Expert Witness in Alabama, et al., Plaintiffs, v. United States Department of Commerce; Gina Raimondo, et al., Defendants. Case No. CASE No. 3:21-cv-00211-RAH-ECM-KCN (U.S. District Court for the Middle District of Alabama Eastern Division)

Expert Witness in League of Women Voters of Ohio, et al., Relators, v. Ohio Redistricting Commission, et al., Respondents. Case No. 2021-1193 (Supreme Court of Ohio)

Additional EITM 2012 at Princeton University - Participant and Graduate Student Coordinator Training

Computer Statistical Programs: R, Stata, SPSS, parallel computing Skills

STATE OF NORTH CAROLINA

COUNTY OF WAKE
NORTH CAROLINA LEAGUE OF CONSERVATION VOTERS, et al.,

REBECCA HARPER, et al.,

Plaintiffs,
vs.
REPRESENTATIVE DESTIN HALL, in his official capacity as Chair of the House Standing Committee on Redistricting, et al., Defendants.

IN THE GENERAL COURT OF JUSTICE
SUPERIOR COURT DIVISION 21 CVS 015426

Consolidated with
21 CVS 500085

\section*{AFFIDAVIT OF ANDREW J. TAYLOR}

Now comes affiant Andrew J. Taylor, having been first duly cautioned and sworn, deposes and states as follows:
1. I am over the age of 18 and am competent to testify regarding the matters
discussed below.
2. For the purposes of this litigation, I have been asked by counsel for Legislative

Defendants to analyze relevant data and provide my expert opinions.
3. To that end, I have personally prepared the report attached to this affidavit as

Exhibit A, and swear to its authenticity and to the faithfulness of the opinions.

FURTHER THE AFFIANT SAYETH NAUGHT.

Executed on 22 December, 2021


Sworn or affirmed before me and subscribed in the presence the \(22^{\text {nd }}\) day of December, 2021, in the state of NC and County of Wake.


CHRISTINE A. MCCAFFREY Wake County My Commission Expires May 08. 2024


\section*{Exhibit A:}

\title{
Expert Report of Dr. Andrew J. Taylor, Ph.D.
}

\author{
Dr. Andrew Taylor \\ North Carolina State University \\ Professor- School of Public and International Affairs \\ Caldwell Hall 277B \\ Raleigh NC 27607 \\ ataylor@ncsu.edu
}

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I. consolidated cases of Harper et al v. Hall et al and North Carolina League of Conservation et al v. Hall et al. More specifically, I have been asked by the legislative defendants to provide my opinion regarding the congressional and state legislative districting plans enacted by the North Carolina General Assembly in 2021 deploying my knowledge of North Carolina political history and legislative politics, comparative politics, and American national and state politics and policy.

I am a tenured professor of political science at North Carolina State University. I received my Ph.D. from the University of Connecticut in 1995 and have taught at NC State for the 26 years since then-the past fourteen as a full professor. I teach an array of courses in American politics and served as chair of the Department of Political Science from 2006 to 2010 and President of the North Carolina Political Science Association in 2012-13. I have written four books and published extensively in political science journals. I have authored 28 peer-reviewed articles and numerous book chapters, reports, and other published work.

I have expertise in political science matters related to these cases. I use a diverse array of methodologies in my work, including different statistical techniques. I have been interviewed by scores of media outlets about issues relating to redistricting and North Carolina politics and policy and given dozens of talks to political and civic groups on these topics over the past quarter century. Some of my academic research analyses these matters. I believe the principal reason I have been hired as an expert in these cases
is that my extensive experience and broad interests in American, North Carolina, comparative, and state politics enable me to offer an integrated and panoramic social scientific understanding of the large and complex questions before the court. My CV, which lists my complete credentials, is attached to this report as Appendix A.

The analyses and opinions I provide in this report are based upon my education in social science methods and knowledge of the relevant academic literature. These skills are well-suited to this analysis. My conclusions stated herein are based upon my review of the information available to me at this time. In my professional judgment this is sufficient basis for my opinions notwithstanding the unusually short period I have been given to write this report. I reserve the right to alter, amend, or supplement these conclusion based upon further study or based upon the availability of additional information and within the confines of the court's truncated scheduling order. I am being compensated for my time in preparing this report at the rate of \(\$ 425 /\) hour. My compensation is in no way contingent on the conclusions reached as a result of my analysis. The opinions in this report are my own, and do not represent the view of North Carolina State University.

\section*{II. Executive Summary}

The substantive part of the report is divided into five sections: "The Redistricting Process in North Carolina in 2021", "Common Cause v. Lewis and the Constitution of the State of North Carolina", "Proportionality, Competitiveness, and the Properties of a 'Partisan

Gerrymander'", "Additional Conceptual and Analytical Considerations", and "A Recent History of North Carolina Party Politics". My findings are:
i. Regarding the process used by the North Carolina General Assembly to conduct redistricting in 2021.
- Compared to those of other states, the Constitution of North Carolina provides its state legislature with considerable authority and latitude in the formation and enactment of district plans.
- In 2021, the state legislature deployed a process that was comparatively transparent, open, and participatory.
ii. Regarding the case of Common Cause v. Lewis, the Constitution of North Carolina, and the plaintiffs' related claims.
- The constitutional provisions that describe Article I rights the plaintiffs believe to have been violated in these cases by the enacted plans-"the free elections" clause, "the equal protection" clause, "the freedom of speech" clause, and "the freedom of assembly" clause-are derived from practices and ideas unrelated to concerns about partisanship and redistricting.
- Political scientists' common understanding of the concept of a "partisan gerrymander" is different from the discipline's understanding of free elections, equal elections, the freedom of speech, and the freedom of assembly.
- Political scientists consider many other political rights that states, including North Carolina, restrict to be constitutive of free elections, equal elections, the freedom of speech, and the freedom of assembly-common burdens on these rights include ballot access, voter registration rules, fair access to the media, campaign finance regulations, etc.
iii. Regarding methods and principles used by political scientists to identify a "partisan gerrymander".
- The plaintiffs wish to see different qualities in the enacted plans particularly proportionality and district competitiveness, but these are often contradictory and elusive and proportionality, at least, is not intrinsic to our electoral system.
- The various methods political scientists use to evaluate district plans generate different results and, in turn, conclusions regarding the extent to which a plan is a "partisan gerrymander"-that is, the choice of method can be determinative of an investigator's assessment.
- "Partisan gerrymandering" is an abstract and complex political science concept that defies clear standards for decisive analysis.
iv. Regarding additional analytical and conceptual challenges facing political scientists as they evaluate district plans.
- There exists a "natural gerrymander" created by the uneven distribution of the general population across the state and within crucial units of redistricting such as counties, voting tabulation districts (VTDs), and
"communities of interest" and the concentration of Democratic voters in urban areas and Republican voters in rural areas.
- The choice of "baseline" statewide elections to evaluate the partisan nature of district plans is arbitrary and can have material effects on the assessment of a plan.
- Terms like "community" are vague and of little practical utility to political scientists offering a principled and objective analysis of enacted district plans.
v. Regarding North Carolina party politics.
- The geographic character of the North Carolina Democratic and Republican parties' support has changed dramatically over the past thirty years, with implications for electoral competitiveness.
- Much of this is a function of discretionary decisions made by state and national party leaders, elected officials, and activists and very little of it can be attributed to redistricting practices.
III. The Redistricting Process in North Carolina in 2021
i. Method

In this section, I use my knowledge and a survey of the academic literature to analyze the manner in which the General Assembly conducted the redistricting of North Carolina's congressional and Senate and House districts in 2021, a matter the plaintiffs in Harper and \(N C L C V\) have placed at the center of their complaint. The approach, typical
in political science, is to place the legislature's actions in historical and comparative state perspective.

\section*{ii. Constitutional Context}

The U.S. Bureau of the Census released data to the states so that they could begin their redistricting on August 12, 2021 (they were released in easier-to-use form on September 16). This was much later than initially intended (the original statutory deadline to complete delivery of redistricting was March 31, 2021) because of the coronavirus pandemic and data anomalies. Under the authority of the Constitution of the State of North Carolina (Article II \(\S 3,5\) ), the North Carolina General Assembly has the responsibility to redraw district lines for the state's U.S. House districts and state legislative districts. This power is the General Assembly's alone. It must exercise this "at the first regular session convening after the return of every decennial census of population taken by order of Congress following the decennial national census". It cannot avoid the charge. For both the congressional and state legislative maps, unlike roughly half of the states, North Carolina law grants authority to enact district plans to neither non-partisan institutional legislative staff nor a commission with all or some members who are either non-legislators or appointed by officers outside of the legislature. \({ }^{1}\)

Moreover, Article II, § 22 of the Constitution states redistricting plans are not ordinary legislation. Like Connecticut, Florida, Maryland, Mississippi (in the case of the

\footnotetext{
\({ }^{1}\) The Constitution mentions congressional redistricting only in passing in Article II, § 22 (5) (c). Here it states the congressional district plan is a bill not subject to gubernatorial amendment.
}
state legislature) and Connecticut (in the case of Congress), the maps are not presented to the Governor. The executive cannot exercise its veto power. \({ }^{2}\) But even in these other states, the legislature's power to devise plans is limited somewhat. In Connecticut, a two-thirds majority of both chambers is needed to approve plans and if the legislature misses statutory deadlines a nine-member back-up commission is charged with drawing the maps. In Maryland, the Governor submits a map the legislature can ignore, but if the legislature misses a legal deadline back-up procedures take effect and its power to draw the plan is consequently curtailed. Ultimately, the Governor's plan is enacted absent the legislature approving theirs. Mississippi has a back-up commission consisting of nonlegislative members.

In drawing its state legislative districts, Florida uses a process most like North Carolina's. There, however, state legislative district maps are automatically submitted to the Florida Supreme Court for approval. In the event that the court rejects the lines, the legislature is given a second chance to draft a plan. If the legislature cannot approve a state legislative redistricting plan, the state attorney general must then ask the state supreme court to draft one. It is only in North Carolina that the legislature expressing its will through a simple majority vote in both chambers has sole authority under state law to

\footnotetext{
\({ }^{2}\) The people approved an amendment to the Constitution bringing about the executive veto in 1996. Legislative Democrats were generally against the proposal. Governors, particularly Jim Martin and Jim Hunt, and legislative Republicans were in favor. A compromise was struck in which, unlike a large majority of the states' governors, North Carolina's governor would not have the line-item veto. Veto overrides would also require only a vote of three-fifths of members of both legislative bodies (most states require two-thirds) and redistricting legislation would not be subject to the veto (Christensen 2008, 246; Fleer 1994, 115-6; New York Times 1995).
}
draw congressional and state legislative maps. \({ }^{3}\) These rules were affirmed when the current Constitution was written in 1971, a time when the Democratic Party enjoyed large and electorally-secure majorities in the General Assembly. \({ }^{4}\)

The mandates that limit the North Carolina legislature's discretion are therefore unrelated to process. They concern the content of the maps and are directed by federal and state statutory and constitutional law and court decisions. Many of them were recited by the "Criteria Adopted by the Committees" approved at a joint meeting of the General Assembly's House Committee on Redistricting and Senate Committee on Redistricting and Elections on August 12, 2021. \({ }^{5}\) I will return to them throughout the report. Probably the most important are that the districts be single-member and contain equal population, be contiguous and compact in shape, minimize the traversal of county lines and splitting of voting tabulation districts (VTDs or essentially precincts or wards), and be sensitive to what are frequently called "communities of interest". \({ }^{6}\)

\footnotetext{
\({ }^{3}\) There are a number of reputable and comprehensive reference sources for this information freely available on the Internet. These include the site of the National Conference of State Legislatures (https://www.ncsl.org/research/redistricting.aspx), the site of academics Justin Levitt and Doug Spencer (https://redistricting.lls.edu/), and the Princeton Gerrymandering Project (https://gerrymander.princeton.edu/). The Congressional Research Service's report, "Congressional Redistricting 2021: Legal Framework" (https://crsreports.congress.gov/product/pdf/LSB/LSB10639) provides a nice overview to the role of federal law in the process.
\({ }^{4}\) The Constitution of 1971 was "an extensive editorial revision of the entire constitution incorporating relatively noncontroversial substantive changes without altering the fundamental character of the document" (Fleer 1994, 51). Proposed changes regarding executive power were rejected by the people.
\({ }^{5} \mathrm{https}: / / \mathrm{www} . n c l e g . g o v / d o c u m e n t s i t e s / c o m m i t t e e s / S e n a t e 2021-154 / 2021 / 08-12-\) 2021/Criteria.adopted.8.12.pdf
\({ }^{6}\) In 2021, there are 14 U.S. House districts apportioned by federal law and 50 state Senate and 120 state House districts as directed by Article II §§2, 4 of the Constitution of North Carolina.
}

For the 2021 redistricting cycle, the House and Senate redistricting committees did adopt criteria concerning the configuration of the maps, however. These criteria were more stringent than those of 2011 and presumably recommended to the committees by legislators' understanding of federal and state law and court decisions and in anticipation of potential legal challenges to the congressional and state legislative district plans. Most notably, the committees prohibited the use of election-result data and data identifying the race of individuals. In Cooper v. Harris in 2017, the U.S. Supreme Court ruled that in drawing two congressional districts after the 2010 census, the North Carolina General Assembly used race as "the predominant factor", an action that did not survive the "strict scrutiny" jurisprudential standard. \({ }^{7}\) In 2018, it essentially reiterated this in a case involving state legislative districts. \({ }^{8}\) Legislators were also instructed this year not to use "partisan considerations". In Common Cause v. Lewis in 2019, a three-judge Superior Court panel essentially ruled that drawing state district lines for the clear purpose of advantaging the majority party's interests violated the North Carolina Constitution. \({ }^{9}\) Both Cooper and Common Cause resulted in the General Assembly having to draw remedial maps.

\section*{iii. Addressing the Plaintiffs' Claims}

The plaintiffs claim the redistricting process was inadequate in some way. In the Harper complaint, they assert, "Legislative Defendants undertook an opaque and

\footnotetext{
\({ }^{7} 137\) S.Ct. 1455 (2017).
\({ }^{8}\) North Carolina v. Covington, 138 S.Ct. 2548 (2018)
\({ }^{9} 373\) N.C. 258 (N.C. 2019).
}
constricted redistricting process" \({ }^{10}\) It would be fair to ask: Compared to what? Based upon my experience and extensive review, there exist no comprehensive systematic studies of how state legislatures have conducted their redistricting over the past several decades. Political science research has focused exclusively on the substance of maps. Indeed, a recent study in Political Research Quarterly on the determinants of state and federal redistricting cases omits any measure of the rules or procedures used by state legislatures in the formulation of district plans. The researchers focus on the form the maps take and political, social, and racial characteristics of states and find that, incidentally, among the variables generating a material effect are the size of the AfricanAmerican population and the number of cases the state has been party to previously (Gimpel, Hightower, and Wohlfarth. 2021). This helps us understand why North Carolina has become the target of so many redistricting suits since 2010.

The National Conference of State Legislatures (NCSL) has observed, however, that before the 2010 cycle the processes used by state legislatures to draw congressional and state legislative maps were not unlike the processes used to write and approve regular legislation. \({ }^{11}\) In North Carolina, both chambers of the General Assembly publish journals containing information about bills, amendments, and votes as per Article II, § 17 of the state Constitution. In recent years, citizens have been able to view and listen to live video and audio streams of proceedings on the General Assembly's website. The website contains other information, including bills filed and notices of committee meetings. This

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\({ }^{10}\) Verified complaint in Harper v. Hall.
\({ }^{11} \mathrm{https}: / /\) www.ncsl.org/research/redistricting/into-the-thicket-a-redistricting-starter-kit-for-legislative-staff.aspx
}
is a dramatic improvement in terms of transparency on the situation prior to 2000 when the institution was considerably more opaque.

NCSL does observe a change from 2010. State legislatures are increasingly making the redistricting process transparent and participatory. The two practices most frequently used to facilitate this are "listening tours" and receiving district plan proposals directly from the public. These are both things the North Carolina General Assembly did in 2021. Although restricted by the coronavirus pandemic, the late release of the census data, and compressed timeline (an original filing deadline of December 17, 2021 and primary originally scheduled on March 8, 2022), the redistricting committees held 13 public hearings across the state and a further four over two days in October once maps had been proposed. This was in addition to the usual input members of the public are free to provide lawmakers on ordinary legislation. \({ }^{12}\) The General Assembly also livestreamed proceedings on its website. It maintained a public redistricting workroom with a dedicated terminal that anyone could schedule to use. The maps citizens drew became part of the public record.

All members of the House and Senate had the opportunity to debate and then vote on three readings of the three bills (SB 740 for the congressional plan, HB 976 for the state House plan, and SB 739 for the state Senate plan). In sum, with the exception of the dramatic use of a lottery machine to help determine the state legislative plans from among five alternatives, the 2019 court-ordered process to redraw maps was practically

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\({ }^{12}\) Article I § 12 of the Constitution permits the people "to instruct their representatives and to apply to the General Assembly for redress of grievances".
}
identical to the 2021 process, particularly with regards to public participation and the openness of committee and floor proceedings. Several Democratic state legislators characterized what happened in 2019 as exceptionally fair and transparent (Bitzer 2021, 136).

The final recorded votes on the third reading of the three 2021 redistricting plans were: Congressional plan 65-49 in the House and 27-22 in the Senate; state Senate plan 65-49 in the House and 26-19 in the Senate; and state House plan 67-49 in the House and \(25-21\) in the Senate. \({ }^{13}\) As far as we know, none of the proceedings violated the state constitutional requirements in Article II, § 12, 17, 18, 19 that pertain to member responsibilities and rights in the consideration of legislation. \({ }^{14}\)

The plaintiffs claim the maps were drawn as the result of "partisan considerations". \({ }^{15}\) As with many high-profile votes in today's partisan American legislatures, the recorded votes were partisan and no Republicans voted against any of the maps and no Democrats voted in favor of any of them. The state Senate plan, however, was altered by two floor amendments offered by Democratic senators. \({ }^{16}\) Moreover, regardless of the motivations for individual members' votes in this matter, the North Carolina General Assembly itself is not uniquely partisan and polarized. To date, in the 2021-22 session more than 75

\footnotetext{
\({ }^{13}\) These votes can be found on the North Carolina General Assembly's website, https://www.ncleg.gov/Legislation/Votes/2021
\({ }^{14}\) These have to do with members' oath to discharge their duties as legislators (Section 12), requiring the bodies keep a journal of their proceedings (Section 17), essentially permitting any member to oppose legislative action and have that opposition made public record (Section 18), and allowing for recorded votes (Section 19).
\({ }^{15}\) Verified complaint in Harper v. Hall, p. 12.
\({ }^{16}\) They were Sen. Natasha Marcus and Sen. Ben Clark.
}
percent of House roll-call votes and 80 percent of Senate roll-call votes have had in excess of 60 percent of members on one side. According to widely-cited research using roll-call and survey data from state legislatures and a recognized ideal-point estimation statistical technique to place individual legislators on a single liberal-to-conservative ideological dimension, the difference in median annual ideology scores between House Republicans and Democrats and Senate Republicans and Democrats from 2010-18 are just slightly higher than the national average (North Carolina House 1.64, other states’ houses 1.63; North Carolina Senate 1.66, other states' senates 1.61). The North Carolina House has become more partisan and polarized according to these measures since 2010 (from 1993 to 2009 its mean difference score was 1.26, compared to the national 1.37) but the state's Senate has actually become less partisan and polarized (from 1993 to 2009 its mean difference score was 1.72 , compared to the national 1.36) (Shor and McCarty 2011). \({ }^{17}\)
IV. Common Cause v. Lewis and The Constitution of the State of North Carolina i. Method

Here, I use my knowledge and experience as a political scientist and examine the comparative and historical political science literature to ascertain whether it is reasonable to argue, as the plaintiffs do, that the enacted plans are in violation of state constitutional provisions concerning "free elections", "equal protection", "freedom of speech", and

\footnotetext{
\({ }^{17}\) Shor and McCarty's updated data can be found at: https://americanlegislatures.com/data/
}
"freedom of assembly". My opinion is not legal, rather I draw on these concepts as understood historically and by the political science literature to evaluate their relationship with the plaintiffs' assertions.
ii. Common Cause and the Plaintiffs' Complaints

In 2019, a three-judge panel of a Superior Court in Wake County ruled the 2017 state House and Senate district plans to be unconstitutional "extreme partisan gerrymanders". The essence of the decision in Common Cause v. Lewis was that the maps violated three state constitutional provisions: The "free elections" clause (Article I, §10), the "equal protection" clause (Article I, § 19), and, together, the "freedom of speech" and "freedom of assembly" clauses (Article I, § 14 and Article I § 12). The plaintiffs in Harper and \(N C L C V\) claim forcefully the district plans violate these provisions of the North Carolina Constitution.

The Court in Common Cause seemed to be taking its lead from a 2018 Pennsylvania decision. In League of Women Voters of Pennsylvania et al v. Commonwealth of Pennsylvania et al, the Supreme Court found that state's 2011 congressional district plan violated Article I, § 5 of its Constitution that asserts, "Elections shall be free and equal; and no power, civil or military, shall at any time interfere to prevent the free exercise of the right of suffrage." \({ }^{18}\) In Common Cause, the Superior Court invoked North Carolina's "free elections" constitutional provision, despite its omission of the term "equal". Perhaps sensitive to the difference and to draw a more direct connection between the

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\({ }^{18} 178\) A.3d 737 (Pa. 2018).
}

North Carolina and Pennsylvania situations, it asserted the plans before it were also in violation of the Constitution of North Carolina's Article I, § 19 guaranteeing "equal protection".

This reference to the equal protection clause is important. First, it should be noted the relevant provision reads that, "No person shall be denied the equal protection of the laws; nor shall any person be subjected to discrimination by the State because of race, color, religion, or national origin." There is no reference to anything remotely related to partisanship. Second, the part of the XIV Amendment of the U.S. Constitution the North Carolina provision mimics has almost exclusively been deployed in connection with government action that is considered discriminatory on the grounds of characteristics like gender, age, national origin, and, especially, race (Arazia 2018). It is interesting that all the plaintiffs in both cases introduce themselves as Democratic voters and most of the plaintiffs in NCLCV also present themselves as Black voters. The two characteristics, race and partisanship, should not be conflated. Race is an established constitutionally suspect category that receives strict scrutiny when states legislate on matters related to fundamental rights like voting. It is also a significant and explicit factor in federal restrictions on the redistricting process, such as those enumerated in the Voting Rights Act and the now established principle that, to use Justice Anthony Kennedy's descriptor in Miller v. Johnson, race cannot without justification be the "predominant" factor motivating the drawing of districts. \({ }^{19}\) Partisanship, by contrast, is not innate, immutable, or central to a person's being. Voting for candidates of a particular party is a choice and
purely incidental to most people's lives. It is something that could be used to describe the class of people the plaintiffs consider "Democratic voters" for little more than a few minutes every two, perhaps even every four, years.

\section*{iii. The State Constitution and the Derivation of the Rights in Question}

As the Court observed in Common Cause, the origins of several of the constitutional rights it invoked can be found far back in the state's history. It noted the source of the "free elections clause" is located in the North Carolina Declaration of Rights of 1776, which in turn borrowed it from the English Bill of Rights of 1689 (Orth 1992). \({ }^{20}\) It also claimed North Carolina's embrace of free elections drew inspiration from language in other state constitutions, including Pennsylvania's. \({ }^{21}\) The 1868 North Carolina Constitution, written following the Civil War, contained a "free elections clause" in its Article I §, 10—although the words "ought to" were in place of today's "shall".

If the origins of the provision go back to 1776 , it was established prior to any meaningful American understanding of the term "gerrymander" which was largely popularized following the 1810 redistricting cycle when the Governor of Massachusetts Elbridge Gerry signed a state legislative district plan that was said to greatly favor his Democratic-Republican Party (Engstrom 2013, 21-22). In 1868, and even in 1971 when today's Constitution was established, the concept of a "partisan gerrymander" does not

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\({ }^{20}\) It should be noted, however, that it was not until the passage of the "Great" Reform Act in 1832 that Britain rid itself of "rotten boroughs", districts with very small constituencies that often elected members of parliament who were essentially selected by a single or small group of powerful residents (Evans 1994).
\({ }^{21}\) Common Cause v. Lewis, 303.
}
appear to have been addressed or contemplated by convention delegates and the state's population. With the exception of the short "fusionist" period of the 1890s when Republicans had control of the General Assembly and the governorship, North Carolina was a solidly one-party state for more than a century following the Civil War. It was not until 1972 that North Carolina elected its first Republican Governor and U.S. Senator of the twentieth century and 1994 that it elected that party's first state legislative majority by giving Republicans control of the House. \({ }^{22}\)

The same logic applies to the "freedom of assembly" provision. Article I, § 25 of the 1868 Constitution reads, "The people have the right to assemble together to consult for their common good, to instruct their representatives, and to apply to the Legislature for the redress of grievances". Given this was written in 1868, it seems difficult to imagine the authors were contemplating partisan gerrymandering as a practice in contravention of the freedom of assembly.

The "freedom of speech" wording was only written into the Constitution in 1971. It was tacked on to the beginning of the "freedom of the press" clause which occupied Article I, § 20 of the 1868 Constitution-and, like "free elections", the 1971 Constitution believed it "shall" as opposed to "ought" "never be restrained". Again, the origins suggest no intent to include the concept of a "partisan gerrymander". \({ }^{23}\) In summary,

\footnotetext{
\({ }^{22}\) Kruman \((1983,154)\) discusses partisan battles over redistricting in North Carolina between Democrats and Whigs in the early 1850s. The Civil War and the demise of Reconstruction, however, made North Carolina a solidly Democratic state.
\({ }^{23}\) Today, Article I, § 14 reads, "Freedom of speech and of the press are two of the great bulwarks of liberty and therefore shall never be restrained, but every person shall be held responsible for their abuse."
}
based upon my review as a political scientist of North Carolina's political history, there seems no support for the drawing of a connection between the constitutional rights of free elections, equal protection, freedom of speech, and freedom of assembly on one hand and partisan redistricting practices on the other.
iv. State Constitutions and the "Partisan Gerrymander"

In fact, when states expressly wish to prohibit partisan gerrymandering, they establish laws to that effect. Academics Justin Levitt and Doug Spencer estimate 19 states have statutes or constitutional provisions restricting the practice of "undue partisanship" in state legislative redistricting, 17 have such statutes or constitutional provisions addressing congressional redistricting. \({ }^{24}\) The following examples provide just a flavor of how this can be done if a state so desires. Article III, § 20 of the Florida State Constitution states, "No apportionment plan or individual district shall be drawn with the intent to favor or disfavor a political party." Article III, § 3 of the Missouri State Constitution states, "Districts shall be drawn in a manner that achieves... partisan fairness." The entire eleventh article of the Ohio State Constitution is devoted to redistricting and Section 6, Clause A states, "No general assembly district plan shall be drawn primarily to favor or disfavor a political party". Article IV, Part 2, § 1(14) of the Arizona State Constitution reads, "to the extent practicable, competitive districts be favored where doing so would not significantly detract from" criteria such as equal population, compactness, and the

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\({ }^{24} \mathrm{https}: / /\) redistricting.lls.edu/redistricting-101/where-are-the-lines-drawn/\#partisan+outcomes
}
protection of communities of interest. North Carolina has no constitutional provision related to the partisan make-up or competitiveness of districts.

Moreover, the U.S. Supreme Court ruled in 2019 in a case involving North Carolina that partisan gerrymandering was outside the ambit of the federal courts as a politically non-justiciable question. \({ }^{25}\) As a result, therefore, state courts are left to determine whether their statutes and constitutions, absent a provision related to partisan redistricting practices, prohibit partisan gerrymandering. Prior to Common Cause, they had only done this definitively once, in the 2018 Pennsylvania case.
v. Political Science and the Concepts of "Free Elections", "Equal Elections",
"Freedom of Speech", and "Freedom of Assembly"

As a political scientist, I find it hard to think of American practices of redistricting, regardless of how skewed in a partisan sense the outcomes seem, to be evidently inconsistent with the principles of "free elections", "equal elections", "freedom of speech", and "freedom of assembly". To explain, let me take each of these concepts in turn, beginning with "free elections".

Freedom House, a highly respected non-profit, non-partisan, non-governmental organization that conducts research and advocacy on democracy, political freedom, and human rights, clearly dislikes what it calls "partisan gerrymandering". \({ }^{26}\) The

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\({ }^{25}\) Rucho v. Common Cause, 139 S.Ct. 2484 (2019). There was a companion case out of Maryland, Benisek v. Lamone, 139 S.Ct. 2484 (2019).
\({ }^{26}\) See, for example, https://freedomhouse.org/sites/default/files/2021-
03/US_Democracy_Report_FINAL_03222021.pdf
}
methodology it uses to conduct its "Freedom in the World" analysis, however, includes "partisan gerrymandering" specifically in response to the following question it asks of countries: "Are the electoral laws and framework fair, and are they implemented impartially by the relevant election management bodies?" The phenomenon is not used to evaluate how countries respond to this question: "Were the current national legislative representatives elected through free and fair elections?" \({ }^{27}\) In the numerous political science reference materials that describe free elections, the key characteristics are things such as whether elections are called in a timely manner, candidates have access to the media, members of the public can vote without undue pressure or intimidation, ballots are cast in secret, and the vote count is transparent and timely.

The Economist's Democracy Index which clearly places "free elections" at the heart of its understanding of democracy, makes no mention of redistricting in its methodology. Its unfortunate assessment in 2020 was that the United States is a "flawed democracy" noting that although "Americans have become much more engaged in politics in recent years" they show "low levels of trust in institutions and political parties, deep dysfunction in the functioning of government, increasing threats to freedom of expression, and a degree of societal polarization that makes consensus almost impossible to achieve". \({ }^{28}\) It is plausible some political scientists believe redistricting contributes to some of these outcomes, but there is a significant amount of research that casts doubt on the argument partisan gerrymandering is a principal cause of polarization in American politics-the

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\({ }^{27} \mathrm{https}: / /\) freedomhouse.org/reports/freedom-world/freedom-world-research-methodology
\({ }^{28} \mathrm{https}: / / \mathrm{www} . e i u . c o m / \mathrm{n} /\) campaigns/democracy-index-2020/
}
dramatic polarization of the U.S. Senate furnishes crucial evidence in that regard McCarty, Poole, and Rosenthal 2009). Interestingly, the country's only non-partisan legislature, Nebraska's unicameral body, is also polarized. Here antagonistic legislative groups are galvanized by campaign contribution patterns and candidate recruitment processes that mirror states with formal partisan politics (Masket and Shor 2015).

In the American context, there are many other practices that vary considerably across states and are more integral to the concept of free elections than what is typically called a "partisan gerrymandering". These include rules related to voter access and election integrity such as registration and voter identification requirements, absentee and early voting rules, and the location and number of polling places. These freedoms are routinely regulated by state law and court decisions.

Freedom, moreover, infers choice. As a result, when assessing whether elections are free we should also consider the character of the ballot given to voters. Ballot access and candidate filing rules are crucial in this regard. So is the number of candidates on the ballot and the availability of accurate and useful information about each of them. If voters have very little freedom of choice in U.S. House and state legislative elections our electoral system is to blame. Much of the time they have only two alternatives, a Democratic or Republican candidate. Others desiring the label "Democrat" or "Republican" are forcibly eliminated from consideration by a primary and candidates from other parties are kept off the general election ballot by restrictive rules. Although the Libertarian Party has official standing in North Carolina, the only independent candidate to appear on a statewide election ballot here was Ross Perot in 1992.

What about "equal elections"? Each person has one vote to elect one legislator who has one vote in the legislature. More specifically, the existing restrictions on the redistricting process exist to ensure elections be equal. The choice of legislative candidates is the same for all voters in a district and, most importantly, the General Assembly must establish districts with equal or nearly equal populations. The law does currently tolerate tangible inequalities in elections, however. In the recent Evenwel v. Abbott case, the Supreme Court strongly advised states to conform to settled practice and draw their districts with equal population, not equal numbers of eligible voters. \({ }^{29}\) Eligible individuals are also given different chances to vote by their registration status-you must be registered in order to vote. Other plausibly unequal treatment includes distance from the place of polling and the length of time it takes to vote once there.

Unequal outcomes are inherent to our winner-take-all or first-past-the-post single-member-districts electoral system-North Carolina cannot draw at-large or multimember districts. \({ }^{30}\) There is one winner in the election for each seat in the U.S. House and North Carolina House and Senate. If the election is contested, there is also at least one loser. The winner is selected by a plurality of voters in the district. The remaining voters who cast a ballot selected a loser.

I will return to the notion of "wasted votes" and the related frequently used quantitative indicator of partisan gerrymanders, the "efficiency gap", later. But I think it

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\({ }^{29} 136\) S. Ct. 1120 (2016).
\({ }^{30}\) The intent was largely to protect the political interests of minorities. The case that ended multi-member districts in North Carolina was Stephenson v. Bartlett, 355 N.C. 354 (2002).
}
should be noted the plaintiffs also talk about certain citizens having their votes "wasted" and imply they are treated unequally. Wasted votes are those cast for the losing candidates or the winning candidate above those needed to win, in other words the difference in votes received by the winner and the second-place finisher minus one. Wasted votes are intrinsic to our system. \({ }^{31}\) It is not, therefore, citizens who waste or do not waste votes when they register their choice of candidates on the ballot. They are exercising a fundamental right. It is the parties who waste them by winning seats by large margins or losing seats by slim ones.

My response to the argument the district plans violate the North Carolina Constitution's provisions regarding "free speech" and "free assembly" is similar. Political scientists do not conceptualize partisan gerrymandering in terms of the suppression of speech or the ability to organize freely. According to the Oxford Concise Dictionary of Politics, "freedom of speech" is the "liberty to express opinions and ideas without hindrance, and especially without fear of punishment" and "freedom of association" is "the freedom of individuals to associate as an end in itself or with the view to pursuing common projects, e.g. churches, trade unions, political parties, and sporting clubs" (McLean and McMillan 2003, 208-9). When they study legal restrictions on political speech and organization in the American context, political scientists examine

\footnotetext{
\({ }^{31}\) If the goal had been to eliminate wasted votes, through their Constitution the people of North Carolina would have adopted a system of proportional representation in which seat shares are a faithful representation of the proportion of total statewide votes each party received. If the plaintiffs' intent is to provide "Democratic voters" the "opportunity ... to elect the candidates of their choice in the districts and/or clusters where they reside" (Verified complaint in \(N C L C V\), p. 12) then they should desire plans with highly uncompetitive districts where each individual Democratic voter is very likely to select the winner.
}
matters such as campaign finance, candidate nomination procedures, rules regulating canvassing, rallies, and protests, media entities' compliance with the federal requirement they provide equal time to any opposing candidates who request it, and so on. State laws that unfavorably treat citizens who wish to organize or vote for third or minor parties, such as those shaping the electoral system and restricting access to the ballot, are perhaps the most important examples. There are no restrictions on North Carolina Democrats' ability to assemble in the way they exist for North Carolina Constitution Party or Green Party members. As of early 2021, those two parties were no longer formally recognized by the state as political parties, consequently stripping them of numerous organizational advantages state Democrats (and Republicans and Libertarians for that matter) enjoy.
V. Proportionality, Competitiveness, and the Properties of a "Partisan Gerrymander" i. Method

In this section, I deploy my knowledge of the political science methodology used to explore partisanship and redistricting. I survey the academic literature and explain and evaluate various principles and techniques.

\section*{ii. Political Science and Partisan Redistricting}

The "partisan gerrymander" or manipulation of the redistricting process to bring about unfair partisan outcomes is an abstract political science construct. The concept has evolved over several decades with the contributions of many academics. \({ }^{32}\) It lacks a

\footnotetext{
\({ }^{32}\) For a good overview, see Burden and Smidt (2020).
}
precise operational definition. It seems to have a number of elements, although there is no consensus as to what these are and several appear to contradict each other. Unless investigators make personal and arbitrary decisions as to what principles to apply, it is prohibitively difficult to undertake a comprehensive comparison of a district plan to both others and some absolute desired standard.

Political scientists have tried to systematize an intellectual approach to the partisan gerrymander. In their efforts to facilitate real-world evaluation of district plans, they have created a series of indicators that purport to permit analysts to gauge the extent to which one is gerrymandered. Measures are generally interested in detecting something called "partisan bias", a broad gauge of whether a party received more seats than it should have given some exogenous standard of acceptability. Some emphasize proportionality or "responsiveness". \({ }^{33}\) Beyond that, however, the indicators vary greatly. Some suffer measurement problems.

\section*{iii. Proportionality and Competitiveness}

The arguments of critics of district plans, including it seems to me the Harper and \(N C L C V\) plaintiffs, are demonstrative of the intellectual minefield that is this effort to identify a partisan gerrymander. They often assert district plans have two important

\footnotetext{
\({ }^{33}\) Both partisan bias and responsiveness focus on the "seats-votes curve" or the proportion of seats and votes won by a party when the two pieces of data are plotted against one another. Partisan bias is only concerned with the proportion of seats won when we place a party at 50 percent of the vote (this must be estimated using a computer algorithm), models interested in proportionality look at the entire curve. In both cases, significant asymmetry in the left and right hand sides of the curve (that is either side of 50 percent of the vote) is interpreted as a sign of a gerrymander.
}
deficiencies: They produce outcomes in which the share of the legislative body's seats won by a party is not proportionate with its share of the aggregate statewide vote and/or they produce too many districts where there is little meaningful competition between the major parties' candidates. Many of these critics, including the plaintiffs here who on several occasions complain the enacted plans' lack of proportionality and too few competitive districts, want maps to exhibit both qualities.

Before I examine the problems of trying to have a district plan exhibit both proportionality and competitiveness, I should emphasize proportionality was not an objective of the designers of our electoral system. Disproportionate outcomes in terms of seats are a feature not a bug. I have a deep knowledge of the modern political history and elections of the nation I grew up in, the United Kingdom. It has similar political values as the United States and an identical first-past-the-post plurality system of single-member districts for elections to its House of Commons. In the most recent general election of December 2019, the Conservative Party won 56.2 percent of the seats to form the government (legislative majority) with 43.6 percent of the vote. The Labor Party was second, but its 32.1 percent of the vote gave it 32.2 percent of the seats. The Liberal Democrats who received 11.6 percent of the national vote in third place won 1.7 percent of the seats while the Scottish National Party's (SNP) 3.9 percent of the vote secured it 7.4 percent of the seats. Labor's main response has been to change its leader and resolve to recruit better candidates and campaign more skillfully in districts it was defeated, especially those it lost narrowly or whose seats its members had occupied in the previous parliament. The Conservatives do the same when they are out of government. The

Liberal-Democrats have not bemoaned redistricting, but continue their long-standing efforts within the political process to make the electoral system more proportional. The SNP has retained its traditional strategy of focusing on its home base in Scotland's 59 districts.

As a practical matter, proportionality is not that important to the representation of the parties in government anyway. Our electoral system is described as "winner-take-all" for a reason. It is explicitly majoritarian. In Common Cause, the Court paid particular attention to the plaintiffs' argument that the plan made it very difficult for the Democrats to win legislative majorities. \({ }^{34}\) It understood that in the General Assembly, majority status is of critical importance and the majority party sees rapidly diminishing returns from winning each additional seat beyond 26 in the Senate and 61 in the House. This is because both bodies are hierarchically organized giving great power to the leader of the majority party and, unlike the U.S. Senate with its filibuster for example, prohibit meaningful minority party obstruction (Cooper 2008). Moreover, the proportional distribution of seats in the North Carolina U.S. House delegation matters little to the overall partisan composition of Congress. North Carolina has only 14 of the 435 districts.

A central problem for critics of district maps like the plaintiffs in Harper and \(N C L C V\) is that proportionality and competitiveness are often incompatible. By trying to increase one, you can reduce the other, but not always in predictable ways. To

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\({ }^{34}\) Common Cause v. Lewis, p. 313.
}
understand this theoretically, consider a hypothetical state where we assert 50 percent of its voters are Democrats and 50 percent Republicans. The voters are distributed across the state in such a way we can draw very different types of maps. We can draw a map for a 100-member legislative body to ensure perfect proportionality. In this case, the plan would have 50 solid (perhaps even near 100\%) "Democratic" districts and 50 solid "Republican" districts. No contests would be competitive. Alternatively we can draw 100 competitive districts, each with roughly half of its voters Democrats and the other half Republicans. Here, however, even a small statewide uniform swing towards one of the parties could result in it winning a very large majority even if the aggregate vote was something like 53 percent to 47 percent in its favor.

There are numerous illustrations of the tension between proportionality and competitiveness in American elections. The 2012 congressional elections immediately following the 2010 redistricting cycle furnish a good example. Nobody claimed the Massachusetts U.S. House plan in the 2010 cycle was gerrymandered; indeed the Center for Public Integrity gave it a grade of ' A '. \({ }^{35}\) But in 2012 Republicans won 30 percent of the statewide vote and only one contest could reasonably be considered competitive. The party's candidate lost that race and Democrats captured all nine of the state's seats. In Iowa, where the non-partisan redistricting process produced maps after the 2010 census that in the 2012 congressional election resulted in a statewide 50 percent to 47 percent advantage for Republicans and an even split between the major parties of the four seats,

\footnotetext{
\({ }^{35}\) See, https://publicintegrity.org/politics/state-politics/massachusetts-gets-c-grade-in-2012-state-integrity-investigation/.
}
no race was decided by less than nine percentage points. In Illinois in 2012, five of its 18 congressional districts were decided by less than ten points (a reasonable indicator of competitiveness these days), but the Democrats won two-thirds of them with 57 percent of the vote.
iv. Often-Cited Political Science Methods Used to Indicate a "Partisan Gerrymander"

Three of the most prominent measures political scientists use to explore the potential gerrymandered qualities of a district plan demonstrate the real-world challenge of accounting for different features like proportionality and competitiveness in a single indicator. The "efficiency gap" developed by Nicholas Stephanopoulos of the University of Chicago Law School and Eric McGhee a political scientist at the Public Policy Institute of California is a frequently used analytical tool in the investigation of district maps popularized when litigants and judges discussed it in the Wisconsin case that eventually became Gill v. Whitford decided by the U.S. Supreme Court in 2018 (Stephanopoulos and McGhee 2018). It takes the absolute difference in the total number of Democratic wasted votes and Republican wasted votes in a district plan and divides it by the total number of votes cast in all districts. Stephanopoulos and McGhee (2018) estimate that any figure in excess of about .08 (or eight percent) constitutes a partisan gerrymander in favor of the party with the fewest wasted votes. But the efficiency gap tends to punish competitiveness if the outcomes break decisively for one party. This is because parties waste a large number of votes in losing close elections and very few in winning them. Proportionality can also be penalized. Take a hypothetical legislature with five districts containing 100 voters each, where Republicans win 60 percent of the
aggregate vote ( 300 votes) and three seats ( 60 percent). If the results were \(85-15,65-35\), 65-35, 45-55, and 40-60 with Republican votes listed first, the efficiency gap would be . 198 indicating a large gerrymander in favor of Democrats. Here the problem is parties waste a great deal of votes relative to their opposition when they win by large margins.

In the "mean-median difference" test, analysts subtract the median percentage recorded by a party's candidates in all of the districts in a plan from the mean percentage. When a party's median vote share is lower than its mean, it might be considered a victim of gerrymandering where its voters are unfairly concentrated (McDonald and Best 2015). But this approach does little to convey proportionality or competitiveness under many conditions, including in states where there is either little or a great deal of variance in the parties' performances across districts (Burden and Smidt 2020; Stephanopoulos and McGhee 2018).

The mean-median difference test is also particularly sensitive. In a study comparing different methods, Jonathan Krasno et al's (2019) analysis of the Wisconsin Assembly map drawn in 2011 using results from 13 statewide elections in the two cycles immediately preceding and following the redistricting revealed the mean-median difference was the method by far the most likely to indicate "substantial" partisan gerrymanders.

A third test, "lopsided margins", simply compares the mean margins of victory in all districts for each of the parties. The party with the larger margins of victory is most likely to have its voters concentrated and therefore subjected to a gerrymander. Analysts can then use a t-test to see if the difference in the means for the parties is statistically
significant (Wang 2016). This helps us get a grasp of competitiveness, but not always proportionality.
v. Summary

The value placed on proportionately and competitiveness by analysts of district plans, including the plaintiffs in Harper and NCLCV, highlight an important problem with judicial efforts to address partisan gerrymandering. Partisan gerrymandering is an abstract and complex concept that defies clear standards suitable for decisive intellectual analysis by political scientists. The reality of a first-past-the-post electoral system with single-member districts make it prohibitively difficult to discover districts that maximize both proportionality and competitiveness using available statistical techniques. Mapdrawers, who are generally not political scientists, therefore often find it difficult to know which tools to use when evaluating competing plans. They discover their attempts to promote one desired principle like proportionality often undermine their efforts to promote another like competitiveness. My understanding of the social science of identifying partisan gerrymanders does not make me question it as derisively as Chief Justice John Roberts when he described the efficiency-gap measure as "gobbledygook" in oral arguments during Whitford. However, I believe even if judges think they have the power to reject maps drawn by the states on the basis that they constitute a partisan gerrymander, the objectives of litigants are often too broad and conflicted and the tools we have to analyze district plans too numerous, complex, and problematic to provide necessary clear and satisfactory direction.

\section*{VI. Additional Conceptual and Analytical Considerations}
i. Method

In this section, I assess "baselines" that permit meaningful evaluation of district plans. To do this, I use my knowledge of North Carolina political history and survey the political science literature on methods.

\section*{ii. The Clustered General Population}

The difficulty of generating transparent and objective standards for what constitutes a partisan gerrymander in the opinion of political scientists is relevant to this section as well. Here, I explicitly address the issue of what "baselines" to use or, in other words, what assumptions we should take into the exercise of constructing and evaluating district plans.

The first task is to account for the real world. Whether the issue involves general redistricting criteria like compactness, contiguity, and the maintenance of communities of interest, VTDs, or municipalities, or generally understood characteristics of partisan gerrymanders such as disproportionality or a lack of competitiveness, it is fair to ask not how any potential plan compares to an absolute standard but the "state of nature" or what we might call the "natural gerrymander". North Carolinians are spread unevenly within an oddly-shaped state. Some counties, communities, and VTDs are relatively small, others are quite large. Some are densely populated, others sparsely populated. So, for example, when we talk about a plan's performance with regards compactness, it is important to note the extent to which dividing the state into 14,50 , or 120 evenly populated chunks mitigates against the principle. Many observers use the Polsby-Popper measure of compactness which
reports results on a scale of 0 to 1 . The congressional, state House, and state Senate plans enacted by the state legislature have Polsby-Popper mean scores of \(.30, .35\), and .34 respectively. Is this unreasonably different from the state of nature? It is impossible to know, but from a basic examination of the three maps by someone with an understanding of the location of North Carolina's urban and rural areas they look, with a few plausible exceptions, quite compact. \({ }^{36}\)

\section*{iii. The Partisan Clustering of the Voting-Age Population}

What is more, Democratic and Republican voters are clustered. Democrats tend to live with other Democrats and Republicans with other Republicans. Democrats dominate the cities, Republicans small towns and rural areas of the state. Political scientists have various theories about why this is so. It could be the product of people with similar demographic characteristics like income, education, or race living together or people being persuaded to agree with their neighbors or moving to a place with more agreeable neighbors (Levendusky 2009; Rodden 2019). Regardless, the phenomenon poses significant challenges to legislators.

Published research demonstrates the problem. In a recent analysis of North Carolina, Gimpel and Harbridge-Yong (2020) reveal conceivable racial, occupational, geophysical, and sociocultural communities of interest tend to be homogenous in their partisan affiliations. To maintain many of them you must "pack" Democratic or Republican voters.

\footnotetext{
\({ }^{36}\) There is another different but simpler measure of the compactness called the Reock test which essentially looks to see what proportion of the area of a circle drawn around its perimeter a district occupies.
}
iv. The Use of Election Data to Identify Democratic and Republican Voters

The second question regarding the establishment of baseline assumptions required to evaluate a district plan is the identification of Democratic and Republican voters. Analysts have sensibly moved away from using party registration data because of the large number of unaffiliated voters and the reality that the act of registering to vote is very different from that of casting one. So, although the criteria adopted by the North Carolina House and Senate redistricting committees in 2021 explicitly prevented legislators from using "election data", we, as observers, have the luxury of election results. But which ones should we use? Many, including the plaintiffs in these two cases, utilize recent statewide contests as their benchmark. They take the precinct-level returns from these elections and superimpose the enacted plans on them to determine hypothetically how many seats each party would receive.

Statewide elections for different offices or held at different times, even if observations are only two or four years apart, can produce significantly different outcomes. Votes are not fixed. The candidates, campaigns, office sought after, and contemporaneous political conditions mean voters do not consistently reveal themselves as Democrats or Republicans since many split their votes between the parties. In 2020, for example, Gov. Roy Cooper, a Democrat, beat Republican Lt. Gov. Dan Forest by 4.5 percentage points. In the presidential race that year, President Donald Trump the Republican defeated his Democratic opponent, former Vice President Joe Biden, by 1.3 percentage points. There was significant talk of "Cooper-Trump" voters, one North Carolina political scientist estimated roughly eight to
twelve percent said they would vote this way shortly before the election. \({ }^{37}\) Turnout can also vary considerably and many voters participate in only one or a few of the elections used for analysis. When measured as a proportion of registered voters, turnout increased six percentage points over 2016 in the 2020 North Carolina election for president. Turnout also varies geographically. Eighty percent of registered voters in Wake County cast a ballot in 2020, only 62 percent of their counterparts in Robeson County did.

Research on Ohio and Wisconsin, two states at the epicenter of redistricting battles, demonstrates the problem of what election(s) to use. The Krasno et al (2019) paper cited earlier revealed that, in addition to the choice of diagnostic method, the choice of election had a material effect on whether an analyst could reasonably describe the 2010 Wisconsin state district plan as a gerrymander or not. Redistricting experts Micah Altman and Michael McDonald examined the competiveness of various Ohio congressional district plans drawn after the 2010 census. "District competitiveness", a component of a formula reformers used to judge the maps somewhat arbitrarily set at 55-45 or less, provided diverse outcomes depending on the baseline election data used (Altman and McDonald 2017).

This problem also afflicts a recent approach to the analysis of district plans I did not consider in the previous section. Armed with sophisticated software, researchers can now use computer algorithms to generate large numbers of alternative maps by combining VTDs that are contiguous and equal in population. This method can produce thousands of maps that, although generally ignoring criteria such as compactness and the maintenance of other

\footnotetext{
\({ }^{37}\) This was Christopher Cooper of Western Carolina University (McElroy 2020).
}
jurisdictions like counties and communities of interest, are drawn without knowledge of partisan voting patterns. Any particular map is said to demonstrate an intolerable partisan gerrymander if it produces returns that are distant from those of the mean or median of all the computer-generated maps (Chen and Rodden 2015). \({ }^{38}\)

Finally, the problem of baseline election results also afflicts post facto analyses of district plans. Goedert (2017) has shown that plans considered partisan gerrymanders often produce more competitive elections than those considered "bipartisan". This is the result of the socalled "dummymander", where the majority party in the state legislature enacts plans in which its voters are distributed so thinly across districts that although it might enjoy considerable advantages in theory and the short-term, the minority benefits in the longer term, especially in the aftermath of "wave" elections. Grofman and Brunell (2005) argue this is what happened to the 1990 Democratic "gerrymander" of North Carolina congressional districts. From the perspective of later in the decade, therefore, a plan that originally seemed biased in favor of the state legislative majority party can appear biased toward the opposition. It is not, therefore, what is usually called a partisan gerrymander.

This concern with the choice of baseline elections motivated Stephanopoulos and McGhee's efficiency gap. They claim a principal strength of their method is that it does not use exogenous election results but the outcomes of the actual legislative contests fought using the plan in question. This is not without problems, however. It is difficult to know

\footnotetext{
\({ }^{38}\) This was the method by which the North Carolina Senate drew state legislative maps following the order from the Court in Common Cause. It took five simulated maps and selected between them by lottery.
}
what to do with uncontested races when calculating statewide party vote totals. Moreover, because candidates win their seats with a plurality of the vote, they have no incentive to maximize. This undermines our capacity to understand the true statewide Democratic and Republican votes under a plan.

\section*{v. The Concept of "Community"}

One last point regarding analytical challenges. The plaintiffs in \(N C L C V\) refer repeatedly to the belief that legislators' district plans should have maintained "communities" of Democratic voters and, especially, Black citizens. What precisely constitutes a "community of interest" for the purposes of redistricting has long been disputed. The term is unavoidably vague. Communities are ill-defined and surely many of them overlap or are nested within others. It is therefore impossible to understand whether the plaintiffs' optimized maps are really an improvement in the number of communities maintained, regardless of the central feature of such communities.
VII. A Recent History of North Carolina Party Politics
i. Method

In this final section, I deploy my knowledge of and survey the academic literature on party politics, particularly in North Carolina.
ii. The Changing Geographic Character of North Carolina Democratic and Republican Voters

The two figures below show county returns for the competitive 1992 (left) and 2020 (right) presidential elections in North Carolina. The data are taken from uselectionatlas.org, a highly reputable source of presidential election data. The counties won by the Democratic candidates (Bill Clinton and Joe Biden) are marked in red (unfortunately the site prefers to give the parties the colors opposite to those assigned to them in today's popular culture) and those won by the Republicans (George H.W. Bush and Donald Trump) in blue. Deeper shading denotes a larger margin of victory. Bush beat Clinton in North Carolina in 1992 by 0.8 percentage points (Ross Perot won 13.7 percent of the vote) and Trump beat Biden in 2020 by 1.3 percentage points.


Clinton (red) v. Bush (blue), 1992


Biden (red) v. Trump (blue), 2020

Note the significant differences. Some areas, such as the counties in northeastern North Carolina and the foothills surrounding Charlotte voted for the same party in both elections, but most of southeast North Carolina became Republican. This is also true of a lot of rural counties in the center and far western part of the state. At the same time, urban areas became more Democratic. In 1992, Bush won Forsyth and Mecklenburg counties and narrowly lost Wake. Trump was defeated in all three in 2020, in Mecklenburg and Wake by around 30 percentage points.

The contrasting figures demonstrate a significant change in North Carolina's political geography. Democrats used to do well in rural areas, especially in the eastern part of the state. Republicans were competitive in urban and suburban areas. That is no longer true. The transformation is not the result of redistricting. Neither, clearly, were the significant gains Republicans made in congressional and state legislative seats in North Carolina in the 1990s and first decade of this century.

How does this happen? Much of it is a function of slow social and economic forces that only reveal themselves over several decades or redistricting cycles. Most individuals vote for candidates of the party with which they identify—according to 2020 exit polls around 95 percent of self-proclaimed Democrats and Republicans in North Carolina voted for the presidential candidate of the party they linked themselves to. But it can also be explained by choices that parties and their leaders, candidates, and activists make. North Carolina's population is changing rapidly with large numbers of newcomers entering the state annually, the state grew by about nine percent or 850,000 people between 2010 and 2018. They are ripe for socialization into its politics. Today, North Carolina has about 2.3 million unaffiliated voters (roughly a third of the total) whose allegiances are up for grabs.

The Shor-McCarty (Shor and McCarty 2011) measures of state legislative party ideology cited earlier, moreover, reveal that between 2008 and 2018 the median North Carolina House Democrat moved .215 points to the left and the median Senate Democrat .008 points to the left. At the same time research showed North Carolina public opinion
to be moving in the opposite direction (Berry et al 1998). \({ }^{39}\) Other research suggests Democratic national elites are today to the left of Democratic voters (Furnas and LaPira 2021). Decisions made by the parties' organizational leaders, elected officials, and activists have significantly contributed to these developments.

Candidates are certainly captive to the reputation of the party whose label they must run with on the ballot (Grynaviski 2013). However, it is also true voters are responsive to candidates' positions on particular issues and their skills as campaigners. \({ }^{40}\) They also engage in spatial voting or the exercise of choosing the candidate they feel is closer to them ideologically. \({ }^{41}\) On balance, this extensive research suggests that parties can greatly influence primary outcomes and by nominating candidates suited to their political surroundings can markedly improve their chances of winning in a district (Hassell 2017). Alternatively, party leaders and motivated activists can leave in place internal rules and procedures and go to the courts to move district lines to benefit their candidates so they may continue to select the same individuals to represent their party in general elections.

\section*{VIII. Conclusion}

There are two analytical approaches to the investigation of the phenomenon typically called a "partisan gerrymander". Researchers can examine individual districts or the larger

\footnotetext{
\({ }^{39}\) Updated data can be found at: https://rcfording.com/state-ideology-data/
\({ }^{40}\) This is a huge literature. A good example is Herrnson and Curry (2011).
\({ }^{41}\) This is also a large literature. An influential work is Jessee (2012).
}
district plan. I have chosen the latter. I have done this for two reasons. First, it is more consistent with my expertise. I am not a mathematician or computer scientist like some of the plaintiffs, but I have spent over two decades observing and writing about American and North Carolina politics and have broad and deep understanding of the complex issues and academic literature on state legislatures, elections, and redistricting. Second, the considerable time constraints placed on me prohibits a detailed district-by-district statistical analysis of the congressional, state Senate, and state House plans.

In the first section of my report, I argue that the process used by the North Carolina General Assembly to create and enact the district plans was consistent with the provisions of the Constitution of North Carolina that speak directly to redistricting. The second section covers my evaluation of the plaintiffs' claims that the plans violate political science's understanding of free elections, equal protection, freedom of speech, and freedom of assembly. Next, I explain the difficulty of identifying plans afflicted with a "partisan gerrymander", the problems with the methods used in these types of studies, and the contradictions between various characteristics-namely proportionality and district-level competitiveness of the parties-many would like to see maps exhibit. In the fourth section, I address additional issues with conceptualization and analysis, particularly those of baseline assumptions. I conclude with a brief look at the state political parties and how they enjoy agency in general elections the critics of district plans imply they do not.

The plaintiffs in \(N C L C V\) claim to have "harnessed the power of high-performance computers, and employed cutting-edge computational methods and resources, to draw
alternative maps". \({ }^{42}\) They claim their plans "avoid the partisan gerrymandering and racial vote dilution that mark the Enacted Plans (those approved by the state legislature), while also improving on the Enacted Plans' compliance with the laws and legitimate policies governing redistricting in North Carolina." The plaintiffs state the General Assembly's plans should be rejected because they "cannot withstand the scrutiny of math and science". \({ }^{43}\)

I believe as an expert in the field of political science, the plaintiffs in \(N C L C V\) have much less command of other subjects more central to redistricting. Their approach glosses over the challenges posed by the evaluation of district maps for properties of partisan gerrymandering. There is no clear consensus among political scientists on the meaning of a partisan gerrymander as a political concept. The choice of baselines necessary for this analysis is a contentious exercise. General and voting-age populations live in such ways as to give states features that contribute to what many might call a natural gerrymander. The preferences of individual voters are often undiscernible, but when they do present themselves they can be fluid and vary temporally and across offices. Candidates and political parties are not helpless in structuring voters' behavior. We understand a partisan plan is measured along several dimensions, but we cannot fully agree on the importance to assign to each one and therefore what is the best way to assess a district map. We also know that efforts to maximize along different dimensions can sometimes be complementary and at other times incompatible.

More importantly, I believe based upon my analysis of North Carolina's political history, the state's redistricting tradition compels the enacted plans. The question is not whether the

\footnotetext{
\({ }^{42}\) Verified complaint in NCLCV v. Hall, p. 62.
\({ }^{43}\) Verified complaint in NCLCV v. Hall, p. 4.
}
plaintiffs' plans are in some way superior. It is whether the enacted plans are lawful. The process the North Carolina General Assembly used was consistent with the framework of redistricting in the state, a bar that is low given the uniquely considerable latitude the state's statutes and constitution give the legislature to consider and approve maps. Political concepts cited by the plaintiffs have little-to-nothing to do with common understandings of the practice of redistricting as it is done in North Carolina or the United States. Those who want different redistricting outcomes should work through the political process to obtain them. The people can elect different legislators or alter other critical features of our politics that make the results of legislative elections so distasteful to them. The people can change the law to provide us with a new method of drawing single-member districts such as the independent non-partisan redistricting committee of House Bill 69 that, in 2019, gathered 66 co-sponsors from both parties. Or, alternatively, the people can enact a thorough overhaul of their electoral system by amending their constitution. For the courts to make such a change is inconsistent with the principle of separation of powers or the manner in which the state's constitution has historically been applied.
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APPENDIX A

\section*{ANDREW JOHN TAYLOR}

Professor
North Carolina State University
Department of Political Science
School of Public and International Affairs
Box 8102
Raleigh, NC 27695-8102
Web: https://sites.google.com/ncsu.edu/taylor/

Phone: (919) 515-8618
Fax: (919) 515-7333
E-mail: ataylor@ncsu.edu

\section*{Professional Experience}

Professor of Political Science, North Carolina State University, 2007-Present
Chair, Department of Political Science, North Carolina State University, 2006-10
Associate Professor of Political Science, North Carolina State University, 2001-7
Assistant Professor of Political Science, North Carolina State University, 1995-2001
Adjunct Instructor of Political Science, University of Connecticut at Hartford, 1991-5

\section*{Education}

Ph.D. Political Science, University of Connecticut, 1995.
M.A. Government, Lehigh University, Bethlehem, Pennsylvania, 1990.
B.A. American Studies (Politics and Government), University of Kent at Canterbury, United Kingdom, 1988.

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\section*{Other Academic Publications:}
"The 2020 Elections in North Carolina", Political Economy in the Carolinas, forthcoming. "The Expert in American Life", National Affairs, (Fall 2021, No. 49), 141-55. "Reforming the Appropriations Process", National Affairs (Spring 2019, No. 39), 33-49.
"How Far Is Too Far? Gender, Emotional Capital and Children's Public School Assignments", Socius, 2 (2016) (with Toby L. Parcel and Joshua A. Hendrix).
"The Challenge of Diverse Public Schools," Contexts, 15 (Winter 2016): 42-47 (with Toby L. Parcel and Joshua A. Hendrix).
"Power Divisions in Governments," in Frank N. Magill (ed.), Survey of Social Science: Government and Politics Series (Pasadena CA: Salem Press, 1995), 1578-83.
"Teaching Politics Panoramically: American Government and the Case Method," PS: Political Science and Politics, 27 (September 1994): 535-7.
"A Proper British Revolution? How the Public Views Constitutional Reform," The Public
Perspective, July/August 1994, 31-4. (with W. Wayne Shannon).
Conference Papers
American Political Science Association, 2021, 2018, 2017, 2015, 2014, 2013, 2010, 2006, 2005, 2004, 2003, 2002, 2001, 1999, 1998, 1997, 1996, 1994.

Midwest Political Science Association, 2021, 2018, 2017, 2015, 2013, 2012, 2011, 2010, 2008, 2007, 2006, 2005, 2003, 2002, 2001, 1996, 1994, 1992.

Southern Political Science Association, 2021, 2020, 2019, 2017, 2016, 2001, 1998, 1997.
Western Political Science Association, 2019.
Citadel Symposium on Southern Politics, 2020.
Northeastern Political Science Association, 1992, 1991.
New England Political Science Association, 1992.
North Carolina Political Science Association, 2003, 1999, 1996.
World Association for Public Opinion Research, 1994.

Selected Major Grants and Other Revenue Generated (Extramural and NCSU Intramural)
John William Pope Foundation and Charles G. Koch Charitable Foundation for, "The Free and Open Societies Project" - \$327,250 total: 2022, (\$73,000), 2021 ( \(\$ 98,750\) ), \(2020(\$ 155,500)\).
U.S. Embassy, London, "Build Your Own Campaign" program for British high school students, 2016-\$56,138.

John William Pope Foundation for, "The Economic, Legal, and Political Foundations of Free Societies" (with Steve Margolis) - \(\$ 1.638\) million total: 2014, (\$426,000 overall, \$268,000 for teaching and research in political science); 2009 ( \(\$ 700,000\) overall, \(\$ 274,200\) for political science), 2004 ( \(\$ 511,500\) overall, \(\$ 214,000\) for political science).

Fidelity Investments, support for NCPSA meeting, 2014 - \(\$ 5,000\) (in kind).
Dail Endowment in Political Science, 2013-\$145,800.
NCSU School of Public and International Affairs Summer Grant - \$10,000 total: \(2013(\$ 5,000)\), 2012 (\$5,000).

Charles G. Koch Charitable Foundation, "Programs in the Classical Liberal Tradition," and other projects (with Steve Margolis before 2017) - \$219,500 total: 2018 ( \(\$ 63,000\) ); 2017 ( \(\$ 74,200\) ); 2015 ( \(\$ 23,300\) ); \(2014(\$ 19,000) ; 2013(\$ 18,000), 2012(\$ 9,000), 2011(\$ 9,000), 2010(\$ 4,000)\).

NCSU Distance Education and Learning Technology Applications IDEA Grant, \$10,500 total 2009 (\$8,000), \(2003(\$ 2,500)\).
U.S. Department of State for, "U.S. Elections Program for Brazilian Fulbrighters" (with Michael Bustle, David McNeill, and Richard Kearney), 2008-\$75,000.

Dirksen Congressional Center Congressional Research Award - \$3,663 total: 2003 (\$3,163), 1994 (\$500).

NCSU University and College of Humanities and Social Sciences (CHASS) Summer Grants \$17,000 total: 2003 (\$5,000), \(1999(\$ 4,000), 1997(\$ 4,000), 1996(\$ 4,000)\).

\section*{Invited Academic Talks}

University of North Carolina at Chapel Hill, 3/03.
East Carolina University, 10/04.
University of North Carolina at Greensboro, 9/09.
University of Surrey (UK), 5/11.
NC State College of Education, 2/13, 3/15.
Shanghai Jiao Tong University (China), 4/16.
Wake Forest University, 10/16.
National Affairs (Capitol Hill, Washington DC), 6/19.

\section*{Principal Administrative and Leadership Appointments}

Director, Free and Open Societies Project, 2019-Present
- Approx. \(\$ 100 \mathrm{k}\) annual budget
- Speaker series, student group, student seminars, free speech conference, research assistants, undergrad research grants, internship support, social media presence

Co-Director, The Economic, Legal and Political Foundations of Free Societies program, 2004-2018; Director 2018-2019
- Approx. \(\$ 85 \mathrm{k}\) annual budget
- Speaker series, student group, student seminars, faculty and grad students research support, undergrad research grants, internship support

Chair, Department of Political Science, 2006-10.
- Instrumental in establishment of School of Public and International Affairs
- Managed \(\$ 2\) million budget
- Approx. 600 majors
- Quadrupled the number of women in tenure-track positions
- Demonstrable improvement in majors' experiences according to exit surveys
- Established formal and transparent rules on program assessment, faculty annual evaluation processes, teaching loads, promotion and tenure guidelines, adjunct and summer school pay

Director, M.A. Program in Political Science, 1997-99; 2000-5

\section*{Professional Honors}

NCSU CHASS's Outstanding Research Award, 2013-14.
Nominated for NCSU Alumni Association Outstanding Research Award, 2013-14.
President of North Carolina Political Science Association, 2012-13.
John W. Pope Center for Higher Education Policy's "Spirit of Free Inquiry" Award (for course,
Public Choice and Political Institutions), 2010.
NCSU Libraries "Fantastic Faculty" honoree, 2008-9.
NCSU Outstanding Extension Service Award, 1999-2000, 2003-4.
NCSU CHASS's Lonnie and Carol Poole Award for Excellence in Teaching, 1998-9.
Nominated for NCSU CHASS's Outstanding Junior Faculty Award, 1997-8, 1998-9.
Oral Parks Award for best Faculty Paper presented at the 1996 North Carolina Political Science
Association meeting, 1997.
Phi Kappa Phi 1995.
Phi Beta Kappa 1995.
University of Connecticut Excellence in Teaching Award, 1993.

\section*{Teaching and Mentoring}

North Carolina State University, Fall 1995-Present.
Courses taught:
- Introduction to American Government (Undergraduate, honors, distance ed., UNC Global Blended Learning Program in China)
- The Presidency and Congress (Undergraduate, distance ed.)
- American Parties and Interest Groups (Undergraduate)
- Public Policy Process (Doctoral program)
- Seminar in American Politics (Undergraduate and graduate)
- Legislative Process (Undergraduate)
- Workshop in Politics (Undergraduate)
- Public Choice and Political Institutions (Undergraduate)
- The Classical Liberal Tradition (Undergraduate and honors)
- The Conservative Tradition in the West (Undergraduate and honors)
- Election 2020 (Honors)
- Ph.D. dissertation committees (Public Administration \& Economics at NCSU, Political Science at UNC): 9 (including one chair)
- Master's theses supervised: 5
- Undergraduate honors thesis supervised: 12 (including runner-up Pi Sigma Alpha national competition for best Honor's thesis)
- Park Scholars Mentor: 2010-16
- Taught distance education courses since 1997-8, pioneer in the development of such courses at NC State

University of Connecticut, Spring 1991-Spring 1995
Courses taught (in addition to those taught at N.C. State):
- Constitutional Interpretation
- Introduction to Comparative Politics

\section*{Fellowships}

American Political Science Association Congressional Fellow (Steiger Fellow), 1999-2000:
- Steiger fellow, named for Rep. Bill Steiger (R-WI), who served 1966-78
- given to fellow best equipped to promote the interests of Congress as an institution and who best represents Steiger's values; a man of "exceptional talent, drive, and integrity"

University of Connecticut Pre-Doctoral Fellowships, 1990-1, 1991-2, 1992-3 (\$6,000 each).

\section*{Select University and Professional Service}

Heterodox Academy Political Science Community Co-Leader, 2021-Present
School of Public and International Affairs, Executive Committee, 2021-Present
Campus Conversations Project, 2021-Present
Chair, Presidential Politics Division, Southern Political Science Association, 2022, 2001
Secretary, Classical Liberals of the Carolinas, 2019-Present
Apex High School Academy of Information Technology, Board Member, 2018-Present
Institute for Humane Studies (IHS), Graduate Student \& Early Career Mentoring, 2017-Present.
NCSU Faculty Advisor, Leaders for Political Dialogue, 2017-Present.
Senior Editor, Political Economy of the Carolinas, 2017-Present.
NCSU School of Public and International Affairs Task Force Chair, Methods 2015-16; F\&A Distribution, 2015-16.

