

# **EXHIBIT F**

1                   IN THE CHANCERY COURT OF TENNESSEE  
2                   FOR THE TWENTIETH JUDICIAL DISTRICT  
3

4                   TELISE TURNER, ET AL.,                 )  
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9   )  
10   ) Case No. 22-0287-IV  
11                   BILL LEE, GOVERNOR,                     )  
12                   ET AL.,                                     )  
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10                   VIDEOTAPED DEPOSITION OF SEAN P. TRENDE  
11                   Wednesday, January 4, 2023  
12                   - - - - -  
13                   - - - - -  
14                   Videotaped Deposition of SEAN P. TRENDE, called by the  
15                   Plaintiffs for examination under the Tennessee Rules  
16                   of Civil Procedure, taken before me, the undersigned,  
17                   Lorraine A. Litvin, a Notary Public in and for the  
18                   State of Ohio, at the Nationwide Hotel and Conference  
19                   Center, 100 Green Meadows Drive South, Lewis Center,  
20                   Ohio, commencing at 9:08 a.m. the day and date above  
21                   set forth.  
22                   - - - - -  
23                   - - - - -  
24                   - - - - -  
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<p>1 APPEARANCES:</p> <p>2 On Behalf of the Plaintiffs:</p> <p>3 Scott Tift, Esq.</p> <p>4 Barrett, Johnston, Martin &amp; Garrison</p> <p>4 414 Union Street, Suite 900</p> <p>Nashville, TN 37219</p> <p>5 615-244-2202</p> <p>stift@barrettjohnston.com</p> <p>6</p> <p>On Behalf of the Defendants:</p> <p>7 Pablo Varela, Esq.</p> <p>8 Alexander Rieger, Esq. (by telephone)</p> <p>Office of the Attorney General</p> <p>9 P.O. Box 20207</p> <p>Nashville, TN 37202</p> <p>10 alex.rieger@ag.tn.gov</p> <p>pablo.varela@ag.tn.gov</p> <p>11</p> <p>Also Present:</p> <p>12 Richard Stevens, Videographer</p> <p>13 Veritext</p> <p>14 -----</p> <p>15</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p>	<p>1 THE VIDEOGRAPHER: We're on the</p> <p>2 record at approximately 09:08 a.m. on</p> <p>3 January 4th, 2023. Please note that</p> <p>4 the microphones are sensitive and may</p> <p>5 pick up whispering and private</p> <p>6 conversations.</p> <p>7 Please mute your phones at this</p> <p>8 time. Audio and video recording will</p> <p>9 continue to take place unless all</p> <p>10 parties agree to go off the record.</p> <p>11 This is a Media 1 of the video</p> <p>12 recorded deposition of Sean P. Trende</p> <p>13 taken by counsel for the plaintiff in</p> <p>14 the matter of Telise Turner, et al.</p> <p>15 Versus Bill Lee, Governor, et al.,</p> <p>16 filed in the Chancery Court,</p> <p>17 Twentieth Judicial District,</p> <p>18 Tennessee, Case Number 22-0287-IV.</p> <p>19 The location of this deposition</p> <p>20 is 100 Green Meadows Drive South,</p> <p>21 Lewis Center, Ohio, 43035.</p> <p>22 My name is Richard D. Stevens</p> <p>23 representing Veritext and I'm the</p> <p>24 videographer. The court reporter is</p> <p>25 Lorraine Litvin from the firm</p>
<p>1 EXAMINATION INDEX</p> <p>2 SEAN P. TRENDE</p> <p>EXAMINATION BY MR. TIFT ..... 4</p> <p>3 -----</p> <p>4 EXHIBIT INDEX</p> <p>5 Plaintiff's Marked</p> <p>6 Exhibit 1 Trende Expert Report 13</p> <p>Exhibit 2 Trende Curriculum Vitae 13</p> <p>7 Exhibit 3 Redistricting Maps Memo 22</p> <p>Exhibit 4 Lockett v Crowell Case Law 27</p> <p>8 Exhibit 5 Cervas Rebuttal Report 40</p> <p>9 -----</p> <p>10 OBJECTION INDEX</p> <p>11 BY MR. VALERA ..... 8</p> <p>BY MR. VALERA ..... 9</p> <p>12 BY MR. VALERA ..... 10</p> <p>BY MR. VALERA ..... 11</p> <p>13 BY MR. VALERA ..... 12</p> <p>BY MR. VALERA ..... 13</p> <p>14 BY MR. VALERA ..... 18</p> <p>BY MR. VALERA ..... 23</p> <p>15 BY MR. VALERA ..... 24</p> <p>BY MR. VALERA ..... 25</p> <p>16 BY MR. VALERA ..... 26</p> <p>BY MR. VALERA ..... 28</p> <p>17 BY MR. VALERA ..... 31</p> <p>BY MR. VALERA ..... 32</p> <p>18 BY MR. VALERA ..... 34</p> <p>BY MR. VALERA ..... 38</p> <p>19 BY MR. VALERA ..... 42</p> <p>BY MR. VALERA ..... 43</p> <p>20 -----</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p>	<p>1 Veritext.</p> <p>2 I'm not authorized to administer</p> <p>3 an oath. I'm not related to any</p> <p>4 party in this action, nor am I</p> <p>5 financially interested in the</p> <p>6 outcome.</p> <p>7 If there are any objections to</p> <p>8 proceeding, please state them at the</p> <p>9 time of your appearance.</p> <p>10 Counsel and all present</p> <p>11 including remotely will now state</p> <p>12 their appearances and affiliations</p> <p>13 for the record beginning with the</p> <p>14 noticing attorney.</p> <p>15 MR. TIFT: Scott Tift, counsel</p> <p>16 for plaintiffs.</p> <p>17 MR. VARELA: Pablo Varela,</p> <p>18 counsel for defendants.</p> <p>19 MR. RIEGER: Alex Rieger,</p> <p>20 counsel for defendants.</p> <p>21 THE VIDEOGRAPHER: Will the</p> <p>22 court reporter please swear in the</p> <p>23 witness?</p> <p>24 SEAN P. TRENDE</p> <p>25 called for examination, under the Tennessee Rules of</p>

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Page 5

2 (Pages 2 - 5)

1 Civil Procedure, after having been first duly sworn,  
2 as hereinafter certified, was examined and testified  
3 as follows:  
4           MR. TIIFT: All right. We're  
5           ready to go.  
6           EXAMINATION  
7 BY MR. TIIFT:  
8 Q Good morning, Mr. Trende.  
9 A Morning.  
10 Q I take it from the number of times you have been  
11 an expert witness that you have done depositions in  
12 the past, correct?  
13 A That's right.  
14 Q Okay. So I'm sure that you have heard the short  
15 laundry list of things every lawyer says at the start  
16 of sort of the ground rules, but I'll just go through  
17 them quickly.  
18 First off, we can take a break at any time that  
19 you need. Just let us know. If we -- if you need to  
20 take a break, I might ask you to answer the question  
21 if there's a question pending.  
22 Does that sound good?  
23 A Yes.  
24 Q I'll inevitably ask a question that is not worded  
25 well. If you in any way don't think you understand

Page 6

1 legislature and the senate, state senate map, elected  
2 by the legislature.  
3       Have you offered any expert opinion about the  
4 senate map?  
5 A No.  
6 Q Okay. Let's talk about a couple of or some  
7 terminology. Throughout your report you refer to the  
8 enacted map. Do we agree that the enacted map refers  
9 to the House of Representatives map enacted by the  
10 Tennessee legislature in early 2022?  
11 A Yes.  
12 Q Okay. Did you do any work as an expert in this  
13 case to determine if the enacted map splits as few  
14 counties as necessary to comply with Federal  
15 Constitution Requirements?  
16           MR. VARELA: Object to the form.  
17 A No. I didn't look to see if there were fewer  
18 county splits that could be made while complying with  
19 federal constitutional requirements. There may be,  
20 but I don't know.  
21 Q Okay. And did you do any sort of affirmative map  
22 making to explore alternative maps of your own  
23 creation for this case?  
24 A No.  
25 Q Did you undertake any attempt on your own to