NCSU Honors Advisory Board \& Admissions Committee, 2014-2018.
Treasurer, North Carolina Political Science Association, 2014-Present.
Program Chair, North Carolina Political Science Association Meeting, 2014.
Co-Chair NCSU CHASS Dean's "Heart of the Matter" Initiative, 2013-15.
NCSU Reappointment, Promotion, and Tenure Committee, 2012-14.
Chair NCSU CHASS Reappointment, Promotion, and Tenure Committee, 2011-12.
NCSU CHASS Associate Director of Development Search Committee, 2011.
American Political Science Association's Albert Dissertation Prize Committee, 2009-10.
The Foundation for Ethics in Public Service, Advisory Board, 2009-12.
NCSU CHASS Committee on Extension, Engagement, and Economic Development, 2008-12.
Coordinator, RTI-NCSU CHASS initiative, 2006-12.
American Political Science Association's Legislative Studies Section Fenno Book Prize
Committee, 2015-16, 2005-6.
NCSU Department of Political Science and Public Administration/School of Public and
International Affairs Dean's Head/Director Search Committee, 1997-8, 2005-6, 2011-12.
NCSU Department of Political Science and Public Administration Scholars, Honors, and Study
Abroad Committee, 2004-6.
NCSU CHASS Research Committee, 2004-7.
NCSU Washington Internship Committee, 2004-7.
NCSU CHASS Curriculum Committee, 2002-4.
Faculty adviser, Truman Scholars Program, NCSU, 2001-4.
NCSU Courses and Curricula Committee, 2002-4.
NCSU Department of Political Science and Public Administration "Structural Issues" Committee (recommended the creation of School of Public and International Affairs), 2000-2.
NCSU CHASS Graduate Studies Committee, Chair, 1998-9.
NCSU Department of Political Science and Public Administration Ph.D. Steering Committee, 1998-2001.
Faculty advisor, NCSU College Republicans 1996-9, 2000-Present; North Carolina Student Legislature, 2005-2012; Young Americans for Liberty 2016-18, 2020-Present; College Libertarians
2018-Present; Society for Politics, Economics, and the Law (SPEL), 2019-Present; Young
Americans for Freedom, 2020-Present; The FreePack, 2021-Present.
NCSU Department of Political Science and Public Administration/School of Public and International Affairs Faculty Search Committee, 1995-6, 1998-9, 2000-1, 2001-2 (chair), 2007-8 (chair), 2011-12, 2013-14 (chair).

\section*{Book Reviews}

The Polarizers: Postwar Architects of our Partisan Era, by Sam Rosenfeld, Party Politics, 26 (2020): 264-5.

The Coddling of the American Mind: How Good Intentions and Bad Ideas are Setting Up a Generation for Failure, by Greg Lukianoff and Jonathan Haidt, Political Economy in the Carolinas, 2 (2019): 118-20.
Politics Over Process: Partisan Conflict and Post-Passage Processes in the U.S. Congress, by Hong Min Park, Steven S. Smith, and Ryan J. Vander Wielen, Congress and the Presidency, 46 (2, 2019): 344-45.

Defying the Odds: The 2016 Elections and American Politics, by James W. Ceaser, Andrew E. Busch, and John J. Pitney, Jr., American Review of Politics, 36 (2, 2018): 109-10.

The Rise and Fall of the Voting Rights Act, by Charles S. Bullock III, Ronald Keith Gaddie, and Justin J. Wert, The North Carolina Historical Review, 84 (January 2017): 120-1.
Legislating in the Dark: Information and Power in the House of Representatives, by James M. Curry, Congress and the Presidency 43 (3, 2016): 401-3.

The Senate Syndrome: The Evolution of Procedural Warfare in the Modern U.S. Senate, by Steven S. Smith, Perspectives on Politics, 13 (December 2015): 1168-9.

Seeking a New Majority: The Republican Party and American Politics, 1960-1980, edited by Robert Mason and Iwan Morgan, Party Politics, 21 (May 2015): 494-5.

The Challenge of Congressional Representation, by Richard F. Fenno, Perspectives on Politics 12 (June 2014): 490-1.

The Tea Party: Three Principles, by Elizabeth Price Foley, American Review of Politics 34 (Spring and Summer 2013): 151-3.

Painting Dixie Red: Where, When, Why and How the South Became Republican, ed. by Glenn Feldman, The North Carolina Historical Review, 79 (October 2012): 457-8.
The Roots of Modern Conservatism: Dewey, Taft, and the Battle for the Soul of the Republican Party, by Michael Bowen, The North Carolina Historical Review, 79 (April 2012): 231-2.

On Thinking Institutionally, by Hugh Heclo, Modern Age, 52 (Spring 2010): 158-60.
The New Politics of North Carolina, edited by Christopher A. Cooper and H. Gibbs Knotts, The North Carolina Historical Review, 76 (January 2009): 108.

The Paradox of Tar Heel Politics: The Personalities, Elections, and Events that Shaped Modern North Carolina, by Rob Christensen, The North Carolina Historical Review, 75 (October 2008): 451-2.

The Right Talk: How Conservatives Transformed the Great Society into the Economic Society, by Mark A. Smith, Perspectives on Politics, 6 (September 2008): 611-12.
Politics and Religion in the White South, ed. by Glenn Feldman, The North Carolina Historical Review, 73 (April 2006): 288-9.

Vicious Cycle: Presidential Decision Making in the American Political Economy, by Constantine J. Spiliotes, The Independent Review, 8 (Summer 2003): 135-8.

The Political Party Matrix: The Persistence of Organization, by J.P. Monroe, American Political Science Review 96 (June 2002): 430.
Party Decline in America: Policy, Politics, and the Fiscal State, by John J. Coleman, Congress and the Presidency 24 (Spring 1997): 97-9.

Cultivating Congress: Constituents, Issues, and Interests in Agricultural Policymaking, by William P. Browne, Journal of Politics 58 (November 1996): 1222-4.

\section*{Other Professional Activities}

Media Commentary:
Hundreds of appearances on television and radio; source for and quoted in hundreds of print stories. Principally: The News and Observer (Raleigh, NC), WRAL-5 (Raleigh, NC), WTVD-11 (Raleigh, NC), WPTF-680 (Raleigh, NC), WUNC-TV (RTP, NC), Public Radio WUNC (Chapel Hill, NC), News Channel 14 North Carolina, Curtis Media Group radio stations (particularly Carolina Newsmakers and The Commentators) Carolina Journal, NC Spin.
Other Appearances: The Hartford Courant, The Washington Times, WLFL-22 (Raleigh, NC), Australian Broadcasting Corp., BBC Radio Humberside, Knight-Ridder Newspapers, The Fayetteville Observer-Times, Apex Herald, WTRG 100.7 (Raleigh, NC), The Citizen-Times (Asheville, NC), The Winston-Salem Journal, Associated Press, Durham Herald-Sun, Laurinburg (NC) Exchange, Triangle Tribune (Durham, NC), McDowell News (Marion, NC), Hendersonville (NC) Times-News, Transylvania Times (Brevard, NC), Kiplinger Letter (Washington, D.C.), Charlotte Observer, Fox News Channel (national cable news), Greensboro (NC) News and Record, Cox Newspapers, WQDR 94.7 (Raleigh, NC), WXIT-1200 (Boone, NC), Wilmington (NC) StarNews, Congressional Quarterly, Reuters, Christian Science Monitor, Boston Globe, Rocky Mount (NC) Telegram, National Public Radio ("All Things Considered", "Marketplace", "1A"), NBC-6 (Charlotte, NC), The Los Angeles Times, North Carolina Political Review, The New York Times, Dallas Morning News, Burlington (NC) Times-News, National Journal's Congress Daily/A.M., The Cook Report, Open/net (NC state government tv show), Dagens Nyheter (Swedish newspaper), Politics in America, Elizabeth City (NC) Daily Advance, Freedom Newspapers, Greenville (NC) Daily Reflector (Reflector.com), Triangle Business Journal, Eastern Wake News, Vermont Public Radio, Daily Herald (Roanoke Rapids, NC), High Point (NC) Enterprise, Wall Street Journal, Pittsburgh Post-Gazette, NewsTalk 106 (Dublin, Ireland), The Sunday Times (of London), Nippon tv. (Japan), State Government Radio (NC), Fairchild Publications, Scripps-Howard, ABCNews.com, Washington Post, Newhouse Newspapers, Nubian Message, CNBC-Asia, Carolina Journal Radio, The Pamlico (NC) News, New York Daily News, Public Radio WFAE (Charlotte), Atlanta JournalConstitution, Salon.com, Chattanooga Times Free Press, WTN 99.7 (Nashville), US News and World Report, News Radio 1020 KDKA (Pittsburgh), Indianapolis Star, Virginia Pilot, Bloomberg News, National Journal, WBT 1110 (Charlotte news), Daily Dispatch (Henderson, NC), Time Magazine, Correio Brazilienese (Brazilian newspaper), C-SPAN, News Talk WDBO-580 (Orlando), Public Radio WHYY (Philadelphia), CNNMoney.com, O Estado de Sao Paulo (Brazilian newspaper), VoterRadio.com, Frankfurter Allgemeine Zeitung (German newspaper), Charlotte Magazine, Delaware Talk Radio, The Guardian (U.K. paper), The Weekly Standard, Waterbury (CT) Republican-American, USA Today, EFE (Spanish language news agency), BBC Radio 4, The Scotsman (Scottish national paper), Tax News and Analysis, Triangle Tribune, San Francisco Chronicle, Agence France Press, Moneynews.com, Arab Times (Kuwaiti English newspaper), The Gulf Times (Qatari English newspaper), The Khaleej Times (English newspaper out of UAE), The County Compass (Bayboro, NC), CashWorks Productions (documentary, "Obama in NC"), Pravda (Slovakian newspaper), WXII-12 (Winston-Salem), Voice America Talk Radio, The Independent Weekly, Politico, WRAL-FM 101.5 (Raleigh), The Daily Beast, Lee County (NC) Star-Tribune, Carolina Journalism Network, Excelsior (Mexican newspaper), Globe and Mail (Canada), WERCAM 960 (Birmingham, AL), WRDU 106.1 (Raleigh, NC), Wilson (NC) Times, Christian Post, Investor Place media, World Magazine, BBC.com, Cary News, The State (South Carolina), Clayton (NC) News-Star, Governing Magazine, WRAL.com, Raleigh Public Record, Business Journal (Charlotte), Walter Magazine, Wake County Times, Roll Call, Duplin (NC) Times, CNN, National Review Online, Creative Loafing (Charlotte), WSJS-600 (Greensboro, NC), East Wake News, Charlotte Business Journal, Jewish Telegraphic Agency, Brookings Institution, msnbc.com,

\section*{Other Professional Activities (cont.) \\ Media Commentary (cont.):}

Irish Times, NC SPIN, GreenWire, International Business Times, The Hill, FoxNews.com, WCHL (Chapel Hill), Daily Signal, CNNPolitics.com, FoxNewsLatino.com, CQ Weekly, The American Prospect, Talking Points Memo, Townhall.com, Rhino Times (Greensboro, NC), Ozy.com, Philanthropy Journal, EnergyWire, Garner-Cleveland Record, Politico Magazine, Freedom Action Network Radio, Domecast, Route Fifty, Chapel Hill News, Raleigh Magazine, Slate, North State Journal, NC Capital Connections, Mother Jones, Sierra Magazine, Alhurra, tvnewscheck.com, Market Watch, The Atlantic, Inside Higher Ed, Modern Healthcare, BBC North America, CBC French Language Service, Inside Climate News, WLOS-ABC 13 (Asheville), HBO, Piedmont Sundial, Asheboro Courier-Tribune, School Reform News, Robesonian, Sanford Herald, NBCNews.com, Clarin (Argentine newspaper), NC Policy Watch, Martin Center for Academic Renewal, Allegheny News, Education Week, WWNC (Asheville, NC), Sinclair Broadcast Group, The Hill, Pew-Stateline, Ifobae (Argentinian news website), WGHP Fox 8 (Greensboro, NC), E\&E News, States Newsroom.com, New Statesman (UK), CNBC.com, YLE (Finnish tv), France 24, Americans for Limited Government, WNCT (Greenville, NC).

\section*{Major Contributions:}
- Called "the leading talking head of Tar Heel politics," News and Observer, 11/05.
- Stories on which I have provided extensive analysis: presidential, congressional, gubernatorial, and local elections; presidential impeachments; UK politics including elections and Brexit; North Carolina politics; policy issues including education, government spending, taxes, health care, agriculture etc.
- Newspaper op-ed topics (mainly for News and Observer and prior to 2010) include: establishment of Connecticut income tax, Republican party politics, the flat tax, third party politics, North Carolina tobacco politics, reform of North Carolina legislature, John Edwards as possible Gore vice president, effect of 2000 election on voting procedures, ability of George W. Bush to govern, proposals for political reform in North Carolina, U.S. and war on terrorism, 2002 North Carolina U.S. Senate race, John Edwards 2004 presidential campaign, reform of NC House, 2006 election, 2008 North Carolina presidential primary, earmarks in Congress, land-use law in North Carolina.
- Column in Carolina Journal 2009-13, 2015-21 (monthly), 2021-present (periodic) ( 40,000 print subscribers, 40,000 unique monthly visitors to website, picked up by newspapers all over North Carolina with est. 300,000 circulation), topics include: NC and the stimulus, financing of elections, legislative term limits, merit pay for teachers, institutional thinking, tobacco industry, political leadership in NC, health care reform, American and French economic models, the role of a public university, 2010 elections, Newt Gingrich, the filibuster, 2010 NC Senate race, Wake County school board politics, 2012 primaries, "bailout fatigue", Obama performance, donors to conservative causes, education reform, NC congressional delegation, \(112^{\text {th }}\) Congress, conservatism today, conservatives and foreign policy, municipal government, election administration, Anglo-American relationship, performance of NC General Assembly, Washington debt deal, income and voting, 2012 presidential race, ethics in politics, Romney presidential candidacy, NC same-sex marriage amendment, juridical democracy, runoff elections, Romney's choice of Ryan, errors in conservatives' thinking, 2012 election postmortem, gender differences in politics, UNC system, the Tea Party, unemployment in NC, Margaret Thatcher, Republican governance in NC, polarization in NC, voter identification, classical republicanism,

\section*{Other Professional Activities (cont.) \\ Media Commentary (cont.):}

Major contributions (cont.)
- higher education funding, William F. Buckley Jr., party competition, diversity on campus, growth and equality, Trump candidacy, ideology in 2016, Brexit referendum, Republican strategy in 2016, China's challenge, conservative values, science politics, Democrats' "electoral lock", Obama and race, Trump election win, McCrory election loss, advocacy and force in politics, fake news, border-adjustment tax, public's sour mood, Millennials and politics, technocracy, 2018 midterm forecast, state Republicans' economic performance, the party system, political language, viewpoint diversity, Trump and Britain, partisan gerrymander, NRA in politics, Facebook, citizenship and census, NC teacher rally, counties in NC politics, 2018 referendums, Steyer and Trump, political nostalgia, NC's important members of Congress, 2018 midterm analysis, ballot harvesting, Trump's deals, direct democracy, federal deficit, slavery and the Electoral College, Corbynism, 2019 Supreme Court term, 2020 Democratic presidential contest, NC redistricting case, politics of 1970s, impeachment, partisan foreign policy, NC budget stalemate, 2020 NC Senate race, coronavirus and the Establishment, coronavirus in NC, slavery reparations, 25 years of NC politics, 2020 House elections in NC, Fed and inflation, 2020 election, Electoral College reform, Democrats' advantages, NC school districts, Biden's economics, UNC and Hannah-Jones, felon voting rights.

\section*{Periodic Reviews:}

Policy Studies Journal, Southeastern Political Review, St Martin's Press, Legislative Studies Quarterly, American Politics Quarterly/Research, Worth Publishers, Journal of Politics, American Journal of Political Science, Social Science Quarterly, Houghton-Mifflin, Political Studies, Political Research Quarterly, The Independent Review, National Science Foundation, American Political Science Review, Praeger, Political Behavior, Compass Point Books, Journal of Agricultural and Resource Economics, Congress and the Presidency, Public Choice, Congressional Quarterly Press, University of Michigan Press, Politics (U.K.), Journal of Public Administration and Policy Research, State Politics and Policy Quarterly, Oxford University Press, John F. Blair Publishing, Palgrave MacMillan, Journal of Political Marketing, W.W. Norton, Government and Opposition, PS: Political Science and Politics, Emerald Press, American Behavioral Scientist.

\section*{Testimony and Consultancy:}
- NC House Committee on Elections
- Coalition to End Gerrymandering
- CSI v. Moore

\section*{Tenure and Promotion Reviews:}

University of Minnesota-Morris, UNC-Greensboro, Clark University, Lehigh University, Clemson University, University of Arkansas, University of Houston-Victoria, UNC-Charlotte.

\section*{Group Membership and Professional Activism:}
- Foundation for Individual Rights in Education (FIRE) - instrumental in securing NC State "Green Light" status
- Heterodox Academy

\section*{Periodic Blog Entries:}
- LSE American Politics and Policy Blog, IHS Learn Liberty Blog, LegBranch, The James G. Martin Center for Academic Renewal, Brookings Institution's FixGov Blog

\section*{Public Addresses:}
- Triangle International Visitor's Council/International Focus (1996-2015), numerous and regular talks on American politics given to academics, journalists, practitioners, and politicians from all over the world.
- NCSU Presbyterian Campus Ministry Peace Lunch Forum, 9/95, 11/98, 11/00, 11/04, 2/06, 3/08, 11/08, 11/16.
- CHASS Dean's Advisory Board, 4/96, 11/98.
- B'nai Brith, 10/96, 12/98, 3/04.
- Area elementary schools, \(11 / 96,11 / 00,10 / 09,6 / 11\).
- Beth Myer Jewish Women's Group, 11/96.
- Area Rotary clubs, \(11 / 96,3 / 99,5 / 99,6 / 08 \times 2,1 / 10,2 / 16,9 / 16,7 / 18,3 / 19\).
- NCSU Alumni Association, 10/96, 11/96, 1/99, 4/99, 9/00, 4/01, 3/04, 10/08, 5/09, 8/12, 9/16.
- NCSU Osher Lifelong Learning Program, 10/96, 10/98. 10/00, 1/08, 9/08, 10/19.
- International Visitor's Council moderator in debate between British M.P.s and North Carolina state legislators, 9/98.
- Area high schools, \(1 / 98,3 / 99,9 / 00,9 / 02,10 / 02,2 / 03,09 / 04,12 / 04,2 / 16,10 / 16\), \(1 / 18,2 / 18,9 / 18,11 / 18,1 / 19,3 / 19,5 / 19 \times 2,12 / 19,10 / 20,11 / 21\).
- Wake County Men's Democratic Club, 11/98.
- Wake County Young Republicans, 3/99, 9/99.
- Wake County National Association of Retired Federal Employees, 4/99, 9/04, 9/14.
- John Locke Foundation, 6/99, 10/05, 1/08, 10/08, 6/09, 1/13, 7/15, 2/18, 2/19, 3/21, 10/21, 11/21.
- Hugh O'Brian Youth Leadership Seminar, 6/99, 6/01, 6/02, 6/09.
- Russian Leadership Program, 9/99, 5/02.
- Research Triangle English Speaking Union, 9/99.
- Canadian Parliamentary Interns, Washington, D.C., 4/00.
- Raleigh Jaycees Political Forum, 10/00.
- St. Augustine's College, 10/00.
- Area residents' association, 10/00.
- NCSU honors/scholars students/Caldwell Fellows/student leadership, 10/00, 4/02, \(1 / 04,2 / 04,2 / 06\) (D.C. trip), 10/08, 10/10, 10/12, 3/15, 9/15, 3/16, 10/16, 11/16, 11/18, 9/19, 10/20.
- Wake County Republican Men's Club, 11/00, 5/06, 1/07.
- Wake County Republican Women's Club, 11/00, 3/02, 9/05, 10/15, 10/19.
- Raleigh Chamber of Commerce, 11/00, 11/08, 3/12, 4/13.
- NCSU retired faculty, \(1 / 01,3 / 04,11 / 08,2 / 16\).
- Area Kiwanis clubs, 3/01, 12/06, 2/17, 11/21.
- NCSU Graduate School Board of Directors, 3/01.
- Republican Club of Fearrington Village, 10/01.
- North Carolina Youth Legislative Assembly, 3/02.
- Westinghouse Retirement Group, 8/02, 2/03.
- NCSU CHASS-sponsored public event, 9/02, 10/08, 11/16, 9/19.
- North Carolina World Trade Association, 10/02.
- European Marshall Memorial Fellowship Program, 10/02.
- Area Optimist club, 1/03.

\section*{Other Professional Activities (cont.)}

Public Addresses (cont.):
- Wake Forest Daughters of the American Revolution, 4/03.
- Adventures in Learning, 5/03.
- Wake County Citizens for Effective Government, 2/04.
- Moderator, North Carolina Republican Party gubernatorial debate, 4/04, 11/07.
- Group of Fifty, 11/04.
- NCSU Society for Politics, Economics and the Law, 11/04, 10/05, 2/08, 9/11, \(9 / 12,3 / 13,4 / 14,9 / 14,9 / 15,9 / 16,10 / 18,9 / 20\).
- NC Leadership Forum, 11/05, 11/08, 11/09, 11/18, 11/19, 11/20.
- Quail Ridge Books, 1/06, 4/15.
- North Carolina Young Lobbyists Association, 5/06, 1/07.
- Raleigh Public Relations Society, 5/06.
- Western Wake Republican Club, 6/06, 1/08, 11/08, 10/10, 5/12, 10/14, 4/16, 4/18, 11/20.
- Young Presidents' Organization, 10/06, 11/19, 12/19.
- Adventures in Ideas, UNC-CH, 2/07.
- North Carolina Association of Electric Cooperatives, 3/07, 9/12.
- Raleigh Exchange Club, 9/07.
- North Carolina Aggregates Association, 6/08.
- U.S. Small Business Administration, 9/08.
- North Carolina Professional Lobbyists Association, 10/08, 11/14, 10/17, 10/19.
- NCSU CHASS "Back to School" Day, 10/08.
- Canadian Consulate, 10/08, 8/09, 2/10.
- NCSU's Friends of the Libraries, 10/08.
- Fulbright Visitors, 10/08.
- NC FREE, 10/08, 6/21.
- UNC Leadership Seminar for State Legislators, 11/08.
- NCSU Harrelson Lecture, 1/09.
- North Carolina Bar Association, 2/09.
- Garner First Presbyterian, 3/09, 3/11.
- NCSU University Club, 3/09.
- Foundation for Ethics in Public Service, 11/09.
- North Carolina Retail Merchants' Association, 4/10.
- Civitas Institute (now merged with Locke Foundation), 6/10, 12/18, 6/20.
- NCSU Office of International Affairs, 7/10.
- UNC System Council on Federal Relations, 8/10, 9/12.
- North Carolina Association of County Commissioners, 8/10, 11/10, 5/14.
- Wake Tech Community College Retirees, 10/10.
- North Carolina Free Enterprise Foundation, 10/10, 10/14, 4/16, 9/16.
- North Carolina Institute for Constitutional Law, 11/10.
- NCSU Development Coalition, 1/11, 10/16.
- Carolina Country Club History Group, \(3 / 11,10 / 11,1 / 12,9 / 12,10 / 12,11 / 12,1 / 14\), \(2 / 14,3 / 14,10 / 14,11 / 14,9 / 15,2 / 16,3 / 16,11 / 16,3 / 17,10 / 17,2 / 18,9 / 18,11 / 18,3 / 19\), \(11 / 19,1 / 20,2 / 20,9 / 21\).

\section*{Other Professional Activities (cont.)}

Public Addresses (cont.):
- Morgan Stanley, 6/11, 10/16.
- NCSU Constitution Day, 10/11.
- Carolina Country Club, 1/12, 8/16.
- Cisco Systems, 3/12.
- National Council for International Visitors, 8/12.
- North Carolina Housing Finance Agency, 8/12.
- National Guard, 9/12.
- North Carolina Museum of History, 10/12, 8/13.
- North Carolina School of Science and Mathematics, 10/12.
- Japanese Embassy, 10/12, 2/20.
- NCSU Lawyers' Association, 11/12.
- AARP, 11/12.
- Bailey and Dixon LLP Election Conference, 10/13.
- UNC Law School, 9/14.
- North Carolina Community College Conference, 10/14.
- International Center for Journalists, 10/14.
- Poole College of Management, 11/14, 12/16.
- NC Beverage Association, 5/15.
- Martin Center (previously Pope Center) for Academic Renewal, 7/15, 10/15, 6/16, 7/17, 6/18, 9/18, 7/19, 8/20, 3/21, 8/21.
- NCSU Holtzman Forum, 11/15.
- Central Carolina Community College, 11/15.
- Great Decisions, Foreign Policy Association, 2/16.
- NCSU Cultural Exchange Network, 3/16.
- VFW-NCSU Leadership in the Public Sector panel, 4/16.
- Durham Central Park Cohousing Community, 5/16.
- Golden Corral group, 9/16.
- Singaporean Embassy, 9/16.
- American Forest and Paper Association, 11/16.
- NC League of Municipalities Board, 12/16.
- North Carolina Public Health Association, 5/17.
- NCSU Department of Social Work Spring Summit, 3/18.
- National Speech and Debate Association, 6/18, 5/19.
- Carolina Preserve, 2/19.
- National Affairs \& R Street Institute, 6/19.
- Issues Confronting Our Nation, 10/19.
- British Embassy, 11/19.
- British American Business Council, 6/20.
- Hindu Society of North Carolina, Seniors' Club, 9/20.
- UK Political Tours, 10/20.
- Life Plan Group, 11/20.
- Foundation for Economic Education, 4/21.
- Carolina Meadows, 4/21.
- Sigma Chi NC STEM Fellowship, 7/21.
- Ex. 9582 -

\section*{Other Professional Activities (cont.)}

Public Addresses (cont.):
- Citizen Redistricting North Carolina, 10/21.
- Meridian International Center, 12/21.

STATE OF NORTH CAROLINA
COUNTY OF WAKE

IN THE GENERAL COURT OF JUSTICE SUPERIOR COURT DIVISION

21 CVS 015426
21 CVS 500085

NORTH CAROLINA LEAGUE OF CONSERVATION VOTERS, et al.,

Plaintiffs,
vs.
REPRESENTATIVE DESTIN HALL, in his official capacity as Chair of the House Standing Committee on Redistricting, et al.,

Defendants.
EXPERT REPORT OF DR. JEFFREY B. LEWIS

REBECCA HARPER, et al.,
Plaintiffs,
vs.
REPRESENTATIVE DESTIN HALL, in his official capacity as Chair of the House Standing Committee on Redistricting, et al., Defendants.

Pursuant to the North Carolina Rules of Civil Procedure and the Case Management Orders of the Court in the above-captioned matter, I, Jeffrey B. Lewis, provide the following written report:
1. I am a Professor of Political Science at the University of California, Los Angeles
(UCLA). I am also the past department chair of UCLA's political science department and past president of the Society for Political Methodology. I have been a member of the

UCLA faculty since 2001. Prior to that, I was an Assistant Professor of Politics and
Public Affairs at Princeton University from 1998 to 2001. I earned my B.A. in Political

Science and Economics from Wesleyan University in 1990 and my Ph.D. in Political Science from the Massachusetts Institute of Technology (MIT) in 1998. My main area of specialization is quantitative political methodology with a focus on making inferences about preferences and behavior from the analysis of voting patterns in the mass public and in legislatures. I have published on the topic of ecological inference - the challenge that arises when one wants to know how individuals of different types voted in an election, but one can only observe electoral data aggregated to the precinct, county or other summary level. A true, accurate, and complete copy of my curriculum vitae is attached as Exhibit A.
2. I have previously been retained as an expert in relation to nine court cases: one involving allegations of voting machine failure in Florida (Jennings v. Elections Can-vassing Commission of State of Florida), four involving claims of minority vote dilution in California (Avitia v. Tulare Local Healthcare District; Satorre et al. v. San Mateo County Board of Supervisors et al.; Ladonna Yumori-Kaku v. City of Santa Clara); and Pico Neighborhood Association and Maria Loya v. City of Santa Monica), one involving claims of minority vote dilution in Texas (Perez, et al. v. Abbott, et al.), one involving claims of minority vote dilution in North Carolina (Common Cause, et al. v. Lewis), one involving claims of minority vote dilution in Washington (Aguilar v. Yakima County), and one involving the compactness of legislative districts in Illinois (Radogno et al v. Illinois State Board of Elections, et al.). I testified as an expert in the cases of Ladonna Yumori-Kaku v. City of Santa Clara and Pico Neighborhood Association and Maria Loya v. City of Santa Monica.
3. I am being compensated at a rate of \(\$ 550 /\) hour.
4. In the attached tables and spreadsheet, at Exhibit B, I present summaries of the results of North Carolina general and Democratic primary election contests held in 2014, 2016, 2018, and 2020. In particular, I consider how each contest would have turned out if only the votes of those residing in each current and in each enacted State House, State Senate, and Congressional district had been counted.
5. This exercise allows us to consider the voting strength of the Black voters in each existing and proposed legislative district.
6. For each of these "reconstituted" election contest in each district, I used weighted ecological regression (ER) to estimate the degree of Black voter cohesion and non-Black voter crossover (hereafter "white crossover"). In some cases, the number of voting precincts available for the analysis was too small or Black share of voters was too small to meaningfully apply ER. I omit such contest-district combinations.
7. I further narrow the set of contests to partisan races for executive and legislative offices. And, I only "reconstitute" a given contest within a given district if the data indicate that at least 80 percent of the voters in the given election who resided the district, voted in the given contest.
8. I identify the "Black-preferred" candidate in each contest as the candidate estimated by ER to have received the largest share of Black votes in the given contest or, in the case of single-candidate elections, that candidate if they are a Democrat (single-candidate elections without a Democrat are considered not to have a Black-preferred candidate).
9. I also note whether each candidate is Black and whether each contest includes at least one Black candidate.
10. The tabulations and estimates are based on datasets that I downloaded from the North Carolina Board of Elections (SBOE) website with the exception of a crosswalk between the current and enacted legislative districts and voting precincts used in the 2014, 2016, 2018, and 2020 elections and estimates of Black Voting-Age population (VAP) by district that were provided by Clark Bensen of POLIDATA.
11. The race of each candidate was determined by looking up each candidate listed in the SBOE's candidate list datasets on the North Carolina voter list (also from the SBOE). In some cases, a candidate's race could not be determined because: their legal name matched no voter on the voter list, no race was indicated on the voter list, or they were matched to several voters of different races on the voter list. In total, over 1,800 Black candidates were identified (including many competing in contests not subsequently analyzed for the reasons described above).
12. The demographic composition of voters from each precinct needed to perform ER was derived by merging vote history records from the SBOE to the precinct election returns. Because some counties do not allocate "One Stop" and absentee votes back to precincts (and for other reasons), not all voters can be matched to a voting precinct and not all
precincts can be placed in legislative districts. Where One Stop and absentee ballots were allocated to regular voting precincts, the voting and demography within each precinct was broken down by voting method when performing ER. This is possible because the vote history records (which are used to estimate the fraction of voters in each precinct who were Black) are broken down by voting method (as sometimes are the election returns within each precinct). When a county reported One Stop or absentee votes without allocating them to precincts and where feasible, I aggregated the One Stop and absentee votes in the election returns and the One Stop and absentee voters into a single One Stop and a single absentee precinct. Given the need to break down the votes by legislative district, this was only feasible in counties that fall entirely within a single State House, State Senate, or Congressional district.
13. The attached tables summarize the reconstituted elections analysis. For each district, the tables show averages of many of the quantities described above as well as: the Blackpreferred candidate "win rate" (the fraction of Black-preferred candidates who would have won if the contest had only been held in the given district); the percent of Blackpreferred candidates who were Democrats; the average number of major-party candidates in the reconstituted contests; the average fraction of voters who were Black; and, an estimate of the average minimum fraction of those voting in the district that would have had to be Black in order for the Black-preferred candidate to expect to get at least 50 percent of the vote (based on the ER estimates and only applied in contests involving two major-party candidates).
14. The tables present separate results for primary and general elections. Separate tallies are also presented that include only those contests that included at least one Black candidate.
15. The attached spreadsheet minority_preferred_candidates.csv identifies the minoritypreferred candidate in each of the reconstituted contests considered. It includes the following fields:
a. district, an identifier of the district including its chamber, plan, and number in which the contest is reconstituted.
b. election_date, the date of the election
c. election_type, primary or general
d. contest, the electoral contest being reconstituted.
e. minority_preferred_candidate, the name of the minority preferred candidate (as identified by ER).
f. minority_preferred_party, the party of the minority-preferred candidate.
g. cand_is_black, whether the Black-preferred candidate is Black.
h. has_minority_candidate, whether the contest included a Black candidate.
i. wonlost, identifies the Black-preferred candidate as a "winner" or "loser" of the reconstituted election (highest-vote getter).
\(j\). pct_vote, percent of vote won by the Black-preferred candidate in the reconstituted contest.
k. ER.pct_black, average share of voters in the ER analyses who were Black.
l. ER.black_cohesion, weighted Ecological Regression (ER) estimates of support for Black-preferred candidate among Black voters in the reconstituted election.
m. ER.white_crossover, weighted Ecological Regression (ER) estimates of support for the Black-preferred candidate among white (non-Black) voters in the reconstituted election.
n. ER.black_pct_needed_for_majority, Uses the ER estimates to infer the minimum share of the voters in the reconstituted election that would generate majority support for the minority-preferred candidate in the reconstituted election. Note that this is the estimated average percentage of Black voters in the contest needed for a majority, not the percentage of Black VAP existing in the district.
o. Coverage, the ratio of the total votes cast in the reconstituted election to the most votes cast in any reconstituted contest in the same district and election expressed as a percentage. In many cases, eligibility to participate in a particular contest will only partially overlap with the district in which the reconstituted election is considered. Because the area of overlap may encompass a set of voters who are not representative of the voters a district as whole when the overlap is small, I consider only contests for which this overlap or "coverage" exceeds 80 percent (for example, this include contests for statewide offices).
p. number_of_candidates, The number of major-party candidates in the contest.
16. This analysis goes beyond Professor Dunchin's analysis to consider not just 4 primary and 4 general election contests, but over 420 individual contests including over 190 that
include a Black candidate. These contests include both endogenous and exogenous contests for legislative and executive offices ranging from a Recorder of Deeds to the US President. The analysis also expands on Professor Duchin's analysis by estimating the rate of support of each candidate in each contest within each district to capture variation in Black voter cohesion and white cross-over voting across the districts (whereas Professor Duchin estimates a single rate of cohesion and of cross-over voting statewide for the 8 contests that she considers).
17. Using (without endorsing) Professor Duchin's definition of "effective" Black districts (greater than 75 percent Black preferred win rate in races with minority candidates combined with greater than 25 percent Black voting-age population), an analysis of this larger set of election contests identifies as "effective" the enacted districts that Professor Duchin enumerates (with the exceptions of State Senate District 12 and State House District Districts 066 which do not exhibit a 75 percent win rate in the larger dataset and House District 039 for which too few data precinct points were available to apply ER to identify the Black-preferred candidates). It also identifies as "effective" by Duchin's definition as many as seven additional State House districts and four additional State Senate districts. See Table 1.
18. Relaxing Professor Duchin's requirement that an "effective" district must have more than 25 percent Black voting-age population, my more expansive analysis suggests the existence of one additional "effective" Congressional district, four additional "effective" State House districts, and two additional "effective" State Senate districts.
19. Further relaxing the definition of "effective" to those districts in which the Black preferred win rate exceeds 66 percent suggests the existence of seven more "effective" State Senate districts and 16 additional "effective" State House districts. See Table 1.
20. Increasing the set of contests considered to include contests without Black candidates further lifts the number of apparently "effective" districts under Duchin's definition.
21. Only two of the "effective" districts (by any of the above definitions) are majority Black VAP. Districts with Black-preferred win rates of over 75 percent in the reconstituted elections include two districts with Black voting-age populations below 7 percent and five districts with Black voting-age populations below 20 percent.

Table 1 - Duchin "Effective" Black Districts in Enacted Plans
\begin{tabular}{|l|c|c|c|}
\cline { 2 - 4 } \multicolumn{1}{c|}{} & House & Senate & Congress \\
\hline \begin{tabular}{l} 
Number of "Effective" Black Districts in enacted \\
plans using Duchin definition
\end{tabular} & 29 & 12 & 2 \\
\hline \begin{tabular}{l} 
Number of "Effective" Black Districts in enacted \\
plans using Duchin definition but relaxing 25\% \\
BVAP and applying win rate of \(66 \%\)
\end{tabular} & 49 & 21 & 5 \\
\hline \begin{tabular}{l} 
Number of "Effective" Black Districts in enacted \\
plans using Duchin definition but relaxing \(25 \%\) \\
BVAP and applying win rate of \(50 \%\)
\end{tabular} & 88 & 40 & 11 \\
\hline
\end{tabular}
22. In no district, enacted or in 2020, does it appear that a majority Black VAP is needed for that district to regularly generate majority support for minority-preferred candidates in the reconstituted elections.
23. Black voters constitute a powerful political force in North Carolina electoral politics because of their numerical size and highly cohesive voting as well as the sizeable white (non-Black) cross-over vote for Black-preferred candidates that exists particularly in areas of the state in which Black voters are concentrated. As Professor Duchin documents, contemporary Black voting power in North Carolina is such that it is now even possible to draw a set of districts in which Black voters would have effective control (by her definition) of a share of the state's legislative districts that meaningfully exceeds the size of the Black population.
24. I reviewed the "Addendum to Primary Expert Report of Jonathan C. Mattingly, Ph.D." Dr. Mattingly appears to have reconstituted election results in different county cluster options and identified Black VAP in those same clusters. Dr. Mattingly's Addendum is not a racially polarized voting analysis.

\section*{CERTIFICATION}

I certify that the statements and opinions provided in this report are true and accurate to the best of my knowledge, information, and belief.


Jeffrey B. Lewis, Ph.D.

December 28, 2021
Date

\section*{Exhibit A}

\section*{Jeffrey B. Lewis}

Political Science Department
Bunche Hall, UCLA
Los Angeles CA 90095
310.206.1307

2330 Pelham Ave.
Los Angeles CA 90064 310.467.7685
email:jblewis@ucla.edu

Education Massachusetts Institute of Technology
Cambridge, MA
Ph.D., Department of Political Science, February 1998.
Wesleyan University
Middletown, CT
B.A., Political Science and Economics with Honors in General Scholarship. June 1990.

\section*{Academic Experience}

University of California Los Angeles Los Angeles, CA
Professor of Political Science. July 2012-present.
University of California Los Angeles Los Angeles, CA
Director, Center for American Politics and Public Policy. July 2017-July 2018.

University of California Los Angeles Los Angeles, CA
Chair, Department of Political Science. July 2011-June 2017.
University of California Los Angeles Los Angeles, CA
Associate Professor of Political Science. July 2007-June 2012.
University of California Los Angeles Los Angeles, CA
Assistant Professor of Political Science. July 2001-June 2007.
Dartmouth College,
Rockefeller Center for the Social Sciences Hanover, NH
Research Fellow. July 2000-June 2001.
Princeton University Princeton, NJ
Assistant Professor of Politics and Public Affairs. July 1997-July 2001.

\section*{Teaching Interests}

Quantitative methods
Elections \& Direct democracy
California politics

\section*{Grants \& Awards}

Fellow, Society for Political Methodology, Elected 2019.
Research grant, "For Modernizing the VoteView Website And Software."
Madison Initiative. William and Flora Hewlett Foundation (Grant \#20163870). January 2016. \$200k.

Conference/training grant, "Support for Conferences and Mentoring of Women and Underrepresented Groups in Political Methodology," National Science Foundation (NSF-SBE-1628102 with Kosuke Imai), \(\$ 308 \mathrm{k}\).

Research grant. "Collaborative Research on Dynamic Models of Roll Call Voting." National Science Foundation (NSF-SBS-0611974, with Keith Poole and Howard Rosenthal). July 2006. \(\$ 394 k\) total ( \(\$ 182 \mathrm{k}\) UCLA).

Brian P. Copenhaver Award for Innovation in Teaching with Technology, College of Letters and Sciences, University of California Los Angeles. 2007.

Warren Miller Prize for best article in volume 11 of Political Analysis. 2003 (article co-authored with Ken Schultz).

Research grant. "Empirical Testing of Crisis Bargaining Models." National Science Foundation (NSF-SBS-0241647, with Ken Schultz). February 2003. \(\$ 200 \mathrm{k}\).

Research grant, "Term limits in California." John Randolf and Dora Haynes Foundation, May 2000. \(\$ 27 \mathrm{k}\).

Research grant, Princeton University Committee on Research in the Humanities and Social Sciences, May 1998.

Harvard/MIT Research Training Group for Positive Political Economy Dissertation Fellowship, 1995-1996.

Sigma Xi Honorary Society, Wesleyan University, 1990.
White Prize for excellence in economics, Wesleyan University, 1990.
Ford Foundation Summer Research Fellowship, Wesleyan University, 1988.
Publications "The new Voteview.com: preserving and continuing Keith Poole?s infrastructure for scholars, students and observers of Congress," Public Choice. 2018, 176:17-32 (with Adam Boche, Aaron Rudkin, and Luke Sonnet).
"Recovering a Basic Space from Issue Scales in R." Journal of Statistical Software. 2016, 69(7) (Keith T. Poole, Howard Rosenthal, James Lo, Royce Carroll).
"The Structure of Utility in Spatial Models of Voting," American Journal of Political Science. 2013, 56(4):1008-1028 (with Royce Carroll, James Lo, Keith T. Poole, and Howard Rosenthal).
"Economic Crisis, Iraq, and Race: A Study of the 2008 Presidential Election." (Election Law Journal. 2010, 9(1): 41-62 (with Michael Herron and Seth Hill).
"Comparing NOMINATE and IDEAL: Points of difference and Monte Carlo tests." Legislative Studies Quarterly. 2009, 34:555-592 (with Royce Carroll, James Lo, Keith T. Poole, and Howard Rosenthal).
"Measuring Bias and Uncertainty in DW-NOMINATE Ideal Point Estimates via the Parametric Bootstrap", Political Analysis. 2009, 17(3):261275 (with Royce Carrol, James Lo, Keith T. Poole, and Howard Rosenthal).
"poLCA: An R Package for Polytomous Variable Latent Class Analysis." Journal of Statistical Software. 2011, 42(10) (with Drew A. Linzer).
"Scaling Roll Call Votes with Wnominate in R." Journal of Statistical Software. 2011, \(42(14)\) (with Keith Poole, James Lo, and Royce Carroll).
"Ballot Formats, Touchscreens, and Undervotes: A Study of the 2006 Midterm Elections in Florida." Election Law Journal. 2008. 7(1):25-47 (with Laurin Frisana, Michael C. Herron, and James Honaker).
"An Estimate of Risk Aversion in the U.S. Electorate." Quarterly Journal of Political Science. 2007, 2(2):139-154. (with Adam J. Berinsky).
"Ideological Adaptation? The Survival Instinct of Threatened Legislators." Journal of Politics. 2007, 69(3):823-843 (with Thad Kousser and Seth Masket).
"Did Ralph Nader Spoil a Gore Presidency? A Ballot-Level Study of Green and Reform Party Voters in the 2000 Presidential Election." Quarterly Journal of Political Science. 2007, 2(3):205-226 (with Michael Herron).
"A Return to Normalcy? Revisiting the Effects of Term Limits on Competitiveness and Spending in California Assembly Elections" State Politics and Policy Quarterly. 2007, 7(1):20-38 (with Seth Masket).
"Learning about Learning: A Response to Wand." Political Analysis. 2006, 14: 121-129 (with Kenneth Schultz).
"Estimating Regression Models in Which the Dependent Variable Is Based on Estimates" Political Analysis. 2005, 13(4) (with Drew A. Linzer)
"Beyond the Median: Voter Preferences, District Heterogeneity, and Representation." Journal of Political Economy. 2004, 106(6):1364-1383 (with Liz Gerber).
"Measuring Bias and Uncertainty in Ideal Point Estimates via the Parametric Bootstrap." Political Analysis. Spring 2004. 12:105-127 (with Keith Poole)
"Extending King's Ecological Inference Model to Multiple Elections using Markov Chain Monte Carlo," Chapter in Gary King, Ori Rosen, and Martin Tanner, Eds. Ecological Inference: New Methodological Strategies. Cambridge: Cambridge University Press. 2004.
"Revealing Preferences: Empirical Estimation of a Crisis Bargaining Game with Incomplete Information." Political Analysis. 2003, 11(4):345-365 (with Kenneth A. Schultz).
"Understanding King's Ecological Inference Model: A Method-of-moments Approach," Historical Methods. 2001, 34(4):170-188.
"Estimating Voter Preference Distributions from Individual-Level Voting Data," Political Analysis. 2001, 9(3):275-297.
"No Evidence on Directional vs. Proximity Voting," Political Analysis. 1999, 8(1):21-33 (with Gary King).
"Reevaluating the Effect of N-Ach (Need for Achievement) on Economic Growth," World Development. 1991, 19(9):1269-1274.

\section*{Other Publications}

Comment on "McCue, K. F. (2001), 'The Statistical Foundations of the EI method, The American Statistician. 2002, 55(3):250.
"Veteran's Adjustment." Chapter in After the Cold War: Living with Lower Defense Spending, Congress of the United States, Office of Technology Assessment, OTA-ITE-524. 1992.

\section*{Working Papers}

Has Joint Scaling Solved the Achen Objection to Miller and Stokes? (with Christopher Tausanovitch, under revision).

Residual Votes in the 2008 Minnesota Senate Race (with Jonathan W. Chipman and Michael C. Herron)

From Punchcards to Touchscreens: Some Evidence from Pasco County, Florida on the Effects of Changing Voting Technology (with Michael C. Herron)

Voting in Low Information Elections: Bundling and Non-Independence of Voter Choice (with Liz Gerber, April 2002)

Dangers of Measurement Error in Non-linear Models: The Case of Directional versus Proximity Voting (April 2002)

A Reply to McCue's Reply to My Comment on "The Statistical Foundations of the EI method"

\section*{PhD Students}

Committees Chaired or Co-chaired: Ryan Enos (Harvard), Seth Hill (UCSD), James Lo (USC), stonegarden grindlife.
Currently charing or co-chairing five committees.
Committee member on over 35 PhD students (including as an outsider member in Economics and Statistics).

\section*{Conference Presentations}

American Political Science Association, Philadelphia, September 2016.
Annual Meetings of the Midwest Political Science Association, Chicago, April 2014.
Annual Meetings of the Midwest Political Science Association, Chicago, April 2011.
Summer Meetings of the Political Methodology Society, New Haven, 2009

Annual Meetings of the Midwest Political Science Association, Chicago, April 2006.
American Political Science Association, Chicago, September 2004.
American Political Science Association, Philadelphia, September 2003.
Annual Meetings of the Midwest Political Science Association, Chicago, April 2003.
Summer Meeting of the Political Methodology Society, Seattle, 2002
Annual Meetings of the Public Choice Society, Houston, San Diego, 2002.
Annual Meetings of the Midwest Political Science Association, Chicago, April 2002.
Annual Meetings of the Midwest Political Science Association, Chicago, April 2001.
Annual Meetings of the Midwest Political Science Association, Chicago, April 2000.
Summer Meeting of the Political Methodology Society, College Station Texas, 1999.
Annual Meetings of the Social Science History Association, Chicago, November 1998.
American Political Science Association, Boston, September 1998.
Annual Meetings of the Midwest Political Science Association, Chicago, April 1997.
Annual Meetings of the American Political Science Association, San Francisco,August 1996.
Annual Meetings of the Public Choice Society, Houston, April 1996.
American Political Science Association, Atlanta, August 1989.
Software Voteview: US Roll call votes and legislator ideologies, 1789-2021: Provides interactive search and visualization of every roll call vote ever taken in the United States Congress. See https://voteview.com.

WNominate (v1.2): R package implementing Poole and Rosenthal's WNominate estimator co-authored with Keith Poole and James Lo. (http: //cran.r-project.org/web/packages/wnominate/index.html)

PoLCA (v1.4.1): R package for Polytomous Variable Latent Class Analysis. Co-authored with Drew Linzer. (http://dlinzer.github.io/poLCA/)

\section*{Data collections}

US Congressional roll call voting and related data, 1789-2021: Provides data on every roll call vote ever taken in the United States Congress. See https://voteview.com.

US Congressional District Boundaries, 1789-2017. Detailed GIS descriptions of every district in US history (with Brandon DeVine (UCLA), Lincoln Pritcher (UCLA), and Ken Martis (UWV)). See http://cdmaps.polisci. ucla.edu/.

109th - 114th Congress Data Project. UCLA. Webpage allows download of up to the hour roll call voting matrices for the current US Congress [Now included in the Voteview project].

California Roll Call Project. UCLA. Collection of roll call voting data from the California Assembly from 1850 to the present. Ongoing (with Seth Masket).

Crisis Bargaining Data Base. UCLA. Codings of post-World War I international crises outcomes in terms of a simple game theoretic model of coercive diplomacy (supported by NSF-SBS-0241647) (with Ken Schultz).

Record of American Democracy Project Harvard University. One of several project leaders. Summer 1995.

\section*{University Service}

Chair: Executive Committee, Faculty of Letters and Science, UCLA (September 2019-Present)

Vice Chair: Executive Committee, Faculty of Letters and Science, UCLA (2018-2019)

Member: Executive Committee, Faculty of Letters and Science, UCLA (2017-2018); Council on Academic Planning and Budget, UCLA (2019Present); Classroom Advisory Committee, UCLA (2018-2020); Pathways to Commencement Task Force, UCLA (2013-2014).

\section*{Professional Experience}

President: Society for Political Methodology (2015-2017).
Vice President/President elect: Society for Political Methodology (20132015).

Co-editor: The American Political Science Review July 2008-July 2011; The Political Methodologist, the APSA Methodology section newsletter. 2004-2007 (with Adam Berinsky and Michael Herron).

Editorial Board Member: Journal of Politics, 2005-2008; Political Analysis 2005-present.

Panelist: National Science Foundation ad hoc peer review panels (June 2004, February 2008, October 2010); National Science Foundation Political Science Panel (2009-2010).

Departmental review visiting committee member: University of Colorado, 2013; London School of Economics, 2015; University of Michigan, 2015.

Nominations committee member: American Political Science Association, 2011-12, 2012-13.

Program committee member: American Political Science Association Annual Meetings 2003, Political Methodology division head.

Anonymous Referee: American Political Science Review, American Journal of Political Science, Journal of Law and Economics, World Politics, Political Analysis, Legislative Studies Quarterly, Sociological Methods Review,

Journal of Politics, Journal of Theoretical Politics, and Political Behavior, Perspectives on Politics, Public Opinion Quarterly, Journal of Political Economy.

Discussant/Panel Chair Political Methodology Conference (1997, 2004, 2005, 2015), Midwest Political Science Association meetings (1998, 2005, 2006). American Political Science Association meetings (1998, 2002, 2003, 2006, 2010, 2016). Public Choice Society (1996, 2002)

\section*{Work Experience}

Polimetrix Palo Alto, CA
Director of Statistics, 2003-2007.
Office of Technology Assessment, U.S. Congress Washington, DC Research Analyst, Industry Technology and Employment program. October 1990 - August 1992.

\section*{Selected Invited Lectures}

American Politics Seminar, Political Science Department, Columbia University, 1998

Political Economy Seminar, Political Science Department, Michigan University, 1999

Political Economy Seminar, Graduate School of Business, Stanford University, 1999

Political Economy Seminar, Politics \& Economics Departments, Princeton University, 1998

Southern California Methods Program, UC Riverside, November 2001.
Ideal-Point Estimation Conference, Washington University St. Louis, September 2002.

American Politics Seminar, Political Science Department, Yale University, 2003.

Political Economy Seminar, Politics \& Economics Departments, Princeton University, Spring 2004.

Political Economy Seminar, Politics Department, Massachusetts Institute of Technology, Spring 2004.

Empirical Implications of Theoretical Models Program, Washington University, St. Louis, June 2004.

Multilevel Methods Conference, Center for the Study of Democratic Politics, Woodrow Wilson School of Public and International Affairs, Princeton University, October 2004.

Empirical Implications of Theoretical Models Program, University of California Berkeley (one week module co-taught with Kenneth A. Schultz). June 2005.

Roll Call Voting Conference, Department of Political Science, University of California, San Diego. May 2006.

Measures of Legislators' Policy Preferences and the Dimensionality of Policy Spaces Conference Department of Political Science, Washington University, St. Louis. November 2007.

Causal Inference. Business School. University of Southern California. June 2010.

How to Scrape Web Pages. Summer Methods Program. Department of Sociology. Stanford University, July 2010, 2011, 2012, 2013, 2014, 2015.

Lectures on Ecological Inference. Summer Methods Training Program, Academia Senica, Taipei, Taiwan. July 2010.

Applied Statistics Workshop. Department of Government. Harvard University, April 2011.

Methods Workshop. Department of Political Science, Stanford University. June 2011.

Conference on "Political Representation: Fifty Years After Miller \& Stokes." Vanderbilt University, March 2013

Center for the Study of Democratic Politics (CSDP) Workshop, Princeton University, April 2015.

Ideal Point Models in Political Science Workshop, MIT, April 2015.
Interdisciplinary Seminar in Quantitative Methods (ISQM) Workshop, University of Michigan, September 2015.

Political Economy Seminar, Graduate School of Business, Stanford University, April 2019,

\section*{Exhibit B}
- Ex. 9601 -
Table 1: General Elections
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline District & Percent Black Voting Age Population & Number of Contests & Percent of Blackpreferred candidates Democratic & Average Number of Candidates & Blackpreferred win rate & Average Blackpreferred candidate vote share & Avg. Pct. Voters Black & Avg. ER Black cohesion (pct.) & \begin{tabular}{l}
Avg. ER \\
White crossover support (pct.)
\end{tabular} & Pct. Black needed for majority \\
\hline CD20-001 & 41.9 & 17 & 100 & 2.0 & 100 & 56 & 39 & 100 & 24 & 35 \\
\hline CD20-002 & 18.2 & 35 & 100 & 2.0 & 43 & 49 & 14 & 100 & 41 & 15 \\
\hline CD20-003 & 18.7 & 18 & 100 & 2.0 & 0 & 38 & 18 & 99 & 24 & 35 \\
\hline CD20-004 & 24.4 & 17 & 100 & 2.0 & 100 & 68 & 22 & 94 & 40 & 19 \\
\hline CD20-005 & 10.7 & 16 & 100 & 2.0 & 0 & 34 & 10 & 100 & 25 & 33 \\
\hline CD20-006 & 32.0 & 17 & 100 & 2.0 & 100 & 60 & 30 & 100 & 42 & 14 \\
\hline CD20-007 & 15.4 & 17 & 100 & 2.0 & 0 & 42 & 13 & 93 & 33 & 29 \\
\hline CD20-008 & 25.9 & 19 & 100 & 2.0 & 11 & 48 & 29 & 100 & 27 & 32 \\
\hline CD20-009 & 17.4 & 18 & 100 & 2.0 & 0 & 44 & 15 & 100 & 32 & 27 \\
\hline CD20-010 & 10.1 & 17 & 100 & 2.0 & 0 & 32 & 11 & 100 & 26 & 33 \\
\hline CD20-012 & 34.1 & 22 & 100 & 1.9 & 100 & 72 & 39 & 100 & 54 & 6 \\
\hline CD20-013 & 13.9 & 17 & 100 & 2.0 & 0 & 33 & 12 & 100 & 23 & 35 \\
\hline CD21-001 & 22.4 & 19 & 100 & 2.0 & 0 & 39 & 19 & 97 & 25 & 35 \\
\hline CD21-002 & 39.1 & 16 & 100 & 2.0 & 94 & 55 & 35 & 100 & 25 & 33 \\
\hline CD21-003 & 15.7 & 17 & 100 & 2.0 & 0 & 43 & 14 & 95 & 33 & 27 \\
\hline CD21-004 & 27.5 & 16 & 100 & 2.0 & 38 & 49 & 34 & 100 & 27 & 31 \\
\hline CD21-005 & 23.2 & 35 & 100 & 2.0 & 46 & 50 & 18 & 100 & 39 & 17 \\
\hline CD21-006 & 20.4 & 17 & 100 & 2.0 & 100 & 66 & 17 & 100 & 42 & 13 \\
\hline CD21-007 & 15.3 & 17 & 100 & 2.0 & 0 & 39 & 13 & 100 & 27 & 31 \\
\hline CD21-008 & 16.5 & 17 & 100 & 2.0 & 0 & 40 & 14 & 100 & 29 & 30 \\
\hline CD21-009 & 36.3 & 22 & 100 & 1.9 & 100 & 75 & 42 & 100 & 58 & 2 \\
\hline CD21-010 & 16.2 & 16 & 100 & 2.0 & 0 & 35 & 12 & 100 & 24 & 34 \\
\hline CD21-011 & 19.2 & 16 & 100 & 2.0 & 0 & 37 & 16 & 100 & 27 & 31 \\
\hline CD21-012 & 17.1 & 16 & 100 & 2.0 & 0 & 43 & 18 & 100 & 33 & 25 \\
\hline CD21-013 & 14.8 & 16 & 100 & 2.0 & 0 & 38 & 14 & 100 & 29 & 30 \\
\hline LD20-001 & 36.6 & 19 & 100 & 2.0 & 21 & 48 & 28 & 100 & 20 & 37 \\
\hline LD20-002 & 25.7 & 20 & 100 & 2.0 & 5 & 43 & 25 & 100 & 25 & 33 \\
\hline LD20-003 & 19.2 & 24 & 100 & 2.0 & 4 & 41 & 19 & 98 & 28 & 31 \\
\hline LD20-004 & 20.6 & 20 & 100 & 2.0 & 0 & 38 & 17 & 100 & 17 & 39 \\
\hline
\end{tabular}
- Ex. 9602 -
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline District & Percent
Black
Voting Age
Population & Number of Contests & \begin{tabular}{l}
Percent of \\
Blackpreferred candidates Democratic
\end{tabular} & Average Number of Candidates & Blackpreferred win rate & Average Blackpreferred candidate vote share & Avg. Pct. Voters Black & Avg. ER Black cohesion (pct.) & Avg. ER White crossover support (pct.) & Pct. Black needed for majority \\
\hline LD20-005 & 41.0 & 20 & 100 & 2.0 & 100 & 56 & 34 & 100 & 20 & 37 \\
\hline LD20-006 & 7.1 & 21 & 100 & 2.0 & 0 & 36 & 7 & 84 & 28 & 43 \\
\hline LD20-007 & 22.4 & 27 & 100 & 2.0 & 15 & 46 & 24 & 100 & 29 & 29 \\
\hline LD20-008 & 42.5 & 23 & 100 & 2.0 & 65 & 54 & 35 & 100 & 30 & 31 \\
\hline LD20-009 & 27.9 & 23 & 100 & 2.0 & 9 & 45 & 21 & 100 & 31 & 31 \\
\hline LD20-010 & 22.0 & 20 & 100 & 2.0 & 0 & 37 & 21 & 100 & 17 & 40 \\
\hline LD20-011 & 15.4 & 37 & 100 & 2.0 & 89 & 57 & 13 & 100 & 50 & 5 \\
\hline LD20-012 & 36.9 & 23 & 100 & 2.0 & 39 & 49 & 38 & 100 & 18 & 39 \\
\hline LD20-013 & 7.9 & 11 & 100 & 2.0 & 0 & 30 & 9 & 95 & 22 & 39 \\
\hline LD20-014 & 17.8 & 14 & 100 & 2.0 & 0 & 40 & 19 & 100 & 26 & 33 \\
\hline LD20-015 & 10.7 & 14 & 100 & 2.0 & 0 & 32 & 12 & 100 & 22 & 36 \\
\hline LD20-016 & 18.3 & 22 & 100 & 2.0 & 0 & 37 & 17 & 95 & 25 & 36 \\
\hline LD20-017 & 10.1 & 33 & 100 & 2.0 & 0 & 37 & 10 & 88 & 31 & 33 \\
\hline LD20-018 & 21.1 & 24 & 100 & 1.9 & 100 & 66 & 21 & 100 & 56 & 5 \\
\hline LD20-019 & 6.3 & 8 & 100 & 2.0 & 0 & 39 & 6 & 100 & 35 & 22 \\
\hline LD20-020 & 5.5 & 1 & 100 & 1.0 & 100 & 100 & 3 & & . & \\
\hline LD20-021 & 37.4 & 22 & 100 & 2.0 & 36 & 47 & 32 & 99 & 23 & 36 \\
\hline LD20-022 & 29.3 & 19 & 100 & 2.0 & 11 & 45 & 29 & 100 & 19 & 38 \\
\hline LD20-023 & 50.6 & 19 & 100 & 2.0 & 100 & 62 & 37 & 100 & 18 & 39 \\
\hline LD20-024 & 38.2 & 21 & 100 & 2.0 & 95 & 55 & 36 & 100 & 26 & 32 \\
\hline LD20-025 & 42.6 & 13 & 100 & 2.0 & 15 & 43 & 34 & 100 & 18 & 39 \\
\hline LD20-026 & 16.5 & 25 & 100 & 2.0 & 0 & 32 & 11 & 100 & 24 & 34 \\
\hline LD20-027 & 51.6 & 23 & 100 & 1.9 & 100 & 67 & 45 & 100 & 29 & 35 \\
\hline LD20-028 & 15.8 & 23 & 100 & 2.0 & 0 & 29 & 10 & 100 & 21 & 37 \\
\hline LD20-029 & 37.2 & 26 & 100 & 1.8 & 100 & 82 & 40 & 100 & 70 & 0 \\
\hline LD20-030 & 28.2 & 19 & 100 & 1.9 & 100 & 60 & 25 & 100 & 47 & 12 \\
\hline LD20-031 & 39.8 & 24 & 100 & 1.8 & 100 & 80 & 48 & 100 & 62 & 1 \\
\hline LD20-032 & 48.1 & 25 & 100 & 1.9 & 100 & 67 & 50 & 100 & 35 & 29 \\
\hline LD20-033 & 39.9 & 36 & 100 & 2.0 & 100 & 64 & 37 & 100 & 43 & 12 \\
\hline
\end{tabular}
- Ex. 9603 -
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline \multicolumn{11}{|l|}{Table 1: General Elections (continued)} \\
\hline District & \begin{tabular}{l}
Percent Black \\
Voting Age Population
\end{tabular} & Number of Contests & Percent of Blackpreferred candidates Democratic & Average Number of Candidates & Blackpreferred win rate & Average Blackpreferred candidate vote share & Avg. Pct. Voters Black & Avg. ER Black cohesion (pct.) & Avg. ER White crossover support (pct.) & Pct. Black needed for majority \\
\hline LD20-034 & 11.5 & 36 & 100 & 2.0 & 19 & 43 & 6 & 100 & 39 & 16 \\
\hline LD20-035 & 18.0 & 37 & 57 & 2.0 & 43 & 45 & 11 & 66 & 43 & 31 \\
\hline LD20-036 & 7.5 & 14 & 50 & 2.0 & 50 & 52 & 6 & 65 & 52 & 16 \\
\hline LD20-037 & 11.3 & 36 & 100 & 2.0 & 0 & 36 & 9 & 100 & 30 & 28 \\
\hline LD20-038 & 39.4 & 43 & 100 & 1.9 & 100 & 77 & 42 & 98 & 62 & 2 \\
\hline LD20-040 & 11.3 & 38 & 100 & 2.0 & 8 & 40 & 7 & 100 & 35 & 22 \\
\hline LD20-041 & 7.1 & 13 & 92 & 2.0 & 46 & 50 & 6 & 88 & 47 & 8 \\
\hline LD20-042 & 38.1 & 25 & 100 & 1.9 & 100 & 71 & 49 & 100 & 40 & 24 \\
\hline LD20-043 & 33.9 & 23 & 100 & 2.0 & 30 & 50 & 29 & 100 & 30 & 32 \\
\hline LD20-044 & 48.1 & 26 & 100 & 1.9 & 100 & 75 & 54 & 100 & 45 & 19 \\
\hline LD20-045 & 31.4 & 26 & 100 & 2.0 & 65 & 52 & 32 & 99 & 30 & 32 \\
\hline LD20-046 & 25.0 & 21 & 100 & 2.0 & 29 & 45 & 27 & 98 & 25 & 33 \\
\hline LD20-047 & 23.8 & 30 & 100 & 1.9 & 47 & 55 & 24 & 98 & 42 & 25 \\
\hline LD20-048 & 35.5 & 19 & 100 & 2.0 & 100 & 56 & 40 & 100 & 28 & 30 \\
\hline LD20-049 & 12.3 & 36 & 100 & 2.0 & 61 & 52 & 7 & 100 & 49 & 7 \\
\hline LD20-050 & 17.5 & 17 & 100 & 2.0 & 12 & 43 & 23 & 89 & 28 & 34 \\
\hline LD20-052 & 11.0 & 26 & 100 & 2.0 & 0 & 29 & 10 & 99 & 22 & 36 \\
\hline LD20-054 & 12.9 & 30 & 53 & 2.0 & 3 & 44 & 9 & 91 & 39 & 21 \\
\hline LD20-055 & 26.2 & 20 & 100 & 2.0 & 0 & 43 & 23 & 100 & 23 & 35 \\
\hline LD20-056 & 10.2 & 36 & 100 & 1.7 & 100 & 79 & 10 & 100 & 76 & 0 \\
\hline LD20-057 & 39.7 & 30 & 100 & 1.9 & 100 & 66 & 39 & 99 & 45 & 17 \\
\hline LD20-058 & 43.1 & 29 & 100 & 1.9 & 100 & 73 & 44 & 98 & 54 & 6 \\
\hline LD20-059 & 28.6 & 26 & 100 & 2.0 & 0 & 39 & 23 & 100 & 21 & 36 \\
\hline LD20-060 & 34.6 & 26 & 100 & 2.0 & 96 & 60 & 36 & 100 & 36 & 21 \\
\hline LD20-061 & 40.0 & 30 & 100 & 1.9 & 100 & 70 & 32 & 100 & 55 & 6 \\
\hline LD20-062 & 13.7 & 28 & 100 & 2.0 & 0 & 36 & 11 & 100 & 28 & 30 \\
\hline LD20-063 & 24.8 & 28 & 100 & 2.0 & 39 & 49 & 24 & 100 & 33 & 25 \\
\hline LD20-064 & 15.1 & 27 & 100 & 2.0 & 0 & 40 & 14 & 100 & 30 & 29 \\
\hline LD20-065 & 19.6 & 26 & 100 & 2.0 & 0 & 36 & 19 & 99 & 22 & 37 \\
\hline
\end{tabular}
- Ex. 9604 -
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline \multicolumn{11}{|l|}{Table 1: General Elections (continued)} \\
\hline District & Percent Black Voting Age Population & Number of Contests & Percent of Blackpreferred candidates Democratic & Average Number of Candidates & Blackpreferred win rate & Average Blackpreferred candidate vote share & \begin{tabular}{l}
Avg. Pct. \\
Voters Black
\end{tabular} & \begin{tabular}{l}
Avg. ER \\
Black \\
cohesion (pct.)
\end{tabular} & \begin{tabular}{l}
Avg. ER \\
White crossover support (pct.)
\end{tabular} & Pct. Black needed for majority \\
\hline LD20-066 & 24.0 & 18 & 100 & 2.0 & 11 & 44 & 20 & 100 & 25 & 33 \\
\hline LD20-067 & 7.9 & 23 & 100 & 2.0 & 0 & 23 & 6 & 100 & 17 & 39 \\
\hline LD20-068 & 8.4 & 24 & 100 & 2.0 & 0 & 35 & 8 & 100 & 30 & 28 \\
\hline LD20-069 & 11.6 & 25 & 100 & 2.0 & 0 & 35 & 11 & 100 & 27 & 32 \\
\hline LD20-070 & 7.2 & 30 & 100 & 2.0 & 0 & 24 & 6 & 100 & 19 & 38 \\
\hline LD20-071 & 40.3 & 25 & 100 & 2.0 & 100 & 73 & 46 & 99 & 50 & 4 \\
\hline LD20-072 & 34.4 & 25 & 100 & 2.0 & 100 & 71 & 34 & 100 & 56 & 1 \\
\hline LD20-073 & 14.6 & 21 & 100 & 2.0 & 0 & 36 & 19 & 100 & 28 & 31 \\
\hline LD20-074 & 11.4 & 26 & 100 & 2.0 & 0 & 45 & 11 & 100 & 38 & 19 \\
\hline LD20-075 & 15.3 & 26 & 100 & 2.0 & 0 & 38 & 15 & 100 & 27 & 31 \\
\hline LD20-076 & 21.6 & 23 & 100 & 2.0 & 0 & 41 & 20 & 100 & 26 & 32 \\
\hline LD20-077 & 7.3 & 20 & 100 & 2.0 & 0 & 26 & 6 & 100 & 19 & 38 \\
\hline LD20-078 & 6.1 & 1 & 100 & 2.0 & 0 & 24 & 7 & 100 & 19 & 38 \\
\hline LD20-079 & 22.3 & 23 & 100 & 2.2 & 4 & 37 & 16 & 98 & 19 & 39 \\
\hline LD20-080 & 9.5 & 24 & 100 & 2.0 & 0 & 23 & 8 & 100 & 16 & 40 \\
\hline LD20-081 & 9.6 & 25 & 100 & 2.0 & 0 & 26 & 8 & 100 & 20 & 38 \\
\hline LD20-082 & 20.2 & 13 & 100 & 1.9 & 8 & 45 & 18 & 100 & 34 & 30 \\
\hline LD20-083 & 19.5 & 24 & 100 & 2.0 & 46 & 48 & 12 & 100 & 26 & 32 \\
\hline LD20-084 & 14.1 & 26 & 100 & 2.0 & 0 & 32 & 13 & 100 & 22 & 36 \\
\hline LD20-086 & 6.0 & 28 & 100 & 2.0 & 4 & 36 & 6 & 100 & 31 & 27 \\
\hline LD20-088 & 16.0 & 19 & 100 & 1.9 & 100 & 59 & 18 & 100 & 51 & 4 \\
\hline LD20-089 & 7.9 & 24 & 100 & 2.0 & 0 & 28 & 7 & 100 & 22 & 36 \\
\hline LD20-091 & 4.8 & 12 & 100 & 2.0 & 0 & 23 & 6 & 100 & 17 & 40 \\
\hline LD20-092 & 40.2 & 24 & 100 & 1.8 & 100 & 76 & 46 & 100 & 55 & 7 \\
\hline LD20-095 & 9.6 & 24 & 100 & 2.0 & 0 & 33 & 8 & 100 & 28 & 31 \\
\hline LD20-096 & 8.9 & 24 & 100 & 2.0 & 0 & 36 & 7 & 100 & 30 & 28 \\
\hline LD20-098 & 9.2 & 27 & 100 & 2.0 & 7 & 43 & 9 & 100 & 38 & 20 \\
\hline LD20-099 & 36.0 & 20 & 100 & 2.0 & 100 & 64 & 42 & 100 & 38 & 19 \\
\hline LD20-100 & 30.5 & 24 & 100 & 1.8 & 100 & 76 & 35 & 100 & 63 & 0 \\
\hline
\end{tabular}
- Ex. 9605 -
Table 1: General Elections (continued)
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline District & Percent Black Voting Age Population & Number of Contests & \[
\begin{array}{r}
\text { Percent of } \\
\text { Black- } \\
\text { preferred } \\
\text { candidates } \\
\text { Democratic }
\end{array}
\] & Average Number of Candidates & Blackpreferred win rate & Average Blackpreferred candidate vote share & \begin{tabular}{l}
Avg. Pct. \\
Voters \\
Black
\end{tabular} & \begin{tabular}{l}
Avg. ER \\
Black \\
cohesion \\
(pct.)
\end{tabular} & \begin{tabular}{l}
Avg. ER \\
White \\
crossover \\
support \\
(pct.)
\end{tabular} & Pct. Black needed for majority \\
\hline LD20-101 & 48.0 & 27 & 100 & 1.9 & 100 & 78 & 55 & 100 & 51 & 13 \\
\hline LD20-102 & 33.8 & 25 & 100 & 1.8 & 100 & 82 & 39 & 99 & 71 & 0 \\
\hline LD20-103 & 14.2 & 21 & 100 & 2.0 & 19 & 48 & 13 & 100 & 40 & 17 \\
\hline LD20-104 & 12.0 & 25 & 100 & 2.0 & 20 & 46 & 10 & 100 & 41 & 16 \\
\hline LD20-105 & 12.9 & 20 & 100 & 2.0 & 50 & 50 & 13 & 100 & 42 & 14 \\
\hline LD20-106 & 46.3 & 30 & 100 & 1.7 & 100 & 87 & 59 & 99 & 71 & 1 \\
\hline LD20-107 & 53.6 & 26 & 100 & 1.8 & 100 & 82 & 57 & 100 & 60 & 3 \\
\hline LD20-108 & 19.5 & 31 & 100 & 2.0 & 6 & 40 & 17 & 100 & 28 & 32 \\
\hline LD20-109 & 15.3 & 30 & 100 & 2.0 & 7 & 39 & 12 & 100 & 31 & 30 \\
\hline LD20-110 & 14.6 & 19 & 100 & 2.0 & 0 & 28 & 13 & 100 & 18 & 39 \\
\hline LD20-111 & 22.8 & 29 & 100 & 2.0 & 3 & 41 & 23 & 100 & 24 & 35 \\
\hline LD20-112 & 9.2 & 36 & 100 & 2.0 & 0 & 31 & 8 & 99 & 25 & 34 \\
\hline LD20-115 & 6.9 & 12 & 100 & 2.0 & 100 & 61 & 6 & 100 & 49 & 6 \\
\hline LD20-116 & 7.2 & 10 & 100 & 2.0 & 60 & 53 & 7 & 100 & 49 & 5 \\
\hline LD21-001 & 17.7 & 21 & 100 & 2.0 & 0 & 38 & 15 & 93 & 25 & 37 \\
\hline LD21-002 & 23.7 & 22 & 100 & 2.0 & 9 & 43 & 23 & 99 & 26 & 32 \\
\hline LD21-003 & 19.4 & 22 & 100 & 2.0 & 5 & 41 & 17 & 99 & 29 & 30 \\
\hline LD21-004 & 24.9 & 17 & 100 & 2.0 & 0 & 35 & 20 & 100 & 19 & 38 \\
\hline LD21-005 & 37.5 & 20 & 100 & 2.0 & 85 & 53 & 32 & 100 & 19 & 38 \\
\hline LD21-007 & 22.2 & 27 & 100 & 2.0 & 15 & 46 & 23 & 100 & 30 & 29 \\
\hline LD21-008 & 44.2 & 23 & 100 & 2.0 & 87 & 57 & 37 & 100 & 32 & 29 \\
\hline LD21-009 & 24.6 & 24 & 100 & 2.0 & 4 & 41 & 19 & 97 & 28 & 36 \\
\hline LD21-010 & 33.1 & 23 & 100 & 2.0 & 4 & 41 & 28 & 99 & 19 & 38 \\
\hline LD21-011 & 14.2 & 36 & 100 & 2.0 & 81 & 55 & 11 & 100 & 49 & 5 \\
\hline LD21-012 & 37.7 & 18 & 100 & 2.0 & 11 & 47 & 34 & 100 & 19 & 38 \\
\hline LD21-013 & 8.3 & 21 & 100 & 2.0 & 0 & 30 & 7 & 96 & 24 & 36 \\
\hline LD21-014 & 17.8 & 14 & 100 & 2.0 & 0 & 40 & 19 & 100 & 26 & 33 \\
\hline LD21-015 & 10.6 & 14 & 100 & 2.0 & 0 & 32 & 13 & 100 & 22 & 36 \\
\hline LD21-016 & 13.2 & 25 & 100 & 2.0 & 0 & 34 & 14 & 93 & 24 & 38 \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline \multicolumn{11}{|l|}{Table 1: General Elections (continued)} \\
\hline District & Percent Black Voting Age Population & Number of Contests & Percent of Blackpreferred candidates Democratic & Average Number of Candidates & Blackpreferred win rate & Average Blackpreferred candidate vote share & Avg. Pct. Voters Black & \begin{tabular}{l}
Avg. ER \\
Black cohesion (pct.)
\end{tabular} & \begin{tabular}{l}
Avg. ER \\
White crossover support (pct.)
\end{tabular} & Pct. Black needed for majority \\
\hline LD21-017 & 10.3 & 33 & 100 & 2.0 & 0 & 38 & 10 & 88 & 32 & 32 \\
\hline LD21-018 & 21.6 & 24 & 100 & 1.9 & 100 & 66 & 22 & 100 & 57 & 5 \\
\hline LD21-019 & 5.1 & 8 & 100 & 2.0 & 0 & 37 & 5 & 100 & 33 & 25 \\
\hline LD21-020 & 5.3 & 1 & 100 & 1.0 & 100 & 100 & 3 & . & . & . \\
\hline LD21-021 & 10.8 & 35 & 100 & 2.0 & 0 & 38 & 7 & 92 & 34 & 28 \\
\hline LD21-022 & 27.7 & 20 & 100 & 2.0 & 0 & 41 & 26 & 100 & 19 & 38 \\
\hline LD21-023 & 52.5 & 19 & 100 & 2.0 & 100 & 62 & 39 & 100 & 17 & 39 \\
\hline LD21-024 & 36.6 & 21 & 100 & 2.0 & 86 & 54 & 36 & 100 & 26 & 32 \\
\hline LD21-025 & 40.0 & 21 & 100 & 2.0 & 33 & 46 & 29 & 100 & 18 & 39 \\
\hline LD21-027 & 50.8 & 21 & 100 & 2.0 & 100 & 64 & 48 & 100 & 27 & 31 \\
\hline LD21-028 & 16.2 & 22 & 100 & 2.0 & 0 & 28 & 11 & 100 & 19 & 38 \\
\hline LD21-029 & 38.3 & 24 & 100 & 1.8 & 100 & 80 & 44 & 100 & 65 & 0 \\
\hline LD21-030 & 33.0 & 23 & 100 & 1.8 & 100 & 81 & 35 & 100 & 71 & 0 \\
\hline LD21-031 & 38.1 & 5 & 100 & 1.0 & 100 & 100 & 45 & . & . & . \\
\hline LD21-032 & 42.4 & 19 & 100 & 1.9 & 100 & 63 & 43 & 100 & 35 & 31 \\
\hline LD21-033 & 29.8 & 43 & 100 & 1.9 & 100 & 77 & 30 & 100 & 67 & 0 \\
\hline LD21-034 & 18.2 & 36 & 100 & 2.0 & 56 & 51 & 13 & 100 & 44 & 11 \\
\hline LD21-036 & 8.0 & 9 & 100 & 2.0 & 0 & 36 & 7 & 100 & 31 & 28 \\
\hline LD21-038 & 43.6 & 2 & 100 & 1.0 & 100 & 100 & 47 & . & . & . \\
\hline LD21-040 & 10.7 & 23 & 100 & 2.0 & 9 & 44 & 6 & 100 & 41 & 15 \\
\hline LD21-042 & 38.1 & 25 & 100 & 1.9 & 100 & 71 & 49 & 100 & 40 & 24 \\
\hline LD21-043 & 34.8 & 23 & 100 & 2.0 & 43 & 51 & 30 & 100 & 31 & 31 \\
\hline LD21-044 & 48.1 & 26 & 100 & 1.9 & 100 & 75 & 54 & 100 & 45 & 19 \\
\hline LD21-045 & 30.3 & 25 & 100 & 2.0 & 32 & 49 & 31 & 99 & 26 & 33 \\
\hline LD21-046 & 28.5 & 21 & 100 & 2.0 & 14 & 44 & 27 & 100 & 22 & 36 \\
\hline LD21-047 & 21.5 & 29 & 100 & 1.9 & 48 & 57 & 23 & 96 & 45 & 22 \\
\hline LD21-048 & 35.5 & 19 & 100 & 2.0 & 100 & 56 & 40 & 100 & 28 & 30 \\
\hline LD21-049 & 13.0 & 36 & 100 & 2.0 & 47 & 50 & 8 & 100 & 46 & 9 \\
\hline LD21-050 & 17.9 & 17 & 100 & 2.0 & 12 & 44 & 25 & 90 & 28 & 34 \\
\hline
\end{tabular}
- Ex. 9607 -
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline District & \begin{tabular}{l}
Percent Black \\
Voting Age Population
\end{tabular} & Number of Contests & Percent of Blackpreferred candidates Democratic & Average Number of Candidates & Blackpreferred win rate & Average Blackpreferred candidate vote share & Avg. Pct. Voters Black & Avg. ER Black cohesion (pct.) & Avg. ER White crossover support (pct.) & Pct. Black needed for majority \\
\hline LD21-052 & 22.3 & 20 & 100 & 2.0 & 20 & 46 & 22 & 99 & 24 & 34 \\
\hline LD21-054 & 11.1 & 31 & 58 & 2.0 & 6 & 44 & 10 & 86 & 39 & 23 \\
\hline LD21-055 & 24.0 & 20 & 100 & 2.0 & 0 & 42 & 21 & 100 & 24 & 34 \\
\hline LD21-056 & 10.1 & 36 & 100 & 1.7 & 100 & 79 & 10 & 100 & 76 & 0 \\
\hline LD21-057 & 39.7 & 30 & 100 & 1.9 & 100 & 66 & 39 & 99 & 45 & 17 \\
\hline LD21-058 & 42.8 & 29 & 100 & 1.9 & 100 & 72 & 44 & 99 & 52 & 8 \\
\hline LD21-059 & 26.6 & 26 & 100 & 2.0 & 0 & 37 & 20 & 100 & 21 & 36 \\
\hline LD21-060 & 34.9 & 26 & 100 & 2.0 & 100 & 61 & 37 & 100 & 37 & 20 \\
\hline LD21-061 & 40.8 & 30 & 100 & 1.9 & 100 & 70 & 34 & 100 & 55 & 6 \\
\hline LD21-062 & 13.3 & 28 & 100 & 2.0 & 0 & 35 & 10 & 100 & 28 & 30 \\
\hline LD21-063 & 24.3 & 29 & 100 & 2.0 & 24 & 48 & 22 & 100 & 34 & 25 \\
\hline LD21-064 & 15.5 & 28 & 100 & 2.0 & 0 & 40 & 14 & 100 & 30 & 29 \\
\hline LD21-065 & 18.9 & 26 & 100 & 2.0 & 0 & 36 & 19 & 99 & 22 & 36 \\
\hline LD21-066 & 27.2 & 35 & 100 & 2.0 & 66 & 53 & 22 & 100 & 39 & 17 \\
\hline LD21-067 & 13.0 & 21 & 100 & 2.0 & 0 & 31 & 13 & 100 & 21 & 36 \\
\hline LD21-068 & 8.1 & 24 & 100 & 2.0 & 0 & 35 & 7 & 100 & 30 & 28 \\
\hline LD21-069 & 11.6 & 21 & 100 & 2.0 & 0 & 33 & 10 & 100 & 26 & 33 \\
\hline LD21-070 & 7.0 & 30 & 100 & 2.0 & 0 & 24 & 6 & 100 & 19 & 38 \\
\hline LD21-071 & 39.5 & 24 & 100 & 2.0 & 100 & 71 & 45 & 98 & 49 & 4 \\
\hline LD21-072 & 33.7 & 24 & 100 & 2.0 & 100 & 69 & 32 & 100 & 54 & 1 \\
\hline LD21-073 & 17.0 & 13 & 100 & 2.0 & 0 & 40 & 12 & 100 & 26 & 33 \\
\hline LD21-074 & 11.3 & 26 & 100 & 2.0 & 0 & 43 & 10 & 100 & 36 & 22 \\
\hline LD21-075 & 15.3 & 26 & 100 & 2.0 & 0 & 38 & 15 & 100 & 27 & 31 \\
\hline LD21-076 & 20.4 & 24 & 100 & 2.0 & 0 & 39 & 19 & 100 & 25 & 33 \\
\hline LD21-077 & 5.5 & 19 & 100 & 2.0 & 0 & 26 & 6 & 100 & 19 & 38 \\
\hline LD21-078 & 5.5 & 1 & 100 & 2.0 & 0 & 26 & 5 & 92 & 23 & 39 \\
\hline LD21-079 & 16.9 & 21 & 100 & 2.0 & 0 & 38 & 12 & 90 & 27 & 37 \\
\hline LD21-080 & 9.4 & 24 & 100 & 2.0 & 0 & 24 & 9 & 100 & 17 & 40 \\
\hline LD21-081 & 9.6 & 25 & 100 & 2.0 & 0 & 26 & 9 & 100 & 20 & 38 \\
\hline
\end{tabular}
- Ex. 9608 -
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline \multicolumn{11}{|l|}{Table 1: General Elections (continued)} \\
\hline District & \begin{tabular}{l}
Percent Black \\
Voting Age Population
\end{tabular} & Number of Contests & Percent of Blackpreferred candidates Democratic & Average Number of Candidates & Blackpreferred win rate & Average Blackpreferred candidate vote share & Avg. Pct. Voters Black & \begin{tabular}{l}
Avg. ER \\
Black \\
cohesion \\
(pct.)
\end{tabular} & \begin{tabular}{l}
Avg. ER \\
White \\
crossover \\
support \\
(pct.)
\end{tabular} & Pct. Black needed for majority \\
\hline LD21-082 & 21.0 & 25 & 100 & 2.0 & 4 & 39 & 16 & 100 & 28 & 34 \\
\hline LD21-083 & 11.9 & 18 & 100 & 2.0 & 0 & 28 & 8 & 100 & 22 & 36 \\
\hline LD21-084 & 16.0 & 26 & 100 & 2.0 & 0 & 34 & 15 & 100 & 23 & 35 \\
\hline LD21-086 & 6.1 & 28 & 100 & 2.0 & 4 & 35 & 6 & 100 & 31 & 28 \\
\hline LD21-088 & 23.3 & 19 & 100 & 1.9 & 100 & 64 & 23 & 100 & 53 & 5 \\
\hline LD21-089 & 6.7 & 24 & 100 & 2.0 & 0 & 26 & 6 & 100 & 21 & 36 \\
\hline LD21-091 & 14.1 & 19 & 100 & 2.0 & 0 & 37 & 19 & 100 & 31 & 28 \\
\hline LD21-092 & 39.1 & 24 & 100 & 1.8 & 100 & 74 & 44 & 100 & 54 & 10 \\
\hline LD21-095 & 7.6 & 24 & 100 & 2.0 & 0 & 32 & 5 & 100 & 28 & 30 \\
\hline LD21-096 & 9.9 & 25 & 100 & 2.0 & 0 & 36 & 9 & 100 & 30 & 28 \\
\hline LD21-098 & 7.5 & 27 & 100 & 2.0 & 0 & 41 & 7 & 100 & 37 & 20 \\
\hline LD21-099 & 46.8 & 28 & 100 & 1.8 & 100 & 82 & 57 & 100 & 59 & 2 \\
\hline LD21-100 & 31.0 & 24 & 100 & 1.8 & 100 & 76 & 35 & 100 & 63 & 0 \\
\hline LD21-101 & 46.8 & 26 & 100 & 1.8 & 100 & 76 & 52 & 100 & 51 & 13 \\
\hline LD21-102 & 37.6 & 26 & 100 & 1.8 & 100 & 84 & 44 & 99 & 73 & 0 \\
\hline LD21-103 & 11.8 & 22 & 100 & 2.0 & 0 & 43 & 12 & 99 & 35 & 23 \\
\hline LD21-104 & 8.5 & 26 & 100 & 2.0 & 0 & 45 & 7 & 100 & 41 & 15 \\
\hline LD21-105 & 12.2 & 24 & 100 & 2.0 & 42 & 49 & 13 & 100 & 42 & 13 \\
\hline LD21-106 & 43.4 & 27 & 100 & 1.8 & 100 & 83 & 54 & 99 & 64 & 1 \\
\hline LD21-107 & 47.4 & 23 & 100 & 1.8 & 100 & 77 & 49 & 100 & 55 & 9 \\
\hline LD21-108 & 19.3 & 30 & 100 & 2.0 & 3 & 38 & 16 & 100 & 26 & 32 \\
\hline LD21-109 & 16.8 & 17 & 100 & 1.9 & 6 & 42 & 14 & 100 & 33 & 31 \\
\hline LD21-110 & 15.7 & 19 & 100 & 2.0 & 0 & 34 & 19 & 100 & 19 & 38 \\
\hline LD21-111 & 16.4 & 19 & 100 & 2.0 & 0 & 31 & 14 & 100 & 20 & 38 \\
\hline LD21-112 & 27.8 & 22 & 100 & 1.9 & 100 & 74 & 37 & 100 & 59 & 1 \\
\hline LD21-113 & 6.8 & 18 & 100 & 2.0 & 0 & 33 & 6 & 96 & 27 & 33 \\
\hline LD21-114 & 7.6 & 13 & 100 & 1.9 & 100 & 67 & 7 & 100 & 66 & 0 \\
\hline LD21-115 & 6.3 & 7 & 100 & 2.0 & 29 & 49 & 5 & 100 & 46 & 7 \\
\hline SD20-001 & 24.6 & 20 & 100 & 2.0 & 0 & 45 & 19 & 96 & 25 & 34 \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline \multicolumn{11}{|l|}{Table 1: General Elections (continued)} \\
\hline District & Percent Black Voting Age Population & Number of Contests & Percent of Blackpreferred candidates Democratic & Average Number of Candidates & Blackpreferred win rate & Average Blackpreferred candidate vote share & Avg. Pct. Voters Black & \begin{tabular}{l}
Avg. ER \\
Black \\
cohesion (pct.)
\end{tabular} & \begin{tabular}{l}
Avg. ER \\
White crossover support (pct.)
\end{tabular} & Pct. Black needed for majority \\
\hline SD20-002 & 14.1 & 21 & 100 & 2.0 & 0 & 35 & 15 & 99 & 25 & 34 \\
\hline SD20-003 & 42.2 & 18 & 100 & 2.0 & 100 & 55 & 42 & 100 & 23 & 35 \\
\hline SD20-004 & 46.5 & 19 & 100 & 2.0 & 100 & 60 & 40 & 100 & 24 & 35 \\
\hline SD20-005 & 34.8 & 20 & 100 & 2.0 & 100 & 54 & 29 & 100 & 26 & 32 \\
\hline SD20-006 & 14.5 & 22 & 100 & 2.0 & 0 & 34 & 16 & 98 & 21 & 38 \\
\hline SD20-007 & 33.6 & 19 & 100 & 2.0 & 5 & 47 & 36 & 100 & 20 & 38 \\
\hline SD20-008 & 12.6 & 18 & 100 & 2.0 & 0 & 38 & 11 & 86 & 31 & 34 \\
\hline SD20-009 & 12.0 & 22 & 100 & 1.9 & 64 & 57 & 10 & 100 & 52 & 8 \\
\hline SD20-010 & 20.1 & 20 & 100 & 2.0 & 0 & 39 & 20 & 100 & 18 & 39 । \\
\hline SD20-011 & 27.5 & 20 & 100 & 2.0 & 25 & 48 & 22 & 100 & 22 & 35 (10) \\
\hline SD20-012 & 18.8 & 22 & 100 & 2.0 & 0 & 42 & 16 & 100 & 24 & 34 \\
\hline SD20-013 & 25.1 & 20 & 100 & 2.0 & 40 & 47 & 25 & 99 & 27 & 31 ¢0 \\
\hline SD20-014 & 32.1 & 37 & 100 & 2.0 & 100 & 65 & 31 & 100 & 49 & 6 ¢ \\
\hline SD20-015 & 18.1 & 35 & 100 & 2.0 & 37 & 45 & 12 & 100 & 38 & 19 \\
\hline SD20-016 & 12.9 & 37 & 100 & 2.0 & 46 & 50 & 9 & 100 & 45 & 10 \\
\hline SD20-017 & 8.8 & 36 & 100 & 2.0 & 0 & 39 & 7 & 90 & 35 & 27 \\
\hline SD20-018 & 24.4 & 20 & 100 & 2.0 & 5 & 44 & 22 & 100 & 28 & 30 \\
\hline SD20-019 & 33.6 & 22 & 100 & 2.0 & 77 & 53 & 32 & 100 & 32 & 30 \\
\hline SD20-020 & 35.4 & 24 & 100 & 1.8 & 100 & 78 & 40 & 100 & 64 & 1 \\
\hline SD20-021 & 41.2 & 20 & 100 & 2.0 & 100 & 67 & 50 & 100 & 34 & 24 \\
\hline SD20-022 & 30.0 & 16 & 100 & 2.0 & 38 & 49 & 27 & 100 & 29 & 29 \\
\hline SD20-023 & 11.1 & 25 & 56 & 1.9 & 56 & 56 & 10 & 82 & 52 & 14 \\
\hline SD20-024 & 22.0 & 22 & 100 & 2.0 & 0 & 44 & 20 & 100 & 31 & 28 \\
\hline SD20-025 & 23.4 & 19 & 100 & 2.0 & 5 & 43 & 24 & 100 & 23 & 35 \\
\hline SD20-026 & 12.6 & 25 & 100 & 2.0 & 0 & 26 & 8 & 100 & 19 & 38 \\
\hline SD20-027 & 24.0 & 26 & 100 & 2.0 & 23 & 44 & 20 & 100 & 30 & 28 \\
\hline SD20-028 & 43.9 & 28 & 100 & 1.9 & 100 & 72 & 42 & 100 & 53 & 8 \\
\hline SD20-029 & 10.5 & 22 & 100 & 2.0 & 0 & 28 & 9 & 100 & 19 & 39 \\
\hline SD20-030 & 14.7 & 19 & 100 & 2.0 & 0 & 33 & 17 & 99 & 21 & 37 \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline District & \begin{tabular}{l}
Percent Black \\
Voting Age Population
\end{tabular} & Number of Contests & Percent of Blackpreferred candidates Democratic & Average Number of Candidates & Blackpreferred win rate & Average Blackpreferred candidate vote share & Avg. Pct. Voters Black & Avg. ER Black cohesion (pct.) & Avg. ER White crossover support (pct.) & Pct. Black needed for majority \\
\hline SD20-031 & 22.0 & 19 & 100 & 2.0 & 5 & 45 & 23 & 100 & 30 & 29 \\
\hline SD20-032 & 23.9 & 23 & 100 & 2.0 & 96 & 57 & 23 & 100 & 45 & 10 \\
\hline SD20-033 & 14.4 & 18 & 100 & 2.0 & 0 & 31 & 12 & 100 & 22 & 36 \\
\hline SD20-034 & 10.1 & 21 & 100 & 2.0 & 0 & 31 & 10 & 100 & 25 & 33 \\
\hline SD20-035 & 12.2 & 22 & 100 & 2.0 & 0 & 36 & 12 & 100 & 28 & 31 \\
\hline SD20-036 & 17.9 & 24 & 100 & 2.0 & 0 & 41 & 12 & 100 & 24 & 34 \\
\hline SD20-037 & 13.8 & 17 & 100 & 2.0 & 65 & 50 & 12 & 100 & 43 & 11 \\
\hline SD20-038 & 42.8 & 26 & 100 & 1.8 & 100 & 82 & 50 & 99 & 65 & 0 \\
\hline SD20-039 & 21.3 & 18 & 100 & 2.0 & 100 & 57 & 24 & 100 & 44 & 11 \\
\hline SD20-040 & 38.7 & 24 & 100 & 1.8 & 100 & 77 & 48 & 100 & 56 & 6 \\
\hline SD20-041 & 29.1 & 21 & 100 & 2.0 & 100 & 58 & 30 & 100 & 40 & 16 \\
\hline SD20-042 & 7.9 & 18 & 100 & 2.0 & 0 & 31 & 6 & 100 & 26 & 33 \\
\hline SD20-043 & 17.4 & 29 & 100 & 2.0 & 7 & 38 & 15 & 100 & 28 & 33 \\
\hline SD20-044 & 13.1 & 22 & 100 & 2.0 & 0 & 32 & 16 & 100 & 21 & 37 \\
\hline SD20-046 & 5.5 & 1 & 100 & 2.0 & 0 & 28 & 5 & 100 & 26 & 32 \\
\hline SD20-049 & 6.4 & 11 & 100 & 2.0 & 100 & 61 & 6 & 100 & 53 & 2 \\
\hline SD21-001 & 28.8 & 18 & 100 & 2.0 & 22 & 47 & 20 & 96 & 24 & 35 \\
\hline SD21-002 & 29.3 & 16 & 100 & 2.0 & 12 & 46 & 23 & 100 & 26 & 32 \\
\hline SD21-003 & 25.9 & 18 & 100 & 2.0 & 0 & 43 & 26 & 100 & 23 & 35 \\
\hline SD21-004 & 34.1 & 17 & 100 & 2.0 & 35 & 49 & 33 & 100 & 23 & 35 \\
\hline SD21-005 & 39.3 & 19 & 100 & 2.0 & 100 & 57 & 31 & 100 & 26 & 33 \\
\hline SD21-006 & 13.8 & 22 & 100 & 2.0 & 0 & 32 & 15 & 99 & 20 & 38 \\
\hline SD21-007 & 11.5 & 22 & 100 & 1.9 & 64 & 57 & 10 & 100 & 52 & 8 \\
\hline SD21-008 & 13.9 & 17 & 100 & 2.0 & 0 & 38 & 11 & 85 & 31 & 35 \\
\hline SD21-009 & 23.1 & 16 & 100 & 2.0 & 0 & 38 & 20 & 99 & 23 & 36 \\
\hline SD21-010 & 15.9 & 22 & 100 & 2.0 & 0 & 38 & 10 & 100 & 21 & 36 \\
\hline SD21-011 & 35.7 & 17 & 100 & 2.0 & 71 & 52 & 32 & 100 & 27 & 31 \\
\hline SD21-012 & 19.6 & 22 & 100 & 2.0 & 0 & 42 & 16 & 100 & 24 & 34 \\
\hline SD21-013 & 20.5 & 18 & 100 & 2.0 & 0 & 43 & 22 & 99 & 28 & 31 \\
\hline
\end{tabular}
- Ex. 9611 -
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline \multicolumn{11}{|l|}{Table 1: General Elections (continued)} \\
\hline District & \begin{tabular}{l}
Percent Black \\
Voting Age Population
\end{tabular} & Number of Contests & Percent of Blackpreferred candidates Democratic & Average Number of Candidates & Blackpreferred win rate & Average Blackpreferred candidate vote share & Avg. Pct. Voters Black & Avg. ER Black cohesion (pct.) & Avg. ER White crossover support (pct.) & Pct. Black needed for majority \\
\hline SD21-014 & 41.5 & 35 & 100 & 2.0 & 100 & 63 & 39 & 100 & 39 & 17 \\
\hline SD21-015 & 13.9 & 36 & 100 & 2.0 & 67 & 54 & 9 & 100 & 50 & 6 \\
\hline SD21-016 & 8.1 & 36 & 100 & 2.0 & 33 & 46 & 6 & 100 & 43 & 12 \\
\hline SD21-017 & 10.1 & 36 & 100 & 2.0 & 0 & 36 & 8 & 99 & 31 & 28 \\
\hline SD21-018 & 21.5 & 36 & 100 & 2.0 & 53 & 51 & 16 & 100 & 41 & 14 \\
\hline SD21-019 & 45.0 & 24 & 100 & 1.9 & 100 & 70 & 46 & 100 & 44 & 23 \\
\hline SD21-020 & 26.2 & 21 & 81 & 2.0 & 81 & 55 & 16 & 88 & 48 & 8 \\
\hline SD21-021 & 18.3 & 18 & 100 & 2.0 & 0 & 39 & 21 & 99 & 23 & 35 \\
\hline SD21-022 & 33.2 & 18 & 100 & 2.0 & 100 & 62 & 30 & 100 & 46 & 9 \\
\hline SD21-023 & 16.0 & 16 & 100 & 2.0 & 100 & 65 & 24 & 84 & 35 & 26 \\
\hline SD21-024 & 28.4 & 17 & 100 & 2.0 & 59 & 53 & 31 & 98 & 30 & 29 \\
\hline SD21-025 & 17.1 & 22 & 100 & 2.0 & & 40 & 16 & 100 & 29 & 30 \\
\hline SD21-026 & 16.8 & 22 & 100 & 2.0 & 0 & 34 & 16 & 100 & 22 & 36 \\
\hline SD21-027 & 26.2 & 25 & 100 & 2.0 & 68 & 52 & 22 & 99 & 39 & 18 \\
\hline SD21-028 & 49.5 & 26 & 100 & 1.9 & 100 & 74 & 50 & 99 & 50 & 11 \\
\hline SD21-029 & 17.3 & 16 & 100 & 2.0 & 0 & 35 & 13 & 100 & 21 & 37 \\
\hline SD21-030 & 8.8 & 18 & 100 & 2.0 & 0 & 25 & 7 & 100 & 19 & 38 \\
\hline SD21-031 & 11.5 & 20 & 100 & 2.0 & 0 & 37 & 12 & 100 & 29 & 29 \\
\hline SD21-032 & 33.8 & 24 & 100 & 2.0 & 100 & 68 & 35 & 99 & 51 & 2 \\
\hline SD21-033 & 14.4 & 18 & 100 & 2.0 & 0 & 32 & 13 & 100 & 22 & 36 \\
\hline SD21-034 & 18.9 & 24 & 100 & 2.0 & 21 & 45 & 13 & 100 & 25 & 33 \\
\hline SD21-035 & 11.1 & 22 & 100 & 2.0 & 0 & 35 & 10 & 100 & 28 & 31 \\
\hline SD21-037 & 10.7 & 22 & 100 & 2.0 & 0 & 33 & 10 & 100 & 26 & 32 \\
\hline SD21-038 & 33.4 & 19 & 100 & 2.0 & 100 & 62 & 35 & 100 & 42 & 13 \\
\hline SD21-039 & 39.0 & 23 & 100 & 1.8 & 100 & 76 & 48 & 100 & 55 & 8 \\
\hline SD21-040 & 47.5 & 25 & 100 & 1.8 & 100 & 86 & 59 & 97 & 69 & 0 \\
\hline SD21-041 & 10.0 & 20 & 100 & 2.0 & 0 & 44 & 9 & 100 & 38 & 19 \\
\hline SD21-042 & 20.3 & 18 & 100 & 1.9 & 100 & 62 & 20 & 100 & 53 & 2 \\
\hline SD21-043 & 17.9 & 29 & 100 & 2.0 & 7 & 39 & 15 & 100 & 28 & 32 \\
\hline
\end{tabular}
- Ex. 9612 -
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline \multicolumn{11}{|l|}{Table 1: General Elections (continued)} \\
\hline District & Percent Black Voting Age Population & Number of Contests & Percent of Blackpreferred candidates Democratic & Average Number of Candidates & Blackpreferred win rate & Average Blackpreferred candidate vote share & Avg. Pct. Voters Black & \begin{tabular}{l}
Avg. ER \\
Black \\
cohesion \\
(pct.)
\end{tabular} & \begin{tabular}{l}
Avg. ER \\
White crossover support (pct.)
\end{tabular} & Pct. Black needed for majority \\
\hline SD21-044 & 12.7 & 22 & 100 & 2.0 & 0 & 33 & 15 & 100 & 20 & 37 \\
\hline SD21-045 & 7.1 & 21 & 100 & 2.0 & 0 & 31 & 7 & 100 & 26 & 32 \\
\hline SD21-049 & 6.9 & 12 & 100 & 1.9 & 100 & 65 & 6 & 100 & 54 & 1 \\
\hline
\end{tabular}
- Ex. 9613 -
Table 2: Primary Elections
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline District & Percent Black Voting Age Population & Number of Contests & Percent of Blackpreferred candidates Democratic & Average Number of Candidates & Blackpreferred win rate & Average Blackpreferred candidate vote share & Avg. Pct. Voters Black & \begin{tabular}{l}
Avg. ER \\
Black cohesion (pct.)
\end{tabular} & \begin{tabular}{l}
Avg. ER \\
White crossover support (pct.)
\end{tabular} & Pct. Black needed for majority \\
\hline CD20-001 & 41.9 & 17 & 100 & 4.0 & 100 & 61 & 62 & 69 & 47 & 10 \\
\hline CD20-002 & 18.2 & 22 & 100 & 3.6 & 68 & 56 & 25 & 69 & 52 & 16 \\
\hline CD20-003 & 18.7 & 18 & 100 & 3.9 & 78 & 55 & 40 & 66 & 48 & 19 \\
\hline CD20-004 & 24.4 & 20 & 100 & 3.8 & 80 & 61 & 33 & 67 & 57 & 9 \\
\hline CD20-005 & 10.7 & 19 & 100 & 3.8 & 58 & 52 & 22 & 64 & 48 & 14 \\
\hline CD20-006 & 32.0 & 18 & 100 & 4.1 & 72 & 53 & 47 & 60 & 46 & 19 \\
\hline CD20-007 & 15.4 & 20 & 100 & 3.8 & 80 & 53 & 29 & 63 & 50 & 4 \\
\hline CD20-008 & 25.9 & 17 & 100 & 4.0 & 76 & 54 & 52 & 60 & 48 & 17 \\
\hline CD20-009 & 17.4 & 20 & 100 & 4.3 & 60 & 50 & 32 & 64 & 45 & 10 \\
\hline CD20-010 & 10.1 & 18 & 100 & 3.9 & 72 & 52 & 25 & 62 & 49 & 24 \\
\hline CD20-011 & 3.7 & 2 & 100 & 3.5 & 50 & 50 & 5 & 82 & 46 & 26 \\
\hline CD20-012 & 34.1 & 23 & 100 & 3.6 & 87 & 61 & 54 & 69 & 51 & 17 \\
\hline CD20-013 & 13.9 & 18 & 100 & 3.9 & 78 & 56 & 33 & 61 & 53 & 11 \\
\hline CD21-001 & 22.4 & 18 & 100 & 3.9 & 78 & 55 & 42 & 66 & 48 & 16 \\
\hline CD21-002 & 39.1 & 17 & 100 & 4.0 & 100 & 61 & 60 & 70 & 47 & 11 \\
\hline CD21-003 & 15.7 & 22 & 100 & 3.7 & 68 & 53 & 27 & 66 & 46 & 11 \\
\hline CD21-004 & 27.5 & 17 & 100 & 4.0 & 71 & 54 & 55 & 61 & 47 & 17 \\
\hline CD21-005 & 23.2 & 21 & 100 & 3.6 & 71 & 58 & 32 & 69 & 54 & 16 \\
\hline CD21-006 & 20.4 & 18 & 100 & 4.3 & 61 & 50 & 24 & 74 & 45 & 19 \\
\hline CD21-007 & 15.3 & 18 & 100 & 3.9 & 67 & 52 & 31 & 62 & 48 & 22 \\
\hline CD21-008 & 16.5 & 18 & 100 & 3.9 & 72 & 52 & 35 & 63 & 46 & 22 \\
\hline CD21-009 & 36.3 & 23 & 100 & 3.6 & 83 & 61 & 55 & 69 & 51 & 17 \\
\hline CD21-010 & 16.2 & 18 & 100 & 3.9 & 78 & 53 & 35 & 62 & 48 & 22 \\
\hline CD21-011 & 19.2 & 17 & 100 & 4.0 & 71 & 53 & 35 & 64 & 47 & 20 \\
\hline CD21-012 & 17.1 & 19 & 100 & 3.8 & 74 & 53 & 36 & 63 & 48 & 18 \\
\hline CD21-013 & 14.8 & 20 & 100 & 3.9 & 80 & 54 & 31 & 65 & 49 & 10 \\
\hline CD21-014 & 3.6 & 2 & 100 & 3.5 & 50 & 50 & 5 & 82 & 46 & 26 \\
\hline LD20-001 & 36.6 & 18 & 100 & 3.9 & 89 & 57 & 57 & 73 & 38 & 17 \\
\hline LD20-002 & 25.7 & 18 & 100 & 3.9 & 89 & 58 & 46 & 71 & 47 & 10 \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline District & Percent Black Voting Age Population & Number of Contests & \begin{tabular}{l}
Percent of \\
Blackpreferred candidates Democratic
\end{tabular} & Average Number of Candidates & Blackpreferred win rate & Average Blackpreferred candidate vote share & Avg. Pct. Voters Black & \begin{tabular}{l}
Avg. ER \\
Black cohesion (pct.)
\end{tabular} & Avg. ER White crossover support (pct.) & Pct. Black needed for majority \\
\hline LD20-003 & 19.2 & 22 & 100 & 3.6 & 64 & 54 & 41 & 66 & 44 & 22 \\
\hline LD20-004 & 20.6 & 18 & 100 & 3.9 & 89 & 58 & 52 & 70 & 45 & 10 \\
\hline LD20-005 & 41.0 & 20 & 100 & 3.7 & 95 & 61 & 61 & 69 & 47 & 15 \\
\hline LD20-006 & 7.1 & 16 & 100 & 4.1 & 75 & 52 & 15 & 64 & 51 & 6 \\
\hline LD20-007 & 22.4 & 23 & 100 & 3.5 & 96 & 66 & 49 & 81 & 52 & 2 \\
\hline LD20-008 & 42.5 & 19 & 100 & 3.8 & 95 & 60 & 59 & 67 & 49 & 12 \\
\hline LD20-009 & 27.9 & 19 & 100 & 3.8 & 79 & 58 & 38 & 67 & 52 & 8 \\
\hline LD20-010 & 22.0 & 17 & 100 & 4.0 & 76 & 54 & 44 & 72 & 36 & 15 \\
\hline LD20-011 & 15.4 & 22 & 100 & 3.6 & 50 & 47 & 15 & 70 & 42 & 25 \\
\hline LD20-012 & 36.9 & 18 & 100 & 3.9 & 89 & 60 & 61 & 67 & 48 & 5 \\
\hline LD20-013 & 7.9 & 17 & 100 & 4.0 & 65 & 52 & 22 & 66 & 47 & 9 \\
\hline LD20-014 & 17.8 & 16 & 100 & 4.1 & 94 & 56 & 47 & 62 & 51 & 11 \\
\hline LD20-015 & 10.7 & 16 & 100 & 4.1 & 75 & 52 & 38 & 62 & 46 & 8 \\
\hline LD20-016 & 18.3 & 19 & 100 & 3.8 & 79 & 52 & 39 & 61 & 46 & 4 \\
\hline LD20-017 & 10.1 & 22 & 100 & 3.6 & 73 & 55 & 25 & 64 & 51 & 12 \\
\hline LD20-018 & 21.1 & 19 & 100 & 3.8 & 79 & 56 & 35 & 62 & 53 & 11 \\
\hline LD20-019 & 6.3 & 20 & 100 & 3.8 & 55 & 51 & 10 & 64 & 49 & 10 \\
\hline LD20-020 & 5.5 & 15 & 100 & 4.1 & 60 & 54 & 8 & 77 & 52 & 5 \\
\hline LD20-021 & 37.4 & 23 & 100 & 3.6 & 87 & 56 & 63 & 62 & 45 & 15 \\
\hline LD20-022 & 29.3 & 23 & 100 & 3.7 & 91 & 58 & 56 & 70 & 43 & 7 \\
\hline LD20-023 & 50.6 & 21 & 100 & 3.8 & 86 & 61 & 66 & 67 & 46 & 11 \\
\hline LD20-024 & 38.2 & 19 & 100 & 3.8 & 95 & 63 & 63 & 68 & 52 & 10 \\
\hline LD20-025 & 42.6 & 12 & 100 & 4.2 & 92 & 57 & 69 & 63 & 46 & 10 \\
\hline LD20-026 & 16.5 & 19 & 100 & 3.8 & 63 & 53 & 35 & 66 & 46 & 24 \\
\hline LD20-027 & 51.6 & 23 & 100 & 3.6 & 78 & 57 & 59 & 71 & 37 & 30 \\
\hline LD20-028 & 15.8 & 19 & 100 & 3.8 & 95 & 56 & 35 & 65 & 51 & 7 \\
\hline LD20-029 & 37.2 & 24 & 100 & 3.6 & 67 & 61 & 37 & 78 & 50 & 12 \\
\hline LD20-030 & 28.2 & 23 & 100 & 3.6 & 70 & 59 & 32 & 73 & 52 & 13 \\
\hline LD20-031 & 39.8 & 24 & 100 & 3.6 & 92 & 63 & 57 & 73 & 49 & 14 \\
\hline
\end{tabular}
- Ex. 9615 -
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline \multicolumn{11}{|l|}{Table 2: Primary Elections (continued)} \\
\hline District & Percent Black Voting Age Population & Number of Contests & Percent of Blackpreferred candidates Democratic & Average Number of Candidates & Blackpreferred win rate & Average Blackpreferred candidate vote share & Avg. Pct. Voters Black & \begin{tabular}{l}
Avg. ER \\
Black \\
cohesion \\
(pct.)
\end{tabular} & \begin{tabular}{l}
Avg. ER \\
White \\
crossover \\
support \\
(pct.)
\end{tabular} & Pct. Black needed for majority \\
\hline LD20-032 & 48.1 & 20 & 100 & 3.7 & 100 & 68 & 65 & 78 & 51 & 8 \\
\hline LD20-033 & 39.9 & 23 & 100 & 3.6 & 83 & 62 & 58 & 74 & 48 & 16 \\
\hline LD20-034 & 11.5 & 22 & 100 & 3.6 & 32 & 42 & 12 & 73 & 38 & 39 \\
\hline LD20-035 & 18.0 & 24 & 100 & 3.5 & 71 & 58 & 31 & 67 & 55 & 18 \\
\hline LD20-036 & 7.5 & 24 & 100 & 3.5 & 58 & 52 & 13 & 62 & 50 & 13 \\
\hline LD20-037 & 11.3 & 23 & 100 & 3.6 & 57 & 52 & 23 & 63 & 49 & 13 \\
\hline LD20-038 & 39.4 & 22 & 100 & 3.5 & 77 & 60 & 52 & 68 & 53 & 22 \\
\hline LD20-040 & 11.3 & 21 & 100 & 3.6 & 43 & 47 & 17 & 70 & 42 & 25 \\
\hline LD20-041 & 7.1 & 22 & 100 & 3.6 & 41 & 46 & 11 & 73 & 43 & 23 \\
\hline LD20-042 & 38.1 & 10 & 100 & 3.0 & 90 & 61 & 76 & 67 & 42 & 12 \\
\hline LD20-043 & 33.9 & 19 & 100 & 3.9 & 79 & 52 & 51 & 59 & 46 & 26 \\
\hline LD20-044 & 48.1 & 19 & 100 & 3.9 & 84 & 56 & 76 & 60 & 44 & 32 \\
\hline LD20-045 & 31.4 & 20 & 100 & 3.9 & 75 & 54 & 60 & 62 & 43 & 25 \\
\hline LD20-046 & 25.0 & 18 & 100 & 4.0 & 89 & 52 & 41 & 61 & 46 & 11 \\
\hline LD20-047 & 23.8 & 24 & 100 & 3.7 & 75 & 51 & 23 & 68 & 46 & 8 \\
\hline LD20-048 & 35.5 & 22 & 100 & 3.7 & 91 & 58 & 63 & 67 & 44 & 16 \\
\hline LD20-049 & 12.3 & 22 & 100 & 3.6 & 32 & 42 & 10 & 68 & 39 & 37 \\
\hline LD20-050 & 17.5 & 20 & 100 & 3.8 & 60 & 51 & 28 & 61 & 48 & 13 \\
\hline LD20-052 & 11.0 & 18 & 100 & 3.9 & 72 & 56 & 26 & 62 & 54 & 9 \\
\hline LD20-054 & 12.9 & 18 & 100 & 3.9 & 67 & 55 & 18 & 63 & 54 & 0 \\
\hline LD20-055 & 26.2 & 20 & 100 & 4.1 & 75 & 52 & 51 & 74 & 35 & 21 \\
\hline LD20-056 & 10.2 & 22 & 100 & 3.8 & 36 & 42 & 8 & 77 & 40 & 29 \\
\hline LD20-057 & 39.7 & 20 & 100 & 3.9 & 80 & 56 & 56 & 63 & 46 & 18 \\
\hline LD20-058 & 43.1 & 21 & 100 & 3.8 & 76 & 55 & 60 & 62 & 46 & 25 \\
\hline LD20-059 & 28.6 & 21 & 100 & 3.9 & 76 & 55 & 60 & 64 & 41 & 19 \\
\hline LD20-060 & 34.6 & 20 & 100 & 3.9 & 85 & 58 & 60 & 64 & 48 & 12 \\
\hline LD20-061 & 40.0 & 20 & 100 & 3.9 & 70 & 54 & 35 & 63 & 49 & 17 \\
\hline LD20-062 & 13.7 & 21 & 100 & 3.8 & 67 & 51 & 27 & 64 & 46 & 9 \\
\hline LD20-063 & 24.8 & 20 & 100 & 3.8 & 80 & 55 & 43 & 62 & 49 & 13 \\
\hline
\end{tabular}
Table 2: Primary Elections (continued)
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline District & Percent Black Voting Age Population & Number of Contests & \begin{tabular}{l}
Percent of \\
Blackpreferred candidates Democratic
\end{tabular} & Average Number of Candidates & Blackpreferred win rate & Average Blackpreferred candidate vote share & Avg. Pct. Voters Black & \begin{tabular}{l}
Avg. ER \\
Black cohesion (pct.)
\end{tabular} & \begin{tabular}{l}
Avg. ER \\
White crossover support (pct.)
\end{tabular} & Pct. Black needed for majority \\
\hline LD20-064 & 15.1 & 20 & 100 & 3.9 & 65 & 52 & 30 & 60 & 48 & 24 \\
\hline LD20-065 & 19.6 & 18 & 100 & 3.9 & 89 & 56 & 44 & 66 & 49 & 16 \\
\hline LD20-066 & 24.0 & 18 & 100 & 4.1 & 78 & 52 & 42 & 63 & 43 & 10 \\
\hline LD20-067 & 7.9 & 18 & 100 & 3.9 & 61 & 50 & 22 & 70 & 44 & 13 \\
\hline LD20-068 & 8.4 & 19 & 100 & 4.1 & 84 & 57 & 25 & 65 & 54 & 4 \\
\hline LD20-069 & 11.6 & 19 & 100 & 3.9 & 79 & 54 & 31 & 64 & 49 & 5 \\
\hline LD20-070 & 7.2 & 18 & 100 & 3.9 & 83 & 56 & 19 & 67 & 53 & 16 \\
\hline LD20-071 & 40.3 & 23 & 100 & 3.7 & 87 & 58 & 62 & 63 & 50 & 14 \\
\hline LD20-072 & 34.4 & 23 & 100 & 3.7 & 70 & 54 & 40 & 65 & 46 & 20 \\
\hline LD20-073 & 14.6 & 18 & 100 & 4.0 & 72 & 51 & 36 & 64 & 44 & 21 \\
\hline LD20-074 & 11.4 & 19 & 100 & 3.9 & 63 & 50 & 23 & 64 & 46 & 8 \\
\hline LD20-075 & 15.3 & 20 & 100 & 3.8 & 75 & 52 & 37 & 65 & 44 & 24 \\
\hline LD20-076 & 21.6 & 19 & 100 & 3.8 & 95 & 56 & 42 & 61 & 53 & 19 \\
\hline LD20-077 & 7.3 & 19 & 100 & 3.9 & 79 & 54 & 23 & 62 & 51 & 8 \\
\hline LD20-078 & 6.1 & 18 & 100 & 3.9 & 67 & 53 & 19 & 62 & 51 & 12 \\
\hline LD20-079 & 22.3 & 19 & 100 & 4.1 & 84 & 55 & 41 & 68 & 46 & 13 \\
\hline LD20-080 & 9.5 & 18 & 100 & 3.9 & 83 & 56 & 26 & 63 & 53 & 16 \\
\hline LD20-081 & 9.6 & 18 & 100 & 3.9 & 78 & 56 & 24 & 62 & 54 & 9 \\
\hline LD20-082 & 20.2 & 10 & 100 & 2.8 & 100 & 61 & 42 & 70 & 55 & 7 \\
\hline LD20-083 & 19.5 & 18 & 100 & 3.9 & 78 & 53 & 37 & 64 & 46 & 25 \\
\hline LD20-084 & 14.1 & 18 & 100 & 3.9 & 89 & 52 & 31 & 64 & 47 & 9 \\
\hline LD20-086 & 6.0 & 20 & 100 & 3.7 & 65 & 54 & 14 & 66 & 52 & 16 \\
\hline LD20-087 & 5.1 & 19 & 100 & 3.8 & 74 & 52 & 13 & 66 & 49 & 11 \\
\hline LD20-088 & 16.0 & 14 & 100 & 4.3 & 64 & 55 & 24 & 67 & 51 & 13 \\
\hline LD20-089 & 7.9 & 17 & 100 & 4.0 & 88 & 55 & 23 & 61 & 54 & 1 \\
\hline LD20-090 & 3.3 & 17 & 100 & 3.9 & 53 & 47 & 8 & 70 & 45 & 19 \\
\hline LD20-091 & 4.8 & 19 & 100 & 3.8 & 63 & 53 & 13 & 65 & 50 & 29 \\
\hline LD20-092 & 40.2 & 21 & 100 & 3.6 & 81 & 60 & 64 & 67 & 48 & 12 \\
\hline LD20-094 & 5.7 & 23 & 100 & 3.8 & 52 & 46 & 12 & 58 & 44 & 14 \\
\hline
\end{tabular}
- Ex. 9617 -
Table 2: Primary Elections (continued)
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline District & Percent Black Voting Age Population & Number of Contests & Percent of Blackpreferred candidates Democratic & Average Number of Candidates & Blackpreferred win rate & Average Blackpreferred candidate vote share & Avg. Pct. Voters Black & \begin{tabular}{l}
Avg. ER \\
Black cohesion (pct.)
\end{tabular} & \begin{tabular}{l}
Avg. ER \\
White crossover support (pct.)
\end{tabular} & Pct. Black needed for majority \\
\hline LD20-095 & 9.6 & 18 & 100 & 3.9 & 67 & 51 & 22 & 61 & 48 & 11 \\
\hline LD20-096 & 8.9 & 17 & 100 & 4.0 & 71 & 50 & 17 & 59 & 48 & 16 \\
\hline LD20-097 & 5.5 & 18 & 100 & 3.9 & 61 & 55 & 15 & 67 & 52 & 8 \\
\hline LD20-098 & 9.2 & 18 & 100 & 3.9 & 56 & 54 & 18 & 63 & 52 & 21 \\
\hline LD20-099 & 36.0 & 23 & 100 & 3.6 & 87 & 62 & 65 & 70 & 47 & 15 \\
\hline LD20-100 & 30.5 & 20 & 100 & 3.7 & 80 & 57 & 41 & 66 & 51 & 19 \\
\hline LD20-101 & 48.0 & 21 & 100 & 3.6 & 90 & 62 & 72 & 69 & 44 & 19 \\
\hline LD20-102 & 33.8 & 19 & 100 & 4.2 & 84 & 59 & 46 & 68 & 52 & 15 \\
\hline LD20-103 & 14.2 & 18 & 100 & 3.9 & 67 & 53 & 24 & 64 & 49 & 21 \\
\hline LD20-104 & 12.0 & 17 & 100 & 3.9 & 53 & 46 & 15 & 66 & 43 & 33 \\
\hline LD20-105 & 12.9 & 18 & 100 & 4.1 & 78 & 55 & 24 & 65 & 52 & 9 \\
\hline LD20-106 & 46.3 & 26 & 100 & 3.7 & 100 & 64 & 72 & 72 & 44 & 12 \\
\hline LD20-107 & 53.6 & 24 & 100 & 3.6 & 96 & 64 & 72 & 72 & 44 & 12 \\
\hline LD20-108 & 19.5 & 19 & 100 & 3.8 & 74 & 53 & 41 & 69 & 43 & 14 \\
\hline LD20-109 & 15.3 & 20 & 100 & 3.7 & 75 & 53 & 30 & 62 & 49 & 8 \\
\hline LD20-110 & 14.6 & 19 & 100 & 3.8 & 84 & 53 & 37 & 64 & 47 & 12 \\
\hline LD20-111 & 22.8 & 21 & 100 & 3.8 & 90 & 57 & 46 & 71 & 45 & 9 \\
\hline LD20-112 & 9.2 & 20 & 100 & 3.8 & 70 & 51 & 19 & 66 & 47 & 11 \\
\hline LD20-115 & 6.9 & 17 & 100 & 4.2 & 59 & 54 & 7 & 66 & 54 & 13 \\
\hline LD20-116 & 7.2 & 20 & 100 & 4.0 & 65 & 56 & 8 & 63 & 55 & 18 \\
\hline LD20-117 & 3.6 & 22 & 100 & 3.7 & 59 & 51 & 5 & 67 & 50 & 4 \\
\hline LD21-001 & 17.7 & 17 & 100 & 4.0 & 100 & 56 & 35 & 70 & 49 & 9 \\
\hline LD21-002 & 23.7 & 18 & 100 & 3.9 & 72 & 56 & 37 & 63 & 52 & 22 \\
\hline LD21-003 & 19.4 & 21 & 100 & 3.7 & 62 & 52 & 35 & 68 & 43 & 22 \\
\hline LD21-004 & 24.9 & 18 & 100 & 4.0 & 83 & 56 & 53 & 66 & 45 & 7 \\
\hline LD21-005 & 37.5 & 19 & 100 & 3.8 & 95 & 59 & 60 & 68 & 45 & 20 \\
\hline LD21-007 & 22.2 & 23 & 100 & 3.5 & 96 & 66 & 48 & 81 & 52 & 3 \\
\hline LD21-008 & 44.2 & 19 & 100 & 3.8 & 95 & 60 & 59 & 67 & 48 & 10 \\
\hline LD21-009 & 24.6 & 17 & 100 & 4.0 & 71 & 56 & 39 & 61 & 52 & 16 \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline \multicolumn{11}{|l|}{Table 2: Primary Elections (continued)} \\
\hline District & Percent Black Voting Age Population & Number of Contests & \begin{tabular}{l}
Percent of \\
Blackpreferred candidates Democratic
\end{tabular} & Average Number of Candidates & Blackpreferred win rate & Average Blackpreferred candidate vote share & Avg. Pct. Voters Black & Avg. ER Black cohesion (pct.) & Avg. ER White crossover support (pct.) & Pct. Black needed for majority \\
\hline LD21-010 & 33.1 & 18 & 100 & 3.9 & 94 & 57 & 58 & 65 & 47 & 16 \\
\hline LD21-011 & 14.2 & 22 & 100 & 3.6 & 45 & 46 & 14 & 71 & 42 & 31 \\
\hline LD21-012 & 37.7 & 17 & 100 & 4.0 & 94 & 59 & 60 & 68 & 46 & 6 \\
\hline LD21-013 & 8.3 & 18 & 100 & 3.9 & 72 & 54 & 19 & 66 & 50 & 14 \\
\hline LD21-014 & 17.8 & 16 & 100 & 4.1 & 94 & 56 & 47 & 62 & 51 & 11 \\
\hline LD21-015 & 10.6 & 17 & 100 & 4.1 & 71 & 51 & 39 & 60 & 45 & 6 \\
\hline LD21-016 & 13.2 & 17 & 100 & 4.0 & 71 & 52 & 38 & 61 & 47 & 6 \\
\hline LD21-017 & 10.3 & 23 & 100 & 3.6 & 70 & 53 & 25 & 62 & 49 & 12 \\
\hline LD21-018 & 21.6 & 20 & 100 & 3.9 & 70 & 54 & 35 & 60 & 50 & 11 \\
\hline LD21-019 & 5.1 & 20 & 100 & 3.8 & 70 & 53 & 10 & 64 & 51 & 11 \\
\hline LD21-020 & 5.3 & 14 & 100 & 4.1 & 64 & 56 & 8 & 77 & 54 & 5 \\
\hline LD21-021 & 10.8 & 22 & 100 & 3.6 & 59 & 51 & 16 & 63 & 49 & 15 \\
\hline LD21-022 & 27.7 & 21 & 100 & 3.8 & 90 & 56 & 55 & 69 & 45 & 10 \\
\hline LD21-023 & 52.5 & 19 & 100 & 3.8 & 89 & 63 & 67 & 70 & 46 & 11 \\
\hline LD21-024 & 36.6 & 18 & 100 & 3.9 & 94 & 61 & 61 & 66 & 51 & 11 \\
\hline LD21-025 & 40.0 & 19 & 100 & 3.8 & 100 & 62 & 63 & 74 & 45 & 13 \\
\hline LD21-026 & 16.8 & 10 & 100 & 2.8 & 80 & 60 & 37 & 75 & 52 & 30 \\
\hline LD21-027 & 50.8 & 22 & 100 & 3.7 & 86 & 60 & 62 & 73 & 49 & 14 \\
\hline LD21-028 & 16.2 & 20 & 100 & 3.8 & 90 & 55 & 36 & 64 & 50 & 7 \\
\hline LD21-029 & 38.3 & 24 & 100 & 3.6 & 79 & 62 & 43 & 77 & 51 & 12 \\
\hline LD21-030 & 33.0 & 23 & 100 & 3.6 & 74 & 60 & 30 & 74 & 54 & 13 \\
\hline LD21-032 & 42.4 & 18 & 100 & 3.9 & 94 & 62 & 60 & 80 & 34 & 15 \\
\hline LD21-033 & 29.8 & 22 & 100 & 3.6 & 73 & 61 & 34 & 74 & 55 & 8 \\
\hline LD21-034 & 18.2 & 22 & 100 & 3.6 & 50 & 50 & 18 & 67 & 46 & 28 \\
\hline LD21-036 & 8.0 & 8 & 100 & 5.2 & 50 & 42 & 13 & 53 & 40 & 0 \\
\hline LD21-040 & 10.7 & 22 & 100 & 3.6 & 41 & 45 & 14 & 76 & 41 & 28 \\
\hline LD21-042 & 38.1 & 10 & 100 & 3.0 & 90 & 61 & 76 & 67 & 42 & 12 \\
\hline LD21-043 & 34.8 & 19 & 100 & 3.9 & 79 & 52 & 52 & 59 & 46 & 26 \\
\hline LD21-044 & 48.1 & 19 & 100 & 3.9 & 84 & 56 & 76 & 60 & 44 & 32 \\
\hline
\end{tabular}