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1 what I have asked, will you let me know and I'll work  
2 on rephrasing until we get to a common understanding  
3 of the question?  
4 A Yes.  
5 Q You're already doing this well, but of course we  
6 need to try to not talk over each other and so I'll  
7 try to fully ask a question or let you fully answer  
8 before I fully ask a question and if you can try to  
9 let me fully ask the question before you answer that  
10 will help the court reporter have a clean transcript.  
11 Does that sound agreeable?  
12 A Yes.  
13 Q And also, if ever you answer with something other  
14 than a verbal response, you know, a head shake or an  
15 hm-hmm kind of thing, I'll just ask you to respond  
16 with a word so that we can have that in the transcript  
17 as well.  
18 Does that sound good?  
19 A Yes.  
20 Q Is there any reason you know of, anything would  
21 prevent you from giving honest testimony to the best  
22 of your recollection this morning?  
23 A No.  
24 Q Okay. In this case there are both challenges to  
25 the house district map enacted by the Tennessee

1 start with the enacted map and then reduce county  
2 splits while still complying with Federal Constitution  
3 Requirements?  
4           MR. VARELA: Object to the form.  
5 A No.  
6 Q Did you attempt to draw any new or alternate maps  
7 that splits fewer counties than the enacted map?  
8 A No.  
9 Q In your work for this case did you do any work to  
10 determine if the general assembly could have created a  
11 house map with fewer than 30 county splits?  
12 A I examined the alternative plans proposed by  
13 Dr. Cervas, C-E-R-V-A-S, so that is part of that type  
14 of exercise, but beyond that I didn't do anything.  
15 Q Okay. In your opinion could the general assembly  
16 have approved a house map with fewer than 30 splits,  
17 county splits, but still complied with the Federal  
18 Constitution Requirements?  
19           MR. VARELA: Object to the form.  
20 A I haven't seen any evidence to suggest they  
21 could.  
22 Q And have you seen the evidence to suggest that  
23 they couldn't have had fewer than 30 splits?  
24           MR. VARELA: Same objection.  
25 A No, I haven't.

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Page 9

3 (Pages 6 - 9)

1 Q And you would agree that you have a broad  
2 expertise in redistricting at this point?  
3 A Yes.  
4 Q And based on that expertise and having worked  
5 with many maps over the years, is your opinion that  
6 there probably could have been fewer than 30 county  
7 splits in the House of Representatives without  
8 violating Federal Constitution Requirements?  
9 MR. VARELA: Object to the form.  
10 A I don't know.  
11 Q So is it accurate to say you don't have an  
12 opinion on whether or not there could have been fewer  
13 than 30 splits, county splits, while still complying  
14 with Federal Constitution Requirements?  
15 MR. VARELA: Same objection.  
16 A I don't think that's quite right. I haven't seen  
17 any evidence to suggest that there could be.  
18 Q Okay. And you also haven't seen evidence to  
19 suggest there couldn't be, correct?  
20 A I don't know what type of -- what that type of  
21 evidence would like, but I haven't seen it.  
22 Q Okay. Do you have an opinion on whether the  
23 general assembly itself sought to cross as few county  
24 lines as necessary to comply with Federal Constitution  
25 Requirements?

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1 during the legislative process that lead to the  
2 enacted map?  
3 A I did not.  
4 Q Do you believe that a house map could have been  
5 drawn based on the 2020 census results that divided  
6 fewer than 30 counties but still complied with  
7 one-person, one-vote in the Federal Constitution's  
8 Equal Rights Clause?  
9 MR. VARELA: Object to the form.  
10 A You mean the Equal Protection Clause?  
11 Q Correct.  
12 A I haven't seen any evidence to suggest that could  
13 have been done.  
14 Q Okay. And you would agree you also haven't seen  
15 evidence to suggest that could not have been done,  
16 correct?  
17 A Like I said, I don't know what that evidence  
18 would even look like. It's difficult to prove a  
19 negative, but I haven't seen it.  
20 Q Do you have any opinion on whether if the  
21 legislature had not sought to maintain cores of  
22 previous districts or to protect incumbents whether it  
23 would have been possible to then divide fewer than 30  
24 counties?  
25 A Can you rephrase that without the negative?

Page 12

1 MR. VARELA: Object to the form.  
2 A I don't know anything about the legislature's  
3 intention.  
4 Q Do you have any opinion on whether the general  
5 assembly sought to cross as few county lines as is  
6 necessary to comply with the Federal Constitution's  
7 equal population requirements?  
8 MR. VARELA: Same objection.  
9 A No. All I did was look at the maps that  
10 Dr. Cervas suggested.  
11 Q Okay. And do you have any opinion on whether the  
12 general assembly sought to cross as few county lines  
13 as necessary to comply with the Federal Constitution's  
14 prohibitions against dilution of minority vote  
15 strength?  
16 MR. VARELA: Same objection.  
17 A No. I didn't look at that.  
18 Q Does the enacted map itself demonstrate on its  
19 face that the general assembly sought to divide as few  
20 counties as necessary to comply with Federal  
21 Constitution Requirements?  
22 MR. VARELA: Object to the form.  
23 A I haven't seen evidence on that one way or  
24 another.  
25 Q Did you review any public testimony from hearings

Page 11

1 Q I can try. Do you have an opinion on whether the  
2 legislature could likely have divided fewer than 30  
3 counties if the legislature did not consider a core  
4 retention and incumbency protection?  
5 MR. VARELA: Object to the form.  
6 A I haven't seen any evidence to suggest they could  
7 have.  
8 Q And you would agree you also haven't seen  
9 evidence to suggest that they could not have, correct?  
10 A Again, I don't know what that evidence would look  
11 like. It's difficult to prove a negative, but I  
12 haven't seen it.  
13 Q I'm going to hand you a copy of your report for  
14 this case. Appendix A was a separate PDF so I have  
15 got them as two files but the separate -- second  
16 document is your -- is your CV.  
17 MR. TIFT: I guess I'll ask that  
18 they be marked as Exhibits 1 for the  
19 report and 2 for the CV.  
20 MR. VARELA: No objection.  
21 -----  
22 (Plaintiff's Exhibits 1 and 2 were  
23 marked for identification.)  
24 -----  
25 Q All right. I handed you the copy of your report

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4 (Pages 10 - 13)

1 from this case. Feel free to look through it, but you  
2 recognize this as the report you submitted in this  
3 case?

4 A Yes.

5 Q Okay. Who wrote the first draft of this report?

6 A I did.

7 Q Did you have any staff assistance in writing this  
8 report -- report or anybody working for you that  
9 assisted in writing the report?

10 A No.

11 Q Okay.

12 A There's handwriting on this document.

13 Q Let me see it. That's right. I gave you the  
14 copy I had marked up.

15 MR. TIFT: With agreement, we  
16 can just switch the sticker to an  
17 unmarked copy.

18 MR. VARELA: No objection.

19 A Fair play and what not.

20 Q Would you hold on to the marked copy there?

21 A Okay.

22 Q Okay. Which lawyer or lawyers did you work with  
23 as you prepared this case? Sorry. Let me start over.

24 Which lawyer or lawyers with the defense in this  
25 case was your point of contact for this report?

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1 in both the enacted map and Dr. Cervas's reports which  
2 is the -- in the enacted map, the majority/minority  
3 district, within rural west Tennessee, do you recall  
4 that?

5 A Yes.

6 Q And were you asked to focus on District 80 by --  
7 by counsel?

8 A I think I was asked to look at it.

9 Q Okay. And you also regularly address questions  
10 about Madison County in Dr. Cervas's maps. Were you  
11 asked by counsel to focus on Madison County?

12 A I was asked to look at it, although conclusions  
13 were never supplied.

14 Q Okay. Were there any opinions about Dr. Cervas's  
15 maps, any concerns about Dr. Cervas's maps that you  
16 raised based purely on your review of the maps in the  
17 first place?

18 A Well, all of the opinions are based on my review  
19 of the map and all my concerns are based on my review  
20 of the maps.

21 Q Okay. And my point is you agree that counsel  
22 asked you to focus on a few points we just talked  
23 about, correct?

24 A Yes. I'm always provided with a scope of  
25 engagement but my conclusions are my own based on an

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1 A Mr. Varela.

2 Q Did you meet with any other lawyers than  
3 Mr. Varela about this report?

4 A No.

5 Q Did Mr. Varela ask you to focus on anything --  
6 any specific points as you worked on your report?

7 A There were suggestions obviously. There was a  
8 scope of engagement that guided what I did.

9 Q Okay. To the best of your memory what points  
10 were you asked to focus on in preparing this report?

11 A I was asked to look at the Lockert cases and to  
12 examine Dr. Cervas's map, also the Tennessee  
13 Constitution and code.