\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline \multicolumn{11}{|l|}{Table 2: Primary Elections (continued)} \\
\hline District & \begin{tabular}{l}
Percent Black \\
Voting Age Population
\end{tabular} & Number of Contests & \begin{tabular}{l}
Percent of \\
Blackpreferred candidates Democratic
\end{tabular} & Average Number of Candidates & Blackpreferred win rate & Average Blackpreferred candidate vote share & Avg. Pct. Voters Black & Avg. ER Black cohesion (pct.) & Avg. ER White crossover support (pct.) & Pct. Black needed for majority \\
\hline LD21-075 & 15.3 & 20 & 100 & 3.8 & 75 & 52 & 37 & 65 & 44 & 24 \\
\hline LD21-076 & 20.4 & 20 & 100 & 3.7 & 95 & 57 & 41 & 61 & 54 & 7 \\
\hline LD21-077 & 5.5 & 20 & 100 & 3.9 & 75 & 52 & 20 & 60 & 50 & 8 \\
\hline LD21-078 & 5.5 & 18 & 100 & 3.9 & 72 & 53 & 17 & 59 & 51 & 8 \\
\hline LD21-079 & 16.9 & 18 & 100 & 3.9 & 83 & 57 & 30 & 66 & 53 & 3 \\
\hline LD21-080 & 9.4 & 19 & 100 & 3.9 & 84 & 54 & 27 & 62 & 51 & 16 \\
\hline LD21-081 & 9.6 & 19 & 100 & 3.8 & 79 & 55 & 24 & 61 & 54 & 10 \\
\hline LD21-082 & 21.0 & 18 & 100 & 3.9 & 89 & 56 & 37 & 63 & 52 & 12 \\
\hline LD21-083 & 11.9 & 17 & 100 & 4.0 & 82 & 53 & 31 & 69 & 45 & 20 \\
\hline LD21-084 & 16.0 & 18 & 100 & 3.9 & 83 & 52 & 35 & 63 & 46 & 10 \\
\hline LD21-086 & 6.1 & 20 & 100 & 3.7 & 65 & 54 & 13 & 67 & 51 & 18 \\
\hline LD21-087 & 4.9 & 19 & 100 & 3.8 & 58 & 51 & 11 & 63 & 49 & 31 \\
\hline LD21-088 & 23.3 & 14 & 100 & 4.3 & 71 & 55 & 28 & 64 & 52 & 13 \\
\hline LD21-089 & 6.7 & 17 & 100 & 4.0 & 76 & 52 & 19 & 64 & 49 & 2 \\
\hline LD21-090 & 3.5 & 19 & 100 & 3.8 & 58 & 49 & 8 & 69 & 47 & 13 \\
\hline LD21-091 & 14.1 & 18 & 100 & 3.9 & 72 & 51 & 33 & 65 & 46 & 20 \\
\hline LD21-092 & 39.1 & 20 & 100 & 3.7 & 80 & 59 & 62 & 66 & 48 & 10 \\
\hline LD21-094 & 5.3 & 20 & 100 & 3.8 & 65 & 51 & 11 & 62 & 50 & 12 \\
\hline LD21-095 & 7.6 & 16 & 100 & 4.2 & 69 & 50 & 14 & 62 & 48 & 17 \\
\hline LD21-096 & 9.9 & 17 & 100 & 4.0 & 76 & 53 & 21 & 59 & 51 & 16 \\
\hline LD21-097 & 5.5 & 18 & 100 & 3.9 & 61 & 54 & 15 & 67 & 52 & 8 \\
\hline LD21-098 & 7.5 & 18 & 100 & 3.9 & 50 & 50 & 14 & 66 & 48 & 28 \\
\hline LD21-099 & 46.8 & 27 & 100 & 3.7 & 96 & 62 & 74 & 69 & 44 & 15 \\
\hline LD21-100 & 31.0 & 20 & 100 & 3.7 & 80 & 57 & 41 & 65 & 51 & 19 \\
\hline LD21-101 & 46.8 & 21 & 100 & 3.8 & 90 & 60 & 70 & 67 & 43 & 16 \\
\hline LD21-102 & 37.6 & 22 & 100 & 3.9 & 86 & 59 & 51 & 68 & 50 & 19 \\
\hline LD21-103 & 11.8 & 20 & 100 & 3.8 & 70 & 53 & 25 & 66 & 49 & 22 \\
\hline LD21-104 & 8.5 & 17 & 100 & 3.9 & 35 & 40 & 12 & 67 & 37 & 47 \\
\hline LD21-105 & 12.2 & 18 & 100 & 4.1 & 78 & 55 & 24 & 63 & 52 & 9 \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline \multicolumn{11}{|l|}{Table 2: Primary Elections (continued)} \\
\hline District & Percent Black Voting Age Population & Number of Contests & Percent of Blackpreferred candidates Democratic & Average Number of Candidates & Blackpreferred win rate & Average Blackpreferred candidate vote share & Avg. Pct. Voters Black & \begin{tabular}{l}
Avg. ER \\
Black \\
cohesion \\
(pct.)
\end{tabular} & \begin{tabular}{l}
Avg. ER \\
White crossover support (pct.)
\end{tabular} & Pct. Black needed for majority \\
\hline LD21-106 & 43.4 & 27 & 100 & 3.7 & 100 & 63 & 68 & 73 & 45 & 13 \\
\hline LD21-107 & 47.4 & 23 & 100 & 3.6 & 96 & 65 & 68 & 72 & 47 & 14 \\
\hline LD21-108 & 19.3 & 19 & 100 & 3.8 & 74 & 53 & 38 & 67 & 44 & 15 \\
\hline LD21-110 & 15.7 & 19 & 100 & 4.0 & 95 & 56 & 46 & 68 & 46 & 11 \\
\hline LD21-111 & 16.4 & 19 & 100 & 4.0 & 74 & 52 & 33 & 65 & 47 & 10 \\
\hline LD21-112 & 27.8 & 20 & 100 & 3.7 & 75 & 58 & 48 & 67 & 49 & 18 \\
\hline LD21-113 & 6.8 & 19 & 100 & 4.0 & 63 & 49 & 13 & 59 & 47 & 3 \\
\hline LD21-114 & 7.6 & 19 & 100 & 4.4 & 63 & 53 & 7 & 61 & 52 & 9 \\
\hline LD21-115 & 6.3 & 17 & 100 & 4.2 & 53 & 50 & 6 & 62 & 49 & 13 \\
\hline LD21-117 & 3.5 & 10 & 100 & 2.8 & 70 & 58 & 5 & 65 & 57 & 4 \\
\hline SD20-001 & 24.6 & 17 & 100 & 4.0 & 94 & 56 & 41 & 66 & 48 & 10 \\
\hline SD20-002 & 14.1 & 20 & 100 & 3.9 & 60 & 50 & 32 & 67 & 46 & 23 \\
\hline SD20-003 & 42.2 & 18 & 100 & 3.9 & 94 & 64 & 61 & 77 & 45 & 7 \\
\hline SD20-004 & 46.5 & 18 & 100 & 4.1 & 94 & 59 & 65 & 68 & 49 & 12 \\
\hline SD20-005 & 34.8 & 17 & 100 & 4.0 & 82 & 56 & 49 & 64 & 49 & 21 \\
\hline SD20-006 & 14.5 & 17 & 100 & 4.0 & 82 & 55 & 45 & 64 & 47 & 10 \\
\hline SD20-007 & 33.6 & 20 & 100 & 3.8 & 95 & 57 & 62 & 64 & 48 & 7 \\
\hline SD20-008 & 12.6 & 21 & 100 & 3.7 & 62 & 51 & 27 & 64 & 44 & 20 \\
\hline SD20-009 & 12.0 & 18 & 100 & 3.9 & 72 & 54 & 20 & 62 & 53 & 13 \\
\hline SD20-010 & 20.1 & 19 & 100 & 3.9 & 89 & 57 & 47 & 65 & 49 & 14 \\
\hline SD20-011 & 27.5 & 18 & 100 & 3.9 & 89 & 60 & 52 & 69 & 48 & 14 \\
\hline SD20-012 & 18.8 & 21 & 100 & 3.7 & 67 & 54 & 41 & 62 & 47 & 5 \\
\hline SD20-013 & 25.1 & 25 & 100 & 3.9 & 72 & 52 & 32 & 64 & 47 & 4 \\
\hline SD20-014 & 32.1 & 22 & 100 & 3.6 & 82 & 61 & 44 & 73 & 52 & 8 \\
\hline SD20-015 & 18.1 & 22 & 100 & 3.5 & 64 & 55 & 23 & 64 & 53 & 12 \\
\hline SD20-016 & 12.9 & 22 & 100 & 3.6 & 41 & 45 & 15 & 75 & 40 & 24 \\
\hline SD20-017 & 8.8 & 22 & 100 & 3.6 & 55 & 49 & 15 & 63 & 47 & 21 \\
\hline SD20-018 & 24.4 & 20 & 100 & 3.8 & 90 & 63 & 46 & 74 & 53 & 11 \\
\hline SD20-019 & 33.6 & 18 & 100 & 4.0 & 78 & 53 & 56 & 59 & 45 & 16 \\
\hline
\end{tabular}
- Ex. 9622 -
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline District & Percent Black Voting Age Population & Number of Contests & Percent of Blackpreferred candidates Democratic & Average Number of Candidates & Blackpreferred win rate & Average Blackpreferred candidate vote share & Avg. Pct. Voters Black & Avg. ER Black cohesion (pct.) & Avg. ER White crossover support (pct.) & Pct. Black needed for majority \\
\hline SD20-020 & 35.4 & 24 & 100 & 3.6 & 71 & 61 & 42 & 74 & 52 & 13 \\
\hline SD20-021 & 41.2 & 21 & 100 & 3.8 & 76 & 57 & 73 & 61 & 46 & 16 \\
\hline SD20-022 & 30.0 & 21 & 100 & 3.9 & 76 & 59 & 41 & 66 & 55 & 0 \\
\hline SD20-023 & 11.1 & 23 & 100 & 3.9 & 48 & 48 & 13 & 58 & 47 & 6 \\
\hline SD20-024 & 22.0 & 18 & 100 & 3.9 & 83 & 55 & 43 & 63 & 49 & 18 \\
\hline SD20-025 & 23.4 & 18 & 100 & 4.0 & 67 & 53 & 44 & 62 & 46 & 20 \\
\hline SD20-026 & 12.6 & 17 & 100 & 4.0 & 82 & 55 & 29 & 63 & 51 & 5 \\
\hline SD20-027 & 24.0 & 21 & 100 & 3.8 & 76 & 54 & 45 & 62 & 48 & 5 \\
\hline SD20-028 & 43.9 & 20 & 100 & 3.9 & 70 & 55 & 50 & 64 & 46 & 17 \\
\hline SD20-029 & 10.5 & 18 & 100 & 3.9 & 78 & 56 & 28 & 63 & 53 & 10 \\
\hline SD20-030 & 14.7 & 18 & 100 & 3.9 & 78 & 51 & 38 & 60 & 47 & 22 \\
\hline SD20-031 & 22.0 & 19 & 100 & 3.8 & 79 & 54 & 49 & 64 & 45 & 24 \\
\hline SD20-032 & 23.9 & 21 & 100 & 3.7 & 62 & 51 & 35 & 65 & 44 & 25 \\
\hline SD20-033 & 14.4 & 19 & 100 & 3.8 & 95 & 55 & 35 & 63 & 52 & 8 \\
\hline SD20-034 & 10.1 & 19 & 100 & 4.0 & 74 & 51 & 24 & 60 & 48 & 10 \\
\hline SD20-035 & 12.2 & 19 & 100 & 3.9 & 84 & 55 & 32 & 62 & 51 & 6 \\
\hline SD20-036 & 17.9 & 18 & 100 & 3.9 & 83 & 53 & 37 & 65 & 46 & 17 \\
\hline SD20-037 & 13.8 & 16 & 100 & 4.2 & 56 & 46 & 18 & 62 & 43 & 29 \\
\hline SD20-038 & 42.8 & 25 & 100 & 3.7 & 92 & 62 & 63 & 69 & 50 & 17 \\
\hline SD20-039 & 21.3 & 20 & 100 & 3.8 & 80 & 55 & 40 & 66 & 48 & 15 \\
\hline SD20-040 & 38.7 & 24 & 100 & 3.8 & 88 & 62 & 65 & 69 & 47 & 16 \\
\hline SD20-041 & 29.1 & 23 & 100 & 3.6 & 83 & 60 & 50 & 69 & 51 & 17 \\
\hline SD20-042 & 7.9 & 17 & 100 & 4.0 & 82 & 52 & 18 & 60 & 51 & 2 \\
\hline SD20-043 & 17.4 & 19 & 100 & 3.8 & 79 & 54 & 36 & 65 & 47 & 8 \\
\hline SD20-044 & 13.1 & 18 & 100 & 3.9 & 72 & 54 & 35 & 66 & 48 & 10 \\
\hline SD20-045 & 3.3 & 1 & 100 & 2.0 & 0 & 38 & 6 & 72 & 33 & 44 \\
\hline SD20-046 & 5.5 & 20 & 100 & 3.7 & 65 & 54 & 12 & 63 & 52 & 7 \\
\hline SD20-047 & 5.1 & 18 & 100 & 3.9 & 39 & 45 & 9 & 65 & 42 & 23 \\
\hline SD20-049 & 6.4 & & & 4.2 & 68 & 56 & 6 & & 55 & 11 \\
\hline
\end{tabular}
- Ex. 9623 -
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline \multicolumn{11}{|l|}{Table 2: Primary Elections (continued)} \\
\hline District & Percent Black Voting Age Population & Number of Contests & Percent of Blackpreferred candidates Democratic & Average Number of Candidates & Blackpreferred win rate & Average Blackpreferred candidate vote share & \begin{tabular}{l}
Avg. Pct. \\
Voters \\
Black
\end{tabular} & \begin{tabular}{l}
Avg. ER \\
Black \\
cohesion (pct.)
\end{tabular} & \begin{tabular}{l}
Avg. ER \\
White crossover support (pct.)
\end{tabular} & Pct. Black needed for majority \\
\hline SD21-001 & 28.8 & 17 & 100 & 4.0 & 88 & 57 & 46 & 67 & 47 & 7 \\
\hline SD21-002 & 29.3 & 17 & 100 & 4.0 & 94 & 60 & 48 & 70 & 49 & 9 \\
\hline SD21-003 & 25.9 & 21 & 100 & 4.0 & 90 & 57 & 46 & 70 & 46 & 10 \\
\hline SD21-004 & 34.1 & 17 & 100 & 4.0 & 88 & 59 & 59 & 66 & 48 & 12 \\
\hline SD21-005 & 39.3 & 17 & 100 & 4.0 & 94 & 59 & 56 & 65 & 50 & 12 \\
\hline SD21-006 & 13.8 & 18 & 100 & 4.1 & 83 & 55 & 44 & 63 & 48 & 9 \\
\hline SD21-007 & 11.5 & 17 & 100 & 4.1 & 71 & 54 & 19 & 62 & 53 & 14 \\
\hline SD21-008 & 13.9 & 20 & 100 & 3.8 & 65 & 51 & 25 & 64 & 46 & 15 \\
\hline SD21-009 & 23.1 & 17 & 100 & 4.0 & 94 & 56 & 50 & 66 & 46 & 5 \\
\hline SD21-010 & 15.9 & 20 & 100 & 3.8 & 80 & 54 & 35 & 65 & 48 & 13 \\
\hline SD21-011 & 35.7 & 19 & 100 & 4.0 & 84 & 61 & 59 & 74 & 45 & 12 \\
\hline SD21-012 & 19.6 & 20 & 100 & 3.8 & 65 & 53 & 42 & 62 & 46 & 18 \\
\hline SD21-013 & 20.5 & 18 & 100 & 3.9 & 78 & 60 & 37 & 66 & 56 & 0 \\
\hline SD21-014 & 41.5 & 22 & 100 & 3.6 & 86 & 62 & 61 & 75 & 43 & 21 \\
\hline SD21-015 & 13.9 & 22 & 100 & 3.6 & 36 & 43 & 12 & 72 & 39 & 32 \\
\hline SD21-016 & 8.1 & 22 & 100 & 3.6 & 45 & 45 & 11 & 76 & 42 & 21 \\
\hline SD21-017 & 10.1 & 22 & 100 & 3.6 & 64 & 54 & 20 & 62 & 52 & 6 \\
\hline SD21-018 & 21.5 & 22 & 100 & 3.5 & 64 & 56 & 27 & 64 & 53 & 12 \\
\hline SD21-019 & 45.0 & 19 & 100 & 3.9 & 74 & 54 & 69 & 58 & 45 & 17 \\
\hline SD21-020 & 26.2 & 21 & 100 & 3.8 & 67 & 55 & 33 & 76 & 47 & 14 \\
\hline SD21-021 & 18.3 & 18 & 100 & 3.9 & 61 & 50 & 41 & 59 & 44 & 5 \\
\hline SD21-022 & 33.2 & 23 & 100 & 3.6 & 74 & 60 & 37 & 73 & 52 & 14 \\
\hline SD21-023 & 16.0 & 24 & 100 & 3.6 & 58 & 51 & 21 & 60 & 50 & 18 \\
\hline SD21-024 & 28.4 & 23 & 100 & 3.8 & 78 & 53 & 42 & 69 & 44 & 6 \\
\hline SD21-025 & 17.1 & 19 & 100 & 3.8 & 84 & 56 & 34 & 62 & 53 & 15 \\
\hline SD21-026 & 16.8 & 18 & 100 & 3.9 & 78 & 54 & 39 & 62 & 50 & 25 \\
\hline SD21-027 & 26.2 & 21 & 100 & 3.9 & 67 & 53 & 36 & 62 & 47 & 12 \\
\hline SD21-028 & 49.5 & 20 & 100 & 3.9 & 85 & 57 & 65 & 63 & 46 & 17 \\
\hline SD21-029 & 17.3 & 17 & 100 & 4.0 & 76 & 50 & 39 & 67 & 41 & 21 \\
\hline
\end{tabular}
- Ex. 9624 -
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline \multicolumn{11}{|l|}{Table 2: Primary Elections (continued)} \\
\hline District & \begin{tabular}{l}
Percent Black \\
Voting Age Population
\end{tabular} & Number of Contests & Percent of Blackpreferred candidates Democratic & Average Number of Candidates & Blackpreferred win rate & \begin{tabular}{l}
Average \\
Blackpreferred candidate vote share
\end{tabular} & Avg. Pct. Voters Black & Avg. ER Black cohesion (pct.) & Avg. ER White crossover support (pct.) & Pct. Black needed for majority \\
\hline SD21-030 & 8.8 & 18 & 100 & 3.9 & 83 & 56 & 24 & 62 & 54 & 10 \\
\hline SD21-031 & 11.5 & 19 & 100 & 3.9 & 68 & 49 & 30 & 64 & 42 & 23 \\
\hline SD21-032 & 33.8 & 22 & 100 & 3.7 & 68 & 54 & 46 & 63 & 45 & 24 \\
\hline SD21-033 & 14.4 & 20 & 100 & 3.8 & 95 & 56 & 34 & 62 & 53 & 7 \\
\hline SD21-034 & 18.9 & 20 & 100 & 3.7 & 85 & 55 & 38 & 63 & 50 & 4 \\
\hline SD21-035 & 11.1 & 18 & 100 & 4.0 & 83 & 54 & 30 & 62 & 50 & 7 \\
\hline SD21-036 & 4.2 & 18 & 100 & 3.9 & 56 & 48 & 10 & 65 & 46 & 14 \\
\hline SD21-037 & 10.7 & 17 & 100 & 4.0 & 71 & 52 & 23 & 62 & 49 & 11 \\
\hline SD21-038 & 33.4 & 23 & 100 & 3.6 & 91 & 61 & 55 & 71 & 49 & 15 \\
\hline SD21-039 & 39.0 & 24 & 100 & 3.5 & 92 & 63 & 65 & 70 & 47 & 14 \\
\hline SD21-040 & 47.5 & 24 & 100 & 3.8 & 100 & 64 & 71 & 70 & 49 & 16 \\
\hline SD21-041 & 10.0 & 17 & 100 & 3.9 & 65 & 51 & 20 & 66 & 47 & 20 \\
\hline SD21-042 & 20.3 & 18 & 100 & 4.1 & 72 & 56 & 26 & 64 & 53 & 10 \\
\hline SD21-043 & 17.9 & 19 & 100 & 3.8 & 79 & 54 & 37 & 65 & 47 & 9 \\
\hline SD21-044 & 12.7 & 19 & 100 & 4.0 & 74 & 53 & 35 & 67 & 45 & 11 \\
\hline SD21-045 & 7.1 & 17 & 100 & 4.0 & 82 & 55 & 18 & 61 & 53 & 1 \\
\hline SD21-046 & 4.6 & 17 & 100 & 4.0 & 59 & 52 & 7 & 72 & 50 & 7 \\
\hline SD21-048 & 5.2 & 20 & 100 & 3.9 & 55 & 47 & 9 & 60 & 45 & 3 \\
\hline SD21-049 & 6.9 & 19 & 100 & 4.2 & 68 & 56 & 7 & 62 & 55 & 11 \\
\hline
\end{tabular}
- Ex. 9625 -
Table 3: General Elections (contests with Black candidate)
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline District & Percent Black Voting Age Population & Number of Contests & Percent of Blackpreferred candidates Democratic & Average Number of Candidates & Blackpreferred win rate & Average Blackpreferred candidate vote share & Avg. Pct. Voters Black & \begin{tabular}{l}
Avg. ER \\
Black cohesion (pct.)
\end{tabular} & \begin{tabular}{l}
Avg. ER \\
White crossover support (pct.)
\end{tabular} & Pct. Black needed for majority \\
\hline CD20-001 & 41.9 & 4 & 100 & 2.0 & 100 & 54 & 38 & 100 & 21 & 37 \\
\hline CD20-002 & 18.2 & 6 & 100 & 2.0 & 17 & 47 & 14 & 99 & 38 & 19 \\
\hline CD20-003 & 18.7 & 5 & 100 & 2.0 & 0 & 36 & 18 & 98 & 22 & 37 \\
\hline CD20-004 & 24.4 & 3 & 100 & 2.0 & 100 & 68 & 21 & 93 & 39 & 21 \\
\hline CD20-005 & 10.7 & 3 & 100 & 2.0 & 0 & 33 & 10 & 100 & 24 & 34 \\
\hline CD20-006 & 32.0 & 3 & 100 & 2.0 & 100 & 60 & 30 & 100 & 41 & 15 \\
\hline CD20-007 & 15.4 & 3 & 100 & 2.0 & 0 & 41 & 13 & 91 & 32 & 30 \\
\hline CD20-008 & 25.9 & 4 & 100 & 2.0 & 0 & 48 & 30 & 100 & 26 & 32 \\
\hline CD20-009 & 17.4 & 4 & 100 & 2.0 & 0 & 43 & 16 & 100 & 31 & 28 \\
\hline CD20-010 & 10.1 & 3 & 100 & 2.0 & 0 & 31 & 11 & 100 & 25 & 33 \\
\hline CD20-012 & 34.1 & 7 & 100 & 1.7 & 100 & 76 & 39 & 99 & 62 & 7 \\
\hline CD20-013 & 13.9 & 3 & 100 & 2.0 & 0 & 32 & 12 & 100 & 22 & 36 \\
\hline CD21-001 & 22.4 & 5 & 100 & 2.0 & 0 & 38 & 19 & 98 & 22 & 37 \\
\hline CD21-002 & 39.1 & 3 & 100 & 2.0 & 100 & 53 & 34 & 100 & 23 & 35 \\
\hline CD21-003 & 15.7 & 3 & 100 & 2.0 & 0 & 42 & 14 & 93 & 32 & 29 \\
\hline CD21-004 & 27.5 & 3 & 100 & 2.0 & 0 & 48 & 34 & 100 & 26 & 32 \\
\hline CD21-005 & 23.2 & 6 & 100 & 2.0 & 33 & 47 & 18 & 99 & 36 & 22 \\
\hline CD21-006 & 20.4 & 3 & 100 & 2.0 & 100 & 65 & 17 & 100 & 40 & 17 \\
\hline CD21-007 & 15.3 & 3 & 100 & 2.0 & 0 & 38 & 12 & 100 & 27 & 32 \\
\hline CD21-008 & 16.5 & 4 & 100 & 2.0 & 0 & 40 & 14 & 100 & 28 & 30 \\
\hline CD21-009 & 36.3 & 7 & 100 & 1.7 & 100 & 79 & 43 & 99 & 64 & 3 \\
\hline CD21-010 & 16.2 & 3 & 100 & 2.0 & 0 & 34 & 11 & 100 & 23 & 35 \\
\hline CD21-011 & 19.2 & 3 & 100 & 2.0 & 0 & 34 & 15 & 100 & 25 & 33 \\
\hline CD21-012 & 17.1 & 3 & 100 & 2.0 & 0 & 42 & 18 & 100 & 32 & 26 \\
\hline CD21-013 & 14.8 & 3 & 100 & 2.0 & 0 & 37 & 14 & 100 & 27 & 32 \\
\hline LD20-001 & 36.6 & 4 & 100 & 2.0 & 0 & 47 & 28 & 100 & 18 & 39 \\
\hline LD20-002 & 25.7 & 5 & 100 & 2.0 & 0 & 43 & 25 & 100 & 24 & 34 \\
\hline LD20-003 & 19.2 & 7 & 100 & 2.0 & 0 & 39 & 19 & 100 & 25 & 33 \\
\hline LD20-004 & 20.6 & 4 & 100 & 2.0 & 0 & 36 & 15 & 100 & 16 & 41 \\
\hline
\end{tabular}
- Ex. 9626 -
Table 3: General Elections (contests with Black candidate) (continued)
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline District & Percent Black Voting Age Population & Number of Contests & \[
\begin{array}{r}
\text { Percent of } \\
\text { Black- } \\
\text { preferred } \\
\text { candidates } \\
\text { Democratic }
\end{array}
\] & Average Number of Candidates & Blackpreferred win rate &  & \begin{tabular}{l}
Avg. Pct. \\
Voters Black
\end{tabular} & \begin{tabular}{l}
Avg. ER \\
Black \\
cohesion \\
(pct.)
\end{tabular} & \begin{tabular}{l}
Avg. ER \\
White \\
crossover \\
support \\
(pct.)
\end{tabular} & Pct. Black needed for majority \\
\hline LD20-005 & 41.0 & 3 & 100 & 2.0 & 100 & 55 & 33 & 100 & 18 & 39 \\
\hline LD20-006 & 7.1 & 5 & 100 & 2.0 & 0 & 34 & 7 & 84 & 25 & 49 \\
\hline LD20-007 & 22.4 & 4 & 100 & 2.0 & 0 & 43 & 23 & 100 & 26 & 32 \\
\hline LD20-008 & 42.5 & 6 & 100 & 2.0 & 33 & 51 & 33 & 100 & 26 & 32 \\
\hline LD20-009 & 27.9 & 4 & 100 & 2.0 & 0 & 43 & 21 & 100 & 27 & 31 \\
\hline LD20-010 & 22.0 & 5 & 100 & 2.0 & 0 & 35 & 23 & 100 & 15 & 41 \\
\hline LD20-011 & 15.4 & 6 & 100 & 2.0 & 83 & 54 & 13 & 100 & 48 & 6 \\
\hline LD20-012 & 36.9 & 7 & 100 & 2.0 & 14 & 47 & 38 & 100 & 15 & 41 \\
\hline LD20-013 & 7.9 & 2 & 100 & 2.0 & 0 & 27 & 9 & 94 & 18 & 42 \\
\hline LD20-014 & 17.8 & 5 & 100 & 2.0 & 0 & 40 & 20 & 100 & 25 & 33 \\
\hline LD20-015 & 10.7 & 5 & 100 & 2.0 & 0 & 31 & 12 & 100 & 22 & 36 \\
\hline LD20-016 & 18.3 & 5 & 100 & 2.0 & 0 & 36 & 17 & 95 & 24 & 37 \\
\hline LD20-017 & 10.1 & 11 & 100 & 2.0 & 0 & 37 & 11 & 90 & 30 & 34 \\
\hline LD20-018 & 21.1 & 3 & 100 & 2.0 & 100 & 62 & 21 & 100 & 51 & 5 \\
\hline LD20-019 & 6.3 & 1 & 100 & 2.0 & 0 & 37 & 6 & 100 & 33 & 25 \\
\hline LD20-021 & 37.4 & 5 & 100 & 2.0 & 20 & 44 & 29 & 100 & 21 & 37 \\
\hline LD20-022 & 29.3 & 4 & 100 & 2.0 & 0 & 43 & 28 & 100 & 18 & 39 \\
\hline LD20-023 & 50.6 & 6 & 100 & 2.0 & 100 & 60 & 38 & 100 & 16 & 41 \\
\hline LD20-024 & 38.2 & 8 & 100 & 2.0 & 100 & 56 & 37 & 100 & 28 & 29 \\
\hline LD20-025 & 42.6 & 4 & 100 & 2.0 & 0 & 40 & 34 & 99 & 14 & 42 \\
\hline LD20-026 & 16.5 & 5 & 100 & 2.0 & 0 & 31 & 11 & 100 & 22 & 36 \\
\hline LD20-027 & 51.6 & 6 & 100 & 2.0 & 100 & 63 & 44 & 100 & 20 & 37 \\
\hline LD20-028 & 15.8 & 5 & 100 & 2.0 & 0 & 27 & 10 & 100 & 19 & 38 \\
\hline LD20-029 & 37.2 & 10 & 100 & 1.6 & 100 & 87 & 40 & 100 & 78 & 0 \\
\hline LD20-030 & 28.2 & 4 & 100 & 2.0 & 100 & 59 & 25 & 100 & 45 & 11 \\
\hline LD20-031 & 39.8 & 8 & 100 & 1.6 & 100 & 84 & 48 & 100 & 71 & 0 \\
\hline LD20-032 & 48.1 & 10 & 100 & 2.0 & 100 & 63 & 50 & 100 & 28 & 31 \\
\hline LD20-033 & 39.9 & 6 & 100 & 2.0 & 100 & 61 & 38 & 99 & 38 & 19 \\
\hline
\end{tabular}
- Ex. 9627 -
Table 3: General Elections (contests with Black candidate) (con-
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline District & \begin{tabular}{l}
Percent Black \\
Voting Age Population
\end{tabular} & Number of Contests & Percent of Blackpreferred candidates Democratic & Average Number of Candidates & Blackpreferred win rate & Average Blackpreferred candidate vote share & Avg. Pct. Voters Black & Avg. ER Black cohesion (pct.) & Avg. ER White crossover support (pct.) & Pct. Black needed for majority \\
\hline LD20-034 & 11.5 & 6 & 100 & 2.0 & 0 & 40 & 6 & 100 & 36 & 22 \\
\hline LD20-035 & 18.0 & 6 & 67 & 2.0 & 33 & 46 & 12 & 64 & 44 & 39 \\
\hline LD20-036 & 7.5 & 3 & 33 & 2.0 & 67 & 56 & 6 & 59 & 56 & 15 \\
\hline LD20-037 & 11.3 & 6 & 100 & 2.0 & 0 & 34 & 10 & 100 & 27 & 31 \\
\hline LD20-038 & 39.4 & 10 & 100 & 1.6 & 100 & 83 & 42 & 98 & 72 & 2 \\
\hline LD20-040 & 11.3 & 6 & 100 & 2.0 & 0 & 38 & 7 & 100 & 33 & 25 \\
\hline LD20-041 & 7.1 & 3 & 100 & 2.0 & 0 & 43 & 6 & 94 & 40 & 16 \\
\hline LD20-042 & 38.1 & 6 & 100 & 2.0 & 100 & 66 & 48 & 100 & 36 & 22 \\
\hline LD20-043 & 33.9 & 6 & 100 & 2.0 & 0 & 47 & 29 & 100 & 26 & 32 \\
\hline LD20-044 & 48.1 & 5 & 100 & 2.0 & 100 & 71 & 52 & 100 & 40 & 16 \\
\hline LD20-045 & 31.4 & 7 & 100 & 2.0 & 57 & 50 & 32 & 100 & 27 & 32 \\
\hline LD20-046 & 25.0 & 5 & 100 & 2.0 & 20 & 42 & 27 & 99 & 21 & 37 \\
\hline LD20-047 & 23.8 & 6 & 100 & 2.0 & 17 & 43 & 24 & 98 & 26 & 32 \\
\hline LD20-048 & 35.5 & 6 & 100 & 2.0 & 100 & 56 & 40 & 100 & 29 & 30 \\
\hline LD20-049 & 12.3 & 6 & 100 & 2.0 & 50 & 49 & 7 & 100 & 45 & 10 \\
\hline LD20-050 & 17.5 & 3 & 100 & 2.0 & 0 & 41 & 24 & 92 & 25 & 37 \\
\hline LD20-052 & 11.0 & 4 & 100 & 2.0 & 0 & 26 & 10 & 100 & 18 & 38 \\
\hline LD20-054 & 12.9 & 8 & 50 & 2.0 & 0 & 43 & 9 & 91 & 38 & 22 \\
\hline LD20-055 & 26.2 & 5 & 100 & 2.0 & 0 & 42 & 25 & 100 & 22 & 36 \\
\hline LD20-056 & 10.2 & 7 & 100 & 2.0 & 100 & 71 & 10 & 100 & 66 & 0 \\
\hline LD20-057 & 39.7 & 5 & 100 & 2.0 & 100 & 58 & 38 & 98 & 33 & 25 \\
\hline LD20-058 & 43.1 & 8 & 100 & 2.0 & 100 & 69 & 45 & 96 & 47 & 8 \\
\hline LD20-059 & 28.6 & 5 & 100 & 2.0 & - & 37 & 24 & 100 & 17 & 40 \\
\hline LD20-060 & 34.6 & 8 & 100 & 2.0 & 88 & 59 & 38 & 100 & 34 & 24 \\
\hline LD20-061 & 40.0 & 8 & 100 & 2.0 & 100 & 64 & 31 & 100 & 48 & 8 \\
\hline LD20-062 & 13.7 & 5 & 100 & 2.0 & 0 & 32 & 11 & 100 & 24 & 34 \\
\hline LD20-063 & 24.8 & 4 & 100 & 2.0 & 0 & 48 & 24 & 100 & 32 & 27 \\
\hline LD20-064 & 15.1 & 4 & 100 & 2.0 & 0 & 39 & 14 & 100 & 29 & 30 \\
\hline
\end{tabular}
- Ex. 9628 -
Table 3: General Elections (contests with Black candidate) (continued)
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline District & Percent Black Voting Age Population & Number of Contests & Percent of Blackpreferred candidates Democratic & Average Number of Candidates & Blackpreferred win rate & Average Blackpreferred candidate vote share & Avg. Pct. Voters Black & \begin{tabular}{l}
Avg. ER \\
Black cohesion (pct.)
\end{tabular} & \begin{tabular}{l}
Avg. ER \\
White crossover support (pct.)
\end{tabular} & Pct. Black needed for majority \\
\hline LD20-065 & 19.6 & 5 & 5100 & 2.0 & 0 & 33 & 19 & 94 & 19 & 43 \\
\hline LD20-066 & 24.0 & 4 & 4100 & 2.0 & 0 & 42 & 21 & 100 & 22 & 36 \\
\hline LD20-067 & 7.9 & 7 & 7100 & 2.0 & 0 & 21 & 6 & 100 & 16 & 40 \\
\hline LD20-068 & 8.4 & 5 & 5100 & 2.0 & 0 & 36 & 7 & 100 & 31 & 27 \\
\hline LD20-069 & 11.6 & 5 & 5100 & 2.0 & 0 & 34 & 11 & 100 & 26 & 32 \\
\hline LD20-070 & 7.2 & 4 & 4100 & 2.0 & 0 & 24 & 6 & 100 & 19 & 38 \\
\hline LD20-071 & 40.3 & 7 & 7100 & 1.9 & 100 & 76 & 46 & 99 & 56 & 4 \\
\hline LD20-072 & 34.4 & 8 & 8100 & 2.0 & 100 & 71 & 34 & 100 & 56 & 1 \\
\hline LD20-073 & 14.6 & 3 & 3100 & 2.0 & 0 & 35 & 19 & 100 & 28 & 31 \\
\hline LD20-074 & 11.4 & 6 & 6100 & 2.0 & 0 & 45 & 11 & 100 & 38 & 19 \\
\hline LD20-075 & 15.3 & 5 & 5100 & 2.0 & 0 & 38 & 15 & 100 & 27 & 32 \\
\hline LD20-076 & 21.6 & 7 & 100 & 2.0 & 0 & 41 & 20 & 100 & 26 & 32 \\
\hline LD20-077 & 7.3 & 4 & 4100 & 2.0 & 0 & 26 & 7 & 100 & 19 & 38 \\
\hline LD20-079 & 22.3 & 7 & 7100 & 2.6 & 14 & 34 & 16 & 98 & 15 & 41 \\
\hline LD20-080 & 9.5 & 7 & 7100 & 2.0 & 0 & 23 & 8 & 100 & 16 & 40 \\
\hline LD20-081 & 9.6 & 5 & 5100 & 2.0 & 0 & 26 & 8 & 100 & 19 & 38 \\
\hline LD20-082 & 20.2 & 1 & 100 & 2.0 & 0 & 40 & 18 & 100 & 27 & 32 \\
\hline LD20-083 & 19.5 & 5 & 5100 & 2.0 & 60 & 48 & 12 & 100 & 24 & 34 \\
\hline LD20-084 & 14.1 & 6 & 6100 & 2.0 & 0 & 31 & 13 & 100 & 21 & 37 \\
\hline LD20-086 & 6.0 & 4 & 4100 & 2.0 & 0 & 32 & 6 & 100 & 28 & 31 \\
\hline LD20-088 & 16.0 & 4 & 4100 & 2.0 & 100 & 56 & 18 & 99 & 47 & 6 \\
\hline LD20-089 & 7.9 & 4 & 4100 & 2.0 & 0 & 27 & 7 & 100 & 22 & 36 \\
\hline LD20-091 & 4.8 & 2 & 2100 & 2.0 & 0 & 23 & 6 & 100 & 16 & 40 \\
\hline LD20-092 & 40.2 & 9 & 9100 & 1.7 & 100 & 80 & 47 & 100 & 63 & 9 \\
\hline LD20-095 & 9.6 & 6 & 6100 & 2.0 & 0 & 32 & 8 & 100 & 26 & 32 \\
\hline LD20-096 & 8.9 & 4 & 4100 & 2.0 & 0 & 35 & 7 & 100 & 30 & 30 \\
\hline LD20-098 & 9.2 & 6 & 6100 & 2.0 & 0 & 41 & 8 & 100 & 36 & 22 \\
\hline LD20-099 & 36.0 & 6 & 6100 & 2.0 & 100 & 63 & 42 & 99 & 38 & 20 \\
\hline
\end{tabular}
- Ex. 9629 -


\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline District & \begin{tabular}{l}
Percent \\
Black \\
Voting Age \\
Population
\end{tabular} & Number of Contests & Percent of Blackpreferred candidates Democratic & Average Number of Candidates & Blackpreferred win rate & Average Blackpreferred candidate vote share & Avg. Pct. Voters Black & \begin{tabular}{l}
Avg. ER \\
Black cohesion (pct.)
\end{tabular} & \begin{tabular}{l}
Avg. ER \\
White crossover support (pct.)
\end{tabular} & Pct. Black needed for majority \\
\hline LD20-100 & 30.5 & 8 & 100 & 1.6 & 100 & 82 & 36 & 100 & 71 & 0 \\
\hline LD20-101 & 48.0 & 10 & 100 & 1.7 & 100 & 82 & 55 & 99 & 60 & 12 \\
\hline LD20-102 & 33.8 & 9 & 100 & 1.6 & 100 & 87 & 40 & 98 & 79 & 0 \\
\hline LD20-103 & 14.2 & 4 & 100 & 2.0 & 0 & 47 & 14 & 100 & 38 & 19 \\
\hline LD20-104 & 12.0 & 6 & 100 & 2.0 & 0 & 47 & 10 & 100 & 41 & 16 \\
\hline LD20-105 & 12.9 & 6 & 100 & 2.0 & 50 & 49 & 13 & 100 & 41 & 14 \\
\hline LD20-106 & 46.3 & 15 & 100 & 1.5 & 100 & 91 & 60 & 99 & 79 & 2 \\
\hline LD20-107 & 53.6 & 10 & 100 & 1.6 & 100 & 87 & 58 & 99 & 70 & 4 \\
\hline LD20-108 & 19.5 & 8 & 100 & 2.0 & 0 & 38 & 17 & 100 & 25 & 33 \\
\hline LD20-109 & 15.3 & 8 & 100 & 2.0 & 0 & 35 & 12 & 100 & 27 & 32 \\
\hline LD20-110 & 14.6 & 3 & 100 & 2.0 & 0 & 28 & 13 & 100 & 17 & 39 \\
\hline LD20-111 & 22.8 & 6 & 100 & 2.0 & 0 & 38 & 22 & 100 & 20 & 37 \\
\hline LD20-112 & 9.2 & 4 & 100 & 2.0 & 0 & 28 & 8 & 100 & 22 & 36 \\
\hline LD20-115 & 6.9 & 1 & 100 & 2.0 & 100 & 59 & 6 & 100 & 44 & 11 \\
\hline LD20-116 & 7.2 & 1 & 100 & 2.0 & 0 & 49 & 7 & 100 & 46 & 7 \\
\hline LD21-001 & 17.7 & 5 & 100 & 2.0 & 0 & 35 & 15 & 91 & 22 & 42 \\
\hline LD21-002 & 23.7 & 5 & 100 & 2.0 & 20 & 43 & 23 & 99 & 26 & 32 \\
\hline LD21-003 & 19.4 & 6 & 100 & 2.0 & 0 & 38 & 18 & 100 & 25 & 34 \\
\hline LD21-004 & 24.9 & 3 & 100 & 2.0 & 0 & 33 & 19 & 100 & 17 & 40 \\
\hline LD21-005 & 37.5 & 3 & 100 & 2.0 & 67 & 51 & 30 & 100 & 17 & 40 \\
\hline LD21-007 & 22.2 & 4 & 100 & 2.0 & 0 & 43 & 22 & 100 & 27 & 32 \\
\hline LD21-008 & 44.2 & 6 & 100 & 2.0 & 83 & 54 & 36 & 100 & 28 & 30 \\
\hline LD21-009 & 24.6 & 5 & 100 & 2.0 & 0 & 37 & 19 & 98 & 23 & 37 \\
\hline LD21-010 & 33.1 & 5 & 100 & 2.0 & 0 & 38 & 26 & 100 & 17 & 40 \\
\hline LD21-011 & 14.2 & 6 & 100 & 2.0 & 83 & 52 & 11 & 100 & 46 & 8 \\
\hline LD21-012 & 37.7 & 5 & 100 & 2.0 & 0 & 45 & 34 & 100 & 16 & 41 \\
\hline LD21-013 & 8.3 & 6 & 100 & 2.0 & 0 & 28 & 7 & 97 & 22 & 37 \\
\hline LD21-014 & 17.8 & 5 & 100 & 2.0 & 0 & 40 & 20 & 100 & 25 & 33 \\
\hline
\end{tabular}

- Ex. 9631 -

- Ex. 9632 -
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline \multicolumn{11}{|l|}{Table 3: General Elections (contests with Black candidate) (continued)} \\
\hline District & \begin{tabular}{l}
Percent Black \\
Voting Age Population
\end{tabular} & Number of Contests & Percent of Blackpreferred candidates Democratic & Average Number of Candidates & Blackpreferred win rate & Average Blackpreferred candidate vote share & Avg. Pct. Voters Black & Avg. ER Black cohesion (pct.) & Avg. ER White crossover support (pct.) & Pct. Black needed for majority \\
\hline LD21-080 & 9.4 & 7 & 100 & 2.0 & 0 & 24 & 9 & 100 & 17 & 40 \\
\hline LD21-081 & 9.6 & 5 & 100 & 2.0 & 0 & 26 & 9 & 100 & 19 & 38 \\
\hline LD21-082 & 21.0 & 5 & 100 & 2.0 & 0 & 34 & 15 & 100 & 23 & 35 \\
\hline LD21-083 & 11.9 & 3 & 100 & 2.0 & 0 & 27 & 7 & 100 & 21 & 37 \\
\hline LD21-084 & 16.0 & 6 & 100 & 2.0 & 0 & 33 & 15 & 100 & 22 & 36 \\
\hline LD21-086 & 6.1 & 4 & 100 & 2.0 & 0 & 31 & 6 & 100 & 27 & 32 \\
\hline LD21-088 & 23.3 & 5 & 100 & 1.8 & 100 & 67 & 23 & 100 & 57 & 6 \\
\hline LD21-089 & 6.7 & 4 & 100 & 2.0 & 0 & 25 & 6 & 100 & 20 & 38 \\
\hline LD21-091 & 14.1 & 3 & 100 & 2.0 & 0 & 36 & 19 & 100 & 30 & 28 \\
\hline LD21-092 & 39.1 & 9 & 100 & 1.7 & 100 & 79 & 44 & 100 & 62 & 12 \\
\hline LD21-095 & 7.6 & 6 & 100 & 2.0 & 0 & 31 & 5 & 100 & 27 & 32 \\
\hline LD21-096 & 9.9 & 4 & 100 & 2.0 & 0 & 36 & 9 & 100 & 30 & 30 \\
\hline LD21-098 & 7.5 & 6 & 100 & 2.0 & 0 & 39 & 7 & 100 & 35 & 23 \\
\hline LD21-099 & 46.8 & 13 & 100 & 1.7 & 100 & 85 & 58 & 99 & 65 & 3 \\
\hline LD21-100 & 31.0 & 8 & 100 & 1.6 & 100 & 82 & 36 & 99 & 71 & 0 \\
\hline LD21-101 & 46.8 & 9 & 100 & 1.7 & 100 & 81 & 52 & 99 & 62 & 13 \\
\hline LD21-102 & 37.6 & 9 & 100 & 1.6 & 100 & 89 & 45 & 98 & 81 & 0 \\
\hline LD21-103 & 11.8 & 4 & 100 & 2.0 & 0 & 42 & 12 & 100 & 34 & 24 \\
\hline LD21-104 & 8.5 & 6 & 100 & 2.0 & 0 & 45 & 7 & 100 & 41 & 16 \\
\hline LD21-105 & 12.2 & 7 & 100 & 2.0 & 43 & 48 & 13 & 100 & 41 & 15 \\
\hline LD21-106 & 43.4 & 11 & 100 & 1.6 & 100 & 86 & 55 & 99 & 71 & 2 \\
\hline LD21-107 & 47.4 & 8 & 100 & 1.6 & 100 & 82 & 50 & 99 & 65 & 10 \\
\hline LD21-108 & 19.3 & 8 & 100 & 2.0 & 0 & 37 & 16 & 100 & 25 & 34 \\
\hline LD21-109 & 16.8 & 4 & 100 & 2.0 & 0 & 39 & 14 & 100 & 28 & 30 \\
\hline LD21-110 & 15.7 & 3 & 100 & 2.0 & 0 & 33 & 18 & 100 & 18 & 39 \\
\hline LD21-111 & 16.4 & 3 & 100 & 2.0 & 0 & 30 & 13 & 100 & 19 & 38 \\
\hline LD21-112 & 27.8 & 7 & 100 & 1.7 & 100 & 78 & 38 & 99 & 65 & 2 \\
\hline LD21-113 & 6.8 & 3 & 100 & 2.0 & 0 & 32 & 6 & 97 & 25 & 34 \\
\hline
\end{tabular}
Table 3: General Elections (contests with Black candidate) (con-
\(\left.\begin{array}{lrrrrrrrrrr}\hline \text { District } & \begin{array}{r}\text { Percent } \\ \text { Black } \\ \text { Voting Age } \\ \text { Population }\end{array} & \begin{array}{r}\text { Number of } \\ \text { Contests }\end{array} & \begin{array}{r}\text { Percent of } \\ \text { Black- } \\ \text { preferred } \\ \text { candidates } \\ \text { Democratic }\end{array} & \begin{array}{r}\text { Average } \\ \text { Number of } \\ \text { Candidates }\end{array} & \begin{array}{r}\text { Black- } \\ \text { preferred } \\ \text { win rate }\end{array} & \begin{array}{r}\text { Average } \\ \text { Black- } \\ \text { preferred } \\ \text { candidate }\end{array} & \begin{array}{r}\text { Avg. Pct. } \\ \text { Voters } \\ \text { Black }\end{array} & \begin{array}{r}\text { Avg. ER } \\ \text { Black } \\ \text { cohesion } \\ \text { (pct.) }\end{array} & \begin{array}{r}\text { Avg. ER } \\ \text { White } \\ \text { crossover } \\ \text { support }\end{array} \\ \text { (pct.) }\end{array} \begin{array}{r}\text { Pct. Black } \\ \text { needed for } \\ \text { majority }\end{array}\right]\)
- Ex. 9634 -
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline District & \begin{tabular}{l}
Percent \\
Black \\
Voting Age Population
\end{tabular} & Number of Contests & Percent of Blackpreferred candidates Democratic & Average Number of Candidates & Blackpreferred win rate & Average Blackpreferred candidate vote share & \begin{tabular}{l}
Avg. Pct. \\
Voters Black
\end{tabular} & \begin{tabular}{l}
Avg. ER \\
Black cohesion (pct.)
\end{tabular} & \begin{tabular}{l}
Avg. ER \\
White crossover support (pct.)
\end{tabular} & Pct. Black needed for majority \\
\hline SD20-027 & 24.0 & 5 & 100 & 2.0 & 0 & 41 & 21 & 100 & 25 & 33 \\
\hline SD20-028 & 43.9 & 7 & 100 & 2.0 & 100 & 67 & 41 & 99 & 45 & 11 \\
\hline SD20-029 & 10.5 & 5 & 100 & 2.0 & 0 & 27 & 9 & 100 & 18 & 39 \\
\hline SD20-030 & 14.7 & 3 & 100 & 2.0 & 0 & 32 & 18 & 100 & 19 & 38 \\
\hline SD20-031 & 22.0 & 3 & 100 & 2.0 & 0 & 45 & 23 & 100 & 29 & 30 \\
\hline SD20-032 & 23.9 & 6 & 100 & 2.0 & 100 & 57 & 23 & 100 & 44 & 10 \\
\hline SD20-033 & 14.4 & 4 & 100 & 2.0 & 0 & 30 & 12 & 100 & 20 & 38 \\
\hline SD20-034 & 10.1 & 5 & 100 & 2.0 & 0 & 30 & 10 & 100 & 23 & 35 \\
\hline SD20-035 & 12.2 & 4 & 100 & 2.0 & 0 & 36 & 11 & 100 & 28 & 31 \\
\hline SD20-036 & 17.9 & 5 & 100 & 2.0 & 0 & 40 & 12 & 100 & 23 & 35 \\
\hline SD20-037 & 13.8 & 4 & 100 & 2.0 & 50 & 49 & 12 & 100 & 42 & 14 \\
\hline SD20-038 & 42.8 & 10 & 100 & 1.6 & 100 & 87 & 53 & 99 & 73 & 0 \\
\hline SD20-039 & 21.3 & 5 & 100 & 2.0 & 100 & 57 & 24 & 100 & 43 & 12 \\
\hline SD20-040 & 38.7 & 9 & 100 & 1.7 & 100 & 81 & 49 & 99 & 65 & 6 \\
\hline SD20-041 & 29.1 & 5 & 100 & 2.0 & 100 & 58 & 30 & 100 & 39 & 17 \\
\hline SD20-042 & 7.9 & 4 & 100 & 2.0 & 0 & 29 & 6 & 100 & 24 & 34 \\
\hline SD20-043 & 17.4 & 8 & 100 & 2.0 & 0 & 35 & 15 & 100 & 24 & 34 \\
\hline SD20-044 & 13.1 & 5 & 100 & 2.0 & 0 & 31 & 16 & 99 & 19 & 39 \\
\hline SD20-049 & 6.4 & 1 & 100 & 2.0 & 100 & 58 & 6 & 100 & 48 & 4 \\
\hline SD21-001 & 28.8 & 3 & 100 & 2.0 & 0 & 46 & 20 & 97 & 21 & 38 \\
\hline SD21-002 & 29.3 & 3 & 100 & 2.0 & 0 & 45 & 22 & 100 & 24 & 34 \\
\hline SD21-003 & 25.9 & 5 & 100 & 2.0 & 0 & 41 & 26 & 99 & 20 & 38 \\
\hline SD21-004 & 34.1 & 4 & 100 & 2.0 & 0 & 48 & 34 & 100 & 21 & 37 \\
\hline SD21-005 & 39.3 & 4 & 100 & 2.0 & 100 & 56 & 30 & 100 & 25 & 34 \\
\hline SD21-006 & 13.8 & 6 & 100 & 2.0 & 0 & 32 & 15 & 100 & 20 & 38 \\
\hline SD21-007 & 11.5 & 3 & 100 & 2.0 & 67 & 55 & 10 & 100 & 50 & 6 \\
\hline SD21-008 & 13.9 & 3 & 100 & 2.0 & 0 & 38 & 11 & 84 & 31 & 36 \\
\hline SD21-009 & 23.1 & 3 & 100 & 2.0 & 0 & 37 & 20 & 99 & 22 & 37 \\
\hline
\end{tabular}
- Ex. 9635 -

- Ex. 9636 -
Table 3: General Elections (contests with Black candidate) (con-
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline District & \begin{tabular}{l}
Percent \\
Black Voting Age
Population
\end{tabular} & Number of Contests & Percent of Blackpreferred candidates Democratic & Average Number of Candidates & \[
\begin{array}{r}
\text { Black } \\
\text { preferred } \\
\text { win rate }
\end{array}
\] & Average Blackpreferred candidate vote share & Avg. Pct. Voters Black & \[
\begin{array}{r}
\hline \text { Avg. ER } \\
\text { Black } \\
\text { cohesion } \\
\text { (pct.) }
\end{array}
\] & \[
\begin{gathered}
\hline \text { Avg. ER } \\
\text { White } \\
\text { crossover } \\
\text { support } \\
\text { (pct.) }
\end{gathered}
\] & Pct. Black needed for majority \\
\hline SD21-039 & 39.0 & 8 & 100 & 1.6 & 100 & 82 & 48 & 100 & 66 & 9 \\
\hline SD21-040 & 47.5 & 10 & 100 & 1.6 & 100 & 89 & 60 & 97 & 76 & 0 \\
\hline SD21-041 & 10.0 & 5 & 100 & 2.0 & 0 & 44 & 9 & 100 & 38 & 19 \\
\hline SD21-042 & 20.3 & 4 & 100 & 2.0 & 100 & 59 & 20 & 100 & 49 & 3 \\
\hline SD21-043 & 17.9 & 8 & 100 & 2.0 & 0 & 36 & 15 & 100 & 24 & 34 \\
\hline SD21-044 & 12.7 & 5 & 100 & 2.0 & 0 & 31 & 15 & 99 & 19 & 39 \\
\hline SD21-045 & 7.1 & 4 & 100 & 2.0 & 0 & 30 & 7 & 100 & 25 & 33 \\
\hline SD21-049 & 6.9 & 1 & 100 & 2.0 & 100 & 59 & 6 & 100 & 50 & 0 \\
\hline
\end{tabular}
- Ex. 9637 -
Table 4: Primary Elections (contests with Black candidate)
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline District & Percent Black Voting Age Population & Number of Contests & Percent of Blackpreferred candidates Democratic & Average Number of Candidates & Blackpreferred win rate & Average Blackpreferred candidate vote share & Avg. Pct. Voters Black & \begin{tabular}{l}
Avg. ER \\
Black cohesion (pct.)
\end{tabular} & \begin{tabular}{l}
Avg. ER \\
White crossover support (pct.)
\end{tabular} & Pct. Black needed for majority \\
\hline CD20-001 & 41.9 & 14 & 100 & 4.1 & 100 & 61 & 62 & 69 & 48 & 12 \\
\hline CD20-002 & 18.2 & 15 & 100 & 4.1 & 67 & 55 & 26 & 71 & 50 & 14 \\
\hline CD20-003 & 18.7 & 15 & 100 & 4.0 & 73 & 54 & 40 & 66 & 47 & 22 \\
\hline CD20-004 & 24.4 & 16 & 100 & 3.9 & 75 & 59 & 34 & 68 & 55 & 12 \\
\hline CD20-005 & 10.7 & 16 & 100 & 3.9 & 56 & 51 & 21 & 62 & 48 & 15 \\
\hline CD20-006 & 32.0 & 15 & 100 & 4.2 & 67 & 51 & 47 & 59 & 44 & 23 \\
\hline CD20-007 & 15.4 & 15 & 100 & 4.0 & 73 & 52 & 30 & 62 & 47 & 5 \\
\hline CD20-008 & 25.9 & 14 & 100 & 4.1 & 79 & 54 & 52 & 60 & 48 & 20 \\
\hline CD20-009 & 17.4 & 16 & 100 & 4.6 & 56 & 46 & 33 & 63 & 42 & 13 \\
\hline CD20-010 & 10.1 & 15 & 100 & 4.0 & 73 & 52 & 25 & 62 & 48 & 27 \\
\hline CD20-011 & 3.7 & 1 & 100 & 5.0 & 100 & 54 & 5 & 100 & 47 & \\
\hline CD20-012 & 34.1 & 20 & 100 & 3.6 & 85 & 60 & 54 & 68 & 50 & 18 \\
\hline CD20-013 & 13.9 & 14 & 100 & 4.1 & 71 & 54 & 33 & 59 & 52 & 14 \\
\hline CD21-001 & 22.4 & 15 & 100 & 4.0 & 73 & 55 & 41 & 66 & 47 & 18 \\
\hline CD21-002 & 39.1 & 14 & 100 & 4.1 & 100 & 61 & 60 & 70 & 47 & 13 \\
\hline CD21-003 & 15.7 & 16 & 100 & 4.1 & 56 & 48 & 28 & 65 & 40 & 17 \\
\hline CD21-004 & 27.5 & 14 & 100 & 4.1 & 71 & 54 & 55 & 60 & 48 & 20 \\
\hline CD21-005 & 23.2 & 14 & 100 & 4.1 & 71 & 59 & 32 & 71 & 54 & 12 \\
\hline CD21-006 & 20.4 & 15 & 100 & 4.5 & 60 & 52 & 25 & 76 & 47 & 10 \\
\hline CD21-007 & 15.3 & 14 & 100 & 4.1 & 57 & 49 & 32 & 61 & 44 & 30 \\
\hline CD21-008 & 16.5 & 14 & 100 & 4.1 & 64 & 48 & 36 & 62 & 41 & 29 \\
\hline CD21-009 & 36.3 & 20 & 100 & 3.6 & 80 & 60 & 56 & 68 & 50 & 19 \\
\hline CD21-010 & 16.2 & 14 & 100 & 4.1 & 86 & 54 & 35 & 63 & 50 & 15 \\
\hline CD21-011 & 19.2 & 14 & 100 & 4.1 & 64 & 51 & 35 & 63 & 46 & 24 \\
\hline CD21-012 & 17.1 & 16 & 100 & 3.9 & 75 & 53 & 36 & 63 & 47 & 21 \\
\hline CD21-013 & 14.8 & 17 & 100 & 3.9 & 76 & 53 & 31 & 64 & 48 & 11 \\
\hline CD21-014 & 3.6 & 1 & 100 & 5.0 & 100 & 54 & 5 & 100 & 47 & \\
\hline LD20-001 & 36.6 & 14 & 100 & 4.1 & 93 & 58 & 58 & 73 & 40 & 19 \\
\hline LD20-002 & 25.7 & 15 & 100 & 4.1 & 87 & 57 & 45 & 70 & 47 & 12 \\
\hline
\end{tabular}
- Ex. 9638 -
Table 4: Primary Elections (contests with Black candidate) (continued)
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline District & Percent Black Voting Age Population & Number of Contests & \begin{tabular}{l}
Percent of \\
Blackpreferred candidates Democratic
\end{tabular} & Average Number of Candidates & Blackpreferred win rate & Average Blackpreferred candidate vote share & Avg. Pct. Voters Black & \begin{tabular}{l}
Avg. ER \\
Black cohesion (pct.)
\end{tabular} & \begin{tabular}{l}
Avg. ER \\
White crossover support (pct.)
\end{tabular} & Pct. Black needed for majority \\
\hline LD20-003 & 19.2 & 19 & 100 & 3.7 & 63 & 53 & 41 & 66 & 43 & 24 \\
\hline LD20-004 & 20.6 & 15 & 100 & 4.0 & 93 & 58 & 52 & 69 & 46 & 12 \\
\hline LD20-005 & 41.0 & 17 & 100 & 3.8 & 94 & 60 & 61 & 68 & 47 & 16 \\
\hline LD20-006 & 7.1 & 13 & 100 & 4.3 & 69 & 51 & 15 & 63 & 49 & 8 \\
\hline LD20-007 & 22.4 & 15 & 100 & 4.1 & 93 & 63 & 49 & 78 & 49 & 4 \\
\hline LD20-008 & 42.5 & 15 & 100 & 4.1 & 93 & 58 & 59 & 66 & 47 & 16 \\
\hline LD20-009 & 27.9 & 14 & 100 & 4.1 & 71 & 56 & 38 & 64 & 50 & 13 \\
\hline LD20-010 & 22.0 & 14 & 100 & 4.1 & 79 & 54 & 44 & 72 & 36 & 18 \\
\hline LD20-011 & 15.4 & 15 & 100 & 4.1 & 47 & 45 & 16 & 67 & 40 & 29 \\
\hline LD20-012 & 36.9 & 15 & 100 & 4.1 & 87 & 59 & 61 & 67 & 46 & 6 \\
\hline LD20-013 & 7.9 & 14 & 100 & 4.1 & 57 & 50 & 22 & 65 & 45 & 10 \\
\hline LD20-014 & 17.8 & 13 & 100 & 4.2 & 92 & 56 & 47 & 61 & 51 & 12 \\
\hline LD20-015 & 10.7 & 13 & 100 & 4.2 & 77 & 52 & 38 & 62 & 45 & 9 \\
\hline LD20-016 & 18.3 & 15 & 100 & 4.0 & 73 & 50 & 39 & 60 & 44 & 4 \\
\hline LD20-017 & 10.1 & 16 & 100 & 3.9 & 69 & 53 & 26 & 64 & 49 & 6 \\
\hline LD20-018 & 21.1 & 14 & 100 & 4.1 & 71 & 55 & 35 & 61 & 51 & 14 \\
\hline LD20-019 & 6.3 & 15 & 100 & 4.0 & 53 & 49 & 10 & 66 & 47 & 13 \\
\hline LD20-020 & 5.5 & 12 & 100 & 4.4 & 58 & 50 & 8 & 79 & 47 & 7 \\
\hline LD20-021 & 37.4 & 17 & 100 & 3.9 & 88 & 56 & 62 & 63 & 46 & 15 \\
\hline LD20-022 & 29.3 & 18 & 100 & 3.9 & 94 & 58 & 55 & 72 & 42 & 9 \\
\hline LD20-023 & 50.6 & 16 & 100 & 4.0 & 100 & 64 & 66 & 70 & 50 & 12 \\
\hline LD20-024 & 38.2 & 16 & 100 & 3.9 & 94 & 63 & 63 & 68 & 52 & 11 \\
\hline LD20-025 & 42.6 & 8 & 100 & 5.2 & 100 & 58 & 68 & 68 & 40 & 24 \\
\hline LD20-026 & 16.5 & 15 & 100 & 4.0 & 60 & 53 & 35 & 67 & 46 & 27 \\
\hline LD20-027 & 51.6 & 18 & 100 & 3.8 & 78 & 57 & 59 & 72 & 36 & 36 \\
\hline LD20-028 & 15.8 & 15 & 100 & 4.0 & 93 & 57 & 35 & 66 & 51 & 8 \\
\hline LD20-029 & 37.2 & 20 & 100 & 3.7 & 65 & 61 & 38 & 79 & 50 & 7 \\
\hline LD20-030 & 28.2 & 19 & 100 & 3.7 & 68 & 59 & 33 & 73 & 52 & 8 \\
\hline
\end{tabular}
- Ex. 9639 -
Table 4: Primary Elections (contests with Black candidate) (con-
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline District & Percent Black Voting Age Population & Number of Contests & \[
\begin{array}{r}
\text { Percent of } \\
\text { Black- } \\
\text { preferred } \\
\text { candidates } \\
\text { Democratic }
\end{array}
\] & Average Number of Candidates & Blackpreferred win rate &  & \begin{tabular}{l}
Avg. Pct. \\
Voters \\
Black
\end{tabular} & \begin{tabular}{l}
Avg. ER \\
Black \\
cohesion \\
(pct.)
\end{tabular} & \begin{tabular}{l}
Avg. ER \\
White \\
crossover \\
support \\
(pct.)
\end{tabular} & Pct. Black needed for majority \\
\hline LD20-031 & 39.8 & 20 & 100 & 3.7 & 95 & 64 & 58 & 74 & 49 & 7 \\
\hline LD20-032 & 48.1 & 16 & 100 & 3.9 & 100 & 68 & 66 & 78 & 52 & 6 \\
\hline LD20-033 & 39.9 & 16 & 100 & 4.0 & 88 & 65 & 58 & 75 & 52 & 0 \\
\hline LD20-034 & 11.5 & 15 & 100 & 4.1 & 33 & 42 & 12 & 71 & 38 & 39 \\
\hline LD20-035 & 18.0 & 15 & 100 & 4.0 & 67 & 57 & 31 & 68 & 52 & 13 \\
\hline LD20-036 & 7.5 & 16 & 100 & 4.0 & 50 & 49 & 13 & 62 & 47 & 18 \\
\hline LD20-037 & 11.3 & 16 & 100 & 4.0 & 62 & 52 & 24 & 62 & 50 & 6 \\
\hline LD20-038 & 39.4 & 15 & 100 & 4.0 & 73 & 61 & 53 & 69 & 54 & 21 \\
\hline LD20-040 & 11.3 & 14 & 100 & 4.1 & 43 & 46 & 17 & 69 & 41 & 31 \\
\hline LD20-041 & 7.1 & 15 & 100 & 4.1 & 40 & 44 & 11 & 70 & 41 & 28 \\
\hline LD20-042 & 38.1 & 9 & 100 & 2.8 & 89 & 60 & 76 & 66 & 44 & 12 \\
\hline LD20-043 & 33.9 & 16 & 100 & 4.0 & 75 & 51 & 51 & 58 & 44 & 30 \\
\hline LD20-044 & 48.1 & 16 & 100 & 4.0 & 81 & 56 & 76 & 60 & 44 & 36 \\
\hline LD20-045 & 31.4 & 17 & 100 & 3.9 & 71 & 54 & 60 & 62 & 42 & 29 \\
\hline LD20-046 & 25.0 & 15 & 100 & 4.1 & 93 & 52 & 41 & 60 & 47 & 13 \\
\hline LD20-047 & 23.8 & 18 & 100 & 4.1 & 67 & 47 & 24 & 66 & 41 & 10 \\
\hline LD20-048 & 35.5 & 18 & 100 & 3.8 & 94 & 58 & 63 & 67 & 43 & 18 \\
\hline LD20-049 & 12.3 & 15 & 100 & 4.1 & 33 & 41 & 10 & 68 & 38 & 38 \\
\hline LD20-050 & 17.5 & 16 & 100 & 3.9 & 56 & 50 & 28 & 60 & 47 & 16 \\
\hline LD20-052 & 11.0 & 15 & 100 & 4.1 & 67 & 55 & 26 & 62 & 52 & 10 \\
\hline LD20-054 & 12.9 & 14 & 100 & 4.1 & 57 & 52 & 18 & 62 & 50 & 0 \\
\hline LD20-055 & 26.2 & 17 & 100 & 4.2 & 71 & 49 & 51 & 72 & 34 & 24 \\
\hline LD20-056 & 10.2 & 14 & 100 & 4.5 & 43 & 45 & 8 & 76 & 42 & 21 \\
\hline LD20-057 & 39.7 & 16 & 100 & 4.1 & 75 & 54 & 56 & 62 & 43 & 24 \\
\hline LD20-058 & 43.1 & 17 & 100 & 4.0 & 71 & 54 & 60 & 61 & 43 & 32 \\
\hline LD20-059 & 28.6 & 17 & 100 & 4.1 & 71 & 53 & 60 & 62 & 39 & 24 \\
\hline LD20-060 & 34.6 & 16 & 100 & 4.1 & 81 & 56 & 60 & 63 & 44 & 16 \\
\hline LD20-061 & 40.0 & 16 & 100 & 4.1 & 62 & 52 & 35 & 62 & 46 & 23 \\
\hline
\end{tabular}
Table 4: Primary Elections (contests with Black candidate) (continued)
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline District & Percent Black Voting Age Population & Number of Contests & Percent of Blackpreferred candidates Democratic & Average Number of Candidates & Blackpreferred win rate & \begin{tabular}{l}
Average \\
Blackpreferred candidate vote share
\end{tabular} & Avg. Pct. Voters Black & Avg. ER Black cohesion (pct.) & Avg. ER White crossover support (pct.) & Pct. Black needed for majority \\
\hline LD20-062 & 13.7 & 17 & 100 & 4.0 & 65 & 50 & 27 & 65 & 44 & 11 \\
\hline LD20-063 & 24.8 & 15 & 100 & 4.1 & 73 & 52 & 43 & 60 & 45 & 20 \\
\hline LD20-064 & 15.1 & 16 & 100 & 4.1 & 62 & 51 & 30 & 59 & 48 & 31 \\
\hline LD20-065 & 19.6 & 15 & 100 & 4.0 & 87 & 55 & 43 & 66 & 48 & 18 \\
\hline LD20-066 & 24.0 & 15 & 100 & 4.3 & 80 & 50 & 42 & 61 & 42 & 12 \\
\hline LD20-067 & 7.9 & 14 & 100 & 4.1 & 64 & 47 & 22 & 70 & 41 & 18 \\
\hline LD20-068 & 8.4 & 15 & 100 & 4.3 & 80 & 54 & 24 & 63 & 51 & 5 \\
\hline LD20-069 & 11.6 & 15 & 100 & 4.1 & 73 & 51 & 31 & 61 & 47 & 6 \\
\hline LD20-070 & 7.2 & 15 & 100 & 4.1 & 80 & 56 & 19 & 65 & 53 & 19 \\
\hline LD20-071 & 40.3 & 19 & 100 & 3.8 & 84 & 58 & 63 & 62 & 50 & 17 \\
\hline LD20-072 & 34.4 & 19 & 100 & 3.8 & 68 & 53 & 41 & 65 & 44 & 24 \\
\hline LD20-073 & 14.6 & 15 & 100 & 4.1 & 73 & 50 & 36 & 64 & 43 & 24 \\
\hline LD20-074 & 11.4 & 16 & 100 & 4.0 & 62 & 50 & 23 & 65 & 45 & 9 \\
\hline LD20-075 & 15.3 & 17 & 100 & 3.9 & 76 & 52 & 37 & 65 & 44 & 27 \\
\hline LD20-076 & 21.6 & 15 & 100 & 4.0 & 93 & 55 & 42 & 60 & 51 & 25 \\
\hline LD20-077 & 7.3 & 15 & 100 & 4.1 & 73 & 52 & 24 & 61 & 49 & 11 \\
\hline LD20-078 & 6.1 & 15 & 100 & 4.1 & 60 & 52 & 19 & 62 & 50 & 14 \\
\hline LD20-079 & 22.3 & 16 & 100 & 4.2 & 81 & 54 & 41 & 68 & 44 & 15 \\
\hline LD20-080 & 9.5 & 14 & 100 & 4.1 & 79 & 55 & 26 & 62 & 52 & 21 \\
\hline LD20-081 & 9.6 & 14 & 100 & 4.1 & 71 & 54 & 24 & 61 & 52 & 12 \\
\hline LD20-082 & 20.2 & 8 & 100 & 2.6 & 100 & 61 & 42 & 69 & 56 & 8 \\
\hline LD20-083 & 19.5 & 14 & 100 & 4.1 & 71 & 51 & 37 & 64 & 44 & 33 \\
\hline LD20-084 & 14.1 & 14 & 100 & 4.1 & 93 & 52 & 32 & 63 & 47 & 11 \\
\hline LD20-086 & 6.0 & 15 & 100 & 4.0 & 67 & 54 & 14 & 65 & 52 & 12 \\
\hline LD20-087 & 5.1 & 15 & 100 & 4.0 & 80 & 52 & 13 & 66 & 50 & 2 \\
\hline LD20-088 & 16.0 & 11 & 100 & 4.5 & 55 & 52 & 24 & 65 & 49 & 16 \\
\hline LD20-089 & 7.9 & 14 & 100 & 4.1 & 86 & 54 & 23 & 60 & 52 & , \\
\hline LD20-090 & 3.3 & 14 & 100 & 4.1 & 50 & 46 & 8 & 69 & 44 & 21 \\
\hline
\end{tabular}
- Ex. 9641 -
Table 4: Primary Elections (contests with Black candidate) (continued)
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline District & Percent Black Voting Age Population & Number of Contests & Percent of Blackpreferred candidates Democratic & Average Number of Candidates & Blackpreferred win rate & Average Blackpreferred candidate vote share & Avg. Pct. Voters Black & \begin{tabular}{l}
Avg. ER \\
Black \\
cohesion \\
(pct.)
\end{tabular} & \begin{tabular}{l}
Avg. ER \\
White crossover support (pct.)
\end{tabular} & Pct. Black needed for majority \\
\hline LD20-091 & 4.8 & 16 & 100 & 3.9 & 56 & 52 & 13 & 64 & 50 & 33 \\
\hline LD20-092 & 40.2 & 18 & 100 & 3.7 & 78 & 60 & 65 & 65 & 49 & 14 \\
\hline LD20-094 & 5.7 & 19 & 100 & 3.9 & 47 & 45 & 12 & 57 & 43 & 15 \\
\hline LD20-095 & 9.6 & 14 & 100 & 4.1 & 64 & 51 & 22 & 61 & 49 & 13 \\
\hline LD20-096 & 8.9 & 14 & 100 & 4.1 & 64 & 48 & 17 & 57 & 47 & 18 \\
\hline LD20-097 & 5.5 & 14 & 100 & 4.1 & 57 & 54 & 14 & 65 & 51 & 11 \\
\hline LD20-098 & 9.2 & 14 & 100 & 4.2 & 50 & 51 & 18 & 62 & 49 & 29 \\
\hline LD20-099 & 36.0 & 20 & 100 & 3.6 & 85 & 61 & 65 & 69 & 46 & 17 \\
\hline LD20-100 & 30.5 & 17 & 100 & 3.8 & 76 & 56 & 42 & 65 & 49 & 21 \\
\hline LD20-101 & 48.0 & 18 & 100 & 3.7 & 89 & 61 & 72 & 67 & 44 & 21 \\
\hline LD20-102 & 33.8 & 16 & 100 & 4.3 & 81 & 58 & 47 & 66 & 51 & 18 \\
\hline LD20-103 & 14.2 & 14 & 100 & 4.2 & 57 & 49 & 24 & 63 & 44 & 30 \\
\hline LD20-104 & 12.0 & 12 & 100 & 4.4 & 50 & 44 & 16 & 61 & 42 & 37 \\
\hline LD20-105 & 12.9 & 15 & 100 & 4.2 & 73 & 54 & 24 & 64 & 50 & 10 \\
\hline LD20-106 & 46.3 & 23 & 100 & 3.7 & 100 & 64 & 73 & 71 & 45 & 13 \\
\hline LD20-107 & 53.6 & 21 & 100 & 3.7 & 95 & 64 & 72 & 71 & 44 & 14 \\
\hline LD20-108 & 19.5 & 16 & 100 & 3.9 & 69 & 52 & 41 & 67 & 42 & 16 \\
\hline LD20-109 & 15.3 & 17 & 100 & 3.8 & 71 & 52 & 30 & 62 & 48 & 9 \\
\hline LD20-110 & 14.6 & 15 & 100 & 4.0 & 87 & 53 & 37 & 64 & 47 & 14 \\
\hline LD20-111 & 22.8 & 16 & 100 & 4.1 & 94 & 54 & 46 & 67 & 42 & 13 \\
\hline LD20-112 & 9.2 & 14 & 100 & 4.1 & 79 & 50 & 19 & 64 & 48 & 10 \\
\hline LD20-115 & 6.9 & 12 & 100 & 4.5 & 58 & 57 & 7 & 68 & 56 & 20 \\
\hline LD20-116 & 7.2 & 12 & 100 & 4.8 & 58 & 55 & 8 & 67 & 54 & 16 \\
\hline LD20-117 & 3.6 & 17 & 100 & 3.8 & 59 & 52 & 5 & 68 & 51 & 5 \\
\hline LD21-001 & 17.7 & 14 & 100 & 4.1 & 100 & 55 & 35 & 69 & 47 & 11 \\
\hline LD21-002 & 23.7 & 15 & 100 & 4.0 & 67 & 55 & 37 & 62 & 51 & 25 \\
\hline LD21-003 & 19.4 & 18 & 100 & 3.8 & 61 & 51 & 35 & 68 & 41 & 25 \\
\hline LD21-004 & 24.9 & 15 & 100 & 4.1 & 87 & 56 & 54 & 65 & 45 & 9 \\
\hline
\end{tabular}
Table 4: Primary Elections (contests with Black candidate) (con-
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline District & Percent Black Voting Age Population & Number of Contests & \begin{tabular}{l}
Percent of \\
Blackpreferred candidates Democratic
\end{tabular} & Average Number of Candidates & Blackpreferred win rate & Average Blackpreferred candidate vote share & \begin{tabular}{l}
Avg. Pct. \\
Voters Black
\end{tabular} & \begin{tabular}{l}
Avg. ER \\
Black cohesion (pct.)
\end{tabular} & \begin{tabular}{l}
Avg. ER \\
White crossover support (pct.)
\end{tabular} & Pct. Black needed for majority \\
\hline LD21-005 & 37.5 & 16 & 100 & 3.9 & 94 & 59 & 60 & 67 & 46 & 22 \\
\hline LD21-007 & 22.2 & 15 & 100 & 4.1 & 93 & 63 & 48 & 78 & 49 & 4 \\
\hline LD21-008 & 44.2 & 15 & 100 & 4.1 & 93 & 58 & 59 & 66 & 46 & 13 \\
\hline LD21-009 & 24.6 & 14 & 100 & 4.1 & 64 & 55 & 38 & 61 & 52 & 19 \\
\hline LD21-010 & 33.1 & 14 & 100 & 4.1 & 100 & 58 & 58 & 64 & 49 & 12 \\
\hline LD21-011 & 14.2 & 15 & 100 & 4.1 & 40 & 44 & 15 & 67 & 40 & 39 \\
\hline LD21-012 & 37.7 & 14 & 100 & 4.1 & 100 & 59 & 60 & 68 & 46 & 7 \\
\hline LD21-013 & 8.3 & 15 & 100 & 4.1 & 67 & 53 & 19 & 64 & 49 & 16 \\
\hline LD21-014 & 17.8 & 13 & 100 & 4.2 & 92 & 56 & 47 & 61 & 51 & 12 \\
\hline LD21-015 & 10.6 & 14 & 100 & 4.3 & 71 & 50 & 40 & 60 & 44 & 7 \\
\hline LD21-016 & 13.2 & 14 & 100 & 4.1 & 64 & 51 & 38 & 59 & 46 & 7 \\
\hline LD21-017 & 10.3 & 17 & 100 & 3.9 & 65 & 51 & 26 & 62 & 47 & 7 \\
\hline LD21-018 & 21.6 & 15 & 100 & 4.1 & 67 & 52 & 35 & 60 & 48 & 14 \\
\hline LD21-019 & 5.1 & 15 & 100 & 4.0 & 60 & 50 & 10 & 64 & 48 & 15 \\
\hline LD21-020 & 5.3 & 11 & 100 & 4.4 & 64 & 52 & 8 & 80 & 50 & 7 \\
\hline LD21-021 & 10.8 & 15 & 100 & 4.1 & 60 & 50 & 16 & 63 & 47 & 22 \\
\hline LD21-022 & 27.7 & 17 & 100 & 3.9 & 94 & 57 & 54 & 70 & 46 & 12 \\
\hline LD21-023 & 52.5 & 15 & 100 & 4.0 & 100 & 65 & 67 & 71 & 50 & 13 \\
\hline LD21-024 & 36.6 & 15 & 100 & 4.0 & 93 & 61 & 61 & 67 & 50 & 13 \\
\hline LD21-025 & 40.0 & 15 & 100 & 4.0 & 100 & 63 & 62 & 77 & 43 & 17 \\
\hline LD21-026 & 16.8 & 9 & 100 & 2.6 & 78 & 61 & 37 & 75 & 54 & 30 \\
\hline LD21-027 & 50.8 & 18 & 100 & 3.9 & 89 & 60 & 62 & 75 & 49 & 17 \\
\hline LD21-028 & 16.2 & 15 & 100 & 4.0 & 93 & 57 & 35 & 67 & 51 & 8 \\
\hline LD21-029 & 38.3 & 20 & 100 & 3.7 & 80 & 63 & 44 & 78 & 51 & 7 \\
\hline LD21-030 & 33.0 & 19 & 100 & 3.7 & 74 & 61 & 30 & 74 & 55 & 8 \\
\hline LD21-032 & 42.4 & 14 & 100 & 4.1 & 93 & 61 & 61 & 78 & 35 & 12 \\
\hline LD21-033 & 29.8 & 15 & 100 & 4.1 & 73 & 62 & 34 & 75 & 57 & 0 \\
\hline LD21-034 & 18.2 & 15 & 100 & 4.1 & 53 & 49 & 18 & 69 & 45 & 29 \\
\hline
\end{tabular}
- Ex. 9643 -

- Ex. 9644 -
Table 4: Primary Elections (contests with Black candidate) (con-
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline District & Percent Black Voting Age Population & Number of Contests & Percent of Blackpreferred candidates Democratic & Average Number of Candidates & Blackpreferred win rate & Average Blackpreferred candidate vote share & Avg. Pct. Voters Black & \begin{tabular}{l}
Avg. ER \\
Black \\
cohesion \\
(pct.)
\end{tabular} & \begin{tabular}{l}
Avg. ER \\
White crossover support (pct.)
\end{tabular} & Pct. Black needed for majority \\
\hline LD21-069 & 11.6 & 15 & 100 & 4.1 & 73 & 51 & 30 & 61 & 47 & 6 \\
\hline LD21-070 & 7.0 & 16 & 100 & 4.0 & 75 & 53 & 18 & 64 & 50 & 20 \\
\hline LD21-071 & 39.5 & 19 & 100 & 3.8 & 84 & 58 & 61 & 62 & 50 & 18 \\
\hline LD21-072 & 33.7 & 18 & 100 & 3.9 & 67 & 53 & 40 & 65 & 45 & 19 \\
\hline LD21-073 & 17.0 & 8 & 100 & 2.6 & 88 & 58 & 35 & 73 & 49 & 25 \\
\hline LD21-074 & 11.3 & 16 & 100 & 4.0 & 69 & 51 & 23 & 64 & 47 & 10 \\
\hline LD21-075 & 15.3 & 17 & 100 & 3.9 & 76 & 52 & 37 & 65 & 44 & 27 \\
\hline LD21-076 & 20.4 & 16 & 100 & 3.9 & 94 & 55 & 41 & 60 & 52 & 9 \\
\hline LD21-077 & 5.5 & 16 & 100 & 4.1 & 75 & 49 & 20 & 57 & 48 & 11 \\
\hline LD21-078 & 5.5 & 15 & 100 & 4.1 & 67 & 51 & 17 & 59 & 50 & 9 \\
\hline LD21-079 & 16.9 & 14 & 100 & 4.1 & 79 & 55 & 30 & 64 & 50 & 4 \\
\hline LD21-080 & 9.4 & 15 & 100 & 4.2 & 80 & 53 & 27 & 61 & 50 & 22 \\
\hline LD21-081 & 9.6 & 15 & 100 & 4.1 & 73 & 54 & 24 & 60 & 52 & 14 \\
\hline LD21-082 & 21.0 & 14 & 100 & 4.1 & 86 & 55 & 38 & 62 & 52 & 16 \\
\hline LD21-083 & 11.9 & 14 & 100 & 4.1 & 79 & 52 & 31 & 68 & 45 & 23 \\
\hline LD21-084 & 16.0 & 14 & 100 & 4.1 & 93 & 52 & 36 & 63 & 46 & 11 \\
\hline LD21-086 & 6.1 & 15 & 100 & 4.0 & 67 & 54 & 13 & 66 & 52 & 13 \\
\hline LD21-087 & 4.9 & 15 & 100 & 4.0 & 67 & 51 & 11 & 64 & 49 & 27 \\
\hline LD21-088 & 23.3 & 11 & 100 & 4.5 & 64 & 53 & 28 & 61 & 50 & 17 \\
\hline LD21-089 & 6.7 & 14 & 100 & 4.1 & 71 & 50 & 19 & 63 & 47 & 2 \\
\hline LD21-090 & 3.5 & 16 & 100 & 3.9 & 56 & 48 & 8 & 69 & 47 & 15 \\
\hline LD21-091 & 14.1 & 15 & 100 & 4.0 & 73 & 51 & 33 & 65 & 45 & 23 \\
\hline LD21-092 & 39.1 & 17 & 100 & 3.8 & 76 & 58 & 63 & 64 & 49 & 11 \\
\hline LD21-094 & 5.3 & 17 & 100 & 3.9 & 65 & 51 & 11 & 61 & 50 & 14 \\
\hline LD21-095 & 7.6 & 12 & 100 & 4.5 & 58 & 48 & 14 & 62 & 46 & 22 \\
\hline LD21-096 & 9.9 & 14 & 100 & 4.1 & 71 & 52 & 21 & 58 & 50 & 18 \\
\hline LD21-097 & 5.5 & 14 & 100 & 4.1 & 57 & 53 & 15 & 64 & 51 & 11 \\
\hline LD21-098 & 7.5 & 14 & 100 & 4.2 & 43 & 47 & 14 & 64 & 44 & 40 \\
\hline
\end{tabular}
- Ex. 9645 -
Table 4: Primary Elections (contests with Black candidate) (con-
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline District & Percent Black Voting Age Population & Number of Contests & Percent of Blackpreferred candidates Democratic & Average Number of Candidates & Blackpreferred win rate & Average Blackpreferred candidate vote share & Avg. Pct. Voters Black & Avg. ER Black cohesion (pct.) & \begin{tabular}{l}
Avg. ER \\
White crossover support (pct.)
\end{tabular} & Pct. Black needed for majority \\
\hline LD21-099 & 46.8 & 24 & 100 & 3.8 & 96 & 61 & 75 & 67 & 44 & 17 \\
\hline LD21-100 & 31.0 & 17 & 100 & 3.8 & 76 & 56 & 42 & 64 & 49 & 21 \\
\hline LD21-101 & 46.8 & 18 & 100 & 3.9 & 89 & 59 & 70 & 66 & 43 & 18 \\
\hline LD21-102 & 37.6 & 19 & 100 & 3.9 & 84 & 58 & 52 & 66 & 50 & 21 \\
\hline LD21-103 & 11.8 & 15 & 100 & 4.1 & 60 & 49 & 25 & 64 & 44 & 30 \\
\hline LD21-104 & 8.5 & 12 & 100 & 4.4 & 33 & 38 & 12 & 64 & 35 & 58 \\
\hline LD21-105 & 12.2 & 15 & 100 & 4.2 & 73 & 54 & 25 & 64 & 50 & 10 \\
\hline LD21-106 & 43.4 & 24 & 100 & 3.7 & 100 & 63 & 68 & 72 & 46 & 14 \\
\hline LD21-107 & 47.4 & 20 & 100 & 3.6 & 95 & 64 & 68 & 71 & 47 & 16 \\
\hline LD21-108 & 19.3 & 16 & 100 & 3.9 & 69 & 52 & 38 & 66 & 44 & 17 \\
\hline LD21-110 & 15.7 & 16 & 100 & 4.1 & 100 & 55 & 46 & 66 & 46 & 12 \\
\hline LD21-111 & 16.4 & 16 & 100 & 4.1 & 75 & 51 & 32 & 62 & 47 & 11 \\
\hline LD21-112 & 27.8 & 17 & 100 & 3.8 & 71 & 57 & 49 & 66 & 48 & 20 \\
\hline LD21-113 & 6.8 & 14 & 100 & 4.1 & 57 & 49 & 12 & 57 & 48 & 4 \\
\hline LD21-114 & 7.6 & 12 & 100 & 5.1 & 67 & 56 & 6 & 62 & 56 & 22 \\
\hline LD21-115 & 6.3 & 12 & 100 & 4.5 & 42 & 49 & 6 & 64 & 48 & 20 \\
\hline LD21-117 & 3.5 & 8 & 100 & 2.6 & 75 & 60 & 5 & 64 & 60 & 4 \\
\hline SD20-001 & 24.6 & 14 & 100 & 4.1 & 100 & 55 & 40 & 66 & 48 & 12 \\
\hline SD20-002 & 14.1 & 17 & 100 & 3.9 & 53 & 48 & 32 & 66 & 44 & 26 \\
\hline SD20-003 & 42.2 & 15 & 100 & 4.0 & 93 & 64 & 61 & 77 & 46 & 8 \\
\hline SD20-004 & 46.5 & 15 & 100 & 4.3 & 93 & 59 & 64 & 69 & 50 & 14 \\
\hline SD20-005 & 34.8 & 14 & 100 & 4.1 & 79 & 55 & 49 & 64 & 48 & 24 \\
\hline SD20-006 & 14.5 & 14 & 100 & 4.1 & 86 & 54 & 45 & 64 & 46 & 11 \\
\hline SD20-007 & 33.6 & 15 & 100 & 4.0 & 100 & 59 & 61 & 67 & 48 & 9 \\
\hline SD20-008 & 12.6 & 15 & 100 & 4.0 & 60 & 49 & 28 & 64 & 41 & 17 \\
\hline SD20-009 & 12.0 & 13 & 100 & 4.3 & 69 & 53 & 20 & 61 & 51 & 18 \\
\hline SD20-010 & 20.1 & 16 & 100 & 4.1 & 88 & 57 & 47 & 64 & 49 & 16 \\
\hline SD20-011 & 27.5 & 14 & 100 & 4.1 & 93 & 62 & 52 & 71 & 49 & 4 \\
\hline
\end{tabular}
- Ex. 9646 -
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline District & Percent Black Voting Age Population & Number of Contests & Percent of Blackpreferred candidates Democratic & Average Number of Candidates & Blackpreferred win rate & Average Blackpreferred candidate vote share & Avg. Pct. Voters Black & \begin{tabular}{l}
Avg. ER \\
Black \\
cohesion \\
(pct.)
\end{tabular} & \begin{tabular}{l}
Avg. ER \\
White crossover support (pct.)
\end{tabular} & Pct. Black needed for majority \\
\hline SD20-012 & 18.8 & 17 & 100 & 3.9 & 65 & 52 & 41 & 60 & 47 & 7 \\
\hline SD20-013 & 25.1 & 20 & 100 & 4.2 & 65 & 48 & 33 & 62 & 43 & 5 \\
\hline SD20-014 & 32.1 & 15 & 100 & 4.1 & 80 & 62 & 45 & 74 & 53 & 0 \\
\hline SD20-015 & 18.1 & 15 & 100 & 4.0 & 67 & 56 & 23 & 64 & 53 & 7 \\
\hline SD20-016 & 12.9 & 15 & 100 & 4.1 & 40 & 43 & 15 & 73 & 38 & 29 \\
\hline SD20-017 & 8.8 & 15 & 100 & 4.1 & 47 & 46 & 16 & 62 & 43 & 34 \\
\hline SD20-018 & 24.4 & 15 & 100 & 4.1 & 87 & 62 & 47 & 73 & 51 & 16 \\
\hline SD20-019 & 33.6 & 15 & 100 & 4.1 & 80 & 53 & 56 & 59 & 45 & 18 \\
\hline SD20-020 & 35.4 & 20 & 100 & 3.7 & 70 & 62 & 43 & 75 & 52 & 7 \\
\hline SD20-021 & 41.2 & 17 & 100 & 3.9 & 71 & 56 & 74 & 60 & 46 & 19 \\
\hline SD20-022 & 30.0 & 17 & 100 & 4.1 & 71 & 56 & 41 & 66 & 52 & 0 \\
\hline SD20-023 & 11.1 & 16 & 100 & 4.3 & 44 & 44 & 14 & 61 & 44 & 11 \\
\hline SD20-024 & 22.0 & 14 & 100 & 4.1 & 79 & 53 & 43 & 62 & 47 & 24 \\
\hline SD20-025 & 23.4 & 15 & 100 & 4.1 & 67 & 51 & 44 & 60 & 46 & 23 \\
\hline SD20-026 & 12.6 & 14 & 100 & 4.1 & 79 & 54 & 29 & 62 & 50 & 6 \\
\hline SD20-027 & 24.0 & 17 & 100 & 4.0 & 71 & 53 & 45 & 61 & 45 & 6 \\
\hline SD20-028 & 43.9 & 16 & 100 & 4.1 & 62 & 53 & 51 & 62 & 43 & 23 \\
\hline SD20-029 & 10.5 & 14 & 100 & 4.1 & 71 & 54 & 28 & 62 & 51 & 14 \\
\hline SD20-030 & 14.7 & 15 & 100 & 4.0 & 73 & 50 & 37 & 60 & 45 & 25 \\
\hline SD20-031 & 22.0 & 16 & 100 & 3.9 & 81 & 54 & 50 & 64 & 44 & 28 \\
\hline SD20-032 & 23.9 & 17 & 100 & 3.8 & 59 & 50 & 36 & 65 & 41 & 31 \\
\hline SD20-033 & 14.4 & 15 & 100 & 4.0 & 100 & 55 & 35 & 62 & 52 & 10 \\
\hline SD20-034 & 10.1 & 15 & 100 & 4.2 & 73 & 50 & 25 & 60 & 47 & 12 \\
\hline SD20-035 & 12.2 & 15 & 100 & 4.1 & 80 & 53 & 32 & 59 & 50 & 8 \\
\hline SD20-036 & 17.9 & 14 & 100 & 4.1 & 79 & 51 & 37 & 64 & 44 & 22 \\
\hline SD20-037 & 13.8 & 13 & 100 & 4.5 & 46 & 43 & 18 & 61 & 39 & 37 \\
\hline SD20-038 & 42.8 & 22 & 100 & 3.8 & 91 & 61 & 64 & 68 & 49 & 19 \\
\hline SD20-039 & 21.3 & 17 & 100 & 3.8 & 76 & 54 & 40 & 66 & 46 & 17 \\
\hline
\end{tabular}
- Ex. 9647 -
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline \multicolumn{11}{|l|}{Table 4: Primary Elections (contests with Black candidate) (continued)} \\
\hline District & Percent Black Voting Age Population & Number of Contests & Percent of Blackpreferred candidates Democratic & Average Number of Candidates & Blackpreferred win rate & Average Blackpreferred candidate vote share & \begin{tabular}{l}
Avg. Pct. \\
Voters Black
\end{tabular} & \begin{tabular}{l}
Avg. ER \\
Black cohesion (pct.)
\end{tabular} & \begin{tabular}{l}
Avg. ER \\
White crossover support (pct.)
\end{tabular} & Pct. Black needed for majority \\
\hline SD20-040 & 38.7 & 21 & 100 & 3.8 & 86 & 61 & 65 & 68 & 46 & 18 \\
\hline SD20-041 & 29.1 & 20 & 100 & 3.6 & 80 & 59 & 50 & 68 & 50 & 18 \\
\hline SD20-042 & 7.9 & 14 & 100 & 4.1 & 79 & 51 & 18 & 59 & 49 & 3 \\
\hline SD20-043 & 17.4 & 16 & 100 & 3.9 & 75 & 53 & 36 & 64 & 47 & 10 \\
\hline SD20-044 & 13.1 & 14 & 100 & 4.1 & 71 & 52 & 35 & 63 & 46 & 14 \\
\hline SD20-045 & 3.3 & 1 & 100 & 2.0 & 0 & 38 & 6 & 72 & 33 & 44 \\
\hline SD20-046 & 5.5 & 15 & 100 & 4.0 & 67 & 54 & 12 & 64 & 53 & 10 \\
\hline SD20-047 & 5.1 & 13 & 100 & 4.2 & 38 & 43 & 8 & 63 & 41 & 25 \\
\hline SD20-049 & 6.4 & 12 & 100 & 4.8 & 67 & 56 & 6 & 66 & 55 & 15 \\
\hline SD21-001 & 28.8 & 14 & 100 & 4.1 & 93 & 57 & 45 & 67 & 48 & 8 \\
\hline SD21-002 & 29.3 & 14 & 100 & 4.1 & 93 & 60 & 48 & 71 & 49 & 10 \\
\hline SD21-003 & 25.9 & 18 & 100 & 4.1 & 89 & 56 & 46 & 71 & 44 & 11 \\
\hline SD21-004 & 34.1 & 14 & 100 & 4.1 & 93 & 59 & 59 & 66 & 48 & 14 \\
\hline SD21-005 & 39.3 & 14 & 100 & 4.1 & 93 & 58 & 56 & 65 & 49 & 14 \\
\hline SD21-006 & 13.8 & 15 & 100 & 4.2 & 87 & 54 & 44 & 62 & 48 & 11 \\
\hline SD21-007 & 11.5 & 12 & 100 & 4.5 & 67 & 53 & 19 & 62 & 51 & 22 \\
\hline SD21-008 & 13.9 & 15 & 100 & 4.0 & 53 & 47 & 26 & 63 & 41 & 20 \\
\hline SD21-009 & 23.1 & 14 & 100 & 4.1 & 93 & 55 & 50 & 66 & 45 & 6 \\
\hline SD21-010 & 15.9 & 16 & 100 & 3.9 & 81 & 54 & 35 & 66 & 49 & 15 \\
\hline SD21-011 & 35.7 & 16 & 100 & 4.1 & 81 & 60 & 58 & 74 & 43 & 14 \\
\hline SD21-012 & 19.6 & 16 & 100 & 4.0 & 62 & 51 & 42 & 61 & 44 & 24 \\
\hline SD21-013 & 20.5 & 14 & 100 & 4.1 & 79 & 59 & 37 & 66 & 55 & 0 \\
\hline SD21-014 & 41.5 & 15 & 100 & 4.1 & 87 & 64 & 62 & 76 & 46 & 7 \\
\hline SD21-015 & 13.9 & 15 & 100 & 4.1 & 33 & 42 & 12 & 71 & 38 & 33 \\
\hline SD21-016 & 8.1 & 15 & 100 & 4.1 & 40 & 43 & 11 & 73 & 40 & 25 \\
\hline SD21-017 & 10.1 & 15 & 100 & 4.1 & 67 & 53 & 20 & 61 & 52 & 6 \\
\hline SD21-018 & 21.5 & 15 & 100 & 4.0 & 67 & 56 & 27 & 64 & 53 & 7 \\
\hline SD21-019 & 45.0 & 16 & 100 & 4.1 & 75 & 54 & 69 & 58 & 45 & 20 \\
\hline
\end{tabular}
- Ex. 9648 -
Table 4: Primary Elections (contests with Black candidate) (continued)
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline District & Percent Black Voting Age Population & Number of Contests & \begin{tabular}{l}
Percent of \\
Blackpreferred candidates Democratic
\end{tabular} & Average Number of Candidates & Blackpreferred win rate & Average Blackpreferred candidate vote share & Avg. Pct. Voters Black & \begin{tabular}{l}
Avg. ER \\
Black cohesion (pct.)
\end{tabular} & \begin{tabular}{l}
Avg. ER \\
White crossover support (pct.)
\end{tabular} & Pct. Black needed for majority \\
\hline SD21-020 & 26.2 & 17 & 100 & 4.0 & 65 & 55 & 34 & 77 & 47 & 8 \\
\hline SD21-021 & 18.3 & 15 & 100 & 4.1 & 60 & 49 & 41 & 60 & 43 & 6 \\
\hline SD21-022 & 33.2 & 19 & 100 & 3.7 & 74 & 61 & 38 & 74 & 52 & 8 \\
\hline SD21-023 & 16.0 & 17 & 100 & 4.1 & 47 & 46 & 23 & 58 & 44 & 30 \\
\hline SD21-024 & 28.4 & 18 & 100 & 4.1 & 78 & 51 & 43 & 70 & 41 & 9 \\
\hline SD21-025 & 17.1 & 14 & 100 & 4.1 & 79 & 53 & 34 & 60 & 50 & 22 \\
\hline SD21-026 & 16.8 & 15 & 100 & 4.0 & 73 & 54 & 39 & 61 & 49 & 29 \\
\hline SD21-027 & 26.2 & 16 & 100 & 4.1 & 62 & 52 & 36 & 63 & 45 & 16 \\
\hline SD21-028 & 49.5 & 16 & 100 & 4.1 & 81 & 55 & 65 & 62 & 42 & 23 \\
\hline SD21-029 & 17.3 & 14 & 100 & 4.1 & 79 & 49 & 39 & 64 & 40 & 25 \\
\hline SD21-030 & 8.8 & 14 & 100 & 4.1 & 79 & 55 & 24 & 61 & 53 & 13 \\
\hline SD21-031 & 11.5 & 16 & 100 & 4.0 & 69 & 48 & 30 & 64 & 41 & 26 \\
\hline SD21-032 & 33.8 & 18 & 100 & 3.9 & 67 & 52 & 47 & 63 & 43 & 30 \\
\hline SD21-033 & 14.4 & 15 & 100 & 4.0 & 100 & 55 & 35 & 62 & 52 & 9 \\
\hline SD21-034 & 18.9 & 16 & 100 & 3.9 & 81 & 54 & 38 & 62 & 49 & 4 \\
\hline SD21-035 & 11.1 & 15 & 100 & 4.1 & 80 & 53 & 30 & 60 & 50 & 8 \\
\hline SD21-036 & 4.2 & 15 & 100 & 4.0 & 53 & 48 & 10 & 64 & 45 & 16 \\
\hline SD21-037 & 10.7 & 14 & 100 & 4.1 & 64 & 51 & 24 & 60 & 48 & 13 \\
\hline SD21-038 & 33.4 & 20 & 100 & 3.6 & 90 & 61 & 56 & 70 & 49 & 16 \\
\hline SD21-039 & 39.0 & 21 & 100 & 3.6 & 90 & 62 & 66 & 69 & 47 & 15 \\
\hline SD21-040 & 47.5 & 21 & 100 & 3.8 & 100 & 63 & 72 & 68 & 48 & 18 \\
\hline SD21-041 & 10.0 & 12 & 100 & 4.4 & 50 & 44 & 20 & 63 & 40 & 32 \\
\hline SD21-042 & 20.3 & 15 & 100 & 4.2 & 67 & 55 & 27 & 64 & 52 & 12 \\
\hline SD21-043 & 17.9 & 16 & 100 & 3.9 & 75 & 53 & 37 & 64 & 47 & 10 \\
\hline SD21-044 & 12.7 & 15 & 100 & 4.3 & 73 & 51 & 35 & 64 & 43 & 14 \\
\hline SD21-045 & 7.1 & 14 & 100 & 4.1 & 79 & 54 & 18 & 59 & 52 & 2 \\
\hline SD21-046 & 4.6 & 14 & 100 & 4.1 & 57 & 51 & 7 & 69 & 49 & 8 \\
\hline SD21-048 & 5.2 & 15 & 100 & 4.0 & 53 & 46 & 9 & 58 & 45 & 3 \\
\hline
\end{tabular}
- Ex. 9649 -
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline \multicolumn{11}{|l|}{Table 4: Primary Elections (contests with Black candidate) (continued)} \\
\hline District & Percent Black Voting Age Population & Number of Contests & Percent of Blackpreferred candidates Democratic & Average Number of Candidates & Blackpreferred win rate & Average Blackpreferred candidate vote share & Avg. Pct. Voters Black & \begin{tabular}{l}
Avg. ER \\
Black cohesion (pct.)
\end{tabular} & \begin{tabular}{l}
Avg. ER \\
White crossover support (pct.)
\end{tabular} & Pct. Black needed for majority \\
\hline SD21-049 & 6.9 & 12 & 100 & 4.8 & 67 & 56 & 7 & 65 & 55 & 15 \\
\hline
\end{tabular}

STATE OF NORTH CAROLINA

COUNTY OF WAKE
NORTH CAROLINA LEAGUE OF CONSERVATION VOTERS, et al.,

REBECCA HARPER, et al.,

Plaintiffs,
vs.
REPRESENTATIVE DESTIN HALL, in his official capacity as Chair of the House Standing Committee on Redistricting, et al., Defendants.

IN THE GENERAL COURT OF JUSTICE SUPERIOR COURT DIVISION 21 CVS 015426

Consolidated with 21 CVS 500085

\section*{AFFIDAVIT OF MICHAEL BARBER}

Now comes affiant Michael Barber, having been first duly cautioned and sworn, deposes and states as follows:
1. I am over the age of 18 and am competent to testify regarding the matters discussed below.
2. For the purposes of this litigation, I have been asked by counsel for Legislative

Defendants to analyze relevant data and provide my expert opinions.
3. To that end, I have personally prepared the rebuttal report attached to this affidavit as Exhibit A, and swear to its authenticity and to the faithfulness of the opinions.

FURTHER THE AFFIANT SAYETH NAUGHT.

Executed on 28 December, 2021.


Michael Barber

\section*{STATE OF FLORIDA}

\section*{COUNTY OF PINELLAS}

Sworn to and subscribed before me by online notarization this \(\underline{28^{\text {th }}}\) day of December, 2021, by MICHAEL BARBER, who appeared by way of two-way audio/video communication technology, and he provided his Utah driver's license as identification.

- Ex. 9652 -

\title{
Reply Report of Michael Barber, PhD
}

\author{
Dr. Michael Barber \\ Brigham Young University \\ 724 Spencer W. Kimball Tower \\ Provo, UT 84604 \\ barber@byu.edu
}

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\section*{1 Introduction and Qualifications}

I have been asked by counsel for the Legislative Defendants to analyze and respond to reports submitted by Drs. Magleby, Pegden, Mattingly, and Cooper with regards to their analysis of North Carolina's recently enacted redistricting plans for the General Assembly (the "Enacted Plans"). \({ }^{1}\)

I do this in the following ways. First, I provide a summary of their conclusions as well as comparisons between their main results and those I produced in my original report. I also consider the specific analysis they produce for several county groupings that are singled out in their reports for additional scrutiny. I also define a measure of substantive significance to determine the degree to which the Enacted Map differs from Dr. Pegden's simulations and subsequent expected seats analysis.

The results show that there is often not agreement, even among the plaintiffs' experts, as to whether or not a county grouping's districts constitute a partisan outlier. In some cases the simulations produced by different experts come to different conclusions, and in other cases some of the experts assert an extreme partisan gerrymander, but in that same grouping the map proposed by the North Carolina League of Conservation Voters (NCLCV Map) exhibits the same qualities as the Enacted Map.

Based on the evidence and analysis presented below, my opinions regarding these reports studying the North Carolina General Assembly can be summarized as follows:
- There is significant agreement between Dr. Magley's simulation results and those produced in my original report with regard to the number of seats carried by Democrats in both the simulations and and the Enacted Plan despite some differences in our particular simulation methods.
- However, Dr. Magleby does not present county grouping by county grouping analyses,

\footnotetext{
\({ }^{1}\) Due to the incredibly tight time constraints between the submission of reports and the deadline for submission of rebuttal reports, I only analyze Dr. Cooper's report in the House clusters and not the Senate clusters. My analysis has been provided to the best of my ability given the time constraints.
}
so it is not possible to compare his results with mine to identify if there are differences at this more granular level.
- In many of the 12 county groupings considered by Drs. Pegden and Mattingly in the House the Enacted Plan is either not a statistical outlier, is not substantively different from the simulations, or is in agreement with the map proposed by the NCLCV plaintiffs in the districts under dispute. Furthermore, in other cases there are reasonable explanations for the boundaries of the map that are separate from partisanship.
- In the 5 county groupings considered by plaintiffs' experts in the Senate, there is also often disagreement on whether the map constitutes a large outlier. In many of the clusters the Enacted Plan is either not a statistical outlier, is not substantively different from the simulations, or is in agreement with the map proposed by the NCLCV plaintiffs in the districts under dispute.

I am an associate professor of political science at Brigham Young University and faculty fellow at the Center for the Study of Elections and Democracy in Provo, Utah. I received my PhD in political science from Princeton University in 2014 with emphases in American politics and quantitative methods/statistical analyses. My dissertation was awarded the 2014 Carl Albert Award for best dissertation in the area of American Politics by the American Political Science Association.

I teach a number of undergraduate courses in American politics and quantitative research methods. \({ }^{2}\) These include classes about political representation, Congressional elections, statistical methods, and research design.

I have worked as an expert witness in a number of cases in which I have been asked to analyze and evaluate various political and elections-related data and statistical methods. Cases in which I have testified at trial or by deposition are listed in my CV, which is attached to the end of this report. I have previously provided expert reports in a number of

\footnotetext{
\({ }^{2}\) The political science department at Brigham Young University does not offer any graduate degrees.
}
cases related to voting, redistricting, and election-related issues: Nancy Carola Jacobson, et al., Plaintiffs, vs. Laurel M. Lee, et al., Defendants. Case No. 4:18-cv-00262 MW-CAS (U.S. District Court for the Northern District of Florida); Common Cause, et al., Plaintiffs, vs. Lewis, et al., Defendants. Case No. 18-CVS-14001 (Wake County, North Carolina); Kelvin Jones, et al., Plaintiffs, v. Ron DeSantis, et al., Defendants, Consolidated Case No. 4:19-cv-300 (U.S. District Court for the Northern District of Florida); Community Success Initiative, et al., Plaintiffs, v. Timothy K. Moore, et al., Defendants, Case No. 19-cv-15941 (Wake County, North Carolina); Richard Rose et al., Plaintiffs, v. Brad Raffensperger, Defendant, Civil Action No. 1:20-cv-02921-SDG (U.S. District Court for the Northern District of Georgia); Georgia Coalition for the People's Agenda, Inc., et. al., Plaintiffs, v. Brad Raffensberger, Defendant. Civil Action No. 1:18-cv-04727-ELR (U.S. District Court for the Northern District of Georgia); Alabama, et al., Plaintiffs, v. United States Department of Commerce; Gina Raimondo, et al., Defendants. Case No. CASE NO. 3:21-cv-00211-RAH-ECM-KCN (U.S. District Court for the Middle District of Alabama Eastern Division); League of Women Voters of Ohio, et al., Relators, v. Ohio Redistricting Commission, et al., Respondents. Case No. 2021-1193 (Supreme Court of Ohio); Adams, et al., Relators, v. DeWine, et al., Respondents. Case No. 2021-1428 (Supreme Court of Ohio)

In my position as a professor of political science, I have conducted research on a variety of election- and voting-related topics in American politics and public opinion. Much of my research uses advanced statistical methods for the analysis of quantitative data. I have worked on a number of research projects that use "big data" that include millions of observations, including a number of state voter files, campaign contribution lists, and data from the US Census. I have also used geographic information systems and other mapping techniques in my work with political data.

Much of this research has been published in peer-reviewed journals. I have published nearly 20 peer-reviewed articles, including in our discipline's flagship journal, The American Political Science Review as well as the inter-disciplinary journal,Science Advances. My CV,
which details my complete publication record, is attached to this report as Appendix A.
The analysis and opinions I provide in this report are consistent with my education, training in statistical analysis, and knowledge of the relevant academic literature. These skills are well-suited for this type of analysis in political science and quantitative analysis more generally. My conclusions stated herein are based upon my review of the information available to me at this time. I reserve the right to alter, amend, or supplement these conclusions based upon further study or based upon the availability of additional information. I am being compensated for my time in preparing this report at an hourly rate of \(\$ 400 /\) hour. My compensation is in no way contingent on the conclusions reached as a result of my analysis. The opinions in this report are my own, and do not represent the view of Brigham Young University.

\section*{2 Review of Dr. Magleby's Report}

My review of Dr. Magleby's report shows many areas in which our data and methods are similar and a few important areas where we differ in our methods. I begin with areas of similarity. As my report considered only the state legislative districts and not the congressional districts, I focus on that portion of Dr. Magleby's report as well.

My review of his report over the last several days indicates that our analysis is similar in the following ways:
- We both use a redistricting simulation algorithm to construct hypothetical legislative districts in the NC House and Senate.
- We both use data from historical elections at the level of the VTD to compute the partisan lean of the Enacted Plan as well as the simulated districts.
- We both use statewide election data to compute partisan indices.
- Using the partisan indices, we both compute the number of districts "carried" by

Democrats and Republicans as a measure of the partisan lean of the districts in the Enacted Plan and the set of simulations.

Our analysis differs in the following ways:
- While we both use a redistricting simulation algorithm to construct hypothetical legislative districts in the NC House and Senate, the exact method and computer programs differ in their construction.
- While we both use data from historical elections at the level of the VTD to compute the partisan lean of the Enacted Plan as well as the simulated districts, we use slightly different elections to generate a partisan index for each district. Professor Magleby uses the following elections in 2016 and 2020 in his index: President, US Senate, Governor, Lieutenant Governor, Attorney General, Treasurer, Secretary of State, Auditor, Agriculture Commissioner, Insurance Commissioner, Labor Commissioner, and Superintendent of Public Instruction. I also use elections for President, US Senate, Governor, Lieutenant Governor, and Attorney General. Due to the very tight time constraints of this case I was unable to obtain data for Treasurer, Secretary of State, Auditor, Agriculture Commissioner, Insurance Commissioner, Labor Commissioner, and Superintendent of Public Instruction. I also include the 2014 Senate race. However, the differences in our indices will not make a large difference given the large number of elections included in either index. Any one election carries very little weight. Finally, if the intention of simulations is to compare the Enacted Plan to a set of simulated districts, the more important factor is that the measure by which the Enacted Plan is evaluated is the same as the measure by which the simulated districts are measured. This is true of both sets of simulations.
- Professor Magleby takes a random sample of 1,000 districting plans from a larger set of simulations to use as his comparison set. From the description in his report, it appears that there is no consideration for whether the simulated districts divide more
counties or are more or less compact than the Enacted Plan. In my report I only include simulations with as many or fewer county traversals and simulations in which the districts comprising the county grouping have an average compactness score that is as large or larger than the Enacted Plan.
- We both conduct simulations separately for each county grouping, however, Professor Magleby's report does not include them in his report. Because of this, I am unable to identify county groupings where the Enacted Map may differ from the simulated districts.

At the statewide level, our results are quite similar. In the State House Dr. Magelby's index predicts the Enacted Plan to have 48 Democratic districts (see Figure 1 of Magleby report). Dr. Magleby's simulations produce a distribution of seats carried by Democrats, with a peak at 52 seats carried by Democrats for a gap of 4 seats between the Enacted Plan and the modal outcome of the simulations.

My index in the House yields 49 seats carried by Democrats (see Tables 1 and 2 in Barber report). Because I consider each county grouping separately, I do not produce a single statewide histogram of seats carried by Democrats statewide, however, Tables 1 and 2 in my report show the middle \(50 \%\) range of simulations across all House clusters to be 50-55 Democratic seats, which would include the modal outcome in Dr. Magleby's Figure 1. This produces a gap of 1-6 seats between the Enacted Plan and the middle \(50 \%\) range of simulated plans.

In the State Senate Dr. Magelby's index predicts the Enacted Plan to have 19 Democratic districts (see Figure 3 of Magleby report). Dr. Magleby's simulations produce a distribution of seats carried by Democrats, with a peak at 22 seats carried by Democrats for a gap of 3 seats between the Enacted Plan and the modal outcome of the simulations.

My index yields 20 seats carried by Democrats in the State Senate (see Tables 31 and 32 in Barber report). Because I consider each county grouping separately, I do not produce a single statewide histogram of seats carried by Democrats statewide, however, Tables 31
and 32 in my report show the middle \(50 \%\) range of simulations across all clusters to be 23 Democratic seats for a gap of 3 seats between the Enacted Plan and the modal outcome of the simulations.

\section*{3 Review of Dr. Cooper's Report}

Dr. Cooper provides no quantitative analysis of the Enacted Plan aside from computing a few different partisan indices of the Enacted Plan. He does not compare the plan to any other alternative plan or set of plans, simulated or otherwise. While the partisan indices he uses are quantitative in nature, the analysis he conducts is fundamentally qualitative. For his analysis of the State House and Senate he looks at each county grouping and offers opinions and anecdotes about the boundaries of the districts as well as the supposed intentions of the legislature. However, he offers no evidence aside from his own opinion to support his assertions of the intentions of the legislature when drawing the district boundaries.

There is nothing wrong, per se, with a qualitative approach to evaluating a state's map. However, qualitative research requires the same standards and rigor as quantitative research. King, Keohane, and Verba (2021), arguably the most influential recent work on qualitative research, describe the need for rigorously defined standards in qualitative research as the following:

We argue that nonstatistical research will produce more reliable results if researchers pay attention to the rules of scientific inference - rules that are sometimes more clearly stated in the style of quantitate research....Indeed the distinctive characteristic that sets social science apart from casual observation is that social science seeks to arrive at valid inferences by the systematic use of well-established procedures of inquiry (pg. 4). \({ }^{3}\)

\footnotetext{
\({ }^{3}\) King, Gary., Verba, Sidney., Keohane, Robert O.. Designing Social Inquiry: Scientific Inference in Qualitative Research, New Edition. United States: Princeton University Press, 2021.
}

From my review of Dr. Cooper's cluster-by-cluster analysis, there is no systematic process by which he determines if a set of districts in a county group constitute a gerrymander or not. Dr. Cooper does not describe any methods or processes that would be consistent with analysis in political science. Instead, I would describe his report as more akin to "casual observation," rather than rigorous social science. Nevertheless, I consider the particular county groups that he identifies and compare his assessment to that of my report and the other plaintiff expert reports.

\section*{4 Review of Dr. Pegden's Report}

Dr. Pegden provides an analysis of the districts in the State House and Senate, as well as the congressional maps. However, I only consider the State House and Senate portion of his report. My understanding of his analysis is that he performs something akin to a simulation analysis, but in a slightly different way. Through a series of very large number of small perturbations to the existing districts that adhere to the redistricting criteria in North Carolina he creates a large set of comparison maps. He then compares the Enacted Map to this set of comparison maps using the 2020 Attorney General election as a "proxy for partisan voting patterns (pg. 9)" in two ways.

Unlike myself, Professor Magleby, and Professor Mattingly, Dr. Pegden only considers one election instead of an index or series of elections. It is unclear to me why he makes this choice since using any individual election as a proxy for future state legislative election results will be subject to the idiosyncrasies (candidate-related factors, issues specific to the office and campaign, campaign spending/advertising, etc) of the particular election chosen. While he provides alternative elections in the Appendix of his report for the 2020 Presidential election, the 2020 Lieutenant Governor election, and the 2020 Governor election, these are only included for the statewide analysis and do not look at specific county groupings in a group-by-group analysis, like is done earlier in his report.

The first analysis Dr. Pegden conducts is to determine the proportion of maps that are more "partisan" than the set of comparison maps. This fraction is treated throughout the report in a similar fashion to a reported p-value in other quantitative research in the social sciences. As Dr. Pegden states: "My method produces a rigorous p-value (statistical significance level) which precisely captures the confidence one can have in the findings of my "second level" analyses. In particular, for my statewide analyses, my second-level claims are all valid at a statistical significance of \(\mathrm{p}=.002\) (pg. 6)."

He also produces an additional analysis for each county grouping in which he computes the expected seat share for the Enacted Plan and compares this to the expected seat share of the set of comparison maps he produces. As he states: "When I am evaluating the partisanship of a comparison districting (to compare it to the Enacted Plan), I am interested in the number of seats we expect Democrats might win in the districting, given unknown shifts in partisan support. In particular, the metric I use is: How many seats, on average, would Democrats win in the given districting, if a random uniform swing is applied to the historical voting data being used?" This comparison is akin to a measure of substantive significance, as it helps us to understand the substantive difference between the Enacted Map and the set of comparison maps generated by Dr. Pegden's algorithm.

Substantive significance is a way of measuring the "practical significance" of a statistical finding. Gross (2015) states, "The function of statistical tests is merely to answer: Is the variation great enough for us to place some confidence in the result; or, contrarily, may the latter be merely a happenstance of the specific sample on which the test was made? The question is interesting, but it is surely secondary, auxiliary, to the main question: Does the result show a relationship which is of substantive interest because of its nature and its magnitude? \({ }^{4}{ }^{4}\) As an example, suppose a drug trial discovers a drug to reduce blood pressure that produces a statistically significant effect in a randomized controlled trial. However,

\footnotetext{
\({ }^{4}\) Gross, Justin H. "Testing What Matters (If You Must Test at All): A Context-Driven Approach to Substantive and Statistical Significance." American Journal of Political Science 59, no. 3 (2015): 775-788. quoting Kish, Leslie. 1959. "Some Statistical Problems in Research Design." American Sociological Review 24(3):328-38.
}
suppose that the substantive impact of this drug on patients' blood pressure remains very small. Given this, it may not be in the interests of the company to produce the drug given other considerations such as cost, potential side effects, and the opportunity costs of other activities. This would be an example of a difference between statistical and substantive significance.

The previous paragraph is relevant to Dr. Pegden's analysis because the first and second level analyses he provides are akin to measures of statistical significance while the expected seat share he computes is akin to a measure of substantive significance. Various measures of redistricting have been created and used, but agreement on any one particular measure as the ideal is lacking. Furthermore, even when a particular measure is agreed upon, what constitutes a substantively significant difference using that measure is even rarer. \({ }^{5}\) Cain et al. summarise this issue well when they state, "Any partisan gerrymandering doctrine that the Court adopts will presumably allow states to draw maps that deviate some from the counterfactual plans. Strict adherence is not likely to be required. The critical question in applying this method then becomes: How much deviation is too much?" \({ }^{6}\)

Given this, agreement on a strict definition of substantive significance is vanishingly rare. As a guidepost, I look at the expected seat share between the Enacted Plan and the expected seat share of the middle \(50 \%\) of Dr. Pegden's simulations (in other words, the simulations which constitute the 25 th to the 75 th percentile). I then calculate how this difference would translate into an expectation for a party to pick up an additional seat over the 5 legislative elections that would take place over the decade in which the plan would be in place. \({ }^{7}\) A redistricting plan is in place for a decade, so it makes sense to consider the

\footnotetext{
\({ }^{5}\) Herschlag, Gregory, Han Sung Kang, Justin Luo, Christy Vaughn Graves, Sachet Bangia, Robert Ravier, and Jonathan C. Mattingly. "Quantifying gerrymandering in North Carolina." Statistics and Public Policy 7, no. 1 (2020): 30-38.; Stephanopoulos, Nicholas O., and Eric M. McGhee. "The measure of a metric: The debate over quantifying partisan gerrymandering." Stan. L. Rev. 70 (2018): 1503.; Warrington, Gregory S. "A comparison of partisan-gerrymandering measures." Election Law Journal: Rules, Politics, and Policy 18, no. 3 (2019): 262-281.
\({ }^{6}\) Cain, Bruce E., Wendy K. Tam Cho, Yan Y. Liu, and Emily R. Zhang. "A Reasonable Bias Approach to Gerrymandering: Using Automated Plan Generation to Evaluate Redistricting Proposals." William \& Mary Law Review 59, no. 5 (2018): 1521.
\({ }^{7}\) I also use the middle \(50 \%\) standard in my own analysis when looking at whether the Enacted Plan is
}
substantive differences over that time period.

\section*{5 Review of Dr. Mattingly's Report}

Dr. Mattingly also produces a set of simulated districting plans and compares the Enacted Plan to this set of comparison maps. Dr. Mattingly does not produce an election index, but instead analyzes separately the results in 12 or 16 different elections in 2016 and 2020. In his statewide analysis he includes 2020: Attorney General, United States Senate, Commissioner of Insurance, Lieutenant Governor, Governor, State Treasurer, Secretary of State, State Auditor, Commissioner of Agriculture, Commissioner of Insurance, and US President; 2016: Commissioner of Agriculture, Governor, Lieutenant Governor, US Senate, and President. In his cluster-by-cluster analysis these elections are 2020: Attorney General, United States Senate, Commissioner of Insurance, Lieutenant Governor, Governor, State Treasurer, Secretary of State, State Auditor, Commissioner of Agriculture, and United States President; 2016: Lieutenant Governor and President. It is unclear to me why he does not include the other 2020 races in the cluster-by-cluster analysis.

In his analysis of the State House Dr. Mattingly produces two different "ensembles" or sets of simulations. The first set he describes as "matched" in that the simulations match the criteria used to draw the Enacted Plan. However, this is often not the case in the cluster-by-cluster analyses where the simulations often do not match the degree to which the Enacted Plan follows these criteria (See, for example, Figures 6.1.3, 6.1.9, 6.1.12, 6.1.21, 6.1.24, 6.1.27, 6.1.30, 6.1.33, 6.1.36 where the Enacted Plan splits fewer municipalities or has fewer ousted voters than a substantial number of the simulations). The simulations are often higher than the Enacted Plan in number of municipalities split, number of voters "ousted" from a district (see pg. 9 of the Mattingly report for a description of ousted voters), and the average compactness of the simulated districts is also often lower than the Enacted Plan (see
an outlier from the simulation results. This interquartile range is a commonly used measure of the central range of expected outcomes in a distribution.

Figure 7.3.1 in Mattingly Report.) Given this, I analyze the results of Dr. Mattingly's second set of simulations that are more strict regarding municipal splits and district compactness and do not consider the first set of simulations especially helpful in analyzing the Enacted Plan.

In his analysis of the State Senate the opposite is true. As in the House Dr. Mattingly produces two different "ensembles" or sets of simulations. The first set he describes are "matched" in that the simulations match the criteria used to draw the Enacted Plan. Here Dr. Mattingly notes, "We will see that the enacted NC Senate preserves municipalities to a high degree; in a way consistent with the most municipality preserving distributions we could produce. Hence, we also provide a Secondary Ensemble for the NC Senate which does not explicitly preserve municipalities (though compactness and the county preservation lead to a degree of municipality preservation.) It coincides with the primary ensemble properties in other resects" (pg. 6). Given the stated interests of the legislature in keeping municipalities whole, it is unclear to me why it would be useful to produce an analysis that intentionally violates this principle. \({ }^{8}\) As such, I focus my comparisons on the first set of simulations in the Senate.

\section*{6 Disagreement Among Plaintiffs' Experts in House County Groupings}

In this section I consider the county groupings that are singled out in the various expert reports submitted by the plaintiffs as being especially egregious examples of gerrymandering. However, as I will show, there is often disagreement even among the plaintiffs' own experts as to the presence, degree, and extent of the problem.

\footnotetext{
\({ }^{8}\) For example, the committee hearing transcripts state: "We honored municipal boundaries. The chair made every effort to keep municipalities whole throughout the draw." See 9:43:00-9:45:00 in the committee hearing https://www.youtube.com/watch?v=7pyfVT6VOc4\&t=34565s\& ab_channel=NCGARedistricting and https://www.youtube.com/watch?v=GOVerOsNMm4\&ab_channel= NCGARedistricting in the Senate.
}

\subsection*{6.1 Pitt House County Grouping}

The Pitt county grouping contains two districts. The largest city in the cluster is Greenville, with a population of 87521 , or nearly 1 district exactly (the target district population in the House is 208,788). However, creating a district that is entirely Greenville with the second district constituting everything in Pitt County that is not Greenville would create a district that resembles a donut hole (in other words, an embedded district). This type of district is also not proposed in the NCLCV proposed map. Given this, to avoid a "donut hole" scenario requires connecting the district that incorporates the majority of Greenville to the edge of the county so as to make sure this district is no longer embedded in the outer district. Simply adding a VTD to the district is not possible since no single VTD can be added without making the population of the district too large and the district highly non-compact. Thus, extending the boundaries of the district to the edge of the county necessitates splitting Greenville. The legislature chose to do this in a relatively east-west direction with northern Greenville in HD-8 and southern Greenville in HD-9.

Dr. Pegden's report states, "My theorems imply that the enacted districting is among the most optimized-for-partisanship \(11 \%\) of all alternative districting satisfying my districting criteria (in other words, \(89.1 \%\) are less optimized-for-partisanship)...(pg. 21)". \(11 \%\) would not constitute a statistical outlier in a traditional scientific study.

With regards to substantive significance, Dr. Pegden's analysis predicts the expected seats from a range of uniform swings in election outcomes in the Enacted Plan in this cluster to be 1.3 Democratic seats. To gauge the substantive significance of this result, I compare it to the 25 th percentile outcome of the simulations on the same metric. This yields an expected seats of between 1.45 Democratic districts, for a difference of between .15 districts. In other words, in a series of 5 elections with varying electoral environments (some good for Democrats and some good for Republicans) in each district in the cluster, we would expect the Enacted Map to elect an additional Democrat in the county group less than 1 time, on average, than the simulated maps would do.

In Dr. Mattingly's report, all 12 elections he considers generate a strongly Democratic district (HD-8). In only 3 of the 12 elections he considers a majority of the simulations create a second Democratic district while in 9 of the 12 elections the majority of the simulations generate a Republican district. In Figure 6.1.23 the Enacted Plan agrees with the majority outcome of the simulations in 10 of the 12 elections he considers.

These results are similar to those contained in my original report. In 10 of the 11 elections I include a majority of simulations generate one Democratic District and one Republican leaning district. In 10 of the 11 elections, the Enacted Plan agrees with the majority outcome of the simulated maps.

The overall picture here is one of agreement that in the majority of cases the Enacted Plan and the simulations generate one Democratic-leaning district and one Republicanleaning district.

Dr. Cooper does not provide any analysis of the Enacted Plan aside from calculating a partisan index of the districts. However, Dr. Cooper notes that Pitt County is currently represented by two Democrats, Kandie Smith and Brian Farkas. Dr. Cooper fails to note the old (2020) districting arrangement had 3 districts in Pitt County with the third district (District 12) extending into Lenoir County and being represented by Republican Chris Humphrey.


Figure 1: 2020 Districts in Pitt County

\subsection*{6.2 Alamance House County Grouping}

The Alamance County grouping contains two districts, HD-63 and HD-64. In this county there is disagreement between plaintiffs' experts as to whether or not the Enacted Map constitutes a gerrymander. Drs. Pegden and Mattingly do not find the map to be a partisan outlier, while Dr. Cooper objects to the particular shape of the districts.

Dr. Pegden's analysis places the Alamance County plan among the lowest quarter of districtings. He states, "In every run, the districting was in the most partisan \(74 \%\) of districtings (in other words, \(26.3 \%\) were less partisan, in every run) (pg. 23)." Because of this, he further states, "The Enacted Map is not unusual enough in the first-level analysis to enable a statistically significant second-level analysis of this cluster (pg. 23)." Looking at the range of expected Democratic seats in this county, the Enacted Plan is actually more Democratic than the median simulation in Dr. Pegden's report.

Dr. Mattingly also agrees that this plan is not an outlier. He states, "From Figure 6.1.25, we see that thought [sic] the Enacted Map tends have more Democrats in the more Democratic district and less in the less democratic [sic] district it not [sic] an outlier on its own (pg. 46)."

The simulations in my initial report also agree with this assessment. In 10 of 11 elections I analyze, the partisan lean of the districts in the Enacted Plan agree with the partisan lean of the majority of the simulations run. In 6 of the 11 elections a Democrat won a majority of the two-party vote in District 63 while in 5 of the elections the Republican candidate won the majority of the votes.

However, Dr. Cooper notes the unusual shape of the district but does not mention that this shape is largely the same (different by only 2.5 precincts) as the 2019 court-approved maps.

\subsection*{6.3 Duplin-Wayne House County Grouping}

The Duplin-Wayne County grouping contains two districts, HD-4 and HD-10.
Dr. Pegden does not provide an analysis of this county. He states, "For this cluster, my conservative approach (as discussed in Section 4.3.2) does not allow my algorithm to generate any comparison maps other than the map itself." This is interesting as it aligns with my simulations in which I found no alternative maps that had an equal (or fewer) number of county traversals and were as compact or more compact than the Enacted Plan (see pg. 58 of Barber original report).

Dr. Mattingly does not find the map to be a partisan outlier in his analysis. He states, "In the Duplin-Wayne county cluster the two districts are safely Republican under the elections considered. The Enacted Map is typical, falling in the middle of the observed democratic [sic] fraction on the Histograms (pg. 42)."

However, the proposed NCLCV Map generates one consistently Democratic-leaning district across all 11 election that I analyze. This constitutes a partisan outlier in all 11 elections I consider and would also fall outside the majority of the simulation results in all comparable elections in Dr. Mattingly's simulations as well. \({ }^{9}\)

\footnotetext{
\({ }^{9}\) While we do not use the same elections Dr. Mattingly and I both use the 2016 Lieutenant Governor, 2016 President, 2020 Lieutenant Governor, 2020 US Senate, 2020 President, 2020 Attorney General, and 2020 Governor races.
}

\subsection*{6.4 Buncombe House County Grouping}

The Buncombe County grouping contains three districts, HD-114, HD-115, and HD116. In this county there is agreement among experts that the Enacted Map in this county grouping generally creates two Democratic seats and 1 Republican-leaning seat. The degree to which this is a partisan outlier is less certain.

Dr. Pegden reports that the Enacted Map in this county "was in the most partisan \(0.020 \%\) of districtings (in other words, \(99.979 \%\) were less partisan, in every run) (pg. 16)." This is a statistically significant result. The Enacted Map has an expected Democratic seats generated from the uniform swing analysis of 2.26 seats while the 25 th percentile plan has an expected Democratic seats of 2.85 . This leads to a substantive difference of 0.59 expected Democratic seats. Put another way, across 5 hypothetical elections of each district in the cluster, we would expect the Enacted Map to elect one fewer Democrat (meaning 2 rather than 3 in this cluster) than the 25th percentile simulation roughly 3 additional times.

Dr. Mattingly's presents simulations in which the Enacted Map and the simulations agree on the creation of 2 Democratic districts in the cluster (HD-114 and HD-115). In all 12 elections considered the Enacted Map and the simulations are in agreement on the partisan lean of these two ditricts. The third district, HD-116, is the source of the disagreement. In 10 of the 12 simulations HD-116 in the Enacted Plan does not agree with the majority of the simulations in Dr. Mattingly's report (see Figure 6.1.14).

Dr. Cooper offers his assessment by saying "By shifting the current district lines where the districts meet in Asheville, however, the Enacted Map packs as many Democrats as possible into HD-114, while HD-115 stays relatively constant in terms of predicted vote share. The C-shaped HD-116 now includes most of the Republican-leaning VTDs in Buncombe..." Dr. Cooper appears to imply that a more appropriate orientation of the district lines would be to place a substantial portion of Asheville into each of the three districts.

In other words, across all three experts, the disagreement with the Enacted Plan centers on district HD-116. The "C" shape in District HD-116, as noted by Dr. Cooper, is
the result of a decision to minimize the division of the city of Asheville. With a population of 94,589 , the city will need to be split into two different districts, but not necessarily three. The Enacted Plan does this by placing approximately 87 percent of the city population in two districts, HD-114 and HD-115, leaving HD-116 to wrap around the the city and largely avoid its boundaries. This, however, creates the "C" shape of the district.

Finally, Dr. Cooper states, "Soon after the maps were passed, all three Democratic incumbents announced that they would be retiring and not running for office in these newly drawn districts." It is unclear to me how this fact is relevant to the shape of the new districts. If the Enacted Map create two strong Democratic districts, how is the announced retirement of all three Democratic incumbents in any way a result of the districting process, as Dr. Cooper implies? Dr. Cooper does not offer any other evidence that something else related to the new districts may have been the cause, such as double bunking, or a dramatic shift in the composition of each district from the old (2020) districts.

\subsection*{6.5 Cumberland House County Grouping}

The Cumberland County group contains four districts, HD-42, HD-43, HD-44, and HD-45. In this cluster there is disagreement between the experts as to whether this county constitutes an extreme gerrymander.

Dr. Pegden's analysis contend the that the Enacted Plan is neither a statistically significant nor substantively significant outlier. He states, "In every run, the districting was in the most partisan \(16 \%\) of districtings (in other words, \(83.5 \%\) were less partisan, in every run)...The Enacted Map is not unusual enough in the first-level analysis to enable a statistically significant second-level analysis of this cluster (pg. 27)."

Beyond not being statistically unique, the substantive difference in the number of expected Democratic seats is very small. The Enacted Map has an expected Democratic seats generated from the uniform swing analysis of 3.21 seats while the 25 th percentile plan has an expected Democratic seats of 3.25 . This leads to a substantive difference of between 0.04 expected Democratic seats. In other words, across 5 hypothetical elections of each district in the cluster, we would expect the Enacted Map to elect one fewer Democrat (meaning 3 rather than 4 in this cluster) than the 25 th percentile simulation less than 1 additional time.

Dr. Mattingly's presents analysis in which the simulations generate two solidly Democratic districts (HD-44 and HD-42) and two districts that are closer to the .50 line with HD-43 being Democratic-leaning and HD-45 being Republican-leaning (see Figure 6.1.29 in Mattingly Report). Regarding this outcome he states, "In an ensemble that better preserves municipalities, the most Republican district is typically more republican [sic] and the second most Republican district more Democratic. This makes the Enacted Plan which squeezes the two together with an [sic] large outlier."

A closer look at Figure 6.1.29 shows that the Enacted Plan is an outlier not because it favors one party over the other, but rather because it creates more competitive races than the majority of Dr. Mattingly's simulations. While Dr. Mattingly's simulations produce
a reliably Republican district in HD-45 and a reliably Democratic district in HD-43, the Enacted Plan creates neither and instead generates two very competitive districts. This produces a responsive map in which the partisanship of legislators elected to these two districts will likely shift frequently with shifting electoral preferences, something Dr. Mattingly notes is a desirable feature of a districting plan in other portions of his report (see pg. 3 and 4 of Mattingly Report).

Dr. Cooper agrees with this this when he states, "The Enacted Map creates two extremely competitive districts, HD-43 and HD-45 (with CCSC scores of D+1,334 and D+663, respectively) by splitting the Democratic-leaning City of Fayetteville into all four districts in the cluster." While his assessment of the competitiveness of these two districts is correct, he is incorrect as to the reason. Fayetteville has a population of 208,501 and as such is required to be divided into at least three districts, but not four. And while the Enacted Plan does draw parts of Fayetteville into all four districts, only \(7.3 \%\) of Fayetteville's population is placed in District 45.

Furthermore, the Enacted Plan places a much smaller proportion of Fayetteville in to the 45th district than NCLCV plaintiff's proposed map does. If Dr. Cooper's objections to dividing municipalities more than necessary is applied to this map, then plaintiff's map fares much worse than the Enacted Map. The table and figure below shows the comparison of how Fayetteville is divided in the two plans, which is also shown as Table 18 and Figure 54 in my original report.

Table 1: Division of Fayetteville in Enacted Plan and NCLCV Plan
\begin{tabular}{|c|c|c|}
\hline & \multicolumn{2}{|c|}{ Percent of Feyetville in district } \\
\hline District: & Enacted Plan & NCLCV Plan \\
\hline 42 & 31.4 & 33.4 \\
\hline 43 & 21.4 & 21.5 \\
\hline 44 & 39.9 & 26.8 \\
\hline 45 & 7.3 & 18.3 \\
\hline \hline Total: & \(100 \%\) & \(100 \%\) \\
\hline
\end{tabular}

Note: Population number for city by district for Enacted Plan from: https: //ncleg.gov/Files/GIS/Plans_Main/Senate_2021/SL\%202021-173\%20Senate\%20-\% 20StatPack\%20Report.pdf Population numbers for city by district for NCLCV Plan from Dave's Redistricting online. https://davesredistricting.org/

Figure 2: Map of Fayetteville Divisions in Cumberland County Cluster
(a) Enacted Map

(b) NCLCV Map


\subsection*{6.6 Durham-Person House County Grouping}

The Durham-Person County grouping contains 4 districts, HD-2, HD-29, HD-30 and HD-31. In this cluster there is disagreement with one district in particular, HD-2, which takes in the entirety of Person County to the north and the northern and eastern portions of Durham county.

Dr. Pegden's analysis of this county cluster yields the following results. He states, "My theorems imply that the enacted districting is among the most optimized-for-partisanship \(0.20 \%\) of all alternative districtings satisfying my districting criteria (in other words, \(99.79 \%\) are less optimized-for-partisanship)" (pg. 25).

However, the substantive effect of this difference is very small. The Enacted Map has an expected Democratic seats generated from the uniform swing analysis of 3.87 seats while the 25 th percentile plan has an expected Democratic seats of 3.95 . This leads to a substantive difference of between 0.08 expected Democratic seats. Put another way, across 5 hypothetical elections of each district in the cluster, we would expect the Enacted Map to elect one fewer Democrat (meaning 3 rather than 4 in this cluster) than the 25 th percentile simulation less than 1 additional time.

Dr. Mattingly's simulations reveal three highly Democratic districts and one district that is more competitive. In the three highly Democfatic district (HD-31, HD-29, and HD30), the Enacted Plan and the simulations are in agreement in all 12 of the 12 elections considered. In 10 of the 12 elections he considers the Enacted Plan agrees with the majority of simulations on the partisanship of the more competitive district, HD-2 (see Figure 6.1.23 of Mattingly Report).

Dr. Cooper simultaneously criticizes the map for dividing Durham across all four district while also packing Democratic into three of the four districts. He states, "The Enacted Map splits the City of Durham across all four districts but packs Democratic voters in HDs 29, 39, and 31; there is not a single Republican or competitive VTD in those districts (pg. 84)." This is a confusing complaint to offer since there are nearly no Republican VTDs
in Durham County (if any at all when looking at Map 40 in Dr. Cooper's report), so it comes as no surprise that the three districts that are entirely contained in Durham County would contain no Republican-leaning VTDs. Furthermore, Dr. Cooper notes that the city of Durham is included in all four districts. However, remedying this by making sure District 2 contained no portion of Durham would only further make District 2 more Republican as the most Democratic VTDs in District 2 are those within the Durham city limits. Furthermore, the population of Durham is 283,506, which means it is large enough that it is absolutely necessary to include parts of Durham in all four districts.

\subsection*{6.7 Brunswick-New Hanover House County Grouping}

The Brunswick-New Hanover County grouping contains 4 districts, HD-17, HD-18, HD-19, and HD-20. In this case, there is disagreement between experts as to whether this cluster constitutes an extreme gerrymander.

Dr. Pegden's analysis contends that the Enacted Plan is not a significant outlier, statistically or substantively. He states, "In every run, the districting was in the most partisan \(11 \%\) of districtings (in other words, \(89.4 \%\) were less partisan, in every run). The Enacted Map is not unusual enough in the first-level analysis to enable a statistically significant second-level analysis of this cluster (pg. 24)."

Beyond not being unusual in comparison to the simulations to perform a statistically significant second-level analysis, the substantive difference in the expected Democratic seat share is also very small. The Enacted Map has an expected Democratic seats generated from the uniform swing analysis of 1.25 seats while the 25 th percentile plan has an expected Democratic seats of 1.25 . This leads to a substantive difference of between 0.00 expected Democratic seats. In other words, across 5 hypothetical elections of each district in the cluster, we would not expect the Enacted Map to differ from the 25th percentile simulation at all, on average.

Dr. Mattingly argues on the other hand that the cluster is problematic. Specifically, he locates the problem in District 20. He states of this district, "The Republican party typically wins the second most democratic [sic] district [HD-20] in the Enacted Plan even though it would go to the Democrats under a number of elections when the neutral maps in the primary ensemble are used." Looking at Figure 6.1.35 in Dr. Mattingly's report we see that in 5 of the 12 elections the Enacted Plan agrees with the majority of simulations on the partisan lean of HD-20.

Dr. Cooper does not offer much by way of exposition in this cluster other than to claim that District 18 is packing Democratic voters "in and around Wilmington" and that "[t]he heavily Republican HD-19 also ensnares a Democratic-leaning VTD south of Wilmington,
which keeps that VTD out of competitive HD-20 (pg. 95)." Another way to consider the "packing" referred to by Dr. Cooper is to note that District 18 keeps the communities of Hightsville, Wrightsboro, Skippers Corner, Castle Hayne, Blue Clay Farms, Northchase, Murraysville, and Kings Grant - all municipalities in and around Wilmington - together. Secondly, the "ensnared" VTD that Dr. Cooper refers to is only moderately Democratic (. 56 in the 2020 Presidential election) and would make only the slightest difference in the overall partisan lean of HD-20 were it to somehow capture it from HD-19.

\subsection*{6.8 Forsyth-Stokes House County Grouping}

The Forsyth-Stokes County grouping contains 5 districts, HD-91, HD-71, HD-72, HD74, and HD-75. In this county there is agreement among experts that the Enacted Map in this county grouping generally creates two Democratic seats and 2 Republican-leaning seats. The partisan lean of the middle district in the Enacted Plan, HD-74, is in dispute.

Dr. Pegden's analysis contends that the Enacted Plan is a significant outlier, statistically and substantively. He states, "My theorems imply that the enacted districting is among the most optimized-for-partisanship \(0.26 \%\) of all alternative districtings satisfying my districting criteria (in other words, \(99.73 \%\) are less optimized-for-partisanship) (pg. 18)."

The substantive difference in the expected Democratic seat share is as follows: The Enacted Map has an expected Democratic seats generated from the uniform swing analysis of 2.18 seats while the 25 th percentile plan has an expected Democratic seats of 2.85 . This leads to a substantive difference of 0.67 expected Democratic seats. Stated differently, across 5 hypothetical elections of each district in the cluster, we would expect the Enacted Map to elect one fewer Democrat (meaning 2 rather than 3 in this cluster) than the 25 th percentile simulation roughly 3 additional times.

Dr. Mattingly's presents simulations that contain two districts that are consistently Democratic leaning (HD-71 and HD-72) and two districts in which the distribution of simulation results are nearly always Republican leaning (HD-91 and HD-75). Thus, the outlier in his analysis lies with HD-74 where the simulations often generate both Republican and Democratic leaning districts and the Enacted Plan is more consistently Republican leaning.

However, the Enacted Plan's District 74 is very similar in shape and partisan lean to the NCLCV "optimized map." A map of the similarities in these districts is presented in Figure 69 of my original report. The partisan lean of District 74 using the election index in my original report is 0.45 while the partisan lean of District 74 in the NCLCV map is 0.46 . Thus, if the Enacted Map is an extreme gerrymander due to the boundaries and partisan lean of District 74, then this criticism would also apply to the proposed NCLCV map as
well.
Finally, Dr. Cooper notes of this district, "The splits of Winston-Salem do not make sense without reference to the anticipated voting behavior of the VTDs arranged into each district." However, this is not the case. The splits of Winston-Salem are largely the same as the 2020 maps, which were approved by a court in 2019. To a large degree the legislature appears to have chosen to leave the district boundaries much the same as the previous court-approved maps. Figure 69 in my original report presents this comparison between the current maps and the old maps in this cluster.

\subsection*{6.9 Cabarrus-Davie-Rowan-Yadkin House County Grouping}

The Cabarrus County grouping contains 5 districts, HD-73, HD-76, HD-77, HD-82, and HD-83.

The layout of districts in this cluster is largely determined by the geography of the four counties in the cluster. Yadkin and Davie are sparsely populated and as such must constitute a portion of a single district (HD-77). This district then extends south into northern Rowan County, where it borders Davie County. Rowan County has a larger population - enough to sustain 1.68 districts. To minimize county traversals in the group, this implies creating a single district that is entirely contained within Rowan county and then another district that spans Rowan County and extends into northern Cabarrus County. Finally, Cabarrus County is the most populated county of the group (population \(=225,804\) ) with a population large enough to support 2.6 districts. This means that there will be two districts entirely contained in Cabarrus County with a partial district that spans Rowan and Cabarrus Counties. Because the county grouping is arranged in a linear North/South axis, this layout of districts - 1 in Yadkin and Davie, and partially in Rowan, 1 in Rowan, 1 spanning Rowan/Cabarrus, and 2 entirely in Cabarrus is the only arrangement that complies with the rules requiring the minimization of county traversals.

Thus, complaints of the districts are limited to the particular boundaries of the two and a half districts in Cabarrus county (HD-73, HD-82 and HD-83).

Dr. Pegden does not find the Enacted Plan to be a significant outlier. He states, "In every run, the districting was in the most partisan \(12 \%\) of districtings (in other words, \(87.7 \%\) were less partisan, in every run). The Enacted Map is not unusual enough in the first-level analysis to enable a statistically significant second-level analysis of this cluster (pg. 26)."

Beyond not being unusual in comparison to the simulations to perform a statistically significant second-level analysis, the substantive difference in the expected Democratic seat share is also very small. The Enacted Map has an expected Democratic seats generated from the uniform swing analysis of 0.33 seats while the 25 th percentile plan has an expected

Democratic seats of 0.45 . This leads to a substantive difference of 0.12 expected Democratic seats. In other words, across 5 hypothetical elections of each district in the cluster, we would expect the Enacted Map to elect one fewer Democrat (meaning 0 rather than 1 in this cluster) than the 25 th percentile simulation less than 1 additional time.

Dr. Mattingly's simulations produce 4 very Republican districts and one district that generates both Republican and Democratic outcomes (HD-82), depending on the election one uses to measure partisanship. He states, "In the Cabarrus-Davie-Rowan-Yadkin county cluster, there are abnormally few Democrats in the most Democratic district (district 82)." In 4 of the 12 elections he considers the Enacted Plan agrees with the majority of the simulations on the partisanship of this swing district.

One important thing to note is that the proposed NCLCV map performs worse than the Enacted Plan by this metric described by Dr. Mattingly. The most Democratic district in this plan is actually less Democratic than the Enacted Plan (0.43 in the NCLCV plan compared to 0.41 in the Enacted Plan using the partisan index in my original report). Thus, by Dr. Mattingly's argument, this would place the NCLCV map as more of a partisan outlier than the Enacted Plan in this county cluster.

\subsection*{6.10 Guilford County House County Grouping}

The Guilford County grouping contains 6 districts, HD-57, HD-58, HD-59, HD-60, HD-61, and HD-62.

Dr. Pegden's analysis contends that the Enacted Plan is a significant outlier. He states, "My theorems imply that the enacted districting is among the most optimized-forpartisanship \(0.000089 \%\) of all alternative districtings satisfying my districting criteria (pg. 19)."

The substantive difference in the expected Democratic seat share is as follows: The Enacted Map has an expected Democratic seats generated from the uniform swing analysis of 4.46 seats while the 25 th percentile plan has an expected Democratic seats of 5.45 . This leads to a substantive difference of 0.99 expected Democratic seats. In other words, across 5 hypothetical elections of each district in the cluster, we would expect the Enacted Map to elect one fewer Democrat (meaning 4-5 rather than 5-6 in this cluster) than the 25 th percentile simulation every time, on average.

Dr. Mattingly states of his simulations in this county: "The ensemble reliably has four democratic districts and a 5th which typically leans Republican but sometimes is competitive. Yet, the Enacted Plan gives one clearly Republican district and one which is often safely Republican and at times competitive (pg. 36)." District 59 is the district in question. Excluding HD-59, in 12 of the 12 elections the Enacted Plan agrees with the majority of Dr. Mattingly's simulations on the partisanship of the remaining 5 districts in the cluster. Thus the discussion of a potential gerrymander is focused on the composition of HD-59.

This also conforms with the simulation results in my original report. In 11 of the 11 elections I consider, the partisan lean of the districts in the Enacted Plan is one Democratic district short of the outcome in the majority of the simulations run.

However, one factor to consider is that District 59's boundaries are identical to the court-approved 2019 map's boundaries, but for one precinct, G53 (See Figure 78 in my original report for a map of the district under the two plans). District 59's population would
be is too large if the map were to use the exact boundaries from 2019 based on the updated 2020 census population numbers. At the same time, District 61 and 58 are within the new population thresholds based on the new census numbers. Thus, it makes perfect sense to move one precinct from 57 into either 61 or 58 to equalize the population of these districts. Precinct G53 may have been chosen because it contains the right population size and is nearly entirely within the city of Greensboro, allowing a larger share of Greensboro to be contained within fewer districts.

\subsection*{6.11 Mecklenburg County House County Grouping}

The Mecklenburg County cluster contains 13 districts, HD-88, HD-92, HD-98, HD-99, HD-100, HD-101, HD-102, HD-103, HD-104, HD-105, HD-106, HD-107, and HD-112.

Dr. Pegden's analysis contends that the Enacted Plan is a outlier, but not to the degree of other clusters discussed above. He states, "My theorems imply that the enacted districting is among the most optimized-for-partisanship \(5.0 \%\) of all alternative districtings satisfying my districting criteria (in other words, \(95.0 \%\) are less optimized-for-partisanship) (pg. 20)." In a traditional scientific study, the \(5 \%\) boundary represents the line of a statistically significant outlier.

The substantive difference in the expected Democratic seat share is as follows: The Enacted Map has an expected Democratic seats generated from the uniform swing analysis of 11.56 seats while the 25 th percentile plan has an expected Democratic seats of 11.95 . This leads to a substantive difference of 0.39 expected Democratic seats. Put another way, across 5 hypothetical elections of each district in the cluster, we would expect the Enacted Map to elect one fewer Democrat (meaning 11-12 rather than 12-13 in this cluster) than the 25th percentile simulation in approximately 2 of these 5 elections, on average. In other words, the difference across this range of electoral environments is Republicans picking up an additional seat about 2 in 5 times.