14 I'm assuming that our conversations aren't  
15 protected under Tennessee law or Tennessee rules?

16 Q Correct.

17 A Okay.

18 Q Were you specifically asked to focus on core  
19 preservation as part of your report?

20 A That was 6 months or 4 months ago, 5 months ago,  
21 but I believe so.

22 Q Okay. And were you specifically asked to focus  
23 on incumbent protection for your report?

24 A Yes. I was asked to examine that.

25 Q You agree in your report you address District 80

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1 independent analysis of the data.

2 Q I get that point, but I'm asking are there any  
3 issues that you raise in your report separate from the  
4 ones that you were asked to focus on by counsel?

5 A And I'm answering your question by saying all the  
6 issues that I'm looking at are based on my own  
7 analysis.

8 I was given a scope of engagement and I complied  
9 with this scope of engagement, but all the analyses  
10 and conclusions are my own based on my own work.

11 Q Okay. In your report you address the division of  
12 Shelby County and Dr. Cervas's fourth and fifth maps,  
13 13(a) -- 13.5(a) and 13.5(b). Do you recall that?

14 A Yes.

15 Q And did counsel ask you to focus on the division  
16 of Shelby County in those maps?

17 A I was asked to look at it, yes, by counsel.

18 Q Okay. So we've just addressed five topics that  
19 counsel asked you to look at. In summary, questions  
20 about District 80, questions about Madison County,  
21 questions about core preservation, questions about  
22 incumbent protection, and questions about the division  
23 of Shelby County.

24 Do you recall any other specific areas that  
25 counsel asked you to look into?

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5 (Pages 14 - 17)

1 A I don't.  
2 Q And do you recall any concerns with the maps of  
3 Dr. Cervas that you raised outside of these five  
4 topics?  
5 MR. VARELA: Object to the form.  
6 A I think I noticed some non contiguities in them  
7 but I don't remember with certainty.  
8 Q You would agree your report doesn't address any  
9 non contiguities, is that correct?  
10 A That's right.  
11 Q Did you have any other concerns that aren't  
12 reflected in your report?  
13 A Not that I recall. If I remember any as we walk  
14 through, I'll modify my answer.  
15 Q Were you provided with incumbent addresses in  
16 advance of the work you did on your report?  
17 A Yes.  
18 Q Have you ever analyzed Tennessee in any fashion?  
19 Well, maybe that's too broad. Have you ever analyzed  
20 Tennessee districting before this case?  
21 A Yes.  
22 Q Okay. At what times?  
23 A When I wrote the Almanac of American Politics,  
24 Tennessee was one of the states to which I was  
25 assigned.

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1 Q Okay. How would you define or state your  
2 expertise as relevant to this case?  
3 A I don't know from a legal perspective what  
4 Mr. Varela is going to argue. That's usually a legal  
5 thing for the lawyers to fight about, but I think I  
6 have substantial expertise in redistricting in  
7 American politics specifically focused on election  
8 statistics and the Voting Rights Act.  
9 Q And do you consider yourself a -- do you consider  
10 yourself an expert on the Tennessee Constitution?  
11 A Again, that's a legal consideration. I don't  
12 know what Mr. Varela is going to argue. I certainly  
13 wouldn't be giving lay testimony on it but I think as  
14 compared to a Tennessee lawyer or Mr. Himes, I guess  
15 is a Tennessee lawyer, I -- I wouldn't have that level  
16 of expertise.  
17 Q Okay. Same with Tennessee statutes?  
18 A Same with Tennessee statutes.  
19 Q Okay. How many times have you been appointed as  
20 special master to draw districting lines?  
21 A I'm going to answer this carefully. I have been  
22 disclosed twice.  
23 Q Okay. And which two were those?  
24 A That was by the Supreme Court of Belize and the  
25 Virginia Supreme Court, Supreme Court of Virginia.

Page 20

1 Q And was that the 2014 almanac?  
2 A Yes. It covers the 2012 redistricting.  
3 Q Are you currently working on whatever will be the  
4 next version of the almanac?  
5 A No.  
6 Q Do you consider yourself an expert on Tennessee's  
7 redistricting practices?  
8 A I don't know what Tennessee law or rules are  
9 regarding qualification of experts. I have more  
10 than -- I don't think I would be giving lay testimony  
11 on it, but I don't know that I would know as much to  
12 say Mr. Himes.  
13 Q Did you do any work to educate yourself on past  
14 practices in Tennessee redistricting to inform your  
15 report?  
16 A I looked at the Tennessee Constitution and the  
17 Lockert cases.  
18 Q And did you do any work to educate yourself on  
19 practices that are not reflected in the Constitution  
20 or in statutory law in Tennessee?  
21 A I think I looked for that on line because most --  
22 a lot of state redistricting committees or  
23 legislatures will promulgate their -- their own  
24 standards that they're going to adhere to. I don't  
25 remember if I found anything.

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1 Q Okay. And in the Virginia matter do I understand  
2 correctly that you and Dr. Grofman were jointly  
3 appointed as special master?  
4 A That's correct.  
5 Q Okay. And did you and Dr. Grofman have any staff  
6 at your assistance during that process?  
7 A We each had a research assistant.  
8 Q Okay. And who -- who did the primary actual nuts  
9 and bolts of drawing districts as between you and  
10 Dr. Grofman or the assistants?  
11 A I can't speak to what Dr. Grofman did. I can say  
12 that every line I drew on the map I drew.  
13 Q Well, did you -- did you draw much of the map --  
14 or -- or, I mean -- we all did what we did, but that  
15 doesn't answer what you did do here, so -- you know,  
16 you drew your lines. I get that.  
17 But, you know, were you -- were you the primary  
18 district line drawer or was Dr. Grofman or did one of  
19 the research assistants do the first pass that you all  
20 tinkered with. How did the responsibilities break  
21 down?  
22 A So, again, it's a tricky question because I don't  
23 know exactly how Dr. Grofman did it. Doctor -- as  
24 between -- I never spoke with his research assistant  
25 and he never spoke with mine.

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6 (Pages 18 - 21)

1 So, I don't know anything about what his research  
2 assistant was doing.  
3 Dr. Grofman and I worked in concert to develop  
4 those maps and no one was in charge. There wasn't a  
5 primary map drawer as between us. It was a true joint  
6 effort and I believe that's reflected in the  
7 memorandum we did for that which is the only reason I  
8 can talk about this.  
9 I'll also put out a caveat that I am under a -- I  
10 hate to call it -- a confidentiality order from the  
11 Supreme Court of Virginia, so I have to be careful how  
12 much I talk about that.  
13 As for myself and my research assistant, she did  
14 not take first passes at lines, as I recall. I used  
15 her primarily to gather data.  
16 There was some shape files on communities of  
17 interest that I relied on her to make maps and  
18 co-collect that data to go through public comments,  
19 but the lines were drawn by me.  
20 MR. TIFT: I'll give you another  
21 document that I'll ask to be marked  
22 as Exhibit 3.  
23 - - - -  
24 (Plaintiff's Exhibit 3 was  
25 marked for identification.)

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1 A Yes.  
2 Q Do you agree core preservation is not a Federal  
3 Constitutional Requirement?  
4 A Not to my knowledge.  
5 Q And you agree that incumbent protection is not a  
6 Federal Constitution Requirement?  
7 A Not to my knowledge.  
8 Q And do you agree that if either core preservation  
9 or incumbency protection were a Federal Constitution  
10 Requirement you would be aware of it since you drew  
11 constitutional lines in the Virginia case?  
12 A I would be shocked if it were a constitutional  
13 requirement, but there's a lot of cases floating  
14 around out there.  
15 Q What hourly rate have you charged for your work  
16 on this case?  
17 A \$450 an hour.  
18 Q Is that your standard rate these days for expert  
19 work?  
20 A Yes.  
21 Q And I understand it's your opinion that the  
22 enacted map is the only constitutional map before the  
23 court in this case at this point --  
24 MR. VARELA: Object to the form.  
25 Q -- correct?