Dr. Mattingly's presents simulation analysis that present the partisan distributions of the different districts and where, specifically, an outlier might occur. Figure 6.1.2 of Dr. Mattingly's report shows that in the 10 most Democratic districts in the cluster, the Enacted Plan agrees with the majority of simulations in 12 of the 12 elections considered. Both the simulations and the Enacted Plan contain 9 comfortably Democratic districts and a 10th district that is Democratic in 11 of the 12 elections considered. In the 2 most Republican districts (HD-98 and HD-103), the Enacted Plan agrees with the majority of simulations in 12 of the 12 elections considered. These two districts occasionally lean Democratic and occasionally lean Republican, but in all 12 elections the Enacted Plan's partisan lean aligns
with the partisan lean of the majority of the simulations. This leaves one districts in dispute - HD-104. In District 104, the Enacted Plan agrees with the majority of the simulations in 11 of the 12 elections considered. Thus, across the 13 different districts in 12 different elections, the Enacted Plan is in alignment with the majority of the simulation results in all but 1 election (Figure 6.1 .2 shows a misalignment of HD-104 with the majority of the simulations in the 2020 Commissioner of Agriculture election).

Dr. Cooper states that, " \([\mathrm{t}]\) he Enacted Map places no Republican VTDs in HDs 92, 99, 100, 101, 102, 106, 107, and 112, leaving every Republican-leaning VTD in HDs 88, 103, 104, and 105." Dr. Cooper omits here that there are very few Republican leaning VTDs at all on his map to begin with, they tend to be close to one another, and are concentrated in northern and southeastern Mecklenburg County. Thus it is not surprising that they are placed in relatively few of the districts given the desire for geographically compact districts. He notes the partisan composition of HDs 98 and 103 as being "carved out of the pockets of Republican voters in the north and southeast portions of the county... (pg. 68)." However, this assessment ignores the partisan geography of the cluster. District 98 is geographically compact and avoids traversing into the Charlotte city limits. Furthermore, District 103 in the southeast of the county keeps the cities of Mint Hill (there are 6 voters from this city not in District 103) and Matthews whole and together in one district.

\subsection*{6.12 Wake County House County Grouping}

The Wake County cluster contains 13 districts, HD-11, HD-21, HD-33, HD-34, HD-35, HD-36, HD-37, HD-38, HD-39, HD-40, HD-41, HD-49, and HD-66.

Dr. Pegden's analysis contends that the Enacted Plan is a statistical outlier. He states, "My theorems imply that the enacted districting is among the most optimized-forpartisanship \(2.2 \%\) of all alternative districtings satisfying my districting criteria (in other words, \(97.8 \%\) are less optimized-for-partisanship) (pg. 22)."

The substantive difference in the expected Democratic seat share is as follows: The Enacted Map has an expected Democratic seats generated from the uniform swing analysis of 11.62 seats while the 25 th percentile plan has an expected Democratic seats of 11.85 . This leads to a substantive difference of 0.23 expected Democratic seats. In other words, across 5 hypothetical elections of each district in the cluster, we would expect the Enacted Map to elect one fewer Democrat (meaning 11-12 rather than 12-13 in this cluster) than the 25th percentile simulation in approximately 1 of these 5 elections, on average.

Dr. Mattingly's simulation analysis presents the partisan distributions of the different districts and where specifically an outlier might occur. Figure 6.1.5 of Dr. Mattingly's report shows that in the 10 most Democratic districts in the cluster, the Enacted Plan agrees with the majority of simulations in 12 of the 12 elections considered. In the most Republican district (HD-37), the Enacted Plan agrees with the majority of simulations in 9 of the 12 elections considered. This leaves two districts - HD-35 and HD-21. In District 35, the Enacted Plan agrees with the majority of the simulations in 7 of the 12 elections considered, and in HD-21 the Enacted Plan agrees with the majority of the simulations in 10 of the 12 elections considered. However, in the 2 elections where it is in disagreement, the Enacted Plan actually creates a Democratic leaning district where the majority of simulations create a Republican leaning district. Thus, the results in this cluster are mixed. Some of the Enacted Plan's districts are more Republican, on average, than the simulations and in other cases the Enacted Plan's districts are more Democratic. And in most cases there is agreement.

\section*{7 Disagreement Among Plaintiff Experts in Senate County Groupings}

\subsection*{7.1 Cumberland and Moore Senate County Grouping}

The Cumberland and Moore Senate county grouping contains two districts, SD-19 and SD-21.

Dr. Pegden's analysis contend that the Enacted Plan is a statistical outlier. He states, "My theorems imply that the enacted districting is among the most optimized-forpartisanship \(0.000015 \%\) of all alternative districtings satisfying my districting criteria (in other words, \(99.999984 \%\) are less optimized-for-partisanship) (pg. 28)."

The substantive difference in the expected Democratic seat share is as follows: The Enacted Map has an expected Democratic seats generated from the uniform swing analysis of 1.01 seats while the 25 th percentile plan has an expected Democratic seats of 1.35 . This leads to a substantive difference of 0.34 expected Democratic seats. Put differently, across 5 hypothetical elections of each district in the cluster, we would expect the Enacted Map to elect one fewer Democrat (meaning 1 rather than 2 in this cluster) than the 25th percentile simulation in approximately 1-2 of these 10 elections, on average. In other words, the difference across this range of electoral environments is Republicans picking up an additional seat less than 2 in 5 times.

Dr. Mattingly states of the result of the simulations in this cluster, "The districts in the enacted are chosen to maximize the number of Democrats in the more democratic district and the number of republicans in the most Republican district. The map is an extreme outlier in both of these regards. The effect is a maximally non-responsive map." It is noteworthy that in other clusters Dr. Mattingly criticizes the map for being overly responsive (see Cumberland House grouping discussion). Despite this critique, from Figure 6.2.10 we see that in all 12 elections the Enacted Map agrees with the majority of the simulations in all districts. In not a single election do a majority of the simulations produce
two Democratic seats.
It is also noteworthy that the NCLCV plaintiff's proposed plan is identical to Enacted Plan in this cluster.

\subsection*{7.2 Fosyth-Stokes Senate County Grouping}

The Forsyth and Stokes Senate county grouping contains two districts, SD-31 and SD-32.

Dr. Pegden's analysis contend that the Enacted Plan is a statistical outlier. He states, "My theorems imply that the enacted districting is among the most optimized-forpartisanship \(0.0051 \%\) of all alternative districtings satisfying my districting criteria (in other words, \(99.9947 \%\) are less optimized-for-partisanship) (pg. 29)."

However, in this cluster the substantive difference in the expected Democratic seat share is nearly zero. This is a particularly good example of the importance of distinguishing between statistical and substantive significance. The Enacted Map has an expected Democratic seats generated from the uniform swing analysis of 1.00 seats while the 25 th percentile plan has an expected Democratic seats of 1.05. This leads to a substantive difference of 0.05 expected Democratic seats. Put another way, across 5 hypothetical elections of each district in the cluster, we would expect the Enacted Map to elect one fewer Democrat (meaning 1 rather than 2 in this cluster) than the 25 th percentile simulation in approximately 0 of these 5 elections, on average. In other words, the difference between the Enacted Plan and the simulations results across this range of electoral environments is effectively zero in this cluster.

Dr. Mattingly states of the result of the simulations in this cluster, "The districts in the enacted are chosen to maximize the number of Democrats in the more democratic district and the number of republicans [sic] in the most Republican district. The map is an extreme outlier in both of these regards. The effect is a maximally non-responsive map (pg. 61)." This is similar to his objection to the Cumberland-Moore cluster above, and is again
noteworthy that in other clusters Dr. Mattingly criticizes the map for being overly responsive (see Cumberland House grouping discussion). Despite this critique, from Figure 6.2.7 we see that in all 12 elections the Enacted Map agrees with the majority of the simulations in all districts. In not a single election do the simulations produce two Democratic seats.

\subsection*{7.3 Guilford-Rockingham Senate County Grouping}

The Guilford and Rockingham Senate county grouping contains 3 districts, SD-26, SD-27, and SD-28.

Dr. Pegden's analysis contend that the Enacted Plan is a statistical outlier. He states, "My theorems imply that the enacted districting is among the most optimized-forpartisanship \(0.00012 \%\) of all alternative districtings satisfying my districting criteria (in other words, \(99.99987 \%\) are less optimized-for-partisanship) (pg. 31)."

The substantive difference in the expected Democratic seat share is as follows: The Enacted Map has an expected Democratic seats generated from the uniform swing analysis of 2 seats while the 25 th percentile plan has an expected Democratic seats of 2.25 . This leads to a substantive difference of 0.25 expected Democratic seats. Put differently, across 5 hypothetical elections of each district in the cluster, we would expect the Enacted Map to elect one fewer Democrat (meaning 2 rather than 3 in this cluster) than the 25th percentile simulation in approximately 1-2 of these 10 elections, on average. In other words, the difference across this range of electoral environments is Republicans picking up an additional seat less than 2 in 5 times.

Dr. Mattingly's summary of the simulations results in this cluster are as follows: "The three districts in the Guilford-Rockingham cluster are constructed to pack an exceptional number of democrats [sic] in the most democratic [sic] district (district 28) and exceptionally few Democrats in the most Republican district (district 26). The effect is to ensure a Republican victory in the district 26 , when in some elections the most republican [sic] district would be at risk of going to the Democratic Party (pg. 63)." However, in 11 of the 12
elections the Enacted Map's least Democratic district (SD-26) agrees with the majority of the simulations by electing a Republican. In only 1 of the 12 elections do the majority of his simulations produce 3 Democratic districts while the Enacted Plan produces only 2. SD-26 is less competitive (i.e. more Republican leaning) than the majority of simulations, but the inverse is also true of SD-27, which is competitive in many of the simulations and in a few rare cases elects a Republican but is more Democratic and always elects a Democrat in the Enacted Plan.

\subsection*{7.4 Granville-Wake Senate County Grouping}

The Granville and Wake Senate county cluster contains 6 districts, SD-13, SD-14, SD-15, SD-16, SD-17, and SD-18.

Dr. Pegden's analysis contend that the Enacted Plan is a statistical outlier. He states, "My theorems imply that the enacted districting is among the most optimized-forpartisanship \(0.000030 \%\) of all alternative districtings satisfying my districting criteria (in other words, \(99.999969 \%\) are less optimized-for-partisanship) (pg. 30)."

The substantive difference in the expected Democratic seat share is as follows: The Enacted Map has an expected Democratic seats generated from the uniform swing analysis of 5.13 seats while the 25 th percentile plan has an expected Democratic seats of 5.75 . This leads to a substantive difference of 0.62 expected Democratic seats. Put another way, across 6 hypothetical elections of each district in the cluster, we would expect the Enacted Map to elect one fewer Democrat (meaning 5 rather than 6 in this cluster) than the 25 th percentile simulation in approximately 3 of these 5 elections, on average. In other words, the difference across this range of electoral environments is Republicans picking up an additional seat roughly 3 in 5 times.

Dr. Mattingly's presents simulations that contain four districts that are solidly Democratic in which no simulation nor the Enacted Plan produce a Republican-leaning seat (see Figure 6.2.4 in Dr. Mattingly's report). The simulations also contain two seats (SD-13 and

SD-17) in which a majority of the simulations produce a Republican-leaning seat (4 of the 12 elections considered) and in other elections produce a Democratic-leaning seat (5 of the 12 elections considered). In some cases the majority of simulations in SD-13 and SD-17 diverge with one district being majority Republican and the other producing a majority of the simulations generating a Democratic district (3 of the 12 elections). In the most Republican district the Enacted Plan agrees with the majority of the simulations in 10 of the 12 elections considered and in the second most Republican district there is agreement in 9 of the 12 elections considered.

\subsection*{7.5 Iredell-Mecklenburg Senate County Grouping}

The Iredell and Mecklenburg Senate county cluster contains 6 districts, SD-37, SD-38, SD-39, SD-40, SD-41, and SD-42.

Dr. Pegden's analysis contend that the Enacted Plan is a statistical outlier. He states, 'My theorems imply that the enacted districting is among the most optimized-forpartisanship \(0.0057 \%\) of all alternative districtings satisfying my districting criteria (in other words, \(99.9943 \%\) are less optimized-for-partisanship) (pg. 32)."

However, the substantive difference in the expected Democratic seat share is much smaller. The Enacted Map has an expected Democratic seats generated from the uniform swing analysis of 4.67 seats while the 25th percentile plan has an expected number of Democratic seats of 4.85. This leads to a substantive difference of 0.18 expected Democratic seats. In other words, across 5 hypothetical elections of each district in the cluster, we would expect the Enacted Map to elect one fewer Democrat (meaning 4 rather than 5 in this cluster) than the 25th percentile simulation in approximately 1 of these 5 elections, on average. Put another way, the difference across this range of electoral environments is Republicans picking up an additional seat roughly 1 in 5 times.

Dr. Mattingly's simulations in this cluster contain four districts that are solidly Democratic in which no majority of his simulations nor the Enacted Plan produce a Republican-
leaning seat (see Figure 6.2.1 in Dr. Mattingly's report). The simulations also contain one seat (SD-37) in which a majority of the simulations produce a heavily Republican-leaning seat in all 12 elections. The Enacted Plan is in total agreement with the majority of simulations in these districts. This leaves SD-41, which is a more competitive seat in the simulations. In 9 of the 12 elections considered the partisan outcome in the Enacted Plan matches the partisan outcome in the majority of the simulations by producing a majority of the two-party vote share for the Democratic candidate.

\section*{Appendix A: Curriculum Vitae}

\section*{Michael Jay Barber}
\begin{tabular}{lll} 
Contact & Brigham Young University & barber@byu.edu \\
InFORMATION & Department of Political Science & http://michaeljaybarber.com \\
& 724 KMBL & Ph: \((801) 422-7492\)
\end{tabular}

Academic Appointments

EDUCATION

Research
InTERESTS

Brigham Young University, Provo, UT
August 2020 - present Associate Professor, Department of Political Science
2014 - July 2020 Assistant Professor, Department of Political Science
2014 - present Faculty Scholar, Center for the Study of Elections and Democracy

Princeton University Department of Politics, Princeton, NJ
Ph.D., Politics, July 2014
- Advisors: Brandice Canes-Wrone, Nolan McCarty, and Kosuke Imai
- Dissertation: "Buying Representation: the Incentives, Ideology, and Influence of Campaign Contributions on American Politics"
- 2015 Carl Albert Award for Best Dissertation, Legislative Studies Section, American Political Science Association (APSA)
M.A., Politics, December 2011

Brigham Young University, Provo, UT
B.A., International Relations - Political Economy Focus, April, 2008
- Cum Laude

American politics, congressional polarization, political ideology, campaign finance, survey research
19. "Ideological Disagreement and Pre-emption in Municipal Policymaking" with Adam Dynes
Forthcoming at American Journal of Political Science
18. "Comparing Campaign Finance and Vote Based Measures of Ideology" Forthcoming at Journal of Politics
17. "The Participatory and Partisan Impacts of Mandatory Vote-by-Mail", with John Holbein
Science Advances, 2020. Vol. 6, no. 35, DOI: 10.1126/sciadv.abc7685
16. "Issue Politicization and Interest Group Campaign Contribution Strategies", with Mandi Eatough
Journal of Politics, 2020. Vol. 82: No. 3, pp. 1008-1025
15. "Campaign Contributions and Donors' Policy Agreement with Presidential Candidates", with Brandice Canes-Wrone and Sharece Thrower Presidential Studies Quarterly, 2019, 49 (4) 770-797
14. "Conservatism in the Era of Trump", with Jeremy Pope Perspectives on Politics, 2019, 17 (3) 719-736
13. "Legislative Constraints on Executive Unilateralism in Separation of Powers Systems", with Alex Bolton and Sharece Thrower
Legislative Studies Quarterly, 2019, 44 (3) 515-548
Awarded the Jewell-Loewenberg Award for best article in the area of subnational politics published in Legislative Studies Quarterly in 2019
12. "Electoral Competitiveness and Legislative Productivity", with Soren Schmidt American Politics Research, 2019, 47 (4) 683-708
11. "Does Party Trump Ideology? Disentangling Party and Ideology in America", with Jeremy Pope
American Political Science Review, 2019, 113 (1) 38-54
10. "The Evolution of National Constitutions", with Scott Abramson Quarterly Journal of Political Science, 2019, 14 (1) 89-114
9. "Who is Ideological? Measuring Ideological Responses to Policy Questions in the American Public", with Jeremy Pope
The Forum: A Journal of Applied Research in Contemporary Politics, 2018, 16 (1) 97-122
8. "Status Quo Bias in Ballot Wording", with David Gordon, Ryan Hill, and Joe Price The Journal of Experimental Political Science, 2017, 4 (2) 151-160.
7. "Ideologically Sophisticated Donors: Which Candidates Do Individual Contributors Finance?", with Brandice Canes-Wrone and Sharece Thrower American Journal of Political Science, 2017, 61 (2) 271-288.
6. "Gender Inequalities in Campaign Finance: A Regression Discontinuity Design", with Daniel Butler and Jessica Preece Quarterly Journal of Political Science, 2016, Vol. 11, No. 2: 219-248.
5. "Representing the Preferences of Donors, Partisans, and Voters in the U.S. Senate" Public Opinion Quarterly, 2016, 80: 225-249.
4. "Donation Motivations: Testing Theories of Access and Ideology" Political Research Quarterly, 2016, 69 (1) 148-160.
3. "Ideological Donors, Contribution Limits, and the Polarization of State Legislatures"
Journal of Politics, 2016, 78 (1) 296-310.
2. "Online Polls and Registration Based Sampling: A New Method for PreElection Polling" with Quin Monson, Kelly Patterson and Chris Mann.
Political Analysis 2014, 22 (3) 321-335.
1. "Causes and Consequences of Political Polarization" In Negotiating Agreement in Politics. Jane Mansbridge and Cathie Jo Martin, eds., Washington, DC: American Political Science Association: 19-53. with Nolan McCarty. 2013.
- Reprinted in Solutions to Political Polarization in America, Cambridge University Press. Nate Persily, eds. 2015
- Reprinted in Political Negotiation: A Handbook, Brookings Institution Press. Jane Mansbridge and Cathie Jo Martin, eds. 2015

Available
"Misclassification and Bias in Predictions of Individual Ethnicity from Administrative Records" (Revise and Resubmit at American Political Science Review)
"Taking Cues When You Don't Care: Issue Importance and Partisan Cue Taking" with Jeremy Pope (Revise and Resubmit)
"A Revolution of Rights in American Founding Documents" with Scott Abramson and Jeremy Pope (Conditionally Accepted)
"410 Million Voting Records Show the Distribution of Turnout in America Today" with John Holbein (Revise and Resubmit)
"Partisanship and Trolleyology" with Ryan Davis (Under Review)
"Who's the Partisan: Are Issues or Groups More Important to Partisanship?" with Jeremy Pope (Revise and Resubmit)
"Race and Realignment in American Politics" with Jeremy Pope (Revise and Resubmit)
"The Policy Preferences of Donors and Voters"
"Estimating Neighborhood Effects on Turnout from Geocoded Voter Registration Records."
with Kosuke Imai
"Super PAC Contributions in Congressional Elections"

Works in "Collaborative Study of Democracy and Politics"

Invited
Presentations
with Brandice Canes-Wrone, Gregory Huber, and Joshua Clinton
"Preferences for Representational Styles in the American Public"
with Ryan Davis and Adam Dynes
"Representation and Issue Congruence in Congress"
with Taylor Petersen
"Education, Income, and the Vote for Trump" with Edie Ellison
"Are Mormons Breaking Up with Republicanism? The Unique Political Behavior of Mormons in the 2016 Presidential Election"
- Ivy League LDS Student Association Conference - Princeton University, November 2018, Princeton, NJ
"Issue Politicization and Access-Oriented Giving: A Theory of PAC Contribution Behavior"
- Vanderbilt University, May 2017, Nashville, TN
"Lost in Issue Space? Measuring Levels of Ideology in the American Public"
- Yale University, April 2016, New Haven, CT
"The Incentives, Ideology, and Influence of Campaign Donors in American Politics"
- University of Oklahoma, April 2016, Norman, OK
"Lost in Issue Space? Measuring Levels of Ideology in the American Public"
- University of Wisconsin - Madison, February 2016, Madison, WI
"Polarization and Campaign Contributors: Motivations, Ideology, and Policy"
- Hewlett Foundation Conference on Lobbying and Campaign Finance, October 2014, Palo Alto, CA
"Ideological Donors, Contribution Limits, and the Polarization of State Legislatures"
- Bipartisan Policy Center Meeting on Party Polarization and Campaign Finance, September 2014, Washington, DC
"Representing the Preferences of Donors, Partisans, and Voters in the U.S. Senate"
- Yale Center for the Study of American Politics Conference, May 2014, New Haven, CT

Conference Washington D.C. Political Economy Conference (PECO):

Teaching
Experience

Poli 315: Congress and the Legislative Process
- Fall 2014, Winter 2015, Fall 2015, Winter 2016, Summer 2017

Poli 328: Quantitative Analysis
- Winter 2017, Fall 2017, Fall 2019, Winter 2020, Fall 2020, Winter 2021

Poli 410: Undergraduate Research Seminar in American Politics
- Fall 2014, Winter 2015, Fall 2015, Winter 2016, Summer 2017

Awards and 2019 BYU Mentored Environment Grant (MEG), American Ideology Project, \$30,000 Grants

2017 BYU Political Science Teacher of the Year Award
2017 BYU Mentored Environment Grant (MEG), Funding American Democracy Project, \$20,000
2016 BYU Political Science Department, Political Ideology and President Trump (with Jeremy Pope), \(\$ 7,500\)

2016 BYU Office of Research and Creative Activities (ORCA) Student Mentored Grant x 3
- Hayden Galloway, Jennica Peterson, Rebecca Shuel

2015 BYU Office of Research and Creative Activities (ORCA) Student Mentored Grant x 3
- Michael-Sean Covey, Hayden Galloway, Sean Stephenson

2015 BYU Student Experiential Learning Grant, American Founding Comparative Constitutions Project (with Jeremy Pope), \(\$ 9,000\)

2015 BYU Social Science College Research Grant, \(\$ 5,000\)
2014 BYU Political Science Department, 2014 Washington DC Mayoral Pre-Election Poll (with Quin Monson and Kelly Patterson), \$3,000

2014 BYU Social Science College Award, 2014 Washington DC Mayoral Pre-Election Poll (with Quin Monson and Kelly Patterson), \(\$ 3,000\)

2014 BYU Center for the Study of Elections and Democracy, 2014 Washington DC Mayoral Pre-Election Poll (with Quin Monson and Kelly Patterson), \(\$ 2,000\)

2012 Princeton Center for the Study of Democratic Politics Dissertation Improvement Grant, \(\$ 5,000\)

2011 Princeton Mamdouha S. Bobst Center for Peace and Justice Dissertation Research Grant, \(\$ 5,000\)

2011 Princeton Political Economy Research Grant, \$1,500

Other Scholarly Expert Witness in Nancy Carola Jacobson, et al., Plaintiffs, vs. Laurel M. Lee, et al., DeActivities fendants. Case No. 4:18-cv-00262 MW-CAS (U.S. District Court for the Northern District of Florida)

Expert Witness in Common Cause, et al., Plaintiffs, vs. LEWIS, et al., Defendants. Case No. 18-CVS-14001 (Wake County, North Carolina)

Expert Witness in Kelvin Jones, et al., Plaintiffs, v. Ron DeSantis, et al., Defendants, Consolidated Case No. 4:19-cv-300 (U.S. District Court for the Northern District of Florida)

Expert Witness in Community Success Initiative, et al., Plaintiffs, v. Timothy K. Moore, et al., Defendants, Case No. 19-cv-15941 (Wake County, North Carolina)

Expert Witness in Richard Rose et al., Plaintiffs, v. Brad Raffensperger, Defendant, Civil Action No. 1:20-cv-02921-SDG (U.S. District Court for the Northern District of Georgia)

Georgia Coalition for the People's Agenda, Inc., et. al., Plaintiffs, v. Brad Raffensberger, Defendant. Civil Action No. 1:18-cv-04727-ELR (U.S. District Court for the Northern District of Georgia)

Expert Witness in Alabama, et al., Plaintiffs, v. United States Department of Commerce; Gina Raimondo, et al., Defendants. Case No. CASE No. 3:21-cv-00211-RAH-ECM-KCN (U.S. District Court for the Middle District of Alabama Eastern Division)

Expert Witness in League of Women Voters of Ohio, et al., Relators, v. Ohio Redistricting Commission, et al., Respondents. Case No. 2021-1193 (Supreme Court of Ohio)

Additional EITM 2012 at Princeton University - Participant and Graduate Student Coordinator Training

Computer Statistical Programs: R, Stata, SPSS, parallel computing Skills

STATE OF NORTH CAROLINA

COUNTY OF WAKE
NORTH CAROLINA LEAGUE OF CONSERVATION VOTERS, et al.,

REBECCA HARPER, et al.,

Plaintiffs,
vs.
REPRESENTATIVE DESTIN HALL, in his official capacity as Chair of the House Standing Committee on Redistricting, et al., Defendants.

IN THE GENERAL COURT OF JUSTICE SUPERIOR COURT DIVISION 21 CVS 015426

Consolidated with 21 CVS 500085

\section*{AFFIDAVIT OF SEAN P. TRENDE}

Now comes affiant Sean P. Trende, having been first duly cautioned and sworn, deposes and states as follows:
1. I am over the age of 18 and am competent to testify regarding the matters discussed below.
2. For the purposes of this litigation, I have been asked by counsel for Legislative Defendants to analyze relevant data and provide my expert opinions.
3. To that end, I have personally prepared the rebuttal report attached to this affidavit as Exhibit A, and swear to its authenticity and to the faithfulness of the opinions.

Executed on 28 December, 2021.
Sean P. Trende 雷

Sean P. Trende

\section*{STATE OF FLORIDA}

\section*{COUNTY OF PINELLAS}

Sworn to and subscribed before me by online notarization this \(\underline{28^{\text {th }}}\) day of December, 2021, by
SEAN P. TRENDE, who appeared by way of two-way audio/video communication technology, and he provided his Ohio driver's license as identification.



Cynthia D. Glaros
Notary Public, State of Florida
My Commission Expires: 06/30/2022

\section*{Exhibit A}

\section*{EXPERT REBUTTAL REPORT OF SEAN TRENDE}

Now comes affiant Sean P. Trende, having been first duly cautioned and sworn, deposes and states as follows:
1. I am over the age of 18 and am competent to testify regarding the matters discussed below.
2. I currently reside at 1146 Elderberry Loop, Delaware, OH 43015. My e-mail is trende.3@buckeyemail.osu.edu.
3. I have been retained in this matter by the Legislative Defendants, and am being compensated at \(\$ 400.00\) per hour for my work in this case.
4. My curriculum vitae is attached to this report as Exhibit 1.

\section*{EXPERT CREDENTIALS}
5. I am currently enrolled as a doctoral candidate in political science at The Ohio State University. I have completed all of my coursework and have passed comprehensive examinations in both methods and American Politics. My coursework for my Ph.D. and M.A.S. included, among other things, classes on G.I.S. systems, spatial statistics, issues in contemporary redistricting, machine learning, non-parametric hypothesis tests and probability theory. I expect to receive my Ph.D. in May of 2021. My dissertation focuses on applications of spatial statistics to political questions.
6. I joined RealClearPolitics in January of 2009 after practicing law for eight years. I assumed a fulltime position with RealClearPolitics in March of 2010. My title is Senior Elections Analyst. RealClearPolitics is a company of around 40 employees, with offices in Washington D.C. It produces one of the most heavily trafficked political websites in the world, which serves as a one-stop shop for political analysis from all sides of the political spectrum
and is recognized as a pioneer in the field of poll aggregation. It produces original content, including both data analysis and traditional reporting. It is routinely cited by the most influential voices in politics, including David Brooks of The New York Times, Brit Hume of Fox News, Michael Barone of The Almanac of American Politics, Paul Gigot of The Wall Street Journal, and Peter Beinart of The Atlantic.
7. My main responsibilities with RealClearPolitics consist of tracking, analyzing, and writing about elections. I collaborate in rating the competitiveness of Presidential, Senate, House, and gubernatorial races. As a part of carrying out these responsibilities, I have studied and written extensively about demographic trends in the country, exit poll data at the state and federal level, public opinion polling, and voter turnout and voting behavior.
8. In particular, understanding the way that districts are drawn and how geography and demographics interact is crucial to predicting United States House of Representatives races, so much of my time is dedicated to that task.
9. I am currently a Visiting Scholar at the American Enterprise Institute, where my publications focus on the demographic and coalitional aspects of American Politics. My first paper focused on the efficiency gap, a metric for measuring the fairness of redistricting plans.
10. I am the author of The Lost Majority: Why the Future of Government is up For Grabs and Who Will Take It. In this book, I explore realignment theory. It argues that realignments are a poor concept that should be abandoned. As part of this analysis, I conducted a thorough analysis of demographic and political trends beginning in the 1920s and continuing through the modern times, noting the fluidity and fragility of the coalitions built by the major political parties and their candidates.
11. I co-authored the 2014 Almanac of American Politics. The Almanac is considered the foundational text for understanding congressional districts and the representatives of those districts, as well as the dynamics in play behind the elections. PBS's Judy Woodruff described the book as "the oxygen of the political world," while NBC's Chuck Todd noted that "[r]eal political junkies get two Almanacs: one for the home and one for the office." My focus was researching the history of and writing descriptions for many of the newly-drawn districts, including tracing the history of how and why they were drawn the way that they were drawn.
12. I have spoken on these subjects before audiences from across the political spectrum, including at the Heritage Foundation, the American Enterprise Institute, the CATO Institute, the Bipartisan Policy Center, and the Brookings Institution. In 2012, I was invited to Brussels to speak about American elections to the European External Action Service, which is the European Union's diplomatic corps. I was selected by the United States Embassy in Sweden to discuss the 2016 elections to a series of audiences there, and was selected by the United States Embassy in Spain to fulfil a similar mission in 2018. I was invited to present by the United States Embassy in Italy, but was unable to do so because of my teaching schedule.
13. In the winter of 2018, I taught American Politics and the Mass Media at Ohio Wesleyan University. I taught Introduction to American Politics at The Ohio State University for three semesters from Fall of 2018 to Fall of 2019. In the Springs of 2020 and 2021, I taught Political Participation and Voting Behavior at The Ohio State University. This course spent several weeks covering all facets of redistricting: How maps are drawn, debates over what constitutes a fair map, measures of redistricting quality, and similar topics.
14. It is my policy to appear on any major news outlet that invites me, barring scheduling conflicts. I have appeared on both Fox News and MSNBC to discuss electoral and
demographic trends. I have been cited in major news publications, including The New York Times, The Washington Post, The Los Angeles Times, The Wall Street Journal, and USA Today.
15. I sit on the advisory panel for the "States of Change: Demographics and Democracy" project. This project is sponsored by the Hewlett Foundation and involves three premier think tanks: The Brookings Institution, the Bipartisan Policy Center, and the Center for American Progress. The group takes a detailed look at trends among eligible voters and the overall population, both nationally and in key states, to explain the impact of these changes on American politics, and to create population projections, which the Census Bureau abandoned in 1995. In 2018, I authored one of the lead papers for the project: "In the Long Run, We're All Wrong," available at https://bipartisanpolicy.org/wp-content/uploads/2018/04/BPC-Democracy-States-of-Change-Demographics-April-2018.pdf.
16. I previously authored an expert report in Dickson v. Rucho, No. 11-CVS-16896 (N.C. Super Ct., Wake County), which involved North Carolina's 2012 General Assembly and Senate maps. Although I was not called to testify, it is my understanding that my expert report was accepted without objection. I also authored an expert report in Covington v. North Carolina, Case No. 1:15-CV-00399 (M.D.N.C.), which involved almost identical challenges in a different forum. Due to what I understand to be a procedural quirk, where my largely identical report from Dickson had been inadvertently accepted by the plaintiffs into the record when they incorporated parts of the Dickson record into the case, I was not called to testify.
17. I authored two expert reports in NAACP v. McCrory, No. 1:13CV658 (M.D.N.C.), which involved challenges to multiple changes to North Carolina's voter laws, including the elimination of a law allowing for the counting of ballots cast in the wrong precinct. I was
admitted as an expert witness and testified at trial. My testimony discussed the "effect" prong of the Voting Rights Act claim. I did not examine the issues relating to intent.
18. I authored reports in NAACP v. Husted, No. 2:14-cv-404 (S.D. Ohio), and Ohio Democratic Party v. Husted, Case 15-cv-01802 (S.D. Ohio), which dealt with challenges to various Ohio voting laws. I was admitted and testified at trial in the latter case (the former case settled). The judge in the latter case ultimately refused to consider one opinion, where I used an internet map-drawing tool to show precinct locations in the state. Though no challenge to the accuracy of the data was raised, the judge believed I should have done more work to check that the data behind the application was accurate.
19. I served as a consulting expert in Lee v. Virginia Board of Elections, No. 3:15-cv357 (E.D. Va. 2016), a voter identification case. Although I would not normally disclose consulting expert work, I was asked by defense counsel to sit in the courtroom during the case and review testimony. I would therefore consider my work de facto disclosed.
20. I filed an expert report in Mecinas v. Hobbs, No. CV-19-05547-PHX-DJH (D. Ariz. 2020). That case involved a challenge to Arizona's ballot order statute. Although the judge ultimately did not rule on a motion in limine in rendering her decision, I was allowed to testify at the hearing.
21. I authored two expert reports in Feldman v. Arizona, No. CV-16-1065-PHX-DLR (D. Ariz.). Plaintiffs in that case challenged an Arizona law prohibiting the collection of voted ballots by third parties that were not family members or caregivers and the practice of most of the state's counties to require voters to vote in their assigned precinct. My reports and testimony were admitted. Part of my trial testimony was struck in that case for reasons unrelated to the merits of the opinion; counsel for the state elicited it while I was on the
witness stand and it was struck after Plaintiffs were not able to provide a rebuttal to the new evidence.
22. I authored an expert report in Smith v. Perrera, No. 55 of 2019 (Belize). In that case I was appointed as the court's expert by the Supreme Court of Belize. In that case I was asked to identify international standards of democracy as they relate to malapportionment claims, to determine whether Belize's electoral divisions (similar to our congressional districts) conformed with those standards, and to draw alternative maps that would remedy any existing malapportionment.
23. I authored expert reports in A. Philip Randolph Institute v. Smith, No. 1:18-cv-00357-TSB (S.D. Ohio), Whitford v. Nichol, No. 15-cv-421-bbc (W.D. Wisc.), and Common Cause v. Rucho, NO. 1:16-CV-1026-WO-JEP (M.D.N.C.), which were efficiency gap-based redistricting cases filed in Ohio, Wisconsin and North Carolina.
24. I also authored an expert report in the cases of Ohio Organizing Collaborative, et al v. Ohio Redistricting Commission, et al (No. 2021-1210); League of Women Voters of Ohio, et al v. Ohio Redistricting Commission, et al (No. 2021-1192); Bria Bennett, et al v. Ohio Redistricting Commission, et al (No. 2021-1198). These cases are pending in original action before the Supreme Court of Ohio.
25. I currently serve as one of two special masters appointed by the Supreme Court of Virginia to redraw the districts that will elect the commonwealth's representatives to the House of Delegates, state Senate, and U.S. Congress.

\section*{SUMMARY OF WORK PERFORMED}
26. I certify that the images attached as Exhibit 2 are true and correct copies of images that I created and that I describe below.
27. To create these images, I first examined the Complaints filed by plaintiffs in this action. I examined whether districts were challenged as either partisan gerrymanders or districts that diluted minority voting power. If I determined a district was challenged, I coded it as a "1."
28. I then downloaded shapefiles for the enacted Congressional, State Senate and House of Representatives from the legislative redistricting website, https://www.ncleg.gov/Redistricting.
29. Using R, a widely utilized statistical programming tool with which I have extensive familiarity through work and coursework, I color-coded the districts by plaintiff group, based upon who challenged which districts. This produced the accompanying maps.

\section*{Exhibit 1}

\section*{SEAN P. TRENDE}

1146 Elderberry Loop
Delaware, OH 43015
strende@realclearpolitics.com

\section*{EDUCATION}

Ph.D., The Ohio State University, Political Science, expected 2022.
M.A.S. (Master of Applied Statistics), The Ohio State University, 2019.
J.D., Duke University School of Law, cum laude, 2001; Duke Law Journal, Research Editor.
M.A., Duke University, cum laude, Political Science, 2001. Thesis titled The Making of an Ideological Court: Application of Non-parametric Scaling Techniques to Explain Supreme Court Voting Patterns from 1900-1941, June 2001.
B.A., Yale University, with distinction, History and Political Science, 1995.

\section*{PROFESSIONAL EXPERIENCE}

Law Clerk, Hon. Deanell R. Tacha, U.S. Court of Appeals for the Tenth Circuit, 2001-02.
Associate, Kirkland \& Ellis, LLP, Washington, DC, 2002-05.
Associate, Hunton \& Williams, LLP, Richmond, Virginia, 2005-09.
Associate, David, Kamp \& Frank, P.C., Newport News, Virginia, 2009-10.
Senior Elections Analyst, RealClearPolitics, 2009-present.
Columnist, Center for Politics Crystal Ball, 2014-17.
Gerald R. Ford Visiting Scholar, American Enterprise Institute, 2018-present.

\section*{BOOKS}

Larry J. Sabato, ed., The Blue Wave, Ch. 14 (2019).
Larry J. Sabato, ed., Trumped: The 2016 Election that Broke all the Rules (2017).
Larry J. Sabato, ed., The Surge:2014's Big GOP Win and What It Means for the Next Presidential Election, Ch. 12 (2015).

Larry J. Sabato, ed., Barack Obama and the New America, Ch. 12 (2013).
Barone, Kraushaar, McCutcheon \& Trende, The Almanac of American Politics 2014 (2013).
The Lost Majority: Why the Future of Government is up for Grabs - And Who Will Take It (2012).

\section*{PREVIOUS EXPERT TESTIMONY}

Dickson v. Rucho, No. 11-CVS-16896 (N.C. Super. Ct., Wake County) (racial gerrymandering).
Covington v. North Carolina, No. 1:15-CV-00399 (M.D.N.C.) (racial gerrymandering).
NAACP v. McCrory, No. 1:13CV658 (M.D.N.C.) (early voting).
NAACP v. Husted, No. 2:14-cv-404 (S.D. Ohio) (early voting).
Ohio Democratic Party v. Husted, Case 15-cv-01802 (S.D. Ohio) (early voting).
Lee v. Virginia Bd. of Elections, No. 3:15-cv-357 (E.D. Va.) (early voting).
Feldman v. Arizona, No. CV-16-1065-PHX-DLR (D. Ariz.) (absentee voting).
A. Philip Randolph Institute v. Smith, No. 1:18-cv-00357-TSB (S.D. Ohio) (political gerrymandering).

Whitford v. Nichol, No. 15-cv-421-bbc (W.D. Wisc.) (political gerrymandering).
Common Cause v. Rucho, No. 1:16-CV-1026-WO-JEP (M.D.N.C.) (political gerrymandering).
Mecinas v. Hobbs, No. CV-19-05547-PHX-DJH (D. Ariz.) (ballot order effect).
Fair Fight Action v. Raffensperger, No. 1:18-cv-05391-SCJ (N.D. Ga.) (statistical analysis).
Pascua Yaqui Tribe v. Rodriguez, No. 4:20-CV-00432-TUC-JAS (D. Ariz.) (early voting).

\section*{COURT APPOINTMENTS}

Appointed as Voting Rights Act expert by Arizona Independent Redistricting Commission
Appointed redistricting expert by the Supreme Court of Belize in Smith v. Perrera, No. 55 of 2019 (one-person-one-vote).

\section*{INTERNATIONAL PRESENTATIONS AND EXPERIENCE}

Panel Discussion, European External Action Service, Brussels, Belgium, Likely Outcomes of 2012 American Elections.

Selected by U.S. Embassies in Sweden, Spain, and Italy to discuss 2016 and 2018 elections to think tanks and universities in area (declined Italy due to teaching responsibilities).

Selected by EEAS to discuss 2018 elections in private session with European Ambassadors.

\section*{TEACHING}

American Democracy and Mass Media, Ohio Wesleyan University, Spring 2018.
Introduction to American Politics, The Ohio State University, Autumn 2018, 2019, 2020, Spring 2018.

Political Participation and Voting Behavior, Spring 2020, Spring 2021.

\section*{REAL CLEAR POLITICS COLUMNS}

Full archives available at http://www.realclearpolitics.com/authors/sean_trende/

Congressional Districts Challenged As Political Gerrymanders, By Plaintiff Group

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Congressional Districts Challenged In Racial Vote Dilution Claim, By Plaintiff Group


State Senate Districts Challenged As Political Gerrymanders, By Plaintiff Group

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State Senate Districts Challenged In Racial Vote Dilution Claim, By Plaintiff Group

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\section*{State House Districts Challenged As Political Gerrymanders, By Plaintiff Group}

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\section*{State House Districts Challenged In Racial Vote Dilution Claim, By Plaintiff Group}

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\section*{All State Senate Districts Challenged, By Plaintiff Group}

© OpenStreetMap contributors

\section*{All State House Districts Challenged, By Plaintiff Group}

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\title{
2016 Contingent Congressional Plan Committee Adopted Criteria
}

\section*{Equal Population}

The Committee will use the 2010 federal decennial census data as the sole basis of population for the establishment of districts in the 2016 Contingent Congressional Plan. The number of persons in each congressional district shall be as nearly as equal as practicable, as determined under the most recent federal decennial census.

\section*{Contiguity}

Congressional districts shall be comprised of contiguous territory. Contiguity by water is sufficient.

\section*{Political data}

The only data other than population data to be used to construct congressional districts shall be election results in statewide contests since January 1, 2008, not including the last two presidential contests. Data identifying the race of individuals or voters shall not be used in the construction or consideration of districts in the 2016 Contingent Congressional Plan. Voting districts ("VTDs") should be split only when necessary to comply with the zero deviation population requirements set forth above in order to ensure the integrity of political data.

\section*{Partisan Advantage}

The partisan makeup of the congressional delegation under the enacted plan is 10 Republicans and 3 Democrats. The Committee shall make reasonable efforts to construct districts in the 2016 Contingent Congressional Plan to maintain the current partisan makeup of North Carolina's congressional delegation.

\section*{Twelfth District}

The current General Assembly inherited the configuration of the Twelfth District from past General Assemblies. This configuration was retained because the district had already been heavily litigated over the past two decades and ultimately approved by the courts. The Harris court has criticized the shape of the Twelfth

District citing its "serpentine" nature. In light of this, the Committee shall construct districts in the 2016 Contingent Congressional Plan that eliminate the current configuration of the Twelfth District.

\section*{Compactness}

In light of the Harris court's criticism of the compactness of the First and Twelfth Districts, the Committee shall make reasonable efforts to construct districts in the 2016 Contingent Congressional Plan that improve the compactness of the current districts and keep more counties and VTDs whole as compared to the current enacted plan. Division of counties shall only be made for reasons of equalizing population, consideration of incumbency and political impact. Reasonable efforts shall be made not to divide a county into more than two districts.

\section*{Incumbency}

Candidates for Congress are not required by law to reside in a district they seek to represent. However, reasonable efforts shall be made to ensure that incumbent members of Congress are not paired with another incumbent in one of the new districts constructed in the 2016 Contingent Congressional Plan.

\section*{2017 HOUSE AND SENATE PLANS CRITERIA}

Equal Population. The Committees shall use the 2010 federal decennial census data as the sole basis of population for drawing legislative districts in the 2017 House and Senate plans. The number of persons in each legislative district shall comply with the \(+/-5\) percent population deviation standard established by Stephenson v. Bartlett, 355 N.C. 354, 562 S.E. 2 d 377 (2002).

Contiguity. Legislative districts shall be comprised of contiguous territory. Contiguity by water is sufficient.

County Groupings and Traversals. The Committees shall draw legislative districts within county groupings as required by Stephenson v. Bartlett, 355 N.C. 354,562 S.E. 2 d 377 (2002) (Stephenson I), Stephenson v. Bartlett, 357 N.C. 301, 582 S.E. 2 d 247 (2003) (Stephenson II), Dickson v. Rucho, 367 N.C. 542, 766 S.E. 2 d 238 (2014) (Dickson I) and Dickson v. Rucho, 368 N.C. 481, 781 S.E.2d 460 (2015) (Dickson II). Within county groupings, county lines shall not be traversed except as authorized by Stephenson I, Stephenson II, Dickson I, and Dickson II.

Compactness. The Committees shall make reasonable efforts to draw legislative districts in the 2017 House and Senate plans that improve the compactness of the current districts. In doing so, the Committees may use as a guide the minimum Reock ("dispersion") and Polsby-Popper ("perimeter") scores identified by Richard H. Pildes and Richard G. Neimi in Expressive Harms, "Bizarre Districts," and Voting Rights: Evaluating ElectionDistrict Appearances After Shaw v. Reno, 92 Mich. L. Rev. 483 (1993).

Fewer Split Precincts. The Committees shall make reasonable efforts to draw legislative districts in the 2017 House and Senate plans that split fewer precincts than the current legislative redistricting plans.

Municipal Boundaries. The Committees may consider municipal boundaries when drawing legislative districts in the 2017 House and Senate plans.

Incumbency Protection. Reasonable efforts and political considerations may be used to avoid pairing incumbent members of the House or Senate with another incumbent in legislative districts drawn in the 2017 House and Senate plans. The Committees may make reasonable efforts to ensure voters have a reasonable opportunity to elect nonpaired incumbents of either party to a district in the 2017 House and Senate plans.

Election Data. Political considerations and election results data may be used in the drawing of legislative districts in the 2017 House and Senate plans.

No Consideration of Racial Data. Data identifying the race of individuals or voters shall not be used in the drawing of legislative districts in the 2017 House and Senate plans.

\title{
Joint Meeting of Committees
}

\author{
August 12, 2021
}

House Committee on Redistricting
Senate Committee on Redistricting and Elections

\section*{Criteria Adopted by the Committees}
- Equal Population. The Committees will use the 2020 federal decennial census data as the sole basis of population for the establishment of districts in the 2021 Congressional, House, and Senate plans. The number of persons in each legislative district shall be within plus or minus \(5 \%\) of the ideal district population, as determined under the most recent federal decennial census. The number of persons in each congressional district shall be as nearly as equal as practicable, as determined under the most recent federal decennial census.
- Contiguity. No point contiguity shall be permitted in any 2021 Congressional, House, and Senate plan. Congressional, House, and Senate districts shall be compromised of contiguous territory. Contiguity by water is sufficient.
- Counties, Groupings, and Traversals. The Committees shall draw legislative districts within county groupings as required by Stephenson v. Bartlett, 355 N.C. 354, 562 S.E.2d 377 (2002) (Stephenson I), Stephenson v. Bartlett, 357 N.C. 301, 582 S.E. 2 d 247 (2003) (Stephenson II), Dickson v. Rucho, 367 N.C. 542, 766 S.E. 2 d 238 (2014) (Dickson I) and Dickson v. Rucho, 368 N.C. 481, 781 S.E. 2d 460 (2015) (Dickson II). Within county groupings, county lines shall not be traversed except as authorized by Stephenson I, Stephenson II, Dickson I, and Dickson II.

Division of counties in the 2021 Congressional plan shall only be made for reasons of equalizing population and consideration of double bunking. If a county is of sufficient population size to contain an entire congressional district within the county's boundaries, the Committees shall construct a district entirely within that county.
- Racial Data. Data identifying the race of individuals or voters shall not be used in the construction or consideration of districts in the 2021 Congressional, House, and Senate plans. The Committees will draw districts that comply with the Voting Rights Act.
- VTDs. Voting districts ("VTDs") should be split only when necessary.
- Compactness. The Committees shall make reasonable efforts to draw legislative districts in the 2021 Congressional, House and Senate plans that are compact. In doing so, the Committee may use as a guide the minimum Reock ("dispersion") and Polsby-Popper ("permiter") scores identified by Richard H. Pildes and Richard G. Neimi in Expressive Harms, "Bizarre Districts," and Voting Rights: Evaluating ElectionDistrict Appearances After Shaw v. Reno, 92 Mich. L. Rev. 483 (1993).
- Municipal Boundaries. The Committees may consider municipal boundaries when drawing districts in the 2021 Congressional, House, and Senate plans.

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August 12, 2021
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House Committee on Redistricting Senate Committee on Redistricting and Elections
- Election Data. Partisan considerations and election results data shall not be used in the drawing of districts in the 2021 Congressional, House, and Senate plans.
- Member Residence. Member residence may be considered in the formation of legislative and congressional districts.
- Community Consideration. So long as a plan complies with the foregoing criteria, local knowledge of the character of communities and connections between communities may be considered in the formation of legislative and congressional districts.
\begin{tabular}{|c|}
\hline EXHIBIT \\
7 \\
\hline
\end{tabular}







- Ex. 9738 -


\section*{District-Incumbent Report}

District Plan: CBA-2
Residence Set: Congress -9/22/2021
\begin{tabular}{|c|l|l|l|c|}
\hline District in this Plan & \multicolumn{1}{|c|}{ Last Name } & \multicolumn{1}{|c|}{ First Name } & Party & Current District \\
\hline 1 & Cawthorn & Madison & Republican & 11 \\
\hline 2 & McHenry & Patrick & Republican & 10 \\
\hline 3 & Hudson & Richard & Republican & 8 \\
\hline 4 & Foxx & Virginia & Republican & 5 \\
\hline 5 & Adams & Alma & Democratic & 12 \\
\hline 6 & Bishop & Dan & Republican & 9 \\
\hline 7 & Budd & Ted & Republican & 13 \\
\hline 8 & Manning & Kathy & Democratic & 6 \\
\hline 9 & Price & David & Democratic & 4 \\
\hline 10 & Ross & Deborah & Democratic & 2 \\
\hline 11 & Butterfield & GK & Democratic & 1 \\
\hline 12 & Murphy & Greg & Republican & 3 \\
\hline 13 & & & & \\
\hline 14 & Rouzer & David & Republican & \\
\hline
\end{tabular}

\section*{Joint Meeting of Committees}

\author{
August 18, 2021
}

House Committee on Redistricting
Senate Committee on Redistricting and Elections

Offered by:
Representative Harrison
Pass:
Fail:

\section*{Proposed Redistricting Process}
1. Start the Redistricting Process Immediately Upon Legacy Data Release. The Committees should begin the redistricting process by utilizing the Legacy Format Summary File of P.L. 94-171 data. General Assembly central staff should start processing the legacy format data immediately upon release of that data by the U.S. Census Bureau.
2. Provide Redistricting Information on the NCGA Website. To facilitate public comment and participation, the General Assembly should maintain the existing redistricting webpage, clearly bookmarked from the home page of the NCGA website, containing all redistricting information in one location, including the following: meeting notices, livestream links, draft maps and any related data and information, and a public comment portal. This webpage should also include an up-to-date posting of the public comments received via the public comment portal.
3. Permit Written and Oral Public Comment. The Committees should ensure all North Carolinians have an opportunity to provide public comment to the members of the Committees regarding redistricting. The Committees should receive public comment in accordance with the following:
a. Through a public comment portal, email, and the U.S. Postal Service. Information about how North Carolinians can submit public input should be provided contemporaneously with any Redistricting committee meeting notices.
b. Before any draft maps are drawn and before final proposed maps are voted on by the Committees.
4. Ensure Quality Video and Audio Broadcast in Public Meetings. The Committees should strive to ensure that video and audio of Committee meetings related to map drawing are timestamped and of a quality such that the public can view relevant details of the proposed maps and hear relevant discussion. Committee notices should include a contact phone number for those observing the process to report technical issues. The Committees should halt map drawing until any technical issues that prevent public observation are resolved.
5. Hold Accessible Public Hearings Throughout the State. The Committees should provide live in-person hearings in areas throughout the State for community members to provide live testimony. In scheduling the public hearings, the Committees should comply with the following:
a. The Committees should conduct at least thirteen hearings, accounting for one from each of the 2019 Congressional districts. Consideration should be given to locations and facilities that are accessible by public transport and to those with disabilities.
b. The Committees should provide remote options for viewing public hearings and for providing public comment where it is technologically feasible to do so.
c. The Committees should endeavor to post a full schedule of public hearings at the beginning of the redistricting process, and in any event provide at least two weeks' notice of any public hearing on redistricting. Public hearings should not be scheduled during or near public holidays, such as Labor Day.

EXHIBIT
18

\section*{Joint Meeting of Committees}

\section*{August 18, 2021}

House Committee on Redistricting Senate Committee on Redistricting and Elections
6. Disclose All Third Parties Involved in Redistricting. The Committees should immediately disclose all consultants and counsel to members and committees of either house of the General Assembly who are paid by State funds who will be participating in the redistricting process. Such disclosure should occur within 24 hours of adoption of this criteria or engagement, whichever occurs first.
7. Committee Consideration of Maps. The Committees should consider only maps that comply with all of the following:
a. Any criteria, systems, or data used in developing the map was disclosed to the public in advance of its use in a manner that allows the public to have a reasonable and adequate opportunity to view the information.
b. The map was released online for public comment, and the public had adequate time to review the map and to submit public comment on the map before it is considered by the Committee or revised by the Committee.
c. The map was drawn in the public view, including a live-stream of the drawing.
d. Written documentation justifying the districts chosen was released online with the map for public viewing.
8. Disclose Initial Draft Maps. After receiving and incorporating public comment, draft maps should be released online for additional public comment within 30 days of when the Committees begin drawing maps.
9. Submit Final Proposed Maps to the General Assembly. The final proposed maps should be publicly released online no later than 21 days after the draft maps are released. The Committees should deliver the final proposed bill containing the map to the appropriate Chamber within 10 days of the release of the final proposed maps.

Offered By: Representative Harrison

Signature:

\author{
TRANSCRIPTION OF AUDIO FILE NORTH CAROLINA HOUSE COMMITTEE \\ ON REDISTRICTING \\ OCTOBER 5, 2021
}

DIGITAL EVIDENCE GROUP
1730 M Street, NW, Suite 812
Washington, D.C. 20036
(202) 232-0646

UNKNOWN MALE: House Committee on Redistricting, Tuesday, October 5, 2021, 643 LOB.

CHAIRMAN HALL: Committee will come to order. The Chair apologizes for delay in getting started this afternoon. Thanks to the committee members for their patience.

Members, I want to start off by thanking you all, the members, staff, and the public who chose to participate in our public hearings across the state over the last several weeks. I think we heard varying opinions. It was great to see folks engaged, and we had members, many -- many member, not even just the folks on this committee, but several members of the House and the Senate, who are not on this committee, who attended those meetings and gave folks a chance to be heard about what they want this process to look like.

The purpose of today's meeting is to -just to do some Housekeeping to give folks an idea of what the map-drawing process is going to look like. And we anticipate, beginning tomorrow, starting the map-drawing process, and so we want to lay out very clearly what the criteria will be -- or rather the rules will be for this committee for drawing maps.

So we'll just jump right into it. We're going to have four terminals. And if you look around this room, you see the big screens. There are going to be four of those. One will be dedicated to the chair of this committee. One will be dedicated to the minority leader, or his designee. I should have said on the first station, it will be dedicated to the chairman or chair's designee. And then the other two will be for any other committee member, or any member of the House who wishes to come in and draw on those terminals.

For now, the plan is to go from 9:00 to 5:00 each day. So we'll come in, gavel in at 9 o'clock. This committee room will stay open throughout the day. Those of you who have been through this before, you know it's not like a typical committee where we're always with a chair standing up here, like I am right now. What we typically do, we'll gavel in, and folks can go draw.

We may take breaks throughout the day. We may just leave the committee room open. We want to be cognizant of staff, let them be able to eat lunch, and that sort of thing, so we may take a few breaks and there. But by and large, the committee room is going to be open from 9:00 to 5:00. We're
going to plan to do that Monday through Friday, for now.

So, as of right now, chair anticipates having this committee room open throughout the rest of this week, until Friday at 5 o'clock. But the chair will say that if significant progress is made, we may not keep the committee open all day on Friday, so that we don't have to keep staff here. And obviously, folks will be -- members will be traveling back to their districts. To prevent them from having to travel back on Friday night, we may go ahead and may not have a committee meeting Friday or may end the committee early on Friday. So just wait and see on that front.

And this is a rule that \(I\) want to make sure all members are clear on, but this committee, and the House as a whole, will only consider maps that are drawn in this committee room, on one of the four stations. So if a map is not drawn on one of these four stations, in this committee room, during those committee hours that the committee is open, then those maps will not be considered for a vote by this committee, and of course, will not be considered for a vote by the House.

And we'll be able to know because when you
put a map into one of these computers, that becomes a matter of public record, and we can tell which were drawn on these computers. It has to be drawn in this committee room.

When this committee is open, we'll maintain
a live stream and live audio during the whole time of map-drawing, so that the process will be, we believe, just about as transparent as we humanly can do. And that's what we heard in public comment. We heard folks say, "We want a transparent process." Well, that's what we're going to give the public. We're going to give the members of this body and the public a transparent process where we draw maps in this room with a live audio feed and a live video feed. And we're going to create a rule that we're only going to consider the maps that are drawn in this room, in the House, in this committee, and ultimately, in the House.

Members, we're going to continue to have session, of course, regular session, throughout this process. As the members know, we're still dealing with the budget right now. And so, obviously, the speaker is aware that this process of redistricting takes a lot of labor, and we'll give us ample time to do that. But we have to continue with the
business of the House in general, so we'll do just the best we can on that, understanding we're operating under a tight time line.

And we've talked about that a lot
throughout this committee process that, because of the delay in the census data, we're just now getting to a point where we can draw these maps, after doing the public comment we wanted to do. But with filing coming in December, we really need to get these maps drawn as close as we can, or at least by the end of this month, if not sooner.

That's going to be our goal to try to get these things done by the end of the month. That way we can give the board of elections time to get ballots printed and let folks know what districts they're going to be in, so they can decide if they want to run or not run. Whether they be members of this committee, or folks who are not in the General Assembly at all.

Members, with that being said --
REPRESENTATIVE RICHARDSON: Mr. Chairman, can I have a quick question?

CHAIRMAN HALL: I'm going to take questions in a little while, but you know, if it's something that's really important right now, okay. All right.

I'm going to take questions at the end.
So for ground rules, that's it for now. I may have left something out, and if so, members can ask me in a moment.

The second step in today's committee is going to be the presentation of the optimum county groupings that have been come up with by the nonpartisan staff. And so the chair is going to turn this over to Erika Churchill, in just a moment, to make a presentation on the optimum county groupings that have been crafted by the non-partisan staff.

But what the chair will ultimately say about these groupings is: in years past, if you've been on this committee, you know that we have adopted certain groupings. Chair does not anticipate adopting any particular grouping this time around because there are multiple options within the county groupings. And that's what you've got in front of you, and that Ms. Churchill is going to explain in more detail here in just a bit.

Rather than limit any member of this committee into just certain groupings, what the chair anticipates is that members can use whichever combination of the groupings that you see before you, in drawing whichever map a member sees fit to
draw.
The only groupings that will be considered are those that are in the packet that's in front of you. These were initially put forth by Duke University, and a non-partisan staff has also drawn their own groupings and confirmed that the Duke groupings were correct. And so we're confident that using the algorithm, as required in the law, that these are the possible groupings -- the possible optimum groupings.

Again, I'll answer questions momentarily on that front. But with that, the chair is going to turn it over to Erika Churchill to speak to the county groupings and to also show an example of how to use the terminals when drawing the maps.

Ms. Churchill, you're recognized.
MS. CHURCHILL: Thank you, Mr. Chair. As you mentioned, central staff, were asked to take a presentation by Christopher Cooper, Blake Esselstyn, Gregory Herschlag, Jonathan Mattingly, and Rebecca Tippett from the quantifying gerrymandering group, which is a non-partisan research group centered at Duke Math.

And they produced a paper entitled, "North Carolina General Assembly County Clusterings from
the 2020 Census." It was posted by Mr. Herschlag on August 17, 2021. And we took it as a recipe, because throughout this, they gave instructions as to what they believed were the optimum county groupings.

I would note that they particularly say, "However, there are often multiple optimal county clusterings that minimize county splitting." And they reference two other blogs that they have posted. The release of the 2020 census data allows us to determine the possible county clusterings for both the North Carolina State House and State Senate redistricting processes.

The one part of Stephenson v. Bartlett which this analysis does not reflect, is compliance with the Voting Rights Act. To determine the county clusters, we used the implementation of the court order procedure described in Carter, et al." The site they gave for Carter, et al. is "Optimal Legislative County Clustering in North Carlina" by Daniel Carter, Zach Hunter, Dan Teague, Gregory Herschlag, and Jonathan Mattingly. Statistics and Public Policy Volume 7, 2020.

For the state House, what you have before you in hardcopy, on the screen, and I believe they
will be posted to the web, are the nine maps that resulted from this paper with respect to the North Carolina State House. The very first one does not have the entire state assigned. They call this the fixed groupings. Throughout the maps that we'll go through, you will find that these will be hash tagged. A little bit of crosshatching on them to identify these are the ones that this particular group say are the optimal.

They created 33 clusters containing 107 of the 120 districts that are fixed based on determining optimal county clusters. 11 of these clusters contain 1 district, meaning that 11 of the 120 House districts are fixed.

So as you're looking at the map, whether in hardcopy or online, you will see that there is a letter assigned to each. I'm just going to pick on Carteret and Craven, in the eastern part of the state, in the blue shading, it is \(Q 2\). The \(Q\) is just an easy letter reference if you need to talk about that particular grouping with anyone. The 2 means that that is population sufficient for 2 House members. The same if you look just to the left, in the gray, the green Lenore Jones BB cluster, or grouping, has a 1 underneath it, meaning that would
be a single member grouping.
So the white areas that are left can each be assigned two different ways. So that would get you to the lovely House maps that are left.
(Sound interruption)
So starting with the Western area that was left kind of unassigned, needs to be grouped. As you will see it on the Duke House 01 map, it would be districts HH and II. The first option here would be to combine Surry, Wilkes, and Alexander to create a two-member district. And Alleghany, Ashe, Watauga, and Caldwell to create a two-member district.

If you will skip over to Duke House 05, this would give you a visual of the second option for this particular grouping. It would be a combination of Surry, Alleghany, Ashe, and Wilkes for a two-member grouping. And Watauga, Caldwell, and Alexander for a two-member grouping.

Staying on the Duke House 05, and heading east to the southeast, the options in that southeast area here would be to combine Wayne and Sampson into a two-member district. Duplin and Onslow into a three-member district. And Pender and Bladen into a one-member district.

And so if you just fast forward one to Duke House 08, the second option in the southeastern corner would be to combine Wayne and Duplin into a two-member district. Sampson and Bladen into a onemember district and Onslow and Pender into a threemember district.

Duke House 05 will be our example of the northeastern corner. Option one would be to combine Hertford, Gates, Pasquotank, and Camden into a single-member district. And Currituck, Dare, Hyde, Pamlico, Beaufort, Washington, Tyrrell, Perquimans, and Chowan into a two-member district.

The other option in the northeastern corner, if you will go to Duke House 06, you can see a visual of that. The single member district would be Currituck, Pasquotank, Perquimans, and Tyrrell. The two-member district would be Beaufort, Pamlico, Hyde, Dare, Washington, Chowan, Camden, Gates, and Hertford.

Each of the multimember districts throughout all of these would need to be divided into single-member districts for compliance with Stephenson opinion.

I should probably note, just so that everybody is aware, the ideal population for a North

Carolina House district is 86,995 people, according to the 2020 Decennial Census, with a plus or minus 5 percent deviation. That leaves a range of 82,645 to 91,345 people.

CHAIRMAN HALL: Okay, members. The chair is going to give Ms. Churchill an opportunity in a moment to display and give an example of how the terminals will work.

But if that is it for your presentation on groupings, if you'll stand there for just a second.

MS. CHURCHILL: Yes, sir.
CHAIRMAN HALL: Committee members, do any members have any questions for legislative staff at this point about groupings? And again, chair's going to take some questions at the end.

Representative Torbett.
REPRESENTATIVE TORBETT: Just if she could repeat the numbers she used there at the last time. There was three. There was a total and the range. MS. CHURCHILL: Okay. Ideal population for a North Carolina House of Representatives districts, 86,995. Creating a plus or minus 5 percent range of 82,645 to 91,345 people.

CHAIRMAN HALL: The chair is going to make sure that all committee members have a document
showing the ideal population for each level of grouping. So for one-member grouping, two-member. And I know we've had that in the past, and it may have already been passed out at one of the meetings we've had. So let's make sure, if we will -- we'll send that out to the committee via email, and we'll have some paper copies at the meeting tomorrow.

MS. CHURCHILL: We will actually have a laminated copy at every station.

CHAIRMAN HALL: Okay, great.
MS. CHURCHILL: And we will also be glad to email that out to everyone. It has been passed out at a previous meeting.

CHAIRMAN HALL: And we're going to go ahead and have paper copies for folks to be able to take with them if they want to.

MS. CHURCHILL: Glad to take care of that.
CHAIRMAN HALL: Representative Harrison.
REPRESENTATIVE HARRISON: Thank you,
Mr. Chair. Thank you, Erika.
If I heard you right, so did you -- when you started -- and I've got the article in front of me from Doctors Mattingly, et al. -- did you say that the fixed -- the fixed clusters -- we're working from a basis of the fixed clusters, and
those represent 107 of the 120 members; is that right?

MS. CHURCHILL: Yes, ma'am.
REPRESENTATIVE HARRISON: And then our options are to figure out how to manipulate the other white, unshaded counties, and that's what we're going to be doing with the other map options?

MS. CHURCHILL: Mr. Chair?
CHAIRMAN HALL: Lady is recognized to respond.

MS. CHURCHILL: Yes, Representative Harrison. With the crosshatched districts in the Duke House fixed, that would establish the groupings for 107 of the 120 districts. Of that 107, 11 -- or of the 33 clusters, 11 of those clusters would be single-member districts. The remainder would still need to be divided into single-member districts. So the counties in white that have no shading, no crosshatching, would be the options to combine together to create the remaining 13 House districts.

CHAIRMAN HALL: And members, and for those folks listening at home, the chair has often referred to these maps as groupings, and you hear Ms. Churchill refer to them as clusters, and those are synonymous terms, just for those listening, to
make sure everybody understands. If you've been through this before, you know that. But if you're new to this committee, or you're listening online and haven't watched this committee before, that may be confusing.

But is that your understanding, Ms. Churchill?

MS. CHURCHILL: Yes, sir. There's actually three terms that I've heard for it. There's the clustering, which is the phrase that the group from Duke used in their paper, which is what \(I\) was reading from. There's also groupings, which is kind of in the court orders, as well as clustering. The other phrase I've heard used to describe this is podding, or creating a pod. I believe all three to be completely interchangeable.

CHAIRMAN HALL: That's right. That's the chair's understanding as well.

Representative Harrison.
REPRESENTATIVE HARRISON: Mr. Chair, if we have questions about the clusters and the process, should we ask them now of you and the committee, or do you want her to talk about the technical and then have the questions after that?

CHAIRMAN HALL: At this point, if you've
got a question for the chair, let's just wait. This is just questions for right now to Ms. Churchill. She's not going to leave after this. She'll be right up here, so if we have another question for her later. But while they're there at the podium, the chair thinks it's appropriate to give members the opportunity to ask them questions.

Representative Warren.
REPRESENTATIVE WARREN: I've got a question for Ms. Churchill.

I'm sorry, when you look at the white clusters, and the different iterations of them on the following maps, I noticed that the numbers stay the same within those configurations. So is this just a matter of looking at those particular counties in terms of their connection to each other, continuity of it, or the contiguousness of it, or whatever the word is we're looking for there?

MS. CHURCHILL: So, Mr. Chair, if I might?
CHAIRMAN HALL: Lady may answer.
MS. CHURCHILL: So you are absolutely
correct. So starting kind of in that western corner, the counties of Surry, Alleghany, Ashe, Watauga, Wilkes, Caldwell, and Alexander, that white area has a population in it sufficient to support
four single-member districts. So it becomes a question of how to group those counties together to best create districts that are in compliance with Stephenson. And there are two options there. Both would be two-member districts. It's just a matter of what the committee chose to use.

REPRESENTATIVE WARREN: And follow-up? CHAIRMAN HALL: The gentleman is recognized.

REPRESENTATIVE WARREN: So, Ms. Churchill, one of the things I noticed in the hearings I attended was some folks in the general public not having an understanding that we try to do these in terms of, not breaking down counties or municipalities, but to stay within the mandates of the population, and you're staying within this cluster. That, in some cases, creates a situation where you have no choice but to comply with the district's population; is that correct?

CHAIRMAN HALL: The lady is recognized.
MS. CHURCHILL: I will attempt that one. And I'm going to pick on the chair for just a moment. His home county of Caldwell --

CHAIRMAN HALL: Join the club.
MS. CHURCHILL: -- as an example.

According to the federal decennial census, it's 80,652 people, which is outside that ideal range of 82,645 to 91,345 for a single-member district. So it would need to be combined with some other contiguous county to create a single-member district. Or it would need to be divided with some other contiguous counties to create two single-member districts. That would be up to the committee how they wanted to do that.

REPRESENTATIVE WARREN: Thank you very much.

CHAIRMAN HALL: Further questions or any comments for legislative staff?

Representative Dixon.
REPRESENTATIVE DIXON: Thank you, Mr. Chair.

Ms. Churchill, without having to add them up, how many House seats are there in the white area including Duplin and then this white area with Tyrrell?

MS. CHURCHILL: So --
Mr. Chair?
The area --
CHAIRMAN HALL: The lady is recognized.
MS. CHURCHILL: -- including Duplin, Wayne,

Sampson, Bladen, Pender, and Onslow is population sufficient to support six single-member House districts. That northeastern corner beginning at Pamlico, running all the way up to Currituck and over to Hertford, is population sufficient to support three single-member districts.

REPRESENTATIVE DIXON: Thank you.
CHAIRMAN HALL: Further discussion or any questions for legislative staff?

Okay. Ms. Churchill, if you want to give us an example of how to use these terminals, the lady is recognized to do that.

MS. CHURCHILL: I'm going to ask Will. He's going to come up and help me.

CHAIRMAN HALL: Along with -- yeah, absolutely.

MS. CHURCHILL: So I would note a couple of things, as Will is getting us started. Each one of these terminals will be directly fed to a
livestream. An audio from that terminal will be fed to the livestream. There will not be a video associated with that terminal. There will be a video of the room that will be seen by the public. The public here in the room can choose to use the screens here, or they can choose to use the North

Carolina General Assembly Wi-Fi to log on, if they wanted to focus on just one of the four terminals. And I'm going to walk over to the terminal, so we can turn that on, so you'll see what it's going to look like. So from here, you will be able to see a House plan. And so, these are just examples that we have been testing to make sure that everything works. These are existing plans; they are nothing new. We just wanted to make sure that everyone had a map that could be seen, can be used; the software works.