Page 24

1 - - - -  
2 Q I believe this is the memorandum you're referring  
3 to from that project. Can you take a look at it?  
4 A Yeah, I believe this is our final memorandum.  
5 Q Okay. Have you ever worked with Dr. Grofman in  
6 any other cases?  
7 A Again, I'll again it carefully. I haven't been  
8 disclosed with Dr. Grofman.  
9 Q And outside of special master work have you  
10 worked with Dr. Grofman at all?  
11 A No.  
12 Q I guess things that I can imagine, you know,  
13 working on research papers together or studying  
14 together or anything like that, have you done any kind  
15 of interaction with him in that respect?  
16 A No.  
17 Q Outside of special master appointments have you  
18 ever presented at conferences with Dr. Grofman?  
19 A No.  
20 Q What is your opinion on Dr. Grofman within the  
21 field of redistricting?  
22 A He's a very smart, knowledgeable man.  
23 Q And you agree he has broad experience in  
24 redistricting over the years?  
25 MR. VARELA: Object to the form.

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1 A That's my understanding, yeah.  
2 Q If we look at page 19 of your report --  
3 A I left my glasses in the car, but I can still  
4 read it.  
5 Q On page 19 I'm looking at subsection F, the  
6 second sentence, it says but it should not be  
7 forgotten -- and "it" refers to the enacted map -- but  
8 it should not be forgotten as it is the only  
9 constitutional map that balances the various  
10 considerations.  
11 Did I read that correctly?  
12 A Yes.  
13 Q And so you agree your opinion here is that the  
14 enacted map is the only constitutional map before the  
15 court?  
16 MR. VARELA: Object to the form.  
17 A Yes.  
18 Q Is it your opinion that the enacted map is  
19 constitutional under the one-person, one-vote  
20 requirements?  
21 A Yes.  
22 Q Did you do any analysis under one-person,  
23 one-vote for your expert work here?  
24 A I looked at the maximum deviation which is under  
25 10 percent, so if you can justify the deviations in

Page 25

7 (Pages 22 - 25)

1 the map then it would be constitutional under  
2 one-person, one-vote.  
3 Q And you agree all of the Dr. Cervas's maps are  
4 under 10 percent also, correct?  
5 MR. VARELA: Object to the form.  
6 A I didn't specifically look at that for the report  
7 but I believe that's right.  
8 Q Okay. And it's your opinion that the enacted map  
9 is constitutional under the Equal Protection Clause of  
10 the Federal Constitution?  
11 A I didn't do a full analysis of that.  
12 Q Okay. And I note that you did a racially  
13 polarized voting analysis about District 80.  
14 Did you do an overall Voting Rights Act analysis  
15 of the entire enacted map?  
16 A No.  
17 Q Did you analyze any other -- any portions of the  
18 enacted map outside of District 80 for compliance with  
19 the Voting Rights Act?  
20 A No.  
21 Q Outside of District 80 throughout Dr. Cervas's  
22 maps did you analyze his maps for Voting Rights Act  
23 compliance?  
24 A No.  
25 Q So is it also your opinion that the enacted map

Page 26

1 numbered paragraph 3, and the court there writes: The  
2 provisions of the Tennessee Constitution, although of  
3 secondary import to equal protection requirements, are  
4 nonetheless the valid and must be enforced insofar as  
5 is possible. If the state is correct in its  
6 insistence that there is no way to comply with the  
7 mandates of the federal and state constitutions  
8 without crossing lines, then we hold that the plan  
9 adopted must cross as few county lines as is necessary  
10 to comply with the federal constitution requirements.  
11 Did I read that correctly?  
12 A You did.  
13 Q And did you do any analysis as an expert to  
14 determine if the enacted plan crossed as few county  
15 lines as is necessary to comply with the federal  
16 constitution requirements?  
17 A No.  
18 Q You agree the process of decennial redistricting  
19 requires some diminishing of core preservation by  
20 nature, correct?  
21 MR. VARELA: Object to form.  
22 A Absence some fluke, yes.  
23 Q Right. As long as the population has moved at  
24 all requiring districting changes, you're going to  
25 diminish the core somewhat?

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1 is constitutional under the County Splitting Provision  
2 of the Tennessee Constitution?  
3 A I haven't seen a valid map that splits fewer  
4 counties so I don't have any reason to believe it is  
5 not, and from what I read in Lockert, and I understand  
6 this is something that you lawyers are going to be  
7 fighting about and is really free to fight about and  
8 the judge to decide, but I think 30 splits is  
9 acceptable.  
10 Q Let's look at Lockert 1.  
11 MR. TIFT: I'll ask that it be  
12 marked as Exhibit 4.  
13 MR. VARELA: No objection.  
14 -----  
15 (Plaintiff's Exhibit 4 was  
16 marked for identification.)  
17 -----  
18 Q I understand that you reviewed the Lockert cases  
19 in -- in your expert work in this case?  
20 A That's right.  
21 Q Let's turn to page 12 of this printout. It's a  
22 Westlaw printout, so I mean the number at the bottom  
23 right corner, not the internal pagination of the  
24 document.  
25 I want to look on the right-hand column at

Page 27

1 A Yeah, as long as the population hasn't increased  
2 equally in every district.  
3 Q Okay. And you agree that larger deviations from  
4 prior cores can be required to remedy an  
5 unconstitutional map or a map that failed to follow  
6 statutory requirements, right?  
7 A I can think of a scenario where that would be  
8 true, yes.  
9 Q And that was the case in your Virginia work,  
10 correct?  
11 A That's right.  
12 Q Let's look at that Virginia memo that's Exhibit  
13 3.  
14 And you will recall that you and Dr. Grofman,  
15 after an introduction, enumerated certain general  
16 criticisms and responded to them?  
17 A That's right.  
18 Q And looking to page 5, your second enumerated  
19 criticism is preservation of various district cores,  
20 do you see that?  
21 A Yes.  
22 Q Okay. And I'll just read the paragraph. It  
23 states: While we understand the views of speakers and  
24 commentators who implored us not to eliminate their  
25 districts or who advocated for a minimal changes map,

Page 29

8 (Pages 26 - 29)

1 we did not see that as our mission here. In fact, a  
2 minimal changes map, based upon districts drawn with  
3 heavy political considerations, would, in our view,  
4 bless those districts and contravene the intent of the  
5 voters when they passed the Virginia Redistricting  
6 Amendment. We do note again that, having effectively  
7 undone decades of convoluted line drawing, future  
8 remaps should not involve the same amount of  
9 disruption, since they would presumably be drawn in a  
10 fashion that permits population adjustments to  
11 existing districts without substantially affecting the  
12 preservation of cities and counties.

13 Did I read that correctly?

14 A That's right.

15 Q And so if I understand this correctly, in order  
16 to fix, in that case, particularly politically  
17 motivated drawing, that by its nature required more  
18 diminishment of previous cores than otherwise would  
19 have happened, correct?

20 A Yeah. Under the -- in the context of Virginia  
21 where they passed an Independent Redistricting  
22 Commission that required a political districting, we  
23 didn't feel we could base our districts on cores that  
24 were heavily gerrymandered in Virginia.

25 Q Right. And you agree that as a general matter if

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1 counties were being split?

2 A I don't remember that. Most of it was about  
3 their districts or their community of interest being  
4 split.

5 Q You would agree that the Exhibit 3 speaks for  
6 itself in terms of what you all reflected as the  
7 comments that you received?

8 A That's right. I mean, I'm not saying that we  
9 didn't receive anything about counties, and if it's in  
10 the -- if it's in -- in the memo, then, yes. We did  
11 this over a year ago, so --

12 Q And you would agree that re-drawing -- sorry.

13 You would agree that drawing a remedial map that  
14 reduces county splits without regard to incumbents  
15 will inevitably pair more incumbents than if you do so  
16 trying --

17 MR. VARELA: Object to form.

18 MR. TIFT: I'm going to just ask  
19 that question again. That was not a  
20 good question.

21 Q You would agree that drawing a remedial map that  
22 reduces county splits entirely without regard to  
23 incumbents will inevitably pair incumbents?

24 MR. VARELA: Object to form.

25 A No. No. I won't agree with that. As we note in

Page 32

1 other constitutional statutory priorities have been  
2 violated in a map, correcting those violations will,  
3 by its nature, cause an increased deviation from the  
4 original core?

5 MR. VARELA: Object to form.

6 A Oh, I don't think this principle necessarily  
7 generalizes. It's written in the specific context of  
8 Virginia which laid out specific considerations  
9 without wiggle room, one of which was not core  
10 retention.

11 Q And you agree that when seeking to divide fewer  
12 political subdivisions than a map previously divided,  
13 as your goal, doing so is itself going to require some  
14 diminishment of prior cores, correct?