So this is what you would see on the screen in the room. We will leave this up and going until after the committee adjourns, so that someone can walk around and see what an actual drawing station would look like as you were sitting at it to engage with the staff to instruct us how to draw a map of your choosing.

CHAIRMAN HALL: And, Ms. Churchill, if you will describe what's the large TV to your right for? MS. CHURCHILL: They are identical. So a staff member will be sitting at the smaller screen. Member, or whoever -- whatever group of members are together, will have the larger screen available to them to stand behind, to sit behind, just so that
it's a little larger, a little easier to see.
CHAIRMAN HALL: Members, do we have any
questions for -- questions or debate about how the process will work in terms of what Ms. Churchill has just described? Again, I'm going to stand for some questions.

Representative Torbett.
REPRESENTATIVE TORBETT: Just for reference, it's my understanding -- I think she eluded to it -- the staffer is there to actually to the map drawing with assistance and information from the member; is that how that's going to work? Because some of us in here have never done map drawing.

CHAIRMAN HALL: The staff folks are there because they understand how to use the software, but it will be completely up to the member to direct the staff member as to how to draw those maps. And staff will -- it wouldn't be appropriate, of course, for staff to make decisions about how to draw. But to answer your question, yeah. You're absolutely right. It will be up to the member to tell the staff member, who knows how to use the technology, how to draw.

Representative Carney.

REPRESENTATIVE CARNEY: So I'm not sure if this question is for now or later, but. So if I come in as a member and I'm drawing on a map, and I leave the room, somebody else comes in, draws another map, and then \(I\) want to make an amendment, how does that work?

CHAIRMAN HALL: The chair is going to initially respond to that and let Ms. Churchill respond to sort of the mechanics of how that works. But, in the past, what has happened is, if you go in and draw a map, and let's say you want to take a break and go eat lunch, or whatever it is you want to do, you can save your map in the system, so that somebody doesn't come behind you and start drawing on the map that you've already created. So you'll be able to save that. You'll be able to come back later on and draw that map.

Now, Ms. Churchill, is that correct, in terms of technology?

And I'm going to continue on with that to try to answer what \(I\) think your whole question is, but yeah.

REPRESENTATIVE CARNEY: Okay.
MS. CHURCHILL: So, yes, sir. Unlike with our drafting system where you were used to us being
able to get to any prior iteration that we have drafted for you, the mapping software doesn't work quite like that. But we are set up internally to make sure that the map that you closed out before you stepped away to get a bite to eat or go to a committee meeting is always there.

When you come back, we will be copying that map to pick up exactly where you left off, so that we will always have that first map, just in case something goes wrong, and you just need to go back to it. So there will be an option for you to pick up wherever you left off and continue going from there. There will be an option for you, if you really like what you -- hated what you did in that second session, you can go back to the first session and pick up again and start over.

CHAIRMAN HALL: And to answer your question about how to, perhaps, change a member that another member's drawn -- and I guess the real question is amendments -- there will be an opportunity for members of the committee to put forth amendments on whatever map or maps this committee ultimately takes up.

And the chair anticipates, as we've done in the past, members can decide whether they want to
put forth a whole map of the state as an amendment, or whether they're just wanting to amend certain groups or \(I\) guess even certain districts. Members will be given an opportunity to put those forth.

REPRESENTATIVE CARNEY: So just a followup.

CHAIRMAN HALL: Yes. Lady is recognized. REPRESENTATIVE CARNEY: And I have never drawn these maps before, so that's why I have all these questions. So these amendments would come -our amendments would come after we have a map?

CHAIRMAN HALL: Yeah. So if the lady will think about it just like a normal committee meeting, where a bill is before the committee --

REPRESENTATIVE CARNEY: Right.
CHAIRMAN HALL: -- and members are putting
forth their own amendments, or perhaps they're wanting their own bills to be put forth at a given time. Really, the easier way to think of it is, members are wanting to put forth their amendments to the bill that's on the floor. The opportunity to do that will be there.

If, let's just say that you like the map that's before the committee, but for a couple of the groupings, and you know, rather -- if you just want
to focus your argument, or whatever the case may be, on those two groupings, the lady can say, look, here are the two groupings. I'm just putting those forth as an amendment. I'm okay with the rest of the map. The opportunity to do that will be given.

REPRESENTATIVE CARNEY: Thank you very much.

CHAIRMAN HALL: And let me say with that, obviously, we're under a tight time constraint. And so we don't have time for the committee to consider 100 maps from every member, you know, who's on there. So at some point, the chair will have to limit that. But as of now, the chair doesn't anticipate having to limit members amendments or proposed maps. Chair thinks that we'll be able to do that in a time efficient way, and still get our work done in time for filing.

Other questions or debate again for legislative staff?

Representative Richardson: Mr. Chairman?
CHAIRMAN HALL: Representative Richardson.
REPRESENTATIVE RICHARDSON: If I might.
Would it be the best practice if when we're drawing -- if we're doing a map, that we articulate our reasonings? Like the criteria that we have listed
\begin{tabular}{|ll}
\hline 1 & and adopted, like communities of interest, should we \\
2 & -- if we do an amendment, or do part of a map, or do \\
3 & part of a district, should we state the reasoning on \\
4 & there that it follows the criteria and which \\
5 & criteria it follows or just not comment? Or what \\
6 & are we -- give us some guidance on that. \\
7 & CHAIRMAN HALL: You know, that's really up \\
8 & to each individual member as to what they want to \\
9 & say while they're drawing the map. And if a member \\
10 & wants to say, "Here's why I'm doing this," every \\
11 & member is free to do that. This committee has \\
12 & adopted a set of criteria that's to be used in \\
13 & drawing the maps, and so that will be the member's \\
14 & choice whether they think that is a best practice or \\
15 & not a best practice. \\
16 & Further questions or debate? \\
17 & Representative Carney. \\
18 & REPRESENTATIVE CARNEY: Thank you, \\
19 & Mr. Chairman. So if -- did I hear you or Erika say \\
20 & that the public is going to have access to all these \\
21 & portals; is that correct? \\
22 & CHAIRMAN HALL: So -- \\
23 & REPRESENTATIVE CARNEY: As we are drawing. \\
25 & Ms. Churchill, go ahead and answer that,
\end{tabular}
and I may weigh in.
MS. CHURCHILL: Okay.
So, Representative Carney, as this is set up currently, a member of the public can choose to look at what is happening at station one online. A member of the public could choose to come to the room and sit in the back and could see all four stations going simultaneously. But to the best of our knowledge, the public will not be standing behind a station, over your back, over staff's back, instructing, conversating, that kind of thing.

REPRESENTATIVE CARNEY: Okay. Just a follow-up.

CHAIRMAN HALL: The lady is recognized. REPRESENTATIVE CARNEY: So will that -each time a member comes and draws a map, is that archived for the public?

CHAIRMAN HALL: So the chair's understanding is that any map that's drawn by a member of this committee in this committee room becomes a public record.

Ms. Churchill, will you speak to that? MS. CHURCHILL: Yes, sir.

Our understanding, as well, because this map is being drawn in public before the committee,



Representative Carney asked if members of the public would know who was drawing maps at the specific time. Will they know, say, for example,

Representative Brockman is working on a map at this time; will they know that?

CHAIRMAN HALL: Ms. Churchill?
MS. CHURCHILL: At this time, the way it is set up, no, sir. They will know that -- they will be able to see what is being drawn on station one. From the audio, they would be able to hear your voice, your instructions, but there would not be a label that was there at all times to say that this is Representative Brockman speaking. We can try to work on something of that nature, if the committee would like.

CHAIRMAN HALL: The gentlemen is recognized.

REPRESENTATIVE BROCKMAN: But there would be something that says, at the end of the day, that this is Representative Brockman's map; is that correct?

CHAIRMAN HALL: Yes. So the chair will speak to that. There will be something on the final map that says who has drawn that map, at least the original part of it. It may be amended, but the
amendment will have the member's name on that. And we've done that in the past.

Ms. Churchill.
MS. CHURCHILL: And I might kind of step in just a little bit to remind everyone that the maps are not what the General Assembly enacts. It is the bill that is sponsored by a bill sponsor, just like every other bill in the institution. The amendments the same way. For an amendment offered by Representative Brockman, the amendment will state that it was offered by Representative Brockman. It will have attached with it a visual of the map, but it is still technically the amendment that the General Assembly is voting on. So yes, sir. All of that will come together.

CHAIRMAN HALL: Okay, members. Are there any questions that are just for Ms. Churchill, at this point? I know another one may arise, so she's not leaving.

Okay. If not, Ms. Churchill, thank you very much for your eloquent presentation.

Members, the chair is going to hand the gavel over to Representative Saine and stand for questions.

VICE CHAIR SAINE: All right,

Representative Hall. Are you ready?
CHAIRMAN HALL: I am. And, Mr. Chairman, if you will start with Representative Cooper-Suggs. She had a question that was appropriate for the chair, but I wanted to wait until I got over here to answer it.

VICE CHAIR SAINE: The chair would be happy to do that.

Representative Cooper-Suggs.
REPRESENTATIVE COOPER-SUGGS: I can wait. I can hold off for a moment. If that's all right.

CHAIRMAN HALL: Okay. Fair enough.
VICE CHAIR SAINE: Fair enough. Thank you, Representative Cooper-Suggs.

Representative Richardson, I think I've got you, and then maybe Representative Harrison.

REPRESENTATIVE RICHARDSON: Mr. Chairman, thank you for taking these questions. When we went to these public hearings, I heard over, and over, and over again several things, you know, communities of interest, you know, and the like. But one thing I heard repeatedly was -- is that the public wanted input after we came up with maps, before we voted on them. I know we're on a tight budget, a tight schedule, you know, with this, and it's going to be
tough. But is it your plan to have some public hearings after -- before we vote on the final maps, but while the maps are up for consideration?

CHAIRMAN HALL: Thank you, Representative Richardson. So what \(I\) will say is that I do anticipate there being some manner of public hearing on whatever the final proposed version of the map is, before the House approves that. And we've done that in the past.

But, you know, I want to speak to what I think is often missed sort of in the story about when or how we're going to do public comment this time around. And that is, the way that we're doing this, the way this committee, as well as the Senate committee, has decided to do this process is simply unprecedented.

The folks on this committee could decide as a committee that we're not going to do this out in the open. The law would allow committee members, we could just simply have somebody draw these maps behind closed doors, as has been done in the past. The law would allow the use of election data to be used in these maps, and there's no binding precedent, whatsoever, that prevents this committee from using election data in drawing those maps and
preventing the committee from doing it behind closed doors.

We are voluntarily saying we don't think that's the best way to do this. We think the best way to do this is in this committee room, with these screens, the technology to allow members of the public to watch what's going on, to listen to what we're saying as we're drawing these maps, to literally, in real time, watch us draw these maps. That has never been done before in a voluntary manner.

In 2019, you were here, Representative Richardson, and many members of this committee were here, we did that in some fashion because we were court ordered to. Gentleman's a lawyer, I think he'll agree, there's no binding precedent from that decision, and this committee would be free to go right back to having some consultant draw these behind closed doors, put them on the floor here, and vote on them. But we're choosing not to do that.

We're taking the unprecedented step of being as transparent as \(I\) believe we possibly can with the way that we're doing this committee process. Obviously, you know, things can always be done better. We want to do that, if we can. But
the unprecedented amount of transparency should not be lost, not only on the members of this committee, but the members of the public, as they watch us do our business.

REPRESENTATIVE RICHARDSON: Thank you.
VICE CHAIR SAINE: Thank you.
Representative Harrison.
REPRESENTATIVE HARRISON: Thank you, Mr. Chair.

Thank you, Chair Hall. Looking at -looking at Doctors Carter, Mattingly, et al.'s article -- and Erika Churchill mentioned this -they say they want -- that's the one part of the Stephenson v. Bartlett decision this analysis does not reflect its compliance with is the Voting Rights Act.

So I sort of skimmed Stephenson v. Bartlett, in anticipation of this meeting, and I'm just wondering, because that seems a very important point of the Stephenson decision is compliance with the Voting Rights Act. So how -- so we're starting with maps that don't take that into account at all, and I'm just wondering how we're complying with that?

CHAIRMAN HALL: Thank you for the question,

Representative Harrison. As the lady knows, this committee has made a decision to not use race at all in the drawing of our maps. I'll also note that, as you know, there's been a lot of litigation in this state over the redistricting process in general. We've had many, many lawsuits going back to when Democrats were in the majority and since Republicans have been the majority. It's really been no different. We've had many, many lawsuits.

What we've seen in those lawsuits, at least in the last few lawsuits that we've seen, is the plaintiffs in those suits that were trying to set aside those maps have said that there is no legally significant racially polarized voting in North Carolina. That's the plaintiffs and their own experts who are saying that.

We've drawn maps in both 2017 and 2019, not using racial data at all. And those maps have been approved -- groupings, rather -- the lady's question is specifically as to groupings, and I'm sort of answering the grouping and map question in one. But we've used groupings in 2017 and in 2019, not taking into account any sort of racial data at all. And courts have uniformly upheld those groupings that we've used, without using racial data.

So we are going to stick with the criteria of the committee and not consider any racial data at all. And based on the past precedent of doing this, we're confident that that will comply with the Voting Rights Act.

REPRESENTATIVE HARRISON: Follow up?
VICE CHAIR SAINE: You're recognized.
REPRESENTATIVE HARRISON: I appreciate that very thoughtful answer. I actually meant with regard actually to the whole mapping process, so you anticipated my question. But I'm looking at section two, that provides to states that "political subdivisions can't impose any voting qualification or prerequisite that impairs or dilutes, on account of race or color, a citizen's opportunity to participate in the political process to elect the representative of his or her choice."

So how do we know -- if we don't take into account race, how do we know that we're complying with the Voting Rights Act? And I kind of understood you to say that we're relying on past, but I'm just -- can you respond to that, please?

CHAIRMAN HALL: And that's the way -- the way we know is because we've already done it. We've done it before and courts have upheld the drawings
of these maps, the groupings and the districts themselves, without this committee using any racial data at all. We've done that twice now, so I'm confident that, without using racial data, we will comply with the Voting Rights Act.

REPRESENTATIVE HARRISON: One more followup, I think.

VICE CHAIR SAINE: You're recognized for follow-up.

REPRESENTATIVE HARRISON: Thank you.
And I guess a lot of my questions have to do with compliance with the Voting Rights Act, and I think I understand your answer is going to be the same, so I'll move to the Common Cause decision that you referenced earlier. And I appreciate the committee's commitment to transparency.

You did say it's an non-binding precedent, so you all don't anticipate -- do you anticipate using any of the ruling from the holding from that decision to guide this process? Do you all feel bound by any of that decision in terms of following the process that the court ordered?

CHAIRMAN HALL: From a strictly legal stance, it's not a binding precedent that anyone is required to follow. But as the lady knows, based on
the criteria the committee has adopted, that is something that this committee has to follow. And we've taken a lot of language out of that opinion and put it into this committee's criteria.

The computers that you see here and the online audio and video, none of that is binding. We are voluntarily doing that. You know, frankly, we learned from that case that perhaps a better process is one that is just like we're doing -- like we did then, like we're doing now, as an open and transparent process. So, you know, while it may not be binding, the committee has chosen to impose upon itself some of the principle outlined in the Common Cause case.

REPRESENTATIVE HARRISON: I think I'm going stop for now and let somebody else ask questions. I might have more. Thank you.

VICE CHAIR SAINE: Thank you,
Representative Harrison.
I have Representative Cooper-Suggs and then Representative Hawkins.

Representative Cooper-Suggs, you're recognized.

REPRESENTATIVE COOPER-SUGGS: Thank you so much, Mr. Chair, and Representative Hall. Thank you
so much.
My question was -- it goes back to the public's input and that the keen interest that they've had in this process, and we've seen that, you know, as I stated earlier, through the districting process as well as through the online portals too. Over 3000 people have responded, so we know that there's interest out there.

And so my question deals with, what steps are you proposing to assure that the public be involved in the efforts to create maps that represent them?

CHAIRMAN HALL: Thank you, Representative Cooper-Suggs, for the question. So I'll go back to what I said previously in response to, you know, what efforts are we making to make sure those folks can follow this process to make sure that it's doing whatever they feel like it should do. Because some of members of the public feel one way about what this process should ultimately end up with, and others feel in different ways. They're differing opinions.

Again, I think it's important to understand context of what's happened in the past, in this building, for the past 200 years when this body has
drawn maps. What has happened in the past is some outside entity, a consultant, goes and they draw the map behind closed doors. We would come into this committee, just like we're in right now, and throw a map down in front of the committee members and say, "Here's the map that we propose."

We're not doing that this time. What we're going to do this time is a more open and deliberative process for this committee. We will literally be drawing on the stations that you see, so members of the public across the state and, in fact, across the world, can log onto the website and watch these maps as we draw them in live fashion. And then, we've seen that the public comment portal is actually much more popular than the in-person public comment method, for one reason or the other. We get many more comments through that portal. We get many more emails, as members of this committee can attest. You receive emails all the time from folks and, you know, probably messages in many different ways and phone calls.

So the public has favored that online portal in telling us how they want to see this done. That portal is going to stay open throughout this process, so an individual sitting anywhere in our
state, and again, anywhere in the world, can sit and watch what's happening. Can literally send a comment right then, simultaneous with that drawing going on and say, "I'm watching station four. I don't like what \(I\) see in \(X\) district," or "I do like what I see in \(X\) district."

That's going to be time-stamped. The committee members are going to have a chance to read every one of those. And so, there is ample opportunity for members of the public to weigh in on these maps. Again, in the past, there's been little opportunity because the maps are already drawn. Folks can come in here and talk all they want, but the map has been drawn.

That's not the case here. We had public comment ahead of time. We're going to draw these in public. And I do anticipate at least some in-person public comment moving forward. With all of that said, I do anticipate at least some form of inperson public comment at the end of this.

REPRESENTATIVE COOPER-SUGGS: Follow-up question.

VICE CHAIR SAINE: You're recognized for a follow-up.

REPRESENTATIVE COOPER-SUGGS: I just want

appreciate you taking the time, and not only to sort of travel across the state for these public hearings, but to take these questions.

And so, one of the things that you mentioned that \(I\) want to follow up on is you said, "throughout this process." Meaning that the public comment portal will be opening throughout this -can you define what that is? Because I know I've actually received that question on our start and ending time, so that people know how to engage it fully, and sort of when their last time is to do so.

CHAIRMAN HALL: I anticipate that public comment portal being open until at least the time that this body adopts -- meaning the House and the Senate, the General Assembly, at least until the time the General Assembly adopts state House maps, state Senate maps, and congressional maps. That public comment portal will stay open until at least that time.

REPRESENTATIVE HAWKINS: Follow-up.
VICE CHAIR SAINE: You're recognized for a follow-up.

REPRESENTATIVE HAWKINS: Thank you, Mr. Chairman.

So a follow-up question is around I think,
you know, earlier, yourself or Erika Churchill mentioned hearings. And so, of course that's probably the most popular question is if we're going to have hearings after this. And you said that that would be up to this body.

Can you give us a time line in the way you see this and when we would kind of make that decision? And when you think that this body should, you know, between now and when we actually have to file, when we need to do that? Because I think, again, a lot of folks would want to know if we're going to sort of go back out on the road and talk about these again.

CHAIRMAN HALL: You know, I'll answer that by saying, you know, as the gentleman knows, we're on an extremely truncated time line, and that's nobody's fault in this body, on either side of the aisle. We just simply didn't get the data in time to do this in the way that it's been done in the past. And especially when you couple it with the fact that the maps aren't being drawn by a consultant somewhere and being delivered here, and us going and voting on them. We're going to do that.
We're going to take the time to draw these
in this committee, out in the open, and that takes time. As the gentleman knows, you know, we've drawn these maps together in years past. We haven't done it this year, for everybody listening at home. He and I, in the past, we've worked together on drawing maps in prior sessions.

So it's difficult to say and commit to some form of public comment afterwards because the reality is we've got to get these done in time for the state board of elections to get ballots finalized. I don't know, frankly, how long it's going to take us to draw these maps. I expect to hopefully start to get some gauge as we get in this thing tomorrow, but for all I know, you know, it may be the last week of October and we're still in this room trying to finalize one version of these maps.

And they really need to all be done in the sense that we need to have some final map in place before that public comment comes in, so that they can comment on whatever it is that we're considering.

Again, I will say that \(I\) do anticipate at least some form of in-person public comment. I just don't know the method, where it will be at, and how much it will be, because of our truncated time line.

But I will just again say, the online version has been extremely popular. We've had a lot more comments there than we've had at some of the inperson sites, where we didn't have a ton of people show up. Some sites, we did have a lot, and others, not so much.

So, you know, folks across the state still have the ability to directly communicate with us and they've got the chance to watch this happen live. So, you know, I am satisfied that the public's got ample opportunity to weigh in on what we're doing in.

REPRESENTATIVE HAWKINS: Thank you.
One last follow-up, Mr. Chairman.
REPRESENTATIVE SAINE: You're recognized for a follow-up.

REPRESENTATIVE HAWKINS: Again, to be clear, in 2019, when we worked on this project together on behalf of the citizens of North Carolina, we both had -- and everyone did -- had a keen interest in groupings because we understand that the way that counties are grouped directly relates to how districts are potentially drawn.

And so one thing that came up last time, but I think we can sort of potentially get ahead of
it this time, is how, you know -- how the committee will approve the entire map. Or is it possible for us to go and approve grouping by grouping, once we go through this process?

Because I think, again, if you remember, a division of the vote in the 2019 session, that would have given us the ability to isolate and really draw down on each individual grouping, which I think could be really helpful. But I wanted to see what the chairman thought about that ability for us to do that this go round, sort of understanding how we did operate in 2019.

CHAIRMAN HALL: You know, I anticipate, as I said earlier, taking up member's amendments that they have, in whatever format that they want to put forth, whether that be an entirely new map or a specific grouping, with the only caveat of saying we can't take up -- every member of this committee can't up with 50 or 100 amendments and us possibly have time to get this done.

So assuming that doesn't take place -which it hasn't in the past, and so I don't anticipate that being the case this time around -- I think it will be similar to what we saw last time, and that is, you know, members can put the amendment
in whatever form they really saw fit.
REPRESENTATIVE HAWKINS: I keep saying one last follow-up, Mr. Chairman.

VICE CHAIR SAINE: Well we'll give you one last follow-up.

REPRESENTATIVE HAWKINS: And so, you know, I, like you, native North Carolinian, and my birthday is in May, so \(I\) was always used to having a May primary. And I understood, you know, why we moved it to March, to play in the presidential. But this is a mid-term, and so, is there any appetite, potentially, to move the primary back to May, in the mid-term, versus the way we do it in presidential years? To give us the ample amount of time to work on these maps and have the potential public comment and have the fun that we did last go round on this project.

CHAIRMAN HALL: You know, I'll answer that question by saying you know, I haven't seen that appetite from the body. You know, I chair redistricting and rules and \(I\) will leave it at that. You know, I don't anticipate us moving that deadline back, I think for a number of reasons.

But one of the best reasons, I think, is folks have planned for that for some time now, and I

of the House can draw a district, will they be bound by the same criteria?

CHAIRMAN HALL: Yes. So to be clear, only a map that's drawn in this room is going to be considered by this committee. And on these computers in this room, you essentially are bound by that criteria because there is no racial data or election data that's loaded into these computers.

But to answer your question, yes. Everybody will be bound by the same criteria. It's not that a member that's not on the committee can go draw whatever map they want to and sort of get around our rules because they're not on the committee. They must follow the criteria.

REPRESENTATIVE HARRISON: For a follow-up?
VICE CHAIR SAINE: You're recognized for follow-up.

REPRESENTATIVE HARRISON: But it seems like if you come in, and you might have the material with you, it might not be actually loaded in the software, but you might actually have -- I just didn't know if there was some way to enforce that, or how do you plan to do that?

CHAIRMAN HALL: Well, you know, I don't plan to search every member who comes into this
committee room, nor do \(I\) want to do that. I don't want to know what some of you all have in there. But, you know, it's one of those things where, at the end of the day, the members of this committee are elected representatives. You're elected by your constituents to come up here and do a job. And, you know, I'm not going to -- I always try not to question people's motives when they do something, and I think this falls in that same vein.

So, you know, members can -- are free to handle those issues as they see fit, but they will follow the criteria in the sense that that data is not in these computers. But I'm not going to -- I'm not going to search their bags when they walk in.

VICE CHAIR SAINE: Recognized for a followup.

REPRESENTATIVE HARRISON: Thank you. Appreciate that.

And I think in 2019 we had a portal open for the public to draw maps. Are we planning on doing that this time around?

CHAIRMAN HALL: We are.
And if the chair will recognize
Ms. Churchill to speak to that.
MS. CHURCHILL: Yes, ma'am. Representative

Harrison, there will be two public terminals available for use starting tomorrow morning at 9:00 a.m. The public will be asked to schedule in advance, so that they can assure that a terminal is there during the time that they want to use it. They will be asked to bring a thumb drive, or other device where they can save their work, because the terminal will be reduced back to its original state when they leave.

REPRESENTATIVE HARRISON: I appreciate that.

I think \(I\) have two more questions, and they're quick, hopefully. I don't want to belabor the point, but in the last meeting we had on August 18th, several of us had gotten together and advocates had proposed a public participation process and a transparency process.

We also all received a letter from Caroline Fry, on Friday, that came from a large group of advocates asking for procedures to be followed by this committee. One of those is transparency related to third-party participation, disclosure of that. Is there any plan to the extent that folks are consulting with counsel or data people, or -- is there any plan for disclosure of that sort of issue?

guess I am one that envisioned, at first, that this committee would come in here for two weeks, gathered around the maps, work together in a non-partisan way to draw these maps out in the public, as you've stated. But I'm hearing now, and I'm understanding, member -- when you said any member can come in here from 9:00 to 5:00 Monday through Friday for two weeks -- correct me if I'm wrong.

CHAIRMAN HALL: That's right.
REPRESENTATIVE CARNEY: But any member of the legislature. House members in here, and I guess the Senate will be doing the same. So it is going to be beyond -- the map drawing will go beyond just the committee members; is that correct?

CHAIRMAN HALL: Yes. And one thing I do what to correct that you said. You said Monday through Friday for two weeks. I don't know if it's going to be two weeks or not. I don't know how long it's going to take. But -- and I understand why the lady is asking the question.

And, you know, having done this in a similar fashion in 2019, what ends up happening when you leave this committee room open for that long, it gives members an opportunity to come in and draw as they see fit. Just as you and I have the right as

1 House members to draft -- to have drafted whatever 2 bill we want to have drafted.
know, sometimes that may be preferable for our given caucuses, but unfortunately, maybe unconstitutional. So, in the same vein, I want to give every

So some of that will happen. You know, members may ask members from given districts to come
over and say, "Hey, what do you think about, you know, this given area? You know it better than I do." So that's going to be allowed, I mean, that teamwork, so to speak. But the reason for leaving it open so much is just to give members the opportunity to have their voice heard, so to speak, in this committee room.

REPRESENTATIVE CARNEY: So a follow-up?
VICE CHAIR SAINE: You're recognized.
REPRESENTATIVE CARNEY: If there are 120 members out of 120 -- let's say every member decided to come in and put something in to these maps, a little section, or their own, or whatever, their own districts, how do we pull all of that together? And I know staff will be the ones that will pull that so that it meets all of the criteria, and pass all the must, or whatever. Will we come up with one map, or two, or three maps that then the committee would vote on? I'm just asking.

CHAIRMAN HALL: I think we'll have multiple maps that the committee will vote on. You know, just like with any other committee, if you're not a member of this committee, if you want to draw a map, you're going to need to get a member of this committee to present that for you. Just like on any

and draw as you see fit. But we will make it known that all House members have the ability to come in here and draw maps during the committee period.

REPRESENTATIVE CARNEY: Thank you.
REPRESENTATIVE SAINE: Thank you.
Representative Hawkins.
REPRESENTATIVE HAWKINS: Yes, sir. Thank
you, so much, for the second opportunity to ask questions about redistricting. The first question is around the ability for multiple language speakers to use this portal and have their languages translated properly.

Representative Torbett and I were in Durham, and he was so kind to allow for a translator, a Spanish speaking translator, for our Spanish speaking population to take part. And maybe this is a question for staff, since we potentially may not have in-person public hearings in the future, how are multiple languages being transferred into the English language, so that we can decipher it and make sure that they have a part in the process?

VICE CHAIR SAINE: Ms. Churchill.
MS. CHURCHILL: Representative Hawkins, I'm not going to commit to anything, because I'm not
sure what we can do with the technology, but we are absolutely happy to look into what our options are, and report that back to the chair.

REPRESENTATIVE HAWKINS: Okay. I also heard you were Erika Churchill, and you can do all things, but just putting that out there.

MS. CHURCHILL: Speaking French is not one of those things.

REPRESENTATIVE HAWKINS: Okay. 10-4. Just

CHAIRMAN HALL: I believe she said not yet.
REPRESENTATIVE HAWKINS: Follow up, Mr. Chairman.

VICE CHAIR SAINE: You're recognized for a follow-up.

REPRESENTATIVE HAWKINS: And this is just, you know, full transparency, Mr. Chairman, so that the public can know that we're, you know, working with all cards up. Is there, you know, any -- I want to make sure that there have been no maps drawn outside of this building that any of us have been privy to. Can we say that unequivocally that that's been the case?

CHAIRMAN HALL: I can't speak for other members of this committee. What I'll say is that I
have not contributed to the drawing of any map, at all.

REPRESENTATIVE HAWKINS: Awesome. Thank you, Mr. Chair.

VICE CHAIR SAINE: Thank you.
Representative Warren.
REPRESENTATIVE WARREN: Thank you. I
propose this to the Chair, but probably going to deflect it to Ms. Churchill. Can you explain what the matrix is on page 2 of this stack of maps?

VICE CHAIR SAINE: Ms. Churchill.
REPRESENTATIVE WARREN: I knew it. She can do anything.

CHAIRMAN HALL: When we're using the word "matrix," generally I'm going to go ahead and deflect that one on over.

MS. CHURCHILL: So, Representative Warren, I'm not sure that it is a matrix in the form that many people think of when you say that word. But it was our attempt to keep up with how the group from Duke was allocating the options to create the eight different combinations for a fully assigned statewide map.

So when you see the A1 option in the Duke House 01 through 04 , that is associated with the
western part of the state, that northwestern corner that was unassigned in the fixed map. The option one, the combination is Surry, Wilkes, Alexander, for two members. And Alleghany, Ashe, Watauga, and Caldwell for two members. And so it's just, we wanted you all to know that we were trying to methodical and systematic, following the recipe. So it's just simply the designations they were using to tell us whether to add salt or to add sugar.

VICE CHAIR SAINE: Thank you, sir.
Any other questions for Chairman Hall?
Representative Brockman.
Representative Brockman, Representative Reives, and then Representative Harrison.

REPRESENTATIVE BROCKMAN: I know we're not considering race, but are we considering party registration when we're drawing the maps, as criteria?

CHAIRMAN HALL: Nope.
VICE CHAIR SAINE: Representative Reives.
REPRESENTATIVE REIVES: Thank you, Mr. Chair. I had a -- I wouldn't call them a series, but you may call them a series of questions --

VICE CHAIR SAINE: You're recognized for a series, sir.

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                                    Page 64
    REPRESENTATIVE REIVES: All right. Thank you.
I wanted to make sure, and I apologize if this is repeating anything, I don't know that $I$ have the answer in my head, and I know that when we walk out of this room, that I'm going to get all these questions, so I'm trying to kind of figure out where we are.
So on the drawing of the maps, I think my big question is -- and I've got to get my glasses back on because $I$ had to type this because I can't see, and I can't read anymore. See what you guys did to me in 10 months. I had 2020 vision when I got here.
But I guess first following up on Representative Hawkins' question, and again, it's just the question we've got to ask. He asked if there have been any maps drawn outside this building. I would like to know if there have been any maps drawn inside the building?
CHAIRMAN HALL: No. Great lawyer question. But no.
REPRESENTATIVE REIVES: Just making sure. I got to ask.
CHAIRMAN HALL: You know, again, I'm

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speaking for myself, as the gentleman understands. I can't speak for what other members have done, on either side of the aisle, or in the Senate, but I have not participated inside or outside of the drawing of any maps, for this session.

REPRESENTATIVE REIVES: That's good. I appreciate that. And going on that same issue, and you really, you and I have talked, and now I want to say publicly, you have been very good about keeping me up to date with what we're trying to do, how we're trying to do it, and I appreciate that. And we had this discussions, but \(I\) want to kind of get it clearer now.

So my concern is similar to Representative Harrison's concern because here seems to be the problem that you run into. So let's say somebody -and I'll use somebody who would never do this. I'm going to use Representative Bell. So let's say Representative Bell comes in and he's gone, and he's talked to, you know, non-member Billy Richardson, and Billy has said, "Oh, man. This would be a great map for you, John Bell, because, you know, you put all the democrats over here. You put all the republicans here. And then you got you all the black people here and the white people here, and all
that stuff." Obviously using racial and partisan data that we're not using.

And so then he says, "Here's my map, so you don't have to worry about drawing it." Well if Representative Bell, under what I'm hearing, brings that map in, sits it down in front of him at the terminal, and just draws it on a computer, then he, at that time, has been allowed to draw a map that's been drawn on a computer, so it can be used, but it's still using racial and partisan data.

And I'm just like Representative Harrison, I'm definitely not asking anybody to police anyone, but do we have anything in place that would kind of help prevent that? Because to me, that sounds an easy get around, in a legal sense, around the criteria that we've set up.

CHAIRMAN HALL: Well, you know, I would initially say that the problem that you face at the end of the day, as the gentleman already knows, and as I've said, I don't think I have the ability to police members of this committee, nor do I want to try to do that. I don't think it can effectively be done.

The committees of this -- the members of this committee have an elective duty to do things, I
think in the right way. And we have a set of criteria that we have used in here. I know I'm not going to bring in a map and sit down and draw it, but you know, the reality is, we're elected officials, and people will talk to us, and they call us all the time. And throughout this process, many members of the committee and the body are going to be told by folks, whether in their district or in the halls out here, what they think they should do.

And in fact, as many of the questions today have shown us, the members of this committee really want the public's comment. And, you know, those members of the public may say, "Representative Reives, I want you to draw the district this way and I want you to do this precinct." And that's up to you to determine how you want to handle doing that.

But at the end of the day, I think we've done all that we can, in the sense of we're only putting the data that's allowed to be used in the computers, in this room, and we've got a live audio feed, and a live video feed. I'm not sure that we can do a whole lot else, humanly, to prevent any sort of noise, so to speak, from coming in, other than doing those things.

REPRESENTATIVE REIVES: Is it possible,
just as a follow-up, that we could at least prevent the bringing in of a physical map to draw from? Is that something possible?

CHAIRMAN HALL: Yeah. You know, and you and I talked about this the other day, and I thought it was a great question, something I hadn't really thought about. And, you know, and I certainly, I see your point. But what \(I\) don't want to get into, as the chair of this committee, is when, you know, Representative Warren comes in here and he's got this big spread, me, you know, telling the sergeant in arms to take Representative Warren, you know -or take his map away from him or take him out of this committee room. You know, I want to avoid that.

And, you know, it's one of those things that there might be a scenario where, you know, you draw one map in here -- you've been through this before -- you draw a map, you have it printed out, and you might take it with you to study it and think about it, and to determine what you want to do to perhaps change it. Maybe you want to take it to your constituents and say, "Look, here's what I'm thinking. What do you think about this?" And maybe they give you input.

And you might want to bring that very map back in here, that you drew in this committee, and sit down and, based on the changes -- the input, rather -- the input you've got from other folks, and make those changes. And I don't know how we would -- again, \(I\) go back to the word policing it -- how I -- I can't stand over somebody's shoulder and say, "Now that's not the map you drew in here. That's a map -- I don't know where that came from." I just don't -- I don't think it's possible to do that.

But what I can tell the members of this committee, as the chair, I won't be brining any maps in here to draw off of. But \(I\) want to be clear that when members of the public that are watching these live video feeds, or members who are sitting in the back, they're going to see members of this committee walking around with maps in their hands. Some people like to have a sheet of paper in front of them. You know, you're probably like me. I like to read, you know, a statue printed out, rather than read it on a computer screen, so that \(I\) can write on it, and think about it a little easier.

So, because of that, I'm afraid, you know, even if we tried to do that, the optics of removing members from this committee, and people seeing
people walking around with maps that have been printed out because they were drawn in here, I think it ultimately results in the best path forward to just say, you know, look folks, the map you draw has got to be the one that you do in here and nowhere else. And that's up to the members and their integrity as to how they want to handle that.

REPRESENTATIVE REIVES: And I would say then, based on that, I'm assuming we will be instructing members that you are not to use racial or partisan data in the drawing of the maps that you do in here.

CHAIRMAN HALL: Absolutely.
REPRESENTATIVE REIVES: And I would also, I guess, say that once we're down to the maps that we're going to be voting on, I mean, I would think that's something that we can ask members when they're presenting a map. You know, if a member comes up and says, "This is my map we're voting on," you could say, "Okay. You didn't use racial or partisan data," and that won't be considered out of line.

CHAIRMAN HALL: I think that's, you know, a fair question for any member of this committee or anyone in the House to ask those very questions.

REPRESENTATIVE REIVES: All right. Well then that gets us to the next question I've got. We've got criterion that we've put in place that we set up for the whole map drawing process. What my question is is what criteria are we going to use to choose between grouping options? Are we going to have some plain set out criteria saying this is what gives us the best grouping options?

CHAIRMAN HALL: So the committee is not going to adopt any specific of the options and groupings. We have said, as I said a moment ago when \(I\) was chairing, the only groupings that we're going to consider, are those that's in this packet. But as you know, and the committee members know, there are multiple possible groupings within that packet. We're not going to vote on which one members have to use.

So that's going to be up to the members of this committee what combination of groupings each member wants to use in drawing their maps. Within that, there might be, you know, one particular grouping, or set of groupings, that somehow results in a map that more fairly meets the criteria, over some other set of groupings. But that's -- you know, in large part, some of that is subjective.

1 Not all of it, but some of it is subjective.
But it's going to be up to the committee members to decide what set of groupings they want to use. We're not going to limit the committee to any one combination of groupings.

REPRESENTATIVE REIVES: Thank you for that. And back to some of Pricey's questions on the Voting Rights Act. Because I'll be the first to say, I don't practice in that area, so I don't profess to completely understand what we're supposed to do.

I think what my question would be is, what do you feel like our obligations are under the Voting Rights Act, at this point? Because I understand that you're saying that we won't be using racial data to determine what those districts look like, initially, which \(I\) think was done before. So what do you think our obligations would be and how are we going to comply?

CHAIRMAN HALL: Well, obviously, you know, we're obligated to comply with section two of the Voting Rights Act. But as I said earlier, we've seen a lot of litigation in this state, and you've followed that, I've followed it. I can't say I've read every line of every single case, because that's all you would ever do, you know, if you were going
to go do that. But I've read a lot of it, and in my opinion, what the plaintiffs have said -- so those folks who have tried to set aside maps -- have said -- and their experts, by the way. The experts that they hired to go to court for them. They've all said that there is no legally significant racially polarized voting in North Carolina.

That's the evidence in the record from past cases that we have. In my opinion, that's what the Covington Court found. So Judge Wynne found that there was no legally significant racially polarized voting in North Carolina. But certainly, the plaintiffs and their experts made that claim.

So without that, we believe, as we've done in the past two sessions that we've redrawn, not considering race is actually, not only proper, but it's the best way forward to make sure that we are complying with, not only the Voting Rights Act, but other state and federal laws.

REPRESENTATIVE REIVES: And also, based on the court decisions, I heard you earlier say that we are choosing not to use partisan data, but since there's no binding precedent -- was your statement about that -- then what obligations do you feel like we have, based on the case that talked
about partisan gerrymander? Do you feel like that we have any obligations based on that case, or that's just something we all have to talk about?

CHAIRMAN HALL: It's not a legally binding precedent. It's not an appellant, because the gentleman knows it wasn't an appellate court that made any of those decisions. So to answer the technical aspect of your question, it is not legally binding.

However, we have adopted some of the opinion in our criteria, so to the extent that we adopted it into our criteria, that's binding on this committee. We've also taken some things that we didn't really adopt as criteria, but simple instructions to the committee that was in that case, and that is all of these computer stations that we see around, the live audio, live video, we're voluntarily doing that.

Again, not binding on us at all. There is certainly no state law that requires this body to have TV cameras to watch us do anything. I mean, we can have -- we have to have open meetings, when the body's meeting, but there's no law that requires us to be transparent in this process. We are voluntarily choosing, at every single step along

1 this line. We are going above and beyond what the

3 transparency.
REPRESENTATIVE REIVES: All right. And I think I've got one follow-up that may be more appropriate for staff, but if you'll just determine, Mr. Chair, who is best to do it. Because while you were talking, I was also thinking back on the Voting Rights Act. I guess my question is, how do we know we're in compliance with the Voting Rights Act with a map then, if we're not using racial data during this time?

CHAIRMAN HALL: Well, again, I would fall back on what we've done in the past. And we have done this in the past in the very method -- with the very method that we're using right now. We haven't used racial data. And those courts have upheld that process. So we're essentially sticking with what works.

As the gentleman knows, this is an ever-evolving body of law around redistricting. All we can do is try to stick with what we know works based on past precedent. And in this particular instance, we're confident, just as we've done in the past, that we should not use racial data at all, and
that doing so, we'll be in compliance with all state and federal laws.

REPRESENTATIVE REIVES: Okay. And I'm going to repeat what I think I'm hearing, and just tell me if I'm accurate. So, if I'm hearing you correctly, we won't be doing anything proactively to see if we're in compliance. What we'll be doing is we'll draw maps, and it's our believe that those maps will comply. And then if the courts tell us they're not in compliance, then that would be when remedial measures would be taken.

CHAIRMAN HALL: In my opinion, not using racial data will ensure that we are in compliance with those laws. So yes.

REPRESENTATIVE REIVES: Okay. Got it. And when we get down to the point on voting on these maps, I mean, are we going to do any kind of culling -- I'm with you in the sense I want this to be more of an efficient process, and if I'm hearing correctly, what our process is, in theory, 120 members can walk in here and draw 120 maps, and then can have 120 amendments, which could really kind of have us all over the place. Is there anything that we're doing to kind of cull this down so that we're not voting on 120 maps when we make our committee
vote?
CHAIRMAN HALL: Well, you know, the gentleman may want to address that in caucus, before we vote on these maps. But outside of that, you know, it's one of those things that I don't know how many we're going to have. I don't want to sit here and say, now look, we're not going to consider -we're only going to consider 10 maps, so come up with your best 10. I don't want to do that. I want to give members of this body who are elected the opportunity to be heard.

You know, on the floor, people can put forth amendments all day, just like, you know, we see them often do. And so we don't want to limit that. But what I'll say is, you know, if we get in here as a committee, and we've got a ton of these amendments and proposed maps coming in, at some point -- and the chair -- I will say, I will talk to you about this ahead of time -- at some point, you and I are going to have to get together and say, you know, we're going to have to talk to the folks in our respective caucuses and limit the number of maps and amendments that we're putting forth in this committee, and tell them, save it for the floor. If you want to put it forth on the floor, they're

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certainly welcome to do that.
But what I'll commit to is an interactive process with you, especially, and really all the members of this committee, that we try to get it done in an efficient process. And that may take, you know, you and I putting our heads together and figuring out which amendments we should take up on this committee, and which may need to wait for the floor.

REPRESENTATIVE REIVES: All right. Well I think those are my questions. Thank you.

VICE CHAIR SAINE: Thank you, sir.
Next, Representative Harrison.
REPRESENTATIVE HARRISON: Thank you, Mr. Chair.

And Mr. Chair, I apologize for the barrage. I think these are really simple questions. If I heard Erika correctly, the public can draw maps on public terminals that are set up, but not in this room or in 544; is that accurate?

REPRESENTATIVE SAINE: Ms. Churchill.
MS. CHURCHILL: Yes, Representative Harrison. That is accurate. The drawing stations in room 544 and 643 are reserved solely for members of the General Assembly.

REPRESENTATIVE HARRISON: So as a follow-up
to that, did I hear that we're only considering maps that are drawn in this room and in 544? And if that's the case, then what are we doing with the public's maps?

CHAIRMAN HALL: So --
Mr. Chairman, sorry.
REPRESENTATIVE SAINE: Go ahead.
CHAIRMAN HALL: So if a member of the public comes in, and as I've said earlier, just like any other bill, you know, one of your constituents or the member of the public may say, "Look, Representative Harrison, here's what I think you should do," you're obviously welcome to take a look at that. And herein lies sort of the friction between the position that Representative Reives talked about, and what you're saying right now.

So if I'm to say, as the chair of this committee, you cannot bring a map in here, period, well, if one of your constituents says, "Representative Harrison, I went to the portal downstairs, \(I\) drew this map, and \(I\) really think this is a good idea," and you agree with it, if we have that rule in place, you wouldn't be able to bring that map in this room. You wouldn't be able to take

1 into account the -- and that's literally public input that you wouldn't be able to take into account.

So the maps that we take up must be drawn in this committee room. Now, we'll talk about maps that are drawn, you know, downstairs, but with the same data loaded into the computers, and how we'll go about handling that, you know, if a member literally wants to take one of those up. But what I anticipate right now is requiring that it be drawn in this committee room.

REPRESENTATIVE HARRISON: I appreciate that, and \(I\) just have one question and I think I'm done. I must have missed the congressional map discussion. Have we talked about that? When does it happen?

CHAIRMAN HALL: So one thing I do want to clarify. So in this room, we won't be drawing any state Senate maps. Just as, you know, we're not going to let them screw up our state House maps, so they're not going to be able to draw ours. The congressional maps, so I think technically, and staff can correct me if I'm wrong, I think the data is in there right now to be able to draw a congressional map.

that, that the state board of elections can still give us turnaround. But the mindset that I've had is let's get this done by the end of October, that way everyone gets ample time to know what districts are going to look like and the state board of elections can get things done.

But, you know, the problem is, you know, we are drawing the whole map for the first time, I guess since 2011. And what we've done, you know, since I've been in this body -- I've been through this process a number of times, but it's always typically been with a more limited part of the map that we're required to redraw. So that's one of the issues. And that is, this is so unprecedented, we have never done it this way. This body has never drawn the whole map in complete public view with live audio, live video. We don't know how long that process is going to take. But, you know, the goal is to get it done by the end of October. REPRESENTATIVE SAINE: Representative Carney.

REPRESENTATIVE CARNEY: Just one last
question, and Mr. Chairman, thank you so much for your indulgence. And we're about to beat the Senate on this committee meeting length of all of us being
able to answer questions, so I appreciate that. I'm just hung up on the maps being drawn in this room, and I'm trying not to be. Because on one hand we're stating that the only maps we will consider will be the maps that are drawn on these computers, in these rooms. But now I'm hearing that it doesn't preclude someone coming to me, from the public, and giving me information and a map, and then I come in here and transport it into the portal.

That takes that to the level of there can be maps -- and help me understand if I'm wrong -there can be maps drawn outside of this building, from any group, and given to a member, or a group of members, and they can come in and put it into the portal. It would be under their name. Is that correct?

CHAIRMAN HALL: Well, I guess in a literal sense, you certainly could hear from somebody else, and come in here, and draw a map. And there's really nothing we can do about that. It's a first amendment issue. The members of this committee have a first amendment right to go talk and hear from their constituents. Their constituents have a first amendment right to talk to their legislatures. Well
even if you're not their legislature. The folks of this country have a right to say what they want to, and if you're walking down the street, they can come up to you and say, "Representative Carney, here's what I think you should do."

It's then up to you, as a member of this committee, to handle that in whatever way you see fit. Just like you would a bill. Some individual in your district, or not your district, may write out a bill for you. You're not going to go introduce that, obviously, and us vote on it to go through the bill drafting process. So in some ways, you know, it's very similar.

The other thing that I'll say though, I think what may be getting lost in the weeds is, when you actually sit down to do this, this is a big state. There's a bunch of precincts on the congressional maps. You have to get things -- with zero deviation it's going to be very difficult to sit down and memorize an entire map, and come in here and sit down and pinpoint, you know, wherever an outside map was that you saw.

But I think, fundamentally, the issue is going back to the law would allow exactly what you're saying, but even on another level. It would
allow you to go hire somebody to draw whatever map you felt like was the best map, and bring it in here, and put it before this committee. But we're going above and beyond what the law requires, in terms of transparency. We're going to require them to be drawn in here.

REPRESENTATIVE CARNEY: Thank you.
REPRESENTATIVE SAINE: Any other questions for Chairman Hall? Seeing none, I believe the business of the committee is completed today.

Is that right, Chairman Hall?
CHAIRMAN HALL: That's right, Chairman Saine. And the members, we'll be back in here at 9 o'clock in the morning. We'll gave in, and members will be able to draw. And let's see how much we can get done tomorrow and perhaps part of Thursday and see if we need to work on Friday.

REPRESENTATIVE SAINE: You've heard the gentleman. Come in tomorrow ready to work. With that --

I'm sorry. Representative Carney.
REPRESENTATIVE CARNEY: So that turned into one more question.

VICE CHAIR SAINE: You're recognized.
REPRESENTATIVE CARNEY: Does that mean that

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\hline 1 & CERTIFICATE OF TRANSCRIPTIONIST \\
\hline 2 & I certify that the foregoing is a true and \\
\hline 3 & accurate transcript of the digital recording \\
\hline 4 & provided to me in this matter. \\
\hline 5 & I do further certify that I am neither a \\
\hline 6 & relative, nor employee, nor attorney of any of the \\
\hline 7 & parties to this action, and that I am not \\
\hline 8 & financially interested in the action. \\
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[^0]:    $\dagger$ © 1993 by Richard H. Pildes and Richard G. Niemi. All rights reserved.

    * Professor of Law, University of Michigan. A.B. 1979, Princeton; J.D. 1983, Harvard. Ed.
    ** Professor of Political Science, University of Rochester. B.A. 1962, Lawrence University; Ph.D. 1967, University of Michigan. - Ed. For first-rate technical assistance, such as production of the maps and data sets included herein, this article relies on Election Data Services, Inc., Washington, D.C. and, more specifically, the efforts of Kimball Brace, Doug Chapin, and Jeff Macintyre. For extremely helpful comments on earlier drafts, we would like to thank Alex Aleinikoff, Steven Croley, Bernard Grofman, Sam Issacharoff, Larry Kramer, Jeffrey Lehman, Deborah Malamud, Harold Stanley, and the participants in the Yale Legal Theory Workshop. We were also fortunate to have exceptionally skillful research assistance from Jeffrey Cnstello and Michael Heel.

    1. Pub. L. No. 89-110, 79 Stat. 437 (codified as amended at 42 U.S.C. §§ 1971,1973 to 1973bb-1 (1988)).
    2. 113 S. Ct. 2816 (1993).
[^1]:    3. 113 S. Ct. at 2827.
    4. 113 S . Ct. at 2832.
    5. See 113 S . Ct. at 2832.
    6. This constraint is found in numerous state constitutions and statutes, although it is not judicially enforced with a great deal of frequency. See infra text accompanying notes 146-52 (discussing state compactness requirements and their enforcement).
    7. See, e.g., Bruce E. Cain, The Reapportionment Puzzle (1984); Robert G. Dixon, Jr., Democratic Representation: Reapportionment in Law and Politics (1968); Bernard Grofman, Criteria for Districting: A Social Science Perspective, 33 UCLA L. Rev. 77 (1985) [hereinafter Grofman, Criteria for Districting]; Bernard Grofman, Would Vince Lombardi
[^2]:    Have Been Right If He Had Said: "When It Comes to Redistricting, Race Isn't Everything, It's the Only Thing'?, 14 Cardozo L. Rev. 1237 (1993) [hereinafter Grofman, Vince Lombardi].
    8. Shaw, 113 S. Ct. at 2842 (White, J., dissenting).

[^3]:    9. Section 2, for example, explicitly speaks in racially conscious terms: "The extent to which members of a protected class have been elected to office . . . is one circumstance which may be considered" in assessing a dilution claim. 42 U.S.C. § 1973(b) (1988). There is no reason to assume, of course, that redistricters were not race conscious before the VRA.
    10. 42 U.S.C. § 1973 (1982).
    11. 478 U.S. 30 (1986).
    12. The Act protects racial groups and, since 1975, language-minority groups, 42 U.S.C. §§ 1973(a), 1973b(f)(2) (1988) (defined as Asian Americans, American Indians, Alaskan natives, and persons of Spanish heritage in 42 U.S.C. § 1973l(c)(3) (1988)).
    13. 478 U.S. at $50-51$. A major question the Court continues to leave open is whether plaintiffs can bring claims seeking "influence districts" - that is, districts in which the plaintiffs" group is not large enough to control election outcomes in a district, but large enough so that an alternative to the current system would give it significant enough influence, in conjunction with supportive coalition members, to control outcomes. See Voinovich v. Quilter, 113 S . Ct. 1149, 1155 (1993) (assuming, without deciding, viability of such claims); Growe v. Emison, 113 S . Ct. 1075, 1084 n. 5 (1993) (leaving question open); Gingles, 478 U.S. at 46-47 n. 12 (leaving question open); see also Prosser v. Elections Bd., 793 F. Supp. 859, 870 (W.D. Wis. 1992) (three-judge court; per curiam) ("The creation of a stronger 'influence' district, however, is a modest plus from the Act's standpoint."). For discussion of influence-district claims, see BERNARD
[^4]:    Grofman et al., Minority Representation and the Quest for Voting Equality 11718 (1992); J. Morgan Kousser, Beyond Gingles: Influence Districts and the Pragmatic Tradition in Voting Rights Law, 27 U.S.F. L. Rev. 551 (1993); Allan J. Lichtman \& J. Gerald Hebert, A General Theory of Vote Dilution, 6 La Raza L.J. 1 (1993).
    14. 478 U.S. at 51.
    15. 478 U.S. at 56.
    16. 478 U.S. at 50-51. The best study of the emergence and content of the racial-polarization requirement is Samuel Issacharoff, Polarized Voting and the Political Process: The Transformation of Voting Rights Jurisprudence, 90 Mich. L. Rev. 1833 (1992).
    17. More precisely, Gingles holds that vote dilution is shown only if, "under the totality of the circumstances," the challenged electoral mechanisms "result in unequal access to the electoral process." 478 U.S. at 46.
    18. When multiple candidates are elected from a single jurisdiction, a cohesive minority population might constitute a significant fraction of the district and yet elect no members. That is, the majority population would always outvote them. See Lani Guinier, The Triumph of Tokenism, 89 Місн. L. Rev. 1077, 1094 (1991); Issacharoff, supra note 16, at 1839-40.
    19. Cf. Richard G. Niemi et al., The Impact of Multimember Districts on Party Representation in U.S. State Legislatures, 10 LEGis. StUd. Q. 441, 443-46 (1985).
    20. See generally Samuel P. Hays, The Politics of Reform in Municipal Government in the Progressive Era, in American Political History as Social Analysis 205, 215-16 (1980).
    21. See J. Morgan Kousser, The Undermining of the First Reconstruction: Lessons for the Second, in Minority Vote Dilution 27 (Chandler Davidson ed., 1984); J. Morgan Kousser, The Voting Rights Act and the Two Reconstructions, in Controversies in Minority Voting 144 (Bernard Grofman \& Chandler Davidson eds., 1992) [hereinafter Kousser, The Voting Rights Act] ("The third means of accomplishing the counterrevolution [against Reconstruction], structural discrimination, involved such tactics as gerrymandering, annexations, the substitution of at-large for single-member-district elections . . . and the adoption of nonstatutory white primaries.").

[^5]:    22. See Grofman et al., supra note 13, at 109 ("Indeed, since Gingles was decided in 1986, as of mid-1991 only a handful of Section 2 cases involving challenges to single-member districts had been decided, and only four of these had been reviewed at the appellate level.") (citations omitted).
    23. Growe v. Emison, 113 S. Ct. 1075, 1084 (1993). In a major VRA decision, a three-judge district court had anticipated this holding while recognizing that courts could not directly apply Gingles to single-member districts without modification. See Jeffers v. Clinton, 730 F. Supp. 196 (E.D. Ark. 1989), affd., 489 U.S. 1019 (1991):

    Thornburg and Smith cannot be automatically applied to the single-member context. . . . But the basic principle is the same. If lines are drawn that limit the number of majority-black single-member districts, and reasonably compact and contiguous majority-black districts could have been drawn, and if racial cohesiveness in voting is so great that, as a practical matter, black voters' preferences for black candidates are frustrated by this system of apportionment, the outlines of a Section 2 theory are made out.
    730 F. Supp. at 205.
    24. As one example, this Term the Court will address challenges to the redistricting of Florida's single-member house and senate districts. 62 U.S.L.W. 3261 (Oct. 12, 1993) (summarizing the dispute in Johnson v. De Grandy, No. 92-519, prob. juris. noted, 113 S. Ct. 1249 (1993)). A principal issue in that case is precisely how Gingles should be applied to single-member districts. The State of Florida argues that proof of the Gingles preconditions is necessary, but not sufficient, in single-member district challenges. As the reply brief notes: "[P]roof of the Gingles preconditions simply does not make out a prima facie case of vote dilution in the singlemember context. The Gingles preconditions are plainly relevant in the single-member context because they establish causation, but they cannot play the same role they do in multimember district cases." Reply Brief for Appellant at 3, Johnson v. De Grandy, No. 92-519, prob. juris. noted, 113 S. Ct. 1249 (1993).
    25. Thornburg v. Gingles, 478 U.S. 30, 50 (1986); see also Grofman ET al., supra note 13, at 115-16 ("[T]wo of the Gingles prongs can probably be applied with little or no modification. . . . The first prong, however, is more difficult to modify in a suitable way.").

[^6]:    26. Pope v. Blue, 809 F. Supp. 392, 394 (W.D.N.C.) (three-judge court), affd., 113 S. Ct. 30 (1992).
    27. 809 F. Supp. at 394.
    28. Compare Gingles, 478 U.S. at 40, noting that no more than four percent of North Carolina's legislators were black in 1982 with Joint Center for Pol. \& Econ. Stud., Black Elected Officials: A National Roster, 1991, at xxiii tbl. 3 (20th ed. 1992), finding that the number of black North Carolina state legislators as of January, 1991 was 19 , which is $11 \%$ of 170, the total number of legislators. 478 U.S. at 40.
    29. Shaw v. Reno, 113 S. Ct. 2816, 2820 (1993).
    30. Section 5 of the VRA prohibits the implementation of any changes affecting voting in certain jurisdictions that the Act covers without the approval of the Attorney General or a special three-judge federal district court in the District of Columbia. To receive preclearance, a
[^7]:    36. Indeed, $80 \%$ of the district's residents live in cities with populations of 20,000 or more. In contrast, the other majority-black district, District 1, is predominantly rural. More than $80 \%$ of the residents in that district live outside cities with populations of 20,000 or more. Brief for Federal Appellees at 5 n.2.
    37. See Shaw, 113 S. Ct. at 2841-42 n. 10 (White, J., dissenting); see also text accompanying notes 116-32.
    38. As long as states comply with their obligation to avoid minority-vote dilution, they generally retain policymaking discretion to draw their districts in accordance with their own assessment of state policy. States have no duty to "follow" the Attorney General's recommendations for the design of districts; in fact, the Attorney General does not make such recommendations. Although the Attorney General must determine that a majority-minority district is generally feasible to deny preclearance under $\S 5$, this geographic determination is general and does not define any specific district design or location. See Drew S. Days, III \& Lani Guinier, Enforcement of Section 5 of the Voting Rights Act, in Minority Vote Dilution, supra note 21, at 167, 171 ("[T]he department objective has not been to dictate any particular result.").

    The Justice Department has consistently maintained that the VRA does not require extremely contorted and convoluted districts. As Drew Days, now Solicitor General, and Lani Guinier wrote in 1984, faced with a "set of facts in which it can be shown that no fairly drawn redistricting plan will result in minority control of one district because of dispersed minority residential patterns," the Justice Department's "response would not be to demand that the jurisdiction adopt a crazy-quilt, gerrymandered districting plan to ensure proportional minority representation." Id. At the same time, the § 5 preclearance review is limited to determining whether minority-vote dilution is taking place. If it is not, the Justice Department does not believe it has the authority to reject a plan merely because it employs contorted districts. See, e.g., Letter from John R. Dunne, Assistant Attorney General, Civil Rights Division, U.S. Department of Justice (Nov. 18, 1991) (preclearing Texas congressional redistricting plan at issue in Terrazas v. Slagle, 789 F. Supp. 828 (W.D. Tex. 1991), aff., 112 S. Ct. 3019 (1992)), quoted in Brief Amicus Curiae of the Republican National Committee in Support of Appellants at 9-10 n.6, Shaw v. Reno, 113 S. Ct. 2816 (1993) (No. 92-357); see also John R. Dunne, Remarks of John R. Dunne, 14 Cardozo L. Rev. 1127 (1993).
    39. Political Pornography-II, Wall St. J., Feb. 4, 1992, at A14.
    40. I-85 No Route to Congress, Raleigh News \& Observer, Jan. 13, 1992, at A8.

[^8]:    41. Reading the "Inkblot," Raleigh News \& Observer, Jan. 21, 1992, at A8.
    42. See Grofman, Vince Lombardi, supra note 7, at 1261 (leading expert witness in votingrights cases describing his own affidavit in which he characterized North Carolina District 12 as a "crazy-quilt" lacking "rational state purpose").
    43. A third kind of voting-rights claim, which was the first to arise historically, is a less frequent litigation subject today. This is the claim of a direct and outright deprivation of the individual right to vote, as in cases that challenged poll taxes and literary tests. See, e.g., Guinn v. United States, 238 U.S. 347 (1915).
[^9]:    44. City of Mobile v. Bolden, 446 U.S. 55, 83 (1980) (Stevens, J., concurring).
    45. See infra text accompanying notes 90-96.
    46. At several points, the Court directly signals its awareness that it is defining two distinct types of claims. The clearest example arises in the Court's discussion of United Jewish Orgs., Inc. v. Carey, 430 U.S. 144 (1977) [hereinafter UJO], the leading equal protection vote-dilution precedent.

    In that case, New York, in response to Voting Rights Act violations, had adopted a 1974 reapportionment plan that redesigned state senate and assembly districts in Kings County. The new plan did not change the number of districts with nonwhite majorities, but the new districts redistributed minority voters in ways likely to enhance the effectiveness of their voting power. One result, however, was that the 30,000 -member Hasidic Jewish community in Williamsburgh, which the previous plan had located entirely in one assembly and one senate district, was fragmented into two assembly and senate districts. On behalf of these voters, plaintiffs brought a complaint charging New York with violating the Constitution by deliberately revising its reapportionment plan along racial lines.

    Writing for the plurality, Justice White rejected this claim on the ground that states can engage in race-conscious districting as long as they do not unfairly dilute the voting power of any racial group. See 430 U.S. at 165 ("[T]here was no fencing out of the white population from participation in the political processes of the county, and the plan did not minimize or unfairly

[^10]:    cancel out white voting strength."). Treating the Hasidic Jewish community as part of the white community for constitutional purposes, the plurality noted that the county's population was $65 \%$ white and that the new reapportionment plan left white majorities in control of $70 \%$ of the assembly and senate districts in the county. In the absence of vote dilution, the intentional use of race was not discriminatory and hence not a constitutional violation. 430 U.S. at 166 ("[A]s long as whites in Kings County, as a group, were provided with fair representation, we cannot conclude that there was a cognizable discrimination against whites or an abridgment of their right to vote on grounds of race.").

    Shaw distinguishes UJO by categorizing it as a vote-dilution case and by recognizing an altogether different kind of claim: "UJO's framework simply does not apply where, as here, a reapportionment plan is alleged to be so irrational on its face that it immediately offends principles of racial equality." Shaw v. Reno, 113 S. Ct. 2816, 2829 (1993). Unlike UJO, here the allegation is "that the plan, on its face, was so highly irregular that it rationally could be understood only as an effort to segregate voters by race." 113 S . Ct. at 2829. Hence, even in the absence of vote dilution, Shaw holds that the deliberate use of race can constitute unconstitutional discrimination with respect to voting rights.
    47. Shaw, 113 S. Ct. at 2824.
    48. Brief for Appellants at 62, Shaw v. Reno, 113 S. Ct. 2816 (1993) (No. 92-357).
    49. Brief for Federal Appellees at 16a app., Shaw (No. 92-357).
    50. 113 S. Ct. at 2838 (White, J., dissenting).
    51. 113 S . Ct. at $2826-27$.
    52. 113 S. Ct. at 2826, 2829.
    53. 113 S. Ct. at 2820, 2827.
    54. 113 S. Ct. at 2818, 2825-26, 2831, 2843, 2845, 2848.
    55. 113 S. Ct. at 2818, 2829, 2832, 2842.

[^11]:    56. 113 S . Ct. at 2827.
    57. Our use of the term condemn is meant to focus on the ultimate question of whether a race-conscious intent invalidates such districts under the Constitution. Analytically, there are two stages to such an inquiry: whether Shaw requires strict scrutiny for such districts, and, if so, what kinds of justifications might suffice. Whichever way these formal questions are resolved, we believe Shaw does not stand for, or portend a sweeping proscription on, intentional race-conscious districting that does not involve actual vote dilution.
    58. See, e.g., Chisom v. Roemer, 111 S. Ct. 2354, 2376 (1991) (Kennedy, J., dissenting) (writing separately solely to reserve question of the constitutionality of § 2 ).
    59. See T. Alexander Aleinikoff \& Samuel Issacharoff, Race and Redistricting: Drawing Constitutional Lines After Shaw v. Reno, 92 Mich. L. Rev. 588, 644 (1993) ("The Court's focus on a district's shape rather than the State's use of a racial classification will make the turn toward Bakke in the voting-rights field possible.").
[^12]:    60. The most significant example is the Court's discussion of the plurality opinion in United Jewish Orgs., Inc. v. Carey, 430 U.S. 144 (1977). The UJO plurality held that "neither the Fourteenth nor the Fifteenth Amendment mandates any per se rule against using racial factors in districting and apportionment," 430 U.S. at 161 ; that "the permissible use of racial criteria is not confined to eliminating the effects of past discriminatory districting or apportionment," 430 U.S. at 161; that "a reapportionment cannot violate the Fourteenth or Fifteenth Amendment merely because a State uses specific numerical quotas in establishing a certain number of black majority districts," 460 U.S. at 162; and that, in the absence of vote dilution, the deliberate use of race to enhance underrepresented minority groups casts "no racial slur or stigma with respect to whites or any other race . . ." 430 U.S. at 165. Shaw does not directly take issue with any of these principles, distance itself from them, or suggest UJO is no longer authoritative. Instead, Shaw concludes that UJO reached a certain holding, conditioned on particular principles, and Shaw then applies these conditions to evaluate the North Carolina districting plan. Thus, the Court quotes a passage in which the UJO plurality had held that a state, employing sound districting principles, might deliberately draw districts in a race-conscious way for the purpose of ensuring fair minority representation. Shaw simply concludes that North Carolina appeared not to have adhered to sound districting principles. Shaw, $113 \mathrm{~S} . \mathrm{Ct}$. at 2832. For further discussion of the Court's treatment of UJO, see supra note 46.
    61. For example, the Court states:
    [ $R$ ]edistricting differs from other kinds of state decisionmaking in that the legislature always is aware of race when it draws district lines, just as it is aware of age, economic status, religious and political persuasion, and a variety of other demographic factors. That sort of race consciousness does not lead inevitably to impermissible race discrimination.
    113 S. Ct. at 2826 (emphasis added). The Court also affirms that "[t]he States certainly have a very strong interest in complying with federal antidiscrimination laws that are constitutionally valid as interpreted and as applied." 113 S . Ct. at 2830.

    The Court does, however, obscure its position a bit in other passages that explicitly reserve judgment on one aspect of race-conscious districting: the intentional creation of majority-minority districts. 113 S. Ct. at 2828 ("Thus, we express no view as to whether 'the intentional creation of majority-minority districts, without more' always gives rise to an equal protection claim.") (quoting 113 S. Ct. at 2839 (White, J., dissenting)). One might read the Court's reservation of this question as casting doubt on this practice, even for reasonably compact districts. Any such reading, however, would be inconsistent with much else in the opinion as well as a direct attack on Gingles. That there is some ambiguity here might well reflect the divisions within the Shaw majority on these questions.
    62. 113 S. Ct. 1149 (1993).
    63. It should be disclosed that Professor Pildes was a legal consultant to the court-appointed special master in Quilter.

[^13]:    64. 113 S. Ct. at 1153.
    65. 113 S . Ct. at 1156.
    66. 113 S . Ct. at 1156 (citations omitted).
    67. In Quilter, the district court had found no racially polarized voting in the relevant areas of Ohio. In the absence of polarized voting, the Court recognized that black and white voters are essentially fungible; race-conscious districting cannot have a dilutive effect when voting patterns are not structured along racial lines. $113 \mathrm{~S} . \mathrm{Ct}$. at 1158.
    68. 113 S . Ct. at 1157-59.
[^14]:    69. Thus, the Court held that the district court had been clearly erroneous in finding a raceconscious intent behind the districting plan and then stated, "we express no view on the relationship between the Fifteenth Amendment and race-conscious redistricting." 113 S . Ct. at 1159.
    70. As might be expected, the immediate reaction in the popular press tended to portray the decision in Shaw as a broad attack on race consciousness in districting, indeed on the fundamental principles of the Voting Rights Act itself. See, e.g., Max Boot, Supreme Court Rules that "Bizarre" Districts May Be Gerrymanders, Christian Sci. Monitor, June 30, 1993, at 7 (Shaw "throws into doubt the way the Justice Department has been enforcing the 1965 Voting Rights Act, designed to guarantee minorities political representation."); Linda Greenhouse, The Supreme Court: Reapportionment; Court Questions Districts Drawn To Aid Minorities, N.Y. Times, June 29, 1993, at A1 ("A sharply divided Supreme Court ruled today that designing legislative districts to increase black representation can violate the constitutional rights of white voters.'); Dick Lehr, Court Casts Doubts over Race-Based Redistricting, Boston Globe, June 29, 1993, at 1 ("The US Supreme Court . . . ruled yesterday that congressional districts designed to give minorities a voting majority may be unconstitutional . . . .').
    71. See, e.g., Metro Broadcasting Inc. v. FCC, 497 U.S. 547, 602-31 (1991) (O'Connor, J.,
[^15]:    dissenting); 497 U.S. at 631-38 (Kennedy, J., dissenting); City of Richmond v. J.A. Croson Co., 488 U.S. 469 (1989).
    72. Shaw v. Reno, 113 S. Ct. 2816, 2824 (1993).
    73. 113 S . Ct. at 2825 (quoting Village of Arlington Heights v. Metropolitan Hous. Dev. Corp., 429 U.S. 252, 266 (1977)).
    74. 113 S. Ct. at 2838 (White, J., dissenting).