15 A If that's your only goal, then yes.

16 Q I understand you and Dr. Grofman, as in your  
17 roles as special master, received a significant amount  
18 of public comment during the special master process.

19 A That's right.

20 Q Is that correct? And you would agree that a  
21 meaningful number of those comments reflected people  
22 not wanting their counties to be split?

23 MR. VARELA: Object to the form.

24 Q Let me rephrase. Did you receive comments from  
25 public -- members of the public concerned that their

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1 paragraph or in number 2, which you just read, once we  
2 drew the districts that were compact and based on  
3 county and city lines, we didn't expect the cores  
4 would adjust more, so I don't -- in the next  
5 re-drawing, so I don't know that we anticipated that  
6 there would be incumbent pairing in the next  
7 re-drawing.

8 It was inevitable in Virginia because of how  
9 convoluted the existing lines were.

10 Q And you and Dr. Grofman did your initial drawing  
11 of new districts without regard to where incumbents  
12 lived, correct?

13 A That's right.

14 Q And one of -- well, the first enumerated  
15 criticism, which on page 3, you all state that perhaps  
16 the most common criticism was that you paired too many  
17 incumbents.

18 A That's right. And I will just get ahead of us  
19 here and say that I can't reveal any conversations I  
20 had with the Supreme Court of Virginia about this or  
21 any direction or ruling we might have received.

22 Q And that's fine with me. I didn't ask you to.

23 So we're looking at your public comments here  
24 where -- where you note that having drawn lines  
25 without knowledge of where incumbents lived lead to

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9 (Pages 30 - 33)

1 perhaps the most common criticism being pairing of  
2 incumbents.  
3 A That's right. The parties each weighed in with  
4 their own maps asking us not to pair incumbents.  
5 There were public comments from people who didn't want  
6 to see their incumbent move away.  
7 There was one issue in particular where a  
8 long-standing member, a long-standing African  
9 American, member of the House of Delegates or the  
10 Senate -- I can't remember -- was paired with another  
11 member so there was a request to preserve that  
12 incumbent.  
13 Q And were you aware in reviewing Dr. Cervas's  
14 reports that he was not provided or the defendants did  
15 not provide incumbent addresses?  
16 MR. VARELA: Object to the form.  
17 A I don't remember one way or the other.  
18 Q Okay. Do you agree if Dr. Cervas was not  
19 provided with incumbent addresses just as when you  
20 didn't have incumbent address in Virginia, it's not  
21 surprising that more incumbents were paired than the  
22 enacted map?  
23 A I'm not surprised or not surprised.  
24 Q Okay. Looking to this page 3, the third  
25 paragraph, you all write: Much of this is simply a

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1 County where you had a huge number of incumbents in  
2 serpentine districts, making those districts  
3 unserpentine made it virtually inevitable they would  
4 be paired together.  
5 Q Have you discussed this case with anyone outside  
6 of the counsel for defendants?  
7 A Probably in general terms with other lawyers and  
8 my wife.  
9 Q Okay. What do you recall having discussed about  
10 this case with -- with any of those individuals?  
11 A My wife knows I have a deposition today in the  
12 Tennessee case but I haven't discussed the specifics  
13 of the matter with her.  
14 Other lawyers know I have a deposition today so  
15 not to schedule anything today, and when discussing  
16 scheduling in general in time allocation, they're  
17 aware of this case but nothing of the specifics of it.  
18 Q Okay. Did you speak with Doug Himes during the  
19 course of your expert work to date?  
20 A No.  
21 Q What software did you and Dr. Grofman use for  
22 redistricting in the Virginia case?  
23 A At Dr. Grofman's request we used Days  
24 Redistricting and then the results from that were  
25 plugged into -- we used staff counsel to plug them

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1 function of the fact that the existing lines split  
2 municipalities and counties regularly and we have  
3 eliminated those splits.  
4 So you would agree eliminating county and  
5 municipality splits in Virginia without regard to  
6 incumbent addresses lead to pairing of more incumbents  
7 than the previous enacted map lead to, is that  
8 correct?  
9 A That was true in Virginia, yes.  
10 Q Okay. And in the next paragraph you go on to  
11 state any redistricting map featuring this degree of  
12 geographic consolidation will almost certainly pair  
13 incumbents together; if those incumbents live in a  
14 narrowly defined geographic area the chances of being  
15 paired together are increased.  
16 Did I read that correctly?  
17 A That's true. That's true in the context of  
18 Virginia.  
19 Q Okay. And it's generically true also with the  
20 hypothetical you stated that if there's geographic  
21 consolidation and if incumbents live in a  
22 narrowly-defined geographic area then the chances are  
23 going to increase in incumbencies being paired,  
24 correct?  
25 A That's right. So, in a situation like in Fairfax

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1 into the Virginia redistricting map.  
2 Q Okay. To the best of your memory, what other  
3 softwares have you used over the years for work on  
4 redistricting?  
5 A Maptitude, and I believe I used the ESRI product  
6 in a case where I haven't been disclosed.  
7 Q And that's ESRI, right, all caps?  
8 A Yeah.  
9 Q Have you ever worked with Dr. Cervas on any  
10 matters?  
11 A I don't want to give what the meaning of is is  
12 response, but I guess it does depend how you would  
13 define our relationship in the New York case.  
14 Q Okay. How would you define your relationship in  
15 the New York case?  
16 A I wouldn't say we worked together but he was the  
17 special master and I was expert for plaintiffs in that  
18 case.  
19 Q Did you know Dr. Cervas before that case?  
20 A No.  
21 Q Have you interacted with Dr. Cervas other than in  
22 the context of the New York case?  
23 A Oh, I didn't interact with Dr. Cervas directly in  
24 that matter.  
25 Q Okay. Have you ever interacted with Dr. Cervas?

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10 (Pages 34 - 37)

1 Have you ever interacted with Dr. Cervas directly?  
2 A There was an issue that arose in Virginia that I  
3 think Dr. Grofman did the communication and I was  
4 cc'd. I don't think I ever directly interacted with  
5 him.  
6 Q I guess sitting here do you feel like you know  
7 Dr. Cervas?  
8 A No.  
9 Q What's your opinion of Dr. Cervas within the  
10 redistricting field?  
11 A I don't really have a strong opinion of him.  
12 Q Do you agree he has expertise in the field of  
13 redistricting?  
14 MR. VARELA: Object to the form.  
15 A That's a legal question that goes into a lot of  
16 stuff that I don't know about, but he -- I don't think  
17 he would be giving lay testimony on it either.  
18 Q Okay. Have you reviewed Dr. Cervas's rebuttal  
19 report since submitting your report?  
20 A Yes.  
21 Q Okay. What's your -- what opinions do you have  
22 on his rebuttal report?  
23 A I don't think the maps and that pass muster  
24 either.  
25 Q Okay. For what reasons?

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1 (Plaintiff's Exhibit 5 was  
2 marked for identification.)  
3 - - - -  
4 Q This is Dr. Cervas's rebuttal report.  
5 So I understand from before you have reviewed  
6 this rebuttal report prior to today?  
7 A That's right.  
8 Q Did counsel ask you to focus on any specific  
9 issues in reviewing the report?  
10 A No.  
11 Q Did counsel -- well, let's say you stated that  
12 one of the two maps in this report has a  
13 non-contiguity. Which map is that?  
14 A I believe that's 13c.  
15 Q Okay. And where is the non-contiguity?  
16 A I don't remember. I looked at that briefly.  
17 Q And did counsel ask you to look for  
18 non-contiguities or direct you to the one that you  
19 found?  
20 A No.  
21 Q Okay. And you don't -- and you believe it's 13c  
22 that has a non-contiguity?  
23 A Yes. We don't get to write a rebuttal report or  
24 sur-reply so I just looked at it quickly.  
25 Q Okay. And then you also identified an issue with  
Page 40

1 A As I recall, there's a non-contiguity in one map  
2 and another map doesn't contain a whole district in  
3 Sullivan County.  
4 THE WITNESS: How are we doing  
5 on time?  
6 MR. TIFT: 9:55.  
7 THE WITNESS: I'll just say I'm  
8 fine but if we're going to get into  
9 his rebuttal report, I'll definitely  
10 need my glasses, so --  
11 MR. TIFT: Okay. Let's go off  
12 the record for a second.  
13 THE VIDEOGRAPHER: We're off  
14 record. The time is 09:57.  
15 (Brief Recess)  
16 THE VIDEOGRAPHER: On the  
17 record. The time is 10:04.  
18 Q All right. Mr. Trende, we're back from a short  
19 break. Is there anything we talked about thus far  
20 that you want to go back to and discuss any more, you  
21 know, update, correct, change?  
22 A No.  
23 Q Okay. I'm going to hand you what we'll mark as  
24 Exhibit 5.  
25 - - - -

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1 Sullivan County. Can you expand on that?  
2 A Yeah. So, it's the same problem as in Madison  
3 County where you have to fill the county with one  
4 district, at least one district if you can, and  
5 Sullivan County -- the district in Sullivan County  
6 doesn't do that.  
7 Q Is that in 13c or d?  
8 A 13d.  
9 Q Okay. Did you identify any other concerns with  
10 these two maps?  
11 A 13c has worse core retention and double bunks  
12 than the enacted plan. 13d does not.  
13 Q Could you elaborate on what you mean by double  
14 burning?  
15 A Double bunk is redistricting jargon for putting  
16 two incumbents in the same -- two or more incumbents  
17 in the same -- well, I guess double bunks would be two  
18 incumbents in the same district.  
19 Q And you would agree 13c and d maintain the exact  
20 same District 80 and 73 as the enacted map?  
21 A Yes.  
22 Q And so you agree that 13c and d resolve your  
23 concerns about Madison County from the previous five  
24 maps?  
25 A Yeah, and I should say just -- yeah, yeah, that's

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11 (Pages 38 - 41)

1 right because 73 is the complement, right.  
2 Q And you agree that 13c and d resolve your concern  
3 about District 80 meaning the majority/minority  
4 district in rural west Tennessee?

5 A Yes.

6 Q So you agree that district -- or sorry -- map c,  
7 13c and d, are on the same Voting Rights Act footing  
8 as the enacted map?

9 MR. VARELA: Object to the form.

10 A I don't know. I don't know what was going on in  
11 potentially in other areas but at least with respect  
12 to that southwest rural Tennessee district they would  
13 be.

14 Q Okay. And you haven't identified any other  
15 Voting Rights Act concerns with the enacted map,  
16 correct?

17 A That's right.

18 Q And do you agree that 13d has similar core  
19 preservation to the enacted map?

20 A Yes.

21 Q You agree that 13d has similar incumbency  
22 protection to the enacted map?

23 A Yes.

24 Q Concerning map 13c, you identified a question of  
25 non-contiguity. Outside of that issue have you

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1 The State of Ohio, )  
2 SS: CERTIFICATE  
3 County of Cuyahoga. )  
4 I, Lorraine A. Litvin, Notary Public within and  
5 for the State of Ohio, duly commissioned and  
qualified, do hereby certify that the within-named  
6 SEAN P. TRENDE, was by me first duly sworn to testify  
the truth, the whole truth, and nothing but the truth  
6 in the cause aforesaid; that the testimony then given  
by him/her was by me reduced to stenotypy in the  
7 presence of said witness, afterwards transcribed on a  
computer, and that the foregoing is a true and correct  
8 transcript of the testimony so given by him/her as  
aforesaid.

9 I do further certify that this deposition was  
10 taken at the time and place in the foregoing caption  
specified and was completed without adjournment.

11 I do further certify that I am not a relative,  
12 employee of, or attorney for any of the parties in the  
above-captioned action; I am not a relative or  
13 employee of an attorney for any of the parties in the  
above-captioned action; I am not financially  
14 interested in the action; I am not, nor is the court  
reporting firm with which I am affiliated, under a  
15 contract as defined in Civil Rule 28(D); nor am I  
otherwise interested in the event of this action.

16 IN WITNESS WHEREOF I have hereunto set my hand  
17 and affixed my seal of office at Cleveland, Ohio, on  
this 13th day of January, 2023.

18

19

20

21

22

23

*Lorraine Litvin*, Notary Public  
in and for the State of Ohio.

My commission expires August 4, 2026

24

25

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1 identified any constitutional violations in map 13c?

2 MR. VARELA: Object to the form.

3 A No.

4 Q And in map 13d you raised a concern about  
5 Sullivan County. Separate from that concern have you  
6 identified any constitutional violations in 13d?

7 MR. VARELA: Same objection.

8 A No.

9 MR. TIFT: All right. I don't  
10 have any further questions.

11 MR. VARELA: No questions.

12 THE VIDEOGRAPHER: We're off the  
13 record. The time is 10:09.

14 -----

15 (Deposition concluded at 10:09 a.m.)

16

17

18

\_\_\_\_\_  
Sean P. Trende

19

20 -----

21

22

23

24

25

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12 (Pages 42 - 44)

[& - affirmative]

<b>&amp;</b> <b>&amp; 2:3</b> <b>0</b> <b>09:08 4:2</b> <b>09:57 39:14</b> <b>1</b> <b>1 3:6 4:11 13:18,22 27:10</b> <b>10 3:12 25:25 26:4</b> <b>100 1:17 4:20</b> <b>10:04 39:17</b> <b>10:09 43:13,15</b> <b>11 3:12</b> <b>12 3:13 27:21</b> <b>13 3:6,6,13 17:13</b> <b>13.5 17:13,13</b> <b>13c 40:14,21 41:7,11,19,22 42:2,7,24 43:1</b> <b>13d 41:8,12 42:18,21 43:4 43:6</b> <b>13th 44:17</b> <b>18 3:14</b> <b>19 25:2,5</b> <b>2</b> <b>2 3:6 13:19,22 33:1</b> <b>2012 19:2</b> <b>2014 19:1</b> <b>2020 12:5</b>	<b>20207 2:9</b> <b>2022 8:10</b> <b>2023 1:10 4:3 44:17</b> <b>2026 44:24</b> <b>22 3:7</b> <b>22-0287 1:6 4:18</b> <b>23 3:14</b> <b>24 3:15</b> <b>25 3:15</b> <b>26 3:16</b> <b>27 3:7</b> <b>28 3:16 44:15</b> <b>28852 44:23</b> <b>3</b> <b>3 3:7 22:22,24 28:1 29:13 32:5 33:15 34:24</b> <b>30 9:11,16,23 10:6,13 12:6 12:23 13:2 27:8</b> <b>31 3:17</b> <b>32 3:17</b> <b>34 3:18</b> <b>37202 2:9</b> <b>37219 2:4</b> <b>38 3:18</b> <b>4</b> <b>4 1:10 3:2,7 15:20 27:12,15 44:24</b>	<b>40 3:8</b> <b>414 2:4</b> <b>42 3:19</b> <b>43 3:19</b> <b>43035 4:21</b> <b>450 24:17</b> <b>4th 4:3 5</b> <b>5 3:8 15:20 29:18 39:24 40:1</b> <b>6</b> <b>6 15:20</b> <b>615-244-2202 2:5</b> <b>7</b> <b>73 41:20 42:1</b> <b>8</b> <b>8 3:11</b> <b>80 15:25 16:6 17:20 26:13,18 26:21 41:20 42:3</b> <b>9</b> <b>9 3:11</b> <b>900 2:4</b> <b>9:08 1:18</b> <b>9:55 39:6</b> <b>a</b> <b>a.m. 1:18 4:2 43:15</b> <b>above 1:18 44:12,13</b>	<b>absence 28:22</b> <b>acceptable 27:9</b> <b>accurate 10:11</b> <b>act 20:8 26:14 26:19,22 42:7 42:15</b> <b>action 5:4 44:12,13,14,15</b> <b>actual 21:8</b> <b>address 15:25 16:9 17:11 18:8 34:20</b> <b>addressed 17:18</b> <b>addresses 18:15 34:15,19 35:6</b> <b>adhere 19:24</b> <b>adjournment 44:10</b> <b>adjust 33:4</b> <b>adjustments 30:10</b> <b>administer 5:2</b> <b>adopted 28:9</b> <b>advance 18:16</b> <b>advocated 29:25</b> <b>affecting 30:11</b> <b>affiliated 44:14</b> <b>affiliations 5:12</b> <b>affirmative 8:21</b>
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[affixed - broad]

<b>affixed</b> 44:17	<b>alternative</b>	<b>area</b> 35:14,22	<b>b</b>
<b>aforesaid</b> 44:6 44:8	8:22 9:12	<b>areas</b> 17:24 42:11	<b>b</b> 17:13
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Tennessee Rules of Civil Procedure

Depositions Upon Oral Examination

Rule 30

Rule 30.05: Submission to Witness; Changes;  
Signing.