[^16]:    75. Redistricting is, of course, among the most intensely partisan of all policymaking, and those who control the process typically pursue the more directly partisan values of trying to maximize their party's influence. In addition, redistricters, including nonpartisan bodies, also frequently try to protect incumbent officeholders. When the redistricting is partisan, one party's incumbents may receive differential protection.
[^17]:    76. See infra notes 91-95 and accompanying text.
    77. For one of the most extensive case law discussions of the values compact districting serves, see Prosser v. Elections Bd., 793 F. Supp. 859, 863 (W.D. Wis. 1992) (three-judge court; per curiam):

    The objections to bizarre-looking reapportionment maps are not aesthetic (except for those who prefer Mondrian to Pollock). They are based on a recognition that representative democracy cannot be achieved merely by assuring population equality across districts. To be

[^18]:    Guinier, Groups, Representation, and Race-Conscious Districting: A Case of the Emperor's Clothes, 71 Texas L. Rev. 1589 (1993).
    79. Gordon E. Baker coined the term reapportionment revolution. Gordon E. Baker, The Reapportionment Revolution: Representation, Political Power, and the Supreme Court (1966).
    80. 438 U.S. 265 (1978).
    81. See Jerold K. Footlick et al., The Landmark Bakke Ruling, Newsweek, July 10, 1978, at 19, 20,25 (quoting Alan Dershowitz as stating that Bakke was "an act of judicial statesmanship"; A.E. (Dick) Howard as terming Bakke "a 'Solomonic' compromise"; Benno Schmidt, Jr., as calling the decision "just about right"; and Charles Alan Wright terming Bakke "a very civilized ruling"); Bakke Wins, Quotas Lose, Time, July 10, 1978, at 8, 9 (quoting Paul Freund as believing the fuzziness of the decision was "a good thing").

[^19]:    82. Cf. Ronald Dworkin, Taking Rights Seriously 223-39 (1977). See generally Vincent Blasi, Bakke as Precedent: Does Mr. Justice Powell Have a Theory?, 67 Cal. L. Rev. 21 (1979) (developing arguments against the distinction).
    83. Despite the rhetoric of public officials, some recent polling data suggest that individuals may not find a significant distinction between preferences and quotas. At the time of the legislative debates over the Civil Rights Act of 1991, Pub. L. No. 102-166, 105 Stat. 1071, 1075-76 (1991) (codified at 42 U.S.C. $\S \S 2000 \mathrm{e}$ to $2000 \mathrm{e}-16$ (Supp. III 1991)), one poll reported that $88 \%$ of whites were opposed to "racial preferences," even in the absence of "rigid quotas." Tom Kenworthy \& Thomas B. Edsall, Whites See Jobs on Line in Debate: Some Chicagoans Fear Reverse Bias, Wash. Post, June 4, 1991, at A1. Public opinion polls on affirmative action, however, are notoriously sensitive to the precise phrasing of questions and the context in which they are posed.
    84. See, e.g., Frederick Schauer, The Rules of Jurisprudence: A Reply, 14 Harv. J.L. \& Pub. Poly. 839 (1991); Kathleen M. Sullivan, Foreword: The Justices of Rules and Standards, 106 Harv. L. Rev. 22 (1992).
[^20]:    85. Even if this concern is appropriate in evaluating policy for some purposes, whether courts should interpret particular provisions of the Constitution to embody such concerns is a distinct question. The analysis of that question requires close attention to the text, history, purposes, and prior interpretations of particular provisions - a task this article does not undertake.
    86. Guido Calabresi \& Philip Bobbitt, Tragic Choices (1978).
    87. Calabresi and Bobbitt term these a "strategy of successive moves," id. at 195, but the language of strategy might suggest a greater role for conscious intent and choice than is warranted. In healthy societies, the effect of the complex mix of public institutions and actors involved in policymaking may be to mediate these fundamental value conflicts through producing outcomes that oscillate between the relevant values, even when no particular actor intends such a result and when institutions are not specifically designed to produce this pattern of outcomes.
    88. For example, Arrow's Theorem reveals that, in theory, public decisionmaking processes cannot be designed in ways that are fair and that preclude the possibility that decisions will cycle among various options (at least under conditions of significant social conflict). Based on this discovery, some scholars indict collective decisionmaking institutions for being unable to guarantee consistent policy outcomes. In contrast, one of us has argued that this kind of cycling might be a healthy means of sustaining the tension between fundamental values, rather than a weakness of democratic institutions. See Richard H. Pildes \& Elizabeth S. Anderson, Slinging Arrows at Democracy: Social Choice Theory, Value Pluralism, and Democratic Politics, 90 Colum. L. Rev. 2121, 2171-75 (1990). As Calabresi and Bobbitt put it, "a society may limit the destructive impact of tragic choices by choosing to mix approaches over time." Calabresi \& Bobbitr, supra note 86, at 196.
[^21]:    89. Id. at 18 .
    90. See infra note 105 and accompanying text (discussing "irreducible minimum" in the standing context).
[^22]:    91. Robert M. Cover, The Supreme Court, 1982 Term - Foreword: Nomos and Narrative, 97 Harv. L. Rev. 4, 4 (1983).
[^23]:    92. Actual intent, to the extent knowable, might be relevant evidence, but it is not the ultimate question at issue.
    93. Among the passages in which the Court emphasizes social perceptions, the messages the districting plan conveys, and the way in which the plan is likely to affect collective understandings are the following:
    (1) "The message that such districting sends to elected representatives is equally pernicious."
    (2) "When a district obviously is created solely to effectuate the perceived common interests of one racial group, elected officials are more likely to believe that their primary obligation is to represent only the members of that group, rather than their constituency as a whole."
    (3) "[The plan is] so highly irregular that, on its face, it rationally cannot be understood as
    anything other than an effort to 'segregat[e] . . . voters' on the basis of race."
    Shaw v. Reno, 113 S. Ct. 2826, 2826-27 (1993) (quoting Gomillion v. Lightfoot, 364 U.S. 339, 341 (1960)).
    Note also the frequent references to "reinforcing perceptions," or "reinforcing beliefs," as in the following:
    (4) "[The plan] reinforces racial stereotypes and threatens to undermine our system of representative democracy by signaling to elected officials that they represent a particular racial group rather than their constituency as a whole."
    113 S. Ct. at 2828.
    Similarly, notice the Court's use of the language of "offense," which is commonly associated with expressive concerns:
    (5) "[The] reapportionment plan is alleged to be so irrational on its face that it immediately offends principles of racial equality."
    $113 \mathrm{~S} . \mathrm{Ct}$. at 2829.
    These passages and others, central to the opinion, are most convincingly explained only by recognizing that it is expressive harms that concern the Court in Shaw.
[^24]:    94. $113 \mathrm{~S} . \mathrm{Ct}$. at 2827.
    95. Vincent Blasi suggests that a similar, expressively oriented rationale provides the best explanation for Justice Powell's opinion in Bakke, although Blasi focuses primarily on the instrumental, rather than the intrinsic, justifications for such a rationale. Blasi, supra note 82, at 59 ("Perhaps Powell is saying that appearances are what matter most because the critical value is the longrun diminution of racial prejudice throughout the society and, depending on how they are perceived by the public, different race-conscious programs may have quite different effects on the racial attitudes of the populace."). Blasi then criticizes such an approach to constitutional doctrine on the familiar grounds that purported social perceptions are too uncertain a basis for constitutional doctrine. Id. at 60 . In addition, he argues that responding to these perceptions by purporting to distinguish between race-as-one-factor and race-as-a-dominant-factor entails public hypocrisy, which Blasi views as "inevitably . . . corrupting." Id.
    96. A similar idea underlies Charles Lawrence's revisionist account of Brown v. Board of Educ., 347 U.S. 483 (1954), an account that Lawrence then uses to argue for the constitutionality of regulating racist speech. See Charles R. Lawrence III, If He Hollers Let Him Go: Regulating Racist Speech on Campus, 1990 Duke L.J. 431. Lawrence argues that school segregation was unconstitutional precisely because of its expressive dimension or its cultural meaning. "Brown held that segregated schools were unconstitutional primarily because of the message segregation conveys - the message that black children are an untouchable caste, unfit to be educated with white children." Id. at 439. In Lawrence's view, Brown therefore stands for the principle that "the systematic group defamation of segregation be disestablished," id. at 441, and that "Brown is a case about group defamation." Id. at 463. To reach this conclusion, he argues that the "nonspeech elements [of school segregation were] by-products of the main message rather than the message simply a by-product of unlawful conduct." Id. at 441.

    This emphasis on cultural meanings as legally cognizable harms captures an important and neglected aspect of Brown and constitutional doctrine more generally. At the same time, Brown might exemplify this point less sharply than other examples. In Brown, the Court accepted lower court findings that " 'tangible' factors" were equal between the white and black schools at issue but relied on inequalities in "intangible considerations." 347 U.S. at 492-93. Moreover, the Court cannot have been unaware of the process by which states scrambled to bring particular black schools up to equivalent standards as they became subject to litigation. Brown might well be justified as a means of ensuring, without the need for case-by-case litigation, that state re-

[^25]:    sources for education would not be discriminatorily allocated. See Geoffrey R. Stone et al., Constitutional Law 503 (2d ed. 1991) (asking whether pre-Brown doctrine, "by requiring the courts to evaluate the level of 'equality' in thousands of segregated school systems throughout the country, [might] have produced an even more serious judicial intrusion on the political branches than Brown').

    As a more elemental illustration, consider instead segregation in public accommodations, such as movie theaters. In this case there can be little claim of comparatively disadvantageous allocation of material benefits between white and black viewers; both groups see the identical movie, albeit from different physical locations. Even if we imagine a situation in which the seating locations did not reflect a social hierarchy (as they do when whites sit in front, blacks in the back or the balcony), such a state-mandated seating distribution along racial lines would surely violate the Constitution. In these contexts, the only reason that the seating segregation is illegal and immoral must be because of its expressive significance or, in Lawrence's words, its cultural meaning.

    Lawrence goes on to argue that, if the only reason for regulating conduct is its expressive dimension, then the expression itself can be directly regulated. This is a far more controversial step. For Lawrence's response to criticisms that this move fails to respect the basic First Amendment distinction between conduct and speech, see Lawrence, supra, at 440-44.

[^26]:    98. Of course, expressive and consequential effects are both effects or outcomes of policies. Part of what an action means is what it does. But it is helpful to observe the difference between these two dimensions of action. The labels are consistent with their usage in contemporary philosophy, but the semantic question of what labels are most helpful to capture the difference is not important. Whether we talk about the expressive dimensions of an action, its social meaning, or its symbolic significance, the crucial point is that actions both express values and attitudes as well as bring out more material consequences.
[^27]:    99. This test first emerged in Justice O'Connor's concurrence in Lynch v. Donnelly, 465 U.S. 668 (1984). Justice O'Connor developed it in subsequent separate opinions, and Supreme Court majority opinions have invoked the "no endorsement" idea with approval. See, e.g., Edwards v. Aguillard, 482 U.S. 578, 585-86 (1987). For a history of the development of this test in an article otherwise critical of it, see Steven D. Smith, Symbols, Perceptions, and Doctrinal Illusions: Establishment Neutrality and the "No Endorsement" Test, 86 Mich. L. Rev. 266, 268-76 (1987).
    100. Lynch, 465 U.S. at 688 (O'Connor, J., concurring) (emphasis added).
    101. 465 U.S. at 688-93 (O'Connor, J., concurring). In Wallace v. Jaffree, 472 U.S. 38 (1985), Justice O'Connor elaborated on two questions that are difficult for all constitutional doctrines focused on expressive harms: how courts might determine "the" social perception of a policy, and from what perspective courts ought to make this interpretive judgment when, as is often likely, no unitary perception exists. 472 U.S. at 73-76 (O'Connor, J., concurring). Thus, she argued that the relevant perceptions are those of an "objective observer" familiar with the text, legislative history, and implementation of the law in question, as well as the values recognized in the religion clauses of the Constitution. 472 U.S. at 76, 83 (O'Connor, J., concurring); see also Corporation of the Presiding Bishop of the Church of Jesus Christ of Latter-Day Saints v. Amos, 483 U.S. 327, 346-49 (1987) (O'Connor, J., concurring) (elaborating upon the "objective observer" perspective); Estate of Thorton v. Caldor, Inc., 472 U.S. 703, 711-12 (1985) (O'Connor, J., concurring) (same).
    102. For an exhaustive summary of favorable commentary on the "endorsement test," see Smith, supra note 99, at 274 n. 45.
    103. See, e.g., Michael W. McConnell, Religious Freedom at a Crossroads, 59 U. Chi. L. Rev. 115, 147-57 (1992); Smith, supra note 99.
[^28]:    104. For an effort to show that much constitutional doctrine and disagreement turns on whether one understands substantive constitutional provisions as recognizing expressive harms, in addition to more material ones, see Richard H. Pildes, Competing Conceptions of Value in Constitutional Law: Expressive and Consequential Harms (Dec. 1, 1992) (unpublished manuscript, on file with author).
    105. The law of standing is a notable example of this type of procedural doctrine. The Court recently restated the "irreducible minimum" that is required for standing under Article III:
    [A] party seeking to invoke a federal court's jurisdiction must demonstrate three things: (1)
    "injury in fact," by which we mean an invasion of a legally protected interest that is "(a) concrete and particularized, and (b) actual or imminent, not conjectural or hypothetical,"
    (2) a causal relationship between the injury and the challenged conduct, by which we mean that the injury "fairly can be traced to the challenged action of the defendant," and has not resulted "from the independent action of some third party not before the court," and (3) a likelihood that the injury will be redressed by a favorable decision, by which we mean that the "prospect of obtaining relief from the injury as a result of a favorable ruling" is not "too speculative."
    Northeastern Fla. Chapter of the Associated Gen. Contractors v. City of Jacksonville, $113 \mathrm{~S} . \mathrm{Ct}$. 2297, 2301-02 (1993) (quoting Lujan v. Defenders of Wildlife, 112 S. Ct. 2130, 2136 (1992); Simon v. Eastern Ky. Welfare Rights Org., 426 U.S. 26, 41-42 (1976); Allen v. Wright, 468 U.S. 737, 752 (1984), respectively); see Cass R. Sunstein, What's Standing After Lujan? Of Citizen Suits, "Injuries," and Article III, 91 Mich. L. Rev. 163 (1992) (discussing modern standing jurisprudence); see also Harold J. Krent \& Ethan G. Shenkman, Of Citizen Suits and Citizen Sunstein, 91 Mich. L. Rev. 1793 (1993) (responding to Sunstein's analysis of standing).
    106. Lujan v. Defenders of Wildlife, 112 S. Ct. 2130, 2143 (1992).
    107. See, e.g., Allen v. Wright, 468 U.S. 737, 755 (1984) (rejecting the idea that stigmatic harm to a racially defined group gives an individual member of that group standing); see also Antonin Scalia, The Doctrine of Standing as an Essential Element of the Separation of Powers, 17 Suffolk U. L. Rev. 881, 881-82 (1983) ("[C]ourts need to accord greater weight than they have in recent times to the traditional requirement that the plaintiff's alleged injury be a particularized one, which sets him apart from the citizenry at large.").
[^29]:    108. For example, in the electoral context, the more traditional conception of standing recently led to dismissal of the constitutional challenge to the seating of Alcee Hastings as representative of Florida's 23d congressional district. Waggoner v. Hastings, 816 F. Supp. 716 (S.D. Fla. 1993). Hastings, a federal district judge who had been impeached, convicted, and removed from office, was subsequently elected to Congress. A plaintiff challenged his seating on the ground that the Constitution's impeachment provisions disqualified Hastings from holding any office under the United States. U.S. Const. art. I, § 3, cl. 7 reads:
    Judgment in Cases of Impeachment shall not extend further than to removal from Office, and disqualification to hold and enjoy any Office of honor, Trust or Profit under the United
    States: but the Party convicted shall nevertheless be liable and subject to Indictment, Trial, Judgment and Punishment, according to Law.
    The plaintiff, however, was registered to vote not in the 23d district, but in an adjoining one. He nonetheless asserted a generalized interest in having only constitutionally qualified officials representing Florida. Although the court found "an appeal to the logic of the plaintiff's argument about an interest of a citizen in having lawfully qualified representatives," the court dismissed the complaint for lack of standing. 816 F. Supp. at 718. The standing holding appears to be an alternative holding because the court also went on to find the claim nonjusticiable on other grounds. 816 F. Supp. at 720 . This result reflects not only the traditional requirement of concrete and particularized injury, but the narrowness with which courts have conceptualized legal injury in the electoral context.
[^30]:    111. 113 S. Ct. at 2822.
    112. 113 S. Ct. at 2824.
    113. 113 S . Ct. at 2847 (Souter, J., dissenting).
    114. $113 \mathrm{~S} . \mathrm{Ct}$. at 2828 (citations omitted).
    115. The closest the Court comes to resolving the tension between traditional standing principles and the expressive harms Shaw recognizes is when the Court intimates that the voters in a particular "bizarre" district experience these harms distinctly: "When a district obviously is created solely to effectuate the perceived common interests of one racial group, elected officials are more likely to believe that their primary obligation is to represent only the members of that group, rather than their constituency as a whole." 113 S . Ct . at 2827. The notion here appears to be that seemingly single-valued redistricting runs the danger of constructing an inappropriate, or antiliberal, conception of the relationship between representation and community in a particular district. In many other passages, however, the Court describes the harms in ways that are not district specific. See, e.g., 113 S. Ct. at 2830 ("Nothing in the [Court's precedents] precludes white voters (or voters of any other race) from bringing the analytically distinct claim that a reapportionment plan rationally cannot be understood as anything other than an effort to segregate citizens into separate voting districts on the basis of race without sufficient justification.") (emphasis added). Even on the narrowest reading, passages like these seem to imply a standing principle broad enough at least to permit any voter in a "bizarre" district to sue. Nevertheless, the question remains whether this kind of geographic standing limitation is consistent with the logic of the expressive harms the Court recognizes.
[^31]:    116. We do not explore in detail more subtle causation questions, such as whether the impermissible cause with which Shaw is concerned must be merely a contributing cause, the dominant cause, or the exclusive cause for a particular district's design. For further discussion, see infra text accompanying notes 251-52.
    117. Citizens exposed to the plan will find it "so irrational on its face that it immediately offends principles of racial equality." $113 \mathrm{~S} . \mathrm{Ct}$. at 2829.
    118. There is no way to prove that this assumption underlies the Court's approach to the case, for the Court made no formal finding or statement to this effect, but the atmosphere of the
[^32]:    opinion strongly suggests that the Court believed North Carolina had defiantly rejected the Justice Department's suggestion in order to pursue state political agendas. For example, the Court referred twice to the fact that "the Attorney General suggested that North Carolina could have created a reasonably compact second majority-minority district in the south-central to southeastern part of the State," $113 \mathrm{~S} . \mathrm{Ct}$. at 2832 , including in the very last paragraph of the opinion, when the Court is recapping the most important elements of the case to define the decision's basic principles. 113 S . Ct. at 2820, 2832. In addition, one of the dissenting opinions explicitly rests on the assumption that the state could have drawn a reasonably compact minor-ity-dominated district, most likely in the southeastern part of the state, as the Attorney General had suggested. See 113 S. Ct. at 2841 n. 10 (White, J., dissenting). Thus, the "strong" version of the facts most likely informed the Court's internal discussions and the Justices' individual deliberations.
    119. See supra note 118 .
    120. See supra note 118. In other litigation, plaintiffs did allege that North Carolina's rejection of a majority-black district in the southern region of the state in favor of District 12 was the result of political gerrymandering motivated by the desire to protect Democratic incumbents. A three-judge court dismissed that suit, Pope v. Blue, 809 F. Supp. 392 (W.D.N.C. 1992), and the Supreme Court summarily affirmed. Pope v. Blue, 113 S. Ct. 30 (1992).

[^33]:    121. Shaw, 113 S. Ct. at 2827.
    122. On remand or in future applications of Shaw, a crucial question is likely to be whether governments can legitimately assert that partisan advantage or protection of incumbents provides a compelling end under strict scrutiny to justify extremely contorted election districts. For discussion, see infra text accompany notes 254-69.
[^34]:    123. This article is not the place to provide a lengthy catalogue of such doctrines or decisions, but, as one example, consider the recent decision in New York v. United States, 112 S . Ct. 2408 (1992). There Congress had ratified a state-led effort to develop a comprehensive mechanism for fairly distributing the burdens of low-level nuclear waste disposal. The Court held that Congress could enforce this scheme constitutionally through monetary and other incentives, but it could not do so by requiring states to assume ownership of nuclear waste if they failed in their other obligations. $112 \mathrm{~S} . \mathrm{Ct}$. at 2412 . In functional terms, the decision is easy to criticize, for Congress can enforce the statute through other, perhaps equally effective means - means just as "coercive" in effect as mandatory ownership. Yet the Court might be understood as concluding that Congress expresses a distinct - and constitutionally impermissible - attitude toward the states when it directly mandates their action. Even if vulnerable on functional or doctrinal grounds, the decision might be thought to assert the principle that Congress cannot understand its relationship to states in this way. Interestingly, Justice O'Connor is the author of New York. Thus, we might see a general theme emerging in Justice O'Connor's conception of constitutional law and the Court's role: a general attentiveness to the expressive dimensions of public action. For further examples of decisions that might be difficult to rationalize on functional grounds, but are best understood in more expressive terms, see the provocative account in Philip Bobbitt, Constitutional Fate 196-223 (1982).
[^35]:    124. See infra note 126.
    125. If this were so, the state perhaps could have submitted its second districting plan for preclearance and tried to demonstrate to the Justice Department that a reasonably compact second minority district could not have been created. Of course, the state might have faced considerable costs, financial and political, from further delaying implementation of the post-1990 congressional redistricting.
    126. Trying to resolve which version of the facts - the "strong" or the "weak" version - is more accurate brings to the surface the complexities of current VRA theory and practice. First, when the North Carolina General Assembly came up with its first redistricting plan, which included only one black-dominated district, the General Assembly expressly concluded that "[i]t is apparent that it is only possible to create one majority black district that is reasonably compact, and that is what Chapter 601 does." Lacy Thornburg, Attorney General of North Carolina, Other Material Concerning the Purpose of the Plan, in Section 5 Submission for North Carolina Congressional Redistricting, Chapter 601 (Aug. 28, 1991) (unpublished document submitted to
[^36]:    129. 61 U.S.L.W. 3418 (Dec. 7, 1992).
    130. 488 U.S. 469 (1989).
    131. 488 U.S. at 495-96.
[^37]:    132. See., e.g., Contractors Assn. v. City of Philadelphia, Nos. 92-1880, 92-1887, 1993 U.S. App. LEXIS 25908, at *26-28 (3d Cir. Oct. 7, 1993).
    133. 488 U.S. 469 (1989).
    134. See supra text accompanying notes 51-57.
    135. Shaw v. Reno, 113 S. Ct. 2816, 2825 (1993) (quoting Village of Arlington Heights v. Metropolitan Hous. Dev. Corp., 429 U.S. 252, 266 (1977)).
[^38]:    136. See infra Table 3.
[^39]:    137. Conceivably, there might be situations in which boundaries were intentionally manipulated to deny blacks potential influence that would still not amount to illegal vote dilution. If there are ever such circumstances that do not violate the VRA itself, Shaw's logic would sensibly extend to these contexts.
[^40]:    138. See supra text accompanying note 6 .
    139. Nothing in the Constitution itself requires the states to create congressional districts. See U.S. CONST. art. I, § 2. Indeed, in the first elections after ratification, the majority of new states held at-large congressional elections. Only Massachusetts, New York, Maryland, Virginia, and South Carolina were organized into representative districts. There is evidence that at least some of the Framers expected the states to create districts and intended the Time, Place, and Manner Clause of Article I, Section 4 to act as a brake against factional districting by state legislatures. Andrew Hacker, Congressional Districting: The Issue of Equal Representation 8-10 (1963). For example, James Madison approvingly asserted in The Federalist No. 56, at 379-80 (James Madison) (Jacob E. Cooke ed., 1961): "Divide the largest state into ten or twelve districts, and it will be found that there will be no peculiar local interest . . . which will not be within the knowledge of the representative of the district." Similarly, Alexander Hamilton stated at the New York ratifying convention: "The natural and proper mode of holding elections will be to divide the state into districts in proportion to the number to be elected." Alexander Hamilton, First Speech of June 21 in the New York Ratifying Convention, in Selected Writings and Speeches of Alexander Hamilton (Morton J. Frisch ed., 1985), quoted in Congressional Quarterly Inc., Jigsaw Politics: Shaping the House After the 1990 Census 6 (1990) (alteration in original).

    As of 1840 , nine of the 31 states continued to elect representatives at large. In response to the frequent occurrence of a majority party's sweeping an entire state delegation in at-large states, Congress invoked the Time, Place, and Manner Clause to pass the Reapportionment Act of 1842, ch. 47,5 Stat. 491. That Act required, for the first time, that representatives "shall be elected by districts composed of contiguous territory equal in number to the number of Representatives" for

[^41]:    U.S. 549,556 (1946), and it has continued to accompany virtually all judicial entries into new issues surrounding redistricting. See generally Peter H. Schuck, The Thickest Thicket: Partisan Gerrymandering and Judicial Regulation of Politics, 87 Colum. L. Rev. 1325 (1987).
    146. Ill. Const. art. IV, § 3(a).
    147. See, e.g., MICH. Const. art. IV, $\S 2$ (requiring state senatorial districts to be drawn "as rectangular in shape as possible"); Mo. CONST. art. III, § 5 (mandating that state senate districts be "of contiguous territory, as compact and nearly equal in population as may be"); N.Y. CONST. art. III, § 5 (requiring assembly districts to be drawn "in as compact form as practicable"). For a full survey of state compactness requirements, see Grofman, Criteria for Districting, supra note 7, at 177 tbl. 3.
    148. One of the two compactness standards that the Iowa legislature adopted in 1980 is expressed as "the ratio of the dispersion of population about the population center of the district to the dispersion of population about the geographic center of the district." Iowa Code Ann. $\S 42.4(1)(\mathrm{c})$ (West 1991). Colorado's Constitution provides a compactness measure based on the sum of the perimeters of district boundaries. Colo. CONST. art. V, § 47 .
    149. The leading recent state case is probably Schrage v. State Bd. of Elections, 430 N.E. 2 d 483 (Ill. 1981). The case is particularly significant because the court found a compactness violation with respect to the design of a single state district. More commonly, state courts that strike down redistricting plans do so on the ground that the plan as a whole, rather than an isolated district, violates state law requirements. Schrage was the first case in Illinois history to strike down a districting plan for violating the state constitution's compactness requirement. A year later, the court in Martin v. Soucie, 441 N.E.2d 131 (Ill. App. Ct. 1982), relied upon Schrage to defeat an apportionment plan for county board elections.

    For other state cases finding violations of state law compactness requirements, see Preisler v. Doherty, 284 S.W.2d 427 (Mo. 1955) (invalidating state senatorial redistricting of the City of St. Louis); State ex rel. Barrett v. Hitchcock, 146 S.W. 40 (Mo. 1912) (invalidating entire Missouri state senatorial apportionment on constitutional compactness and population equality failings); In re Sherill, 81 N.E. 124 (N.Y. 1907) (invalidating entire 51-district New York state senatorial apportionment on grounds that two districts failed to meet constitutional compactness and population equality requirements); In re Livingston, 160 N.Y.S. 462 (Sup. Ct. 1916) (voiding apportionment of assembly districts within a senate district).

[^42]:    150. See Acker v. Love, 496 P.2d 75 (Colo. 1972); In re Legislative Districting of Gen. Assembly, 193 N.W.2d 784, 791 (Iowa 1972).
    151. See, e.g., Preisler v. Kirkpatrick, 528 S.W.2d 422, $426-27$ (Mo. 1975) (finding all but two districts to be within compactness requirements and holding that "considering the overall, state-wide plan developed . . . the districts established substantially comply with the compactness requirement" of the Missouri Constitution); Opinion to the Governor, 221 A.2d 799 (R.I. 1966) (finding districting plan valid absent "a complete departure from the requirement for compactness") (advisory opinion). See generally Grofman, Criteria for Districting, supra note 7, at 86.
    152. A typical example is the recent decision of the Virginia Supreme Court in Jamerson v. Womack, 423 S.E.2d 180 (Va. 1992). There the plaintiffs challenged, on compactness grounds, two state senate districts, at least one of which was designed to be a majority-black district. The court acknowledged that one of the districts was longer than any other in the state and that the enacted plan split more counties than other plans the legislature had considered. At trial, each side offered expert testimony on the compactness of the districts and plan. On appeal, the Virginia Supreme Court did not evaluate this testimony or engage in any analysis of the quantitative measures presented. Instead, the court found it sufficient that the expert testimony was in conflict and that the trier of fact had accepted one side's testimony. 423 S.E.2d at 186.

    Similarly, in Schrage v. State Bd. of Elections, 430 N.E.2d 483 (Ill. 1981), the Illinois Supreme Court chose to "rely on a visual examination of the questioned district as other courts have done," finding that "a more precise measurement is unnecessary." 430 N.E.2d at 487; cf. In re Legislative Districting of the State, 475 A.2d 428, 437 (Md. 1984) ("With the possible exception of Colorado . . . no jurisdiction has defined or applied the compactness requirement in geometric terms. On the contrary, most jurisdictions have concluded that the constitutional compactness requirement, in a state legislative redistricting context, is a relative rather than an absolute standard.") (citation omitted).

[^43]:    153. Information provided by Election Data Services, Inc.
    154. Only the perimeter measure in the 1980s shows enough of a difference to be possibly meaningful. We discuss this measure infra at text accompanying notes 202-04.
    155. With so few states requiring compactness, individual cases could greatly influence the results. Hawaii's districts are relatively noncompact because they are artifacts of the unusual geography (island composition); balancing this extreme, perhaps, are Iowa's relatively compact districts based, in part, on its rather square shape.
[^44]:    156. See Thornburg v. Gingles, 478 U.S. 30, 50-51 (1986).
    157. $113 \mathrm{~S} . \mathrm{Ct} .1075$ (1993).
    158. In Growe, a federal district court, after having appointed a special master, had crafted a redistricting plan for Minnesota's state senate. In overturning that decision, the Supreme Court described the one state senate district, which the district court had believed the VRA required, as an "oddly shaped creation." The Court also characterized as "dubious" the district court's assumption that this district was "geographically compact" under Gingles. $113 \mathrm{~S} . \mathrm{Ct}$ at 1085. The Court described this district, Senate District 59, as "stretching from south Minneapolis, around the downtown area, and then into the northern part of the city in order to link minority populations." 113 S . Ct. at 1083 . In total population figures, the district was $43 \%$ black and $60 \%$ minority. 113 S . Ct. at 1083. Because the Court overturned the district court's judgment on other grounds, these comments are dicta, but they might nonetheless be suggestive.
    159. See generally Pamela S. Karlan, Maps and Misreadings: The Role of Geographic Compactness in Racial Vote Dilution Litigation, 24 Harv. C.R.-C.L. L. Rev. 173, 199 (1989) ("Geographic concerns played only a minor role in the legislative history of amended Section 2. In the past two years, however, geographic compactness has moved to the forefront of vote dilution litigation . . . .") (footnote omitted).
    160. In these cases, the courts sometimes discuss compactness in isolation and sometimes in terms of the appropriate trade-offs between it and other values. When courts treat compactness as the sole variable, they frame the judicial inquiry as whether districts are "sufficiently compact." When courts consider the appropriate trade-offs between shape and other relevant redistricting values - for example, avoidance of vote dilution, compactness, preservation of communities of interest - the question is what degree of compactness is consistent with other legitimate redistricting policies.

    Although the way the question is framed initially may have some effect on shifting burdens of evidentiary production, ultimately these two approaches amount to the same inquiry. Whether a district is "sufficiently" compact, for example, is largely a function of how one weighs the value of compactness against competing districting values.

[^45]:    161. 686 F. Supp. 1459 (M.D. Ala. 1988).
    162. 686 F. Supp. at 1466.
    163. 686 F. Supp. at 1465 . Not anticipating Shaw, the court went on to add that "[a]n aesthetic norm" would be "an unworkable concept, resulting in arbitrary and capricious results, because it offers no guidance as to when it is met." 686 F . Supp. at $1465-66$.
    164. The court also noted that the county's proposed plan contained a similarly shaped district, and that the board's superintendent had testified that the district posed no administrative or other problems. 686 F . Supp. at 1466.
    165. Jeffers v. Clinton, 730 F. Supp. 196, 207 (E.D. Ark. 1989); see also Neal v. Coleburn, 689 F. Supp. 1426, 1437 (E.D. Va. 1988) (stating that asymmetrical districts are acceptable when "in line with the configurations of electoral districts that have been approved in other cases").
    166. Bryant v. Lawrence County, 814 F. Supp. 1346, 1350 (S.D. Miss. 1993). The court also concluded that the plaintiffs drew the proposed districts "without regard to natural geographic boundaries, [or] splitting of precincts." 814 F . Supp. at 1350 .
    167. 814 F. Supp. at 1351.
    168. Clark v. Calhoun County, 813 F. Supp. 1189, 1198 (N.D. Miss. 1993).
[^46]:    169. Dillard v. Baldwin County Bd. of Educ., 686 F. Supp. 1459, 1466 (M.D. Ala. 1988) (noting that a district would have "no sense of community . . if its members and its representatives could not effectively and efficiently stay in touch with each other; or . . . if its members and its representatives could not easily tell who actually lived within the district").
    170. 691 F. Supp. 991 (E.D. La. 1988)
    171. "A proposed district is sufficiently compact if it retains a natural sense of community. To retain that sense of community, a district should not be so convoluted that its representative could not easily tell who actually lives in the district." 691 F. Supp. at 1007.

    This principle appears similar to one that Bernard Grofman has recently advanced under the label of "cognizability":

    I wish to argue that districts can be so far from cognizable that they violate what we might think of as a due process component of equal protection by damaging the potential for "fair and effective representation." By "cognizability," I mean the ability to characterize the district boundaries in a manner that can be readily communicated to ordinary citizens of the district in commonsense terms based on geographical referents. . . .

    Egregious violations of the cognizability principle can be identified by making use of standard criteria of districting, such as violation of natural geographic boundaries, grossly unnecessary splittings of local subunit boundaries (such as city and county lines), and sunderings of proximate and contiguous natural communities of interests.
    Grofman, Vince Lombardi, supra note 7, at 1262-63 (footnotes omitted). Grofman acknowledges that he does not yet have a clear operational test for noncognizability, which he recognizes is especially problematic because cognizability is best thought of as a continuum. Id. at 1262.
    172. 691 F. Supp. at 1007. The court nonetheless did invalidate Jefferson Parish's unusual council-election scheme, which was not used anywhere else in Louisiana, on other grounds. 691 F. Supp. at $994 \mathrm{n} .2,1008$.

[^47]:    174. Neal v. Coleburn, 689 F. Supp. 1426, 1437 (E.D. Va. 1988).
    175. See, e.g., Magnolia Bar Assn. v. Lee, 793 F. Supp. 1386 (S.D. Miss. 1992) (finding no $\S 2$ violation in Mississippi judicial redistricting, partially on grounds that majority-minority districts could not be drawn without splitting counties), affd., 994 F.2d 1143 (5th Cir. 1993); Wesch v. Hunt, 785 F. Supp. 1491, 1499 (S.D. Ala.) (adopting a court-decreed plan that creates a major-ity-African-American congressional district for Alabama without "extensive gerrymandering"), affd. sub nom. Camp v. Wesch, 112 S. Ct. 1926 (1992), and affd. sub nom. Figures v. Hunt, 113 S. Ct. 1233 (1993); Burton v. Sheheen, 793 F. Supp. 1329, 1356 (D.S.C. 1992) ("II]n light of § 2's strong national mandate . . . a district is sufficiently geographically compact if it allows for effective representation."); Gunn v. Chickasaw County, 705 F. Supp. 315, 322-23 (N.D. Miss. 1989) (rejecting proposed remedial plan partially on grounds that it did not give proper consideration to existing political subdivisions and cohesive neighborhoods); Carstens v. Lamm, 543 F. Supp. 68 (D. Colo. 1982) (fashioning a court-decreed congressional redistricting plan for Colorado); Rybicki v. State Bd. of Elections, 574 F. Supp. 1082, 1097 (N.D. Ill. 1982) (refusing to invalidate the Illinois General Assembly's districting plan as "noncompact" partially on grounds that plaintiffs' proposed plan contained similarly noncompact districts).
    176. This tension is also apparent in the district court cases. Some courts tend to treat the VRA as creating an affirmative duty to draw majority-minority districts when reasonably possible. See, e.g., DeGrandy v. Wetherell, 794 F. Supp. 1076, 1085 (N.D. Fla. 1992) ("[W]e conclude that the law supports the drawing of a minority district where, in light of minority concentrations and community of interests, such a district can reasonably be drawn.'") (quoting Report of the Special Master at 14 (May 18, 1992)), cert. granted sub nom. Johnson v. De Grandy, 113 S. Ct. 2437 (1993); Jeffers v. Clinton, 730 F. Supp. 196, 205 (E.D. Ark. 1989) ("If . . . reasonably compact and contiguous majority-black districts could have been drawn, and if racial cohesiveness in voting is so great that . . . black voters' preferences for black candidates are frustrated . . . the outlines of a Section 2 theory are made out."), affd., 498 U.S. 1019 (1991).

    Several recent decisions, however, have emphatically denied any duty on the part of the legislature to maximize minority political representation. See, e.g., Teague v. Attala County, 807 F. Supp. 392, 404 (N.D. Miss. 1992) ("The Voting Rights Act never was intended as a vehicle for creating 'safe' black or other minority seats."); Nash v. Blunt, 797 F. Supp. 1488, 1496 (W.D. Mo. 1992) ("[W]e do not believe Congress intended the Act to require maximum representation."), affd. sub nom. African Am. Voting Rights Legal Defense Fund, Inc. v. Plunt, 113 S . Ct. 1809 (1993); Turner v. Arkansas, 784 F. Supp. 553, 573 (E.D. Ark. 1991) (Section 2 of the VRA "is not violated . . . simply because [a] legislature does not enact a districting plan that maximizes black political power or influence."), affd., 112 S. Ct. 2296 (1992).

    According to a former Assistant Attorney General, Civil Rights Division, "[t]here is one thing the Civil Rights Division does not do: It does not require, because the law does not require, the maximization of minority representation." Dunne, supra note 38, at 1128.

[^48]:    179. 369 U.S. 186 (1962).
    180. See Karcher v. Daggett, 462 U.S. 725 (1983).
[^49]:    181. Shaw v. Reno, 113 S. Ct. 2816, 2826 (1993). As the Court puts it, in some cases, a district is "so highly irregular that, on its face, it rationally cannot be understood as anything other than an effort to 'segregat[e] . . . voters' on the basis of race." $113 \mathrm{~S} . \mathrm{Ct}$. at 2826 (quoting Gomillion v. Lightfoot, 364 U.S. 339, 341 (1960)).
    182. 113 S . Ct. at 2826-27 (discussing Gomillion).
    183. 364 U.S 339 (1960).
[^50]:    184. Shaw presumably also applies to state legislative districts. In upper houses of state legislatures, the number of districts is often 30-50, and in lower houses the number is often 100 or more. Harold W. Stanley \& Richard G. Niemi, Vital Statistics on American Politics 153 tbl. 4-6 (4th ed. 1994).
    185. One should not confuse these questions with how big a district is in absolute size. Districts in sparsely populated areas of a state are necessarily larger in overall size than those in large urban areas; given one-person-one-vote requirements, this disparity cannot be avoided.
[^51]:    186. The facts concerning these districts are drawn from Michael Barone \& Grant Uifusa, The Almanac of American Politics 1994, at 1250-51, 1275-76 (Eleanor Evans ed., 1993) (describing the creation and composition of Texas CD18 and Texas CD29, respectively). In the first election in Texas CD29, a Hispanic did not win the seat. Id. at 1276.
[^52]:    187. Id. at 320.
    188. In part, this apparent smoothness is a function of the scale of the map. If each city were shown in detail, one would see more border irregularities.
    189. It turns out, as we shall see, that this district is so extremely long and narrow that, together with the lengthened western border, it is relatively noncompact with respect to its perimeter. Nonetheless, at first glance, its border characteristics do not appear troubling.
[^53]:    190. The source of this map is Gomillion v. Lightfoot, 364 U.S. 339, 348 (1960).
    191. To be sure, one projection sticks out incongruously from the side of the main body of the new boundaries. Yet even Wisconsin CD9 (Figure 2(d)), which appears by comparison to be fairly regular, has an appendage on the north side that sticks out some miles from the main portion of the district.
    192. Two hundred thirty-nine of the 1990 s congressional districts are less compact than the reconfigured Tuskegee district on both of the quantitative measures introduced below.
[^54]:    193. The Tuskegee case was so extreme because the effect was "to remove from the city all save only four or five of its 400 Negro voters while not removing a single white voter or resident." Gomillion v. Lightfoot, 364 U.S. 339, 341 (1960).
    194. The cost of calculating district compactness scores does not seem to have stopped states and even some local jurisdictions from making them. The entire cost of redistricting has increased dramatically in recent years, but, given requirements for strict population equality, for example, the marginal additional burden of calculating district compactness should not be prohibitive.
    195. Richard G. Niemi et al., Measuring Compactness and the Role of a Compactness Standard in a Test for Partisan and Racial Gerrymandering, 52 J. Pol. 1155 (1990).
    196. These characteristics also turn out to be the basis for most operationalizations of the term.
[^55]:    197. Niemi et al., supra note 195, at 1160 .
    198. Some might suggest that hexagons provide a better base than circles because hexagons can fill an entire space, in principle, with no "in-between" area left over. Given the irregular shapes of states and other jurisdictions, however, it is unlikely that any real area could be divided into a set of perfect hexagons, even if equal population were not a consideration. Perfection in the real world of districting is impossible regardless of the theoretical standard one uses.
    199. Because squares - which have equal length and width - are considered relatively compact, some have suggested that length and width should be the basis of quantitative measures. See, e.g., Curtis C. Harris, Jr., A Scientific Method of Districting, 9 Behavioral Sci. 219, 221 (1964). The difficulty is that no unique method exists of measuring the length and width of irregular shapes. Length might well be the distance between the two points farthest apart in the district. Yet what is the width? How would one judge it in congressional districts such as those shown in Figures 2(f) or 3(c)?
    200. Earnest C. Reock, Jr., originally defined this measure, Earnest C. Reock, Jr., Note, Measuring Compactness as a Requirement of Legislative Reapportionment, 5 Midwest J. Pol. ScI. 70, 71 (1961), which Niemi and others catalogued as Dispersion 7. Niemi et al., supra note 195, at 1161.
    201. In a practical sense, it is not always easy to measure areas of complex shapes, though computer programs are now available for this purpose.
[^56]:    202. Intuitively, one might think the most obvious measure of perimeter is overall perimeter length, measured in distance units, such as miles or kilometers. The Colorado State Constitution incorporates this approach for its state legislative districts. Colo. Const. art. V, § 47. While easy to grasp, this measure has certain undesirable properties, especially when comparing congressional districts across the nation. First, because overall length is very sensitive to the absolute size of a district, one can only sensibly apply it to districting plans taken as a whole. That is, as noted above, it makes little sense to compare the overall lengths of the boundaries of rural and urban districts. See supra note 185. Rural districts, no matter how smooth and regular their borders, will register longer boundaries than urban ones, no matter how convoluted the boundaries of the latter.

    Comparing alternative districting plans on the basis of the overall boundary lengths for all the districts in the state does make sense. Nevertheless, given regional variations between urban and rural areas, one cannot reasonably compare individual districts, even within one state. In addition, comparisons of aggregate boundary lengths across states are inappropriate because the shapes of the states will greatly affect such measurements. For these reasons, we do not use this measure here.
    203. In equation form, this definition is expressed as $4 \pi A / P^{2}$, where $A$ is the area and $P$ is the perimeter of the district. One can easily confirm that a circle has a perimeter score of 1 , as follows. If the perimeter of a circle is $P$, by definition, $P=2 \pi r$, where $r$ is the radius of the circle. In addition, $A$, the area of the circle, is $\pi r^{2}$. Then, perimeter score $=4 \pi\left(\pi r^{2}\right) /(2 \pi r)^{2}=1$. This measure is called the Schwartzberg measure in Daniel D. Polsby \& Robert D. Popper, The Third Criterion: Compactness as a Procedural Safeguard Against Partisan Gerrymandering, 9 Yale L. \& Poly. Rev. 301, 348-49 (1991). In fact, as Polsby and Popper point out, it is a slight

[^57]:    variation (and improvement) of the measure originally proposed by Schwartzberg. Id. at 349 n.204; see also Joseph E. Schwartzberg, Reapportionment, Gerrymanders and the Notion of "Compactness," 50 Minn. L. Rev. 443 (1966).
    204. These observations illustrate the point that natural features will affect compactness scores - dispersion as well as perimeter. The effects of natural features are a reason that one cannot use such scores in a mechanical fashion to eliminate districts that fall below some predetermined level. For more discussion, see infra text accompanying notes 231-32.

[^58]:    205. Niemi et al., supra note 195, at 1162 tbl. 1 .
    206. In technical terms, this measure is described as the minimum convex figure that completely contains the district.
    207. For the "rubber-band" definition, a perfect district would be one in which the border had only "convex" angles - that is, a rubber band stretched around it would have no areas that are outside the district but inside the rubber band. For the alternative definition, a circle would receive a score of 1.0 .
    208. Shaw v. Reno, 113 S. Ct. 2816, 2826-27 (1993).
    209. 113 S. Ct. at 2821.
    210. 113 S . Ct. at 2827.
    211. 113 S . Ct. at 2820-21.
[^59]:    212. 113 S . Ct. 1075 (1993); see supra notes $157-58$ and accompanying text.
    213. 113 S. Ct. at 1085.
    214. Having for the first time been able to calculate and assess fully a population measure, we are able to see that it measures, in part, the type of population the districts include and exclude, and not simply the degree to which the districts retain nearby populations. In particular, largely rural or suburban districts may tend to circle around an urban area rather than incorporate a portion of the city itself. This pattern often leaves a large population in the "rubber-band" or circle area, lowering the population score. Favoring higher scores would thus give preference to districts that mixed urban and suburban-or rural areas. For example, Colorado CD4, near Denver, and Ohio CD13, near Cleveland, are outlying districts that have relatively low scores on the population measure because they abut large urban areas. A largely rural or suburban district that circles around an urban area also lowers the dispersion measure. The effect, however, is especially strong for population measures; the excluded land area may not be great, but the excluded population will often be large. For these reasons, we will refrain from further use of population measures.
    215. See supra text accompanying notes 177-80.
    216. Lest this statement seem to render the concept meaningless, consider the analogy of outdoor temperature. There is no bright line dividing hot from warm or warm from cold. Although there are some meaningful points on the temperature scale, such as the point at which water freezes, those points do not provide an objective division between hot and cold. Temperature is relative. Yet we all make use of temperature information daily.
    217. Can one simply combine dispersion and perimeter scores by averaging them? The problem with averaging the two scores is that it can mask situations in which one score is high and the other low. In principle, one might have a district with a dispersion score of .80 and a perimeter score of . 02 . The average - .41 - appears fairly reasonable; indeed, it is greater than the
[^60]:    mean score for the congressional districts in many states. Nevertheless, it hides the extremely low perimeter score. Such extreme situations are not likely to occur in practice, but the data we present below, see infra Table 3, reveal a number of situations in which the average does not convey an extremely low score on one - usually the perimeter - measure. See supra text accompanying note 186 for the discussion of Texas CD18.
    218. Niemi et al., supra note 195, at 1167-76, demonstrate this point with respect to entire plans.
    219. Note that some states with water boundaries define the perimeters of the district as extending into the water - for example, a relatively straight line in the middle of a river dividing two states. Consequently, one cannot always equate the apparent shape of the state with the compactness levels possible.
    220. Federal constitutional requirements of one person, one vote are more stringent for congressional districts. For state legislative districts, the Court has declared population deviations of up to $10 \%$ to be presumptively valid and has upheld deviations up to $16.4 \%$ while noting that the latter "approach tolerable limits." Brown v. Thompson, 462 U.S. 835, 842 (1983); Mahan v. Howell, 410 U.S. 315, 319, 329 (1973). In contrast, the standard for a congressional district remains that the district be "as mathematically equal as reasonably possible." White v . Weiser, 412 U.S. 783, 790 (1973); see also Karcher v. Daggett, 462 U.S. 725 (1983) (finding unconstitutional for congressional districts an average deviation from absolutely perfect equipopulation of $0.1384 \%$ when the maximum deviation of any one district was only $0.6984 \%$.). The stricter the requirement of population equality, the more districts are likely to deviate from compactness. Note, though, that some state constitutions require nearly absolute equality of state legislative districts.

[^61]:    222. Information provided by Election Data Services, Inc.
[^62]:    223. Just as there is no bright line between compact and noncompact districts, there is no one number that determines whether the difference between compactness scores is significant. Clearly, a small difference - for example, . 01 - is not meaningful, and certainly the larger the difference, the more likely it is that the scores are meaningfully different. A given difference has to be evaluated at least in the context of: (a) whether the difference is due to geographical or other obvious factors - for example, a case in which adjoining districts are "reoriented" so that the common border is now along a meandering river, or a case in which one district follows noncompact subjurisdiction boundaries while another is made compact by crossing those boundaries; (b) the size of the difference in both dispersion and perimeter score - it can even happen that differences in dispersion and perimeter scores are contradictory; and (c) whether the comparison is of the average scores for entire plans or of the scores of specific districts - a plan average may be based on scores of a large number of districts, so even if a few districts in the plan are made substantially more (or less) compact, the average across all districts may not change much.
    224. Nationwide, $13 \%$ of congressional districts have perimeter scores below 0.10. See infra Table 3.
    225. Note that only Districts 1 and 12 are majority-minority districts.
    226. See supra text accompanying note 165 .
[^63]:    227. We have also ranked them in terms of the population measure, but for reasons discussed above, see supra text accompanying notes 208-14, we do not provide that information here.
    228. See infra Table 4.
    229. A historical comparison may be of interest: as suggested above, the "uncouth twenty-eight-sided" figure in Gomillion is not particularly noncompact by the standards of the 1990s. See supra notes 190-91 and accompanying text. We estimate its dispersion score to be in the neighborhood of .41 , and its perimeter score to be approximately .34 . The dispersion score puts the district above the average 1990s congressional districts in all but seven states; the perimeter score is above the average in all but eight states.
[^64]:    230. Information provided by Election Data Services, Inc.
    231. One of the authors previously wrote that we should "almost always" limit comparisons to one state or jurisdiction. Niemi et al., supra note 195, at 1176. Professor Niemi now regards nationwide comparisons as more useful than that statement would suggest, as long as one makes them with sensitivity to the shapes of states and to other complicating factors such as islands and coast or shorelines.
[^65]:    232. In both cases, the islands are well spread out, thus greatly lowering the dispersion score. The perimeter score is also reduced because the perimeter is calculated around each island - as well as mainland area - separately.
    233. If one averages the dispersion and perimeter scores for Texas CD18 (Figure 2(g)), the resulting score is .185 , which does not place it among the 25 least compact congressional districts in the nation.
    234. We leave aside the cases of California CD36 and Hawaii CD2 because they are artifacts of the unusual geography of the two states.
    235. Political observers describe this oddly shaped district as a result of the way in which the Voting Rights Act was interpreted in Florida. The beach towns were apparently isolated when
[^66]:    the adjoining 23d and 17th districts, just inland from the coast, were designed as minority-dominated districts. From this perspective, the oddly shaped coastal district is the residue of an effort to create minority-dominated districts. See generally BARONE \& UjifuSA, supra note 186, at 320-21 (describing Florida CD22 and the redistricting process).
    236. In addition to Florida CD22, Louisiana CD6, New York CDs 5, 7-9, and North Carolina CD7 are each majority-white districts that share parts of borders with a minority district.
    237. All these figures exclude districts in which no one racial or ethnic group is a majority. The exact numbers, but not the conclusion, would change if we counted those districts. Stanley \& Niemi, supra note 184, at 43-44 tbl. 1-17, lists congressional districts with a majorityminority population, based in part on Election Data Services data.
    238. See supra text accompanying notes 181-220.
    239. See, e.g., League of United Am. Citizens v. Clements, 999 F. 2 d 831 (5th Cir. 1993) (en

[^67]:    banc); Hines v. Mayor of Ahaskie, 998 F.2d 1266 (4th Cir. 1993); Kimble v. County of Niagara, 826 F. Supp. 664 (W.D.N.Y. 1993).
    240. Information provided by Election Data Services, Inc.

[^68]:    241. As noted earlier, the ability to calculate compactness scores has been developed only recently. See supra text accompanying note 194.
    242. See supra Table 2.
[^69]:    245. See Niemi et al., supra note 195, at 1175.
    246. That extremely noncompact districts are not evident, in general, in the 1970s and 1980s does not, of course, mean they were not prevalent in earlier periods. Southern Redeemers used gerrymanders, involving extremely noncompact election districts, as a central technique to reestablish political control after the national retreat from Reconstruction began in 1877. Thus, in Mississippi, Redeemers in 1877 concentrated "the bulk of the black population in a 'shoestring' Congressional district running the length of the Mississippi River, leaving five others with white majorities. Alabama parceled out portions of its black belt into six separate districts to dilute the black vote." Eric Foner, Reconstruction: America's Unfinished Revolution, 1863-
[^70]:    250. Of the states with combined black and Hispanic populations above $20 \%$, between $10 \%$ and $20 \%$, and less than $10 \%, 13$ of $15(87 \%)$, 7 of $9(78 \%)$, and 12 of 19 ( $63 \%$ ), respectively, saw a decline in their perimeter scores.
[^71]:    251. See, e.g., Shaw v. Reno, 113 S. Ct. 2816 (1993) ("[W]hen members of a racial group live together in one community, a reapportionment plan that concentrates members of the group in one district and excludes them from others may reflect wholly legitimate purposes. The district lines may be drawn, for example, to provide for compact districts of contiguous territory, or to maintain the integrity of political subdivisions."); Reynolds v. Sims, 377 U.S. 533, 578 (1964).
[^72]:    252. These assumptions are always subject to constitutional and VRA constraints, of course, that prohibit minority-vote dilution.
[^73]:    253. See, e.g., Washington v. Davis, 426 U.S. 229, 248 n. 14 (1976).
    254. 412 U.S. 735 (1973).
    255. 412 U.S. at 753; see also White v. Weiser, 412 U.S. 783, 795-96 (1973) ("Districting inevitably has sharp political impact and inevitably political decisions must be made by those charged with the task.').
[^74]:    256. Supplemental Brief for the United States as Amicus Curiae at 14, Hays v. Louisiana (W.D. La. filed Aug. 9, 1993) (No. 92-1522S).
    257. See supra text accompanying notes 90-96.
    258. 478 U.S. 109 (1986).
    259. For example, after the Wisconsin legislature failed to reapportion itself following the 1990 Census, the court adopted its own plan and construed Bandemer to require that the smallest number of incumbents be paired. The critical feature of the plan chosen was that it "pair[ed] only 16 incumbents in both houses of the legislature, and only 6 of the same party." Prosser v. Elections Bd., 793 F. Supp. 859, 871 (W.D. Wis. 1992).

    The Supreme Court has acknowledged the legitimacy of state efforts to protect incumbents on several occasions. See, e.g., Karcher v. Daggett, 462 U.S. 725, 740-41 (1983); Burns v. Richardson, 384 U.S. 73, 89 n. 16 (1966) (minimizing competition between incumbents does not necessarily establish invidiousness).
    260. For a critique of the courts' protection of incumbents as a way of ensuring against extreme partisan gerrymandering, see Samuel Issacharoff, Judging Politics: The Elusive Quest for Judicial Review of Political Fairness, 71 Texas L. Rev. 1643, 1672 (1993) ("Courts have repeatedly invoked Bandemer for the proposition that it is impermissible to place incumbents in head-to-head contests with each other in redrawn districts.").
    261. Burton v. Sheheen, 793 F. Supp. 1329, 1342 (D.S.C. 1992) (describing the avoidance of incumbent contests as "an important state goal").

[^75]:    263. White v. Weiser, 412 U.S. 783, 797 (1973). Note, though, that the Court explicitly reserved the different question of whether a state can justify a deviation from population equality among districts that is a prima facie violation of equal protection on the ground that it is necessary to protect incumbents. 412 U.S. at 791-92. Justice Marshall rejected the Court's willingness to defer to state desires to protect incumbents, even when the question arises only in the context of federal courts' choosing between reapportionment plans after a constitutional violation has been established. 412 U.S. at 799 (Marshall, J., concurring in part).
    264. See, e.g., Prosser v. Elections Bd., 793 F. Supp. 859,867 (W.D. Wis. 1992) (three-judge court; per curiam) ("Judges should not select a plan that seeks partisan advantage - that seeks to change the ground rules so that one party can do better than it would do under a plan drawn up by persons having no political agenda - even if they would not be entitled to invalidate an enacted plan that did so."); Terrazas v. Slagle, 789 F. Supp. 828, 844 (W.D. Tex. 1991)
     incumbents, is the sole focus of federal law in the area of redistricting and reapportioning seats to legislative bodies."), affd., 112 S. Ct. 3019 (1992) (mem.).
    265. "The plan developed by the court was developed without regard ta the residence of incumbents. Adherence to principles of compactness and population equality, and respect for governmental boundaries insures that partisan gerrymandering is reduced or eliminated." Emison v. Growe, 782 F. Supp. 427, 445-46 (D. Minn. 1992) (footnote omitted), revd., 113 S. Ct. 1075 (1993).
[^76]:    267. See supra notes 254-55 and accompanying text.
    268. Shaw v. Reno, 113 S. Ct. 2816, 2841 (1993) (White, J., dissenting), 113 S. Ct. at 2843 (Stevens, J., dissenting).
    269. See, e.g., Brief Amicus Curiae of the Republican National Committee in Support of Appellants at 12-13, 19-21, 25, Shaw.
[^77]:    270. Many years ago, John Ely observed that legal standards treating ex post racially disparate impact as racial discrimination would necessarily require policymakers ex ante to engage in race-conscious policymaking. He noted:
    [So] long as the Court remains unwilling to order states to take race into account . . . judicial review must await proof of racial motivation and cannot be triggered by disproportion per se. To undertake automatically to invalidate [state actions] because of racial disproportion would obviously be to order that balance be intentionally achieved.
    John H. Ely, Legislative and Administrative Motivation in Constitutional Law, 79 Yale L.J. 1205, I260 (1970). Because the VRA prohibits electoral arrangements that discriminate in intent as well as result, policymakers must be aware of - rather than indifferent to - the racial distribution of political power that different electoral structures will produce.
    271. See, e.g., Shaw, 113 S. Ct. at 2830 ("The States certainly have a very strong interest in complying with federal antidiscrimination laws that are constitutionally valid as interpreted and as applied."). There is some circularity, inevitably, to this analysis. If only "highly irregular" districts trigger strict scrutiny, then only those districts require special justification. But as a statutory matter, courts are unlikely to interpret the Act to require highly irregular districts after Shaw.
    272. See supra text accompanying notes 160-76.
    273. Even if courts become more strict in the way they interpret the first prong of Gingles, thus finding no liability when no reasonably compact minority district can be created, they might
[^78]:    still permit "highly irregular" districts as a remedy after liability has otherwise been found. Thus, once § 2 requires a jurisdiction to create a minority district, the jurisdiction might prefer an irregular to a compact district. In this context, however, the jurisdiction could not defend itself on the ground that the VRA required the irregular district. The legal question would then be whether the creation of this irregular district was "narrowly tailored" to remedy the violation, a question we address infra at text accompanying notes 278-80.
    274. We focus here only on oddly shaped districts, rather than race-conscious districts in general, because of our view that Shaw applies only to the former. See supra text accompanying notes 57-74.
    275. If the Justice Department denied $\S 5$ preclearance on the ground that the failure to create a particular, "highly irregular" district would amount to a potential § 2 violation, a jurisdiction that complied by drawing such a district would likely have sufficient justification. Of course, an aggressive interpretation of Croson could further require that the Justice Department's conclusion of potential § 2 liability itself rest on a sufficient factual foundation, such as proof of racially polarized voting in the relevant area.

[^79]:    277. As we argued earlier, see supra text accompanying notes 126-32, Shaw can be read broadly and narrowly; if Shaw applies only when a more compact minority district could have been created, then the inability to do so would provide a sufficient defense under strict scrutiny.
    278. Shaw v. Reno, 113 S. Ct. 2816, 2819 (1993). This statement is made in the specific context of remedying violations under § 5's nonretrogression standard. 113 S . Ct. at 2819. The Court does not make a similarly explicit statement regarding narrow tailoring with respect to § 2. Nonetheless, nothing the Court says about § 5 would appear to distinguish it from § 2 in this respect.
[^80]:    280. It is generally recognized that equal population and avoidance of minority-vote dilution are goals that must be achieved. Beyond that, there is widespread disagreement on the priority ranking of other goals.
    281. See, e.g., Robert G. Dixon, Jr., Fair Criteria and Procedures for Establishing Legislative Districts, 9 Poly. Stud. J. 839, 844 (1981) (noting that districting is not an exercise in logic but in compromise and accommodation); Issacharoff, supra note 260, at 1650 (noting that states are hard pressed to articulate coherent policies for districting plans "in light of the political horsetrading and compromises that typically - and perhaps inevitably - underlie such plans"). The difficulties here are analogous to those that underlie the judicial resistance to engage in substan-
[^81]:    tive rationality review of economic legislation; just as individual economic regulations are tied to each other through an ongoing process of compromise and logrolling, individual district lines cannot be rationalized apart from the compromises and trade-offs they embody. See generally Frank Michelman, Politics and Values or What's Really Wrong with Rationality Review, 13 CREighton L. Rev. 487 (1977) (analyzing rationality review of economic regulation).
    282. 369 U.S. 186 (1962).

[^82]:    283. 377 U.S. 533 (1964); see also Wesberry v. Sanders, 376 U.S. 1 (1964) (requiring one person, one vote for congressional districts). Professors Aleinikoff and Issacharoff make a similar observation. See Aleinikoff \& Issacharoff, supra note 59, at 622 ("Shaw would then be the Baker of compactness standards, with its own Reynolds presumably to follow.").
[^83]:    ${ }^{1}$ The Court ordered the parties to provide the Special Master by November 8, 2017, with a list of incumbents running for reelection, along with their address and the date they were first elected. See Order at 9 . The Legislative Defendants provided such a list on November 8, although the Plaintiffs and Defendants could not agree on whether Representative Larry Bell was running for reelection. ECF No. 209. By later notice, Representative Bell confirmed he was not running for reelection. Larry Bell Declaration, Nov. 10, 2017, ECF No. 211. The Plaintiffs and Defendants also disagreed on the address for Senator Trudy Wade. With the release of the Special Master's Draft Plan and Report, the parties were ordered to submit the data on incumbent address as a geographic layer to be incorporated into Maptitude for Redistricting (the geographic information system used to construct the Special Master's Plan). The Legislative Defendants did so on November 14, 2017. ECF No. 214.

[^84]:    ${ }^{2}$ This is also the case for the Cromartie Demonstrative Maps. That proposal for the Guilford Senate Districts unnecessarily redraws the Guilford County portion of Senate District 29, which is primarily anchored in Randolph County.

[^85]:    ${ }^{3}$ Of course, the Special Master's Plan must also comply with the Voting Rights Act. See 52 U.S.C § 10301. No violations of the Voting Rights Act have been alleged with respect to the districts under review. Moreover, remedial plans for violations of the Voting Rights Act might require consideration of the kind of election data that the Court has barred the Special Master from considering in the construction of the Recommended Plan.

[^86]:    ${ }^{4}$ The Special Master is greatly indebted to Professor Patrick Egan of the NYU Department of Politics for assistance in producing the tables, images, and exhibits for this Report and the Draft Report. Professor Egan did not play a role in construction of the plans themselves.

[^87]:    ${ }^{5}$ In their reply brief, the Legislative Defendants correct their misinterpretation of the Draft Report's mention of removing any "residuum of racial predominance." See Legislative Defendants Response to Plaintiffs' Proposed Modifications to Special Master's Draft Plan, Nov. 17, 2017, at 3 n.4. ECF Doc. 218. In a footnote they acknowledge: "To the extent the special master is referring to an alleged "residuum" of race in the 2017 plans from the 2011 version of the districts, it is unclear why the 2011 plans have any relevance to the special master's work. Absent a Section 5 preclearance requirement, the baseline plans for analysis are the 2017 plans enacted by the legislature. The 2017 plans stand or fall on their own as to any alleged racial gerrymandering." Id. The Legislative Defendants correctly understand the Special Master's intended use of the word "residuum of racial predominance," as referring to the constitutional infirmities identified in the 2011 Plan that remained in the 2017 Plan. Indeed, the point made in the Special Master's Draft Plan was precisely the one suggested by the Court in its Order, when it expressed concerns that preserving the core shape and other characteristics of the 2011 Districts perpetuated the unconstitutional features of those districts. See Order at 2. The 2017 plans cannot "stand on their own" if they substantially preserve the 2011 districts already deemed unconstitutional. Indeed, the task assigned to the Special Master was to design a plan that cures any constitutional infirmity remaining in the 2017 Plan that the Court had identified already in its decision striking down the analogous 2011 Districts.
    ${ }^{6}$ The actual statistics as to Black Voting Age Population in the districts undermine this claim as well, but that issue is addressed in the discussion of the districts themselves.

[^88]:    ${ }^{7}$ In a short email to the Court on November 13, I confirmed that this was the correct interpretation of their Order.

[^89]:    ${ }^{8}$ As will be seen in the longer description of individual districts below, the peculiarity of these measures explains some of the changes made in Guilford County from the Draft House Plan to the Recommended House Plan.

[^90]:    ${ }^{9}$ For some reason, the Legislative Defendants also suggest that the "Special Master gave less consideration to Greensboro municipal lines in House District 57." Defendants Reply Brief at 3, ECF No. 218. I confess, I do not understand the criticism. Draft District 57 followed the municipal lines of Greensboro. It contained (and tracked) some of the non-contiguous portions of Greensboro that are northeast of the central city, but Enacted 2017 District 57 did so as well.

[^91]:    ${ }^{1}$ In the Draft Plan, HD 58 scores 0.27 on Reock and 0.15 on Polsby-Popper. Plaintiffs' proposed version of HD 58 that moves the entire SUM2 precinct scores 0.23 on Reock and 0.13 on Polsby-Popper. Thus, the Plaintiffs' Proposed whole-precinct modification

[^92]:    ${ }^{3}$ The change in compactness scores in HD 49 and 34 cannot be attributed entirely or even predominantly to the unpairing of Representatives Ball and Martin. Both of those districts were modified to accommodate the restoration of HD 40 and even out the population between districts in that area. Notwithstanding that fact, the compactness scores of the districts in the Special Master's plan and the Plaintiffs' suggested revisions are comparable. HD 49 in the Draft Plan scores 0.41 on Reock and 0.33 on PolsbyPopper. HD 49 in the Plaintiffs' Proposed Wake Modification scores 0.46 on Reock and 0.30 on Polsby-Popper. HD 34 in the Draft Plan scores 0.46 on Reock and 0.53 on Polsby-Popper. HD 34 in the Plaintiffs' Proposed Wake Modification scores 0.44 on Reock and 0.43 on Polsby-Popper. Thus, the Special Master's version of HD 34 is only very slightly more compact than Plaintiffs' suggested version, but that may be due to the restoration of HD 40. With HD 49, the Special Master's version scores better on PolsbyPopper and the Plaintiffs' version scores better on Reock. Ultimately, Plaintiffs' suggested modifications do not degrade the compactness of the Special Master's plan.

[^93]:    ${ }^{1}$ The process adopted by the Court for the appointment of the special master violates Rule 53, Fed. R. Civ. P., and the constitutional sovereignty of the State of North Carolina, including its legislature. Legislative defendants incorporate by reference all of their prior objections related to the appointment of Professor Persily as special master. D.E. 204. Legislative defendants renew their request to conduct a deposition or voir dire of the special master to examine the apparent conflicts raised by legislative defendants in prior briefing.

[^94]:    ${ }^{2}$ The Supreme Court has made clear that a record must include evidence of statistically significant racially polarized voting in a specific geographic area before race can be considered in drawing a district encompassing that area. Cooper v. Harris, 137 S.Ct. 1455, 1471 (2017) ("Harris"). Indeed, in Harris the Supreme Court held that even though the record before the North Carolina General Assembly contained expert reports documenting statewide racially polarized voting, the evidence wasn't sufficiently "local" enough to justify the State's consideration of race in drawing specific districts. Id. and n.5. Here, the special master does not even have evidence of statewide racially polarized voting before him, much less evidence of statistically significant racially polarized voting in the districts that he created employing racial sorting. If the State's record evidence in Harris was insufficient to support the use of race in redistricting, certainly the complete dearth of any such evidence before the special master prevents him from considering it.

[^95]:    ${ }^{4}$ To be sure, courts may impose temporary remedies during the pendency of litigation, see, e.g., Fed. R. Civ. P. 65; Winter v. Nat. Res. Def. Council, Inc., 555 U.S. 7, 20 (2008), but that is quite different from anticipatorily crafting a remedy that will be imposed only in the event liability is later found.

[^96]:    ${ }^{5}$ Perry involved an unusual circumstance in which the district court was forced to draw interim maps in the absence of an adjudicated legal violation because the intervening census concededly had "render[ed] the current plan unusable," but the State's newly enacted plan had not yet gained preclearance under Section 5 of the Voting Rights Act from the separate district court that was conducting the preclearance proceedings. Id. at 342. Obviously, no comparable circumstances exist here, as the district court itself has the power to determine the validity of the 2017 plans anytime it chooses to do so.

[^97]:    ${ }^{1}$ The legislature's decision not to draw race-based districts required it to re-group the counties under the county grouping requirements of Stephenson v. Bartlett, 355 N.C. 354, 562 S.E. $2 d 377$ (2002) and Dickson v. Rucho, 368 N.C. 481, 781 S.E. 2 d 404 (2015). The

[^98]:    ${ }^{5}$ While Democratic Representative Quick is double-bunked with Republican Representative Hardister, plaintiffs seek to move Representative Quick out of a district that is more likely to elect a Republican candidate and into an adjoining district that is more likely to elect a Democratic candidate.

[^99]:    ${ }^{6}$ Moreover, the population ripples created by plaintiffs' proposed changes in Wake County illustrate why eliminating the racial gerrymandering found in the 2011 districts necessarily requires the legislature to have the ability to change all of the districts within any given county grouping, including a single-county grouping such as Wake County. As demonstrated by plaintiffs' requested change to House District 40, the population ripple in changing a district affects more than just "adjoining" districts. Plaintiffs' proposed change to House District 40 overpopulates adjoining House District 49. Removing population from House District 49 requires changing a district that did not