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may then be used as fully as though signed unless on a motion to suppress under Rule 32.04(4) the court holds that the reasons given for the refusal to sign require rejection of the deposition in whole or in part.

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IN THE CHANCERY COURT OF TENNESSEE  
FOR THE TWENTIETH JUDICIAL DISTRICT

TELISE TURNER, *et al.*,

Case No. 22-0287-IV

Plaintiffs,

v.

BILL LEE, Governor, *et al.*,

Defendants.

Expert Report of Sean P. Trende



## I. Expert Qualifications

### *Primary Employment*

I serve as Senior Elections Analyst for RealClearPolitics. I joined RealClearPolitics in January of 2009 after practicing law for eight years. I assumed a fulltime position with RealClearPolitics in March of 2010. RealClearPolitics is a company of around 50 employees, with its main 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.

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. 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. I am also currently a Visiting Scholar at the American Enterprise Institute, where my publications focus on the demographic and coalitional aspects of American Politics.

### *Publications and Speaking Engagements:*

I am also 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.

I also co-authored the 2014 Almanac of American Politics. The Almanac is considered the foundational text for understanding congressional districts and the representatives of those

**Prior Engagements as an Expert:**

In 2021, I served 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 in the following decade. The Supreme Court of Virginia accepted those maps, which were praised by observers from across the political spectrum. "New Voting Maps, and a New Day, for Virginia," *The Washington Post* (Jan. 2, 2022), available at <https://www.washingtonpost.com/opinions/2022/01/02/virginia-redistricting-voting-maps-gerrymandee>; Henry Olsen, "Maryland Shows How to do Redistricting Wrong. Virginia Shows How to Do it Right," *The Washington Post* (Dec. 9, 2021), available at <https://www.washingtonpost.com/opinions/2021/12/09/maryland-virginia-redistricting/>; Richard Pildes, "Has VA Created a New Model for a Reasonably Non-Partisan Redistricting Process," *Election Law Blog* (Dec. 9, 2021), available at <https://electionlawblog.org/?p=126216>.

In 2019, 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.

I served as a Voting Rights Act expert to counsel for the Arizona Independent Redistricting Commission in 2021 and 2022.

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 5 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.

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. I was admitted as an expert

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 "Real 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. I was assigned Texas as one of my states. I have also authored a chapter in Larry Sabato's post-election compendium after every election dating back to 2012.

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 fulfill 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.

***Education:***

I am currently enrolled as a doctoral candidate in political science at The Ohio State University. I have completed all my coursework and have passed comprehensive examinations in both methods and American Politics. In pursuit of this degree, I have also earned a Master's Degree in Applied Statistics. 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.

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, and again in Fall of 2021. I am slated to teach it again in Fall of 2022. In the Springs of 2020, 2021, and 2022, 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.

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.

I authored reports in *NAACP v. Husted*, No. 2:14-cv-404 (S.D. Ohio), and *Ohio Democratic Party v. Mated*, 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.

I served as a consulting expert in *Lee v. Virginia Board of Elections*, No. 3:15-cv-357 (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.

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.

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.

I authored an expert report in *Pascua Yaqui Tribe v. Rodriguez*, No. 4:20-CV-00432-TUC-JAS (D. Ariz.), which involved early voting. My expert report and testimony were admitted at trial.

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.

I have only been excluded as an expert once, in *Fair Fight v. Raffensperger*. The judge concluded that I lacked sufficient credentials to testify as an expert in election administration.

I 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. 2021-1 198). That case was decided on the written record.

I authored two expert reports in the consolidated cases of *NCLCV v. Hall* and *Harper v. Hall* (21 CVS 15426; 21 CVS 500085), two political/racial gerrymandering cases. My reports and testimony were admitted.

I authored two expert reports in the consolidated cases of *Montana Democratic Party v. Jacobson*, DV-56-2021-451 (Mont. Dist. Ct.). These cases involve the elimination of same-day registration, use of student identification to vote, and the restriction of ballot collection.

I authored an expert report on behalf of amicus curiae in the consolidated cases of *Carter v. Chapman* (No. 464 M.D. 2021) and *Gressman v. Chapman* (No. 465 M.D. 2021), which were redistricting cases before the Supreme Court of Pennsylvania.

I filed an expert report in *Harkenrider v. Hochul*, (No. E2022-0116CV), which is a partisan gerrymandering challenge to New York's enacted Congressional and state Senate maps. My reports and testimony were admitted.

I filed an expert report in *Szeliga v. Lamone*, Case No. C-02-CV-21-001816 (Md. Cir. Ct.) and *In the Matter of 2022 Legislative Redistricting of the State*, Misc. No. 25 (Md. Ct. App.), political gerrymandering cases in Maryland. My reports and testimony were admitted.

I filed an expert report in *Graham v. Adams*, (No. 22-CI-00047) (Ky. Cir. Ct.), a political gerrymandering case. I was admitted as an expert and allowed to testify as trial.

I filed an expert report in *NAACP v. McMaster*, (No. 3:21-cv-03302-JMC-T,11-1- RMG), which is a racial gerrymandering challenge to South Carolina's enacted state House maps.

## II. Scope of Engagement

I have been retained by the Attorney General of Tennessee on behalf of defendants in the above matter, to evaluate Tennessee's maps, passed in light of the 2020 decennial census ("Enacted Plan" or "Enacted Map"). I have also been asked to respond to the "Report of Plaintiff's Expert Regarding Tennessee State House Reapportionment," dated Oct. 10, 2022. ("Cervas Report"). In the course of this comparison, I have also been asked to evaluate the districts that were used for

the previous decade, which I will refer to as the “Benchmark Plan” or “Benchmark Map.” I have been retained and am being compensated at a rate of \$450.00 per hour to provide my expert analysis.

### **III. Summary of Opinions**

Based on the work performed as addressed in the following sections of the report, I hold to the following opinions to a reasonable degree of professional certainty:

- Dr. Cervas’s maps would have the state “play chicken” with the Voting Rights Act, by either dismantling a performing ability-to-elect district in an area with highly racialized voting, or by reducing the Democratic vote share in the area substantially, while drawing the Black Democratic incumbent out of the district.
- All five of Dr. Cervas’s maps create difficulties in the Madison County area. In particular, all maps except 13a fail to contain a district that is wholly within Madison County, notwithstanding the fact that Madison County has adequate population to do so.
- Dr. Cervas’s final maps – 13.5a and 13.5b – raise additional constitutional concerns by traversing a county boundary without justification.
- Dr. Cervas’s maps are also indifferent to core retention and incumbents, placing large numbers of incumbents in the same district as other incumbents, and dismantling existing districts.
- Because of this, Dr. Cervas has not demonstrated that he has created legal districts that could pass the legislature and would withstand VRA scrutiny.

#### **IV. Data Relied Upon and Construction of Datasets**

For purposes of this report, I reviewed and/or relied upon the following materials:

- Mapping data made available from Dr. Cervas in his report, via Dave's Redistricting App;
- Shapefiles for Tennessee political materials and demographic information at the block, precinct, and county level, downloaded from the Redistricting Data Hub, available at <https://redistrictingdatahub.org/>;
- The Supreme Court of Tennessee's three opinions in *State ex rel. Lockert v. Crowell* (631 S.W.2d 702 (1982); 656 S.W.2d 836 (1983); 1986 WL 1649 (1986));
- Other documents referenced in this report.

Third parties are eliminated from all election results, resulting in a calculation of two-party vote share. This is standard practice in the study of elections.

All shapefiles are projected using the WGS 84 projection.

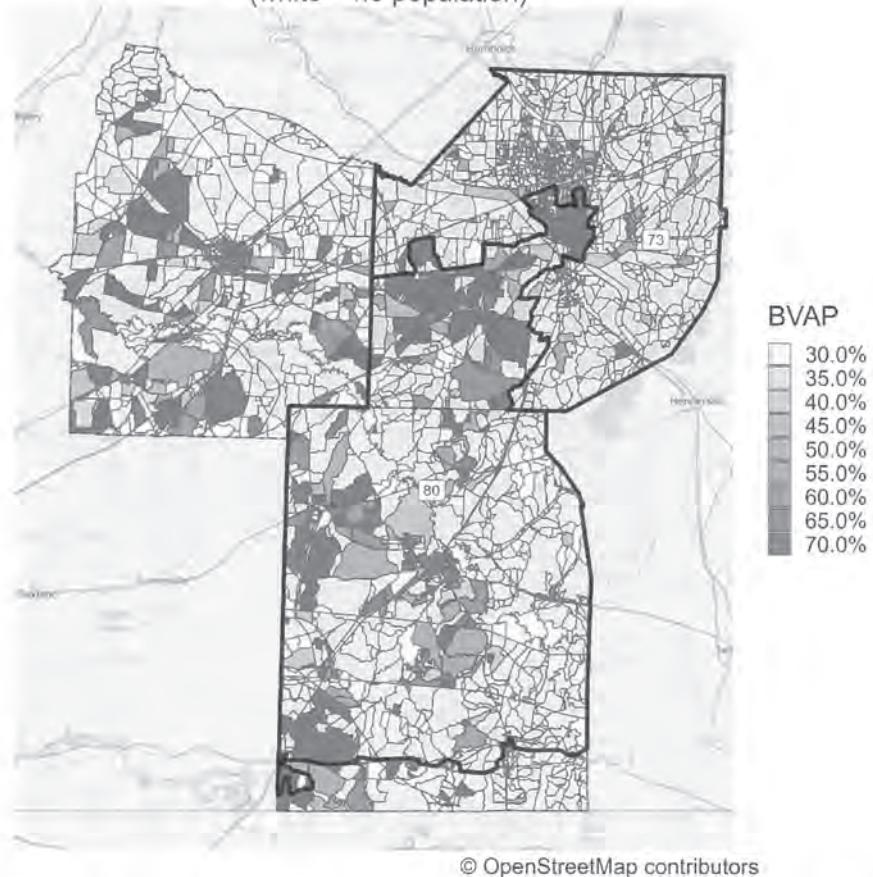
## V. Analysis of the Cervas Maps

### a. Map 13a

Dr. Cervas' demonstration map 13a does, as the Cervas Report claims, decrease the number of county splits vis-à-vis the Enacted Plan. However, in doing so it increases the number of Republican seats and dismembers a performing ability-to-elect district.

Since 2000, Rep. Johnny Shaw of Bolivar has represented a rural West Tennessee District. Rep. Shaw is African-American. Under the Benchmark plan, Rep. Shaw represented a district that included much of Hardeman and Madison Counties. A substantial portion of the district's population resides in Jackson, but it extends southward to include Rep. Shaw's residence in Hardeman County.

Benchmark Map, Districts 73 and 80  
(white = no population)

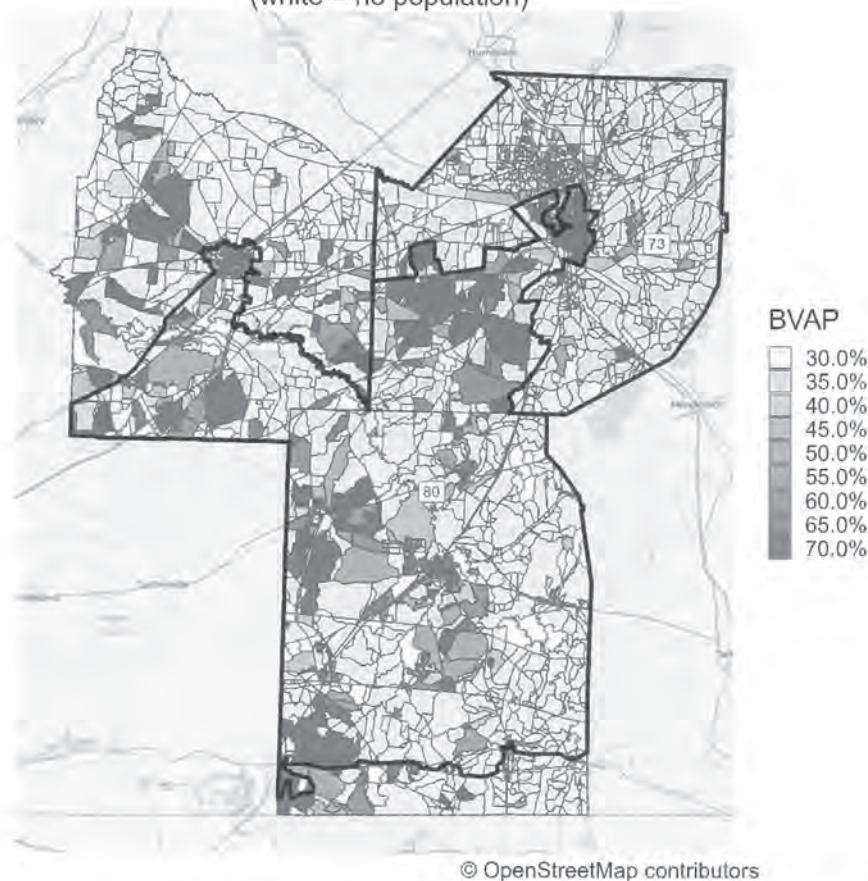


In the existing configuration, District 73 is contained entirely within Madison County, while District 80 takes in the bulk of the county plus a portion of Hardeman County. District 73 was heavily Republican, giving Donald Trump 65.8% of the vote in the last election, while

District 80 would favor Democrats, having gone 58.5% for Joe Biden. The latter district was also majority Black Voting Age population, with a BVAP of 54.4%.

District 80, however, was badly underpopulated by the end of the decade. Its population was just 56,918, 18.6% under the ideal population. Its population obviously had to be increased. Mapmakers did this by extending Shaw's district into neighboring Haywood County. The resulting district configuration is shown below:

Enacted Map, Districts 73 and 80  
(white = no population)



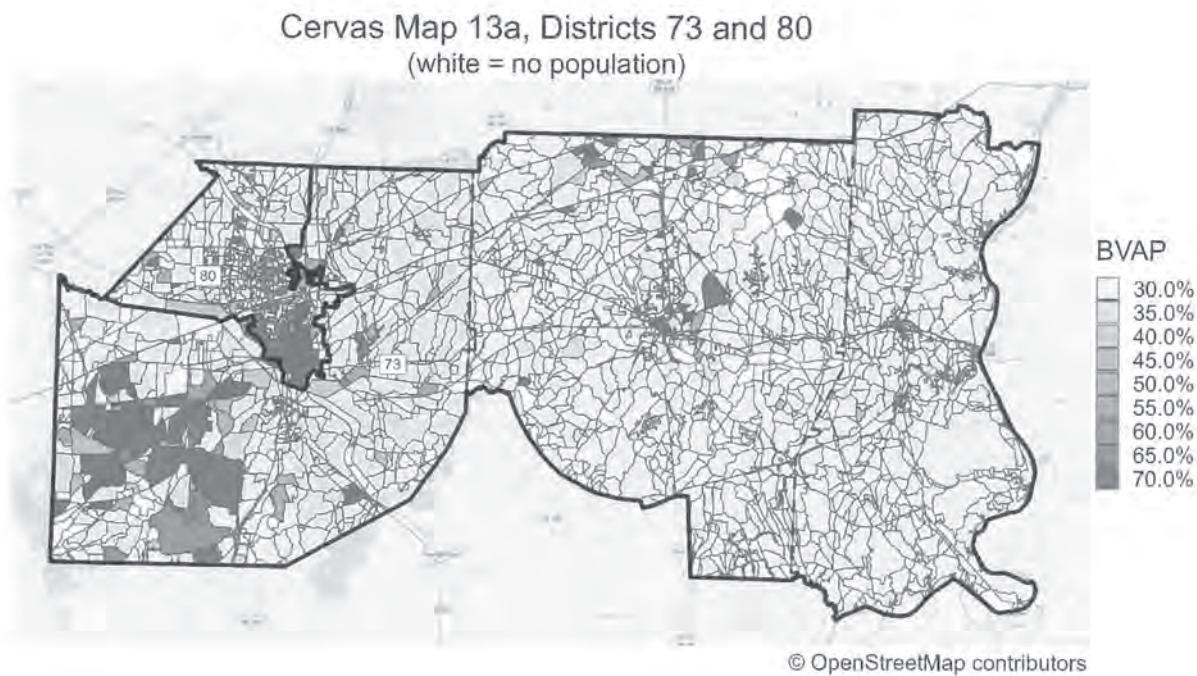
This district maintains the core of Rep. Shaw's district, but extends it into Brownsville. District 73 is wholly contained within Madison County. The resulting district 80 has a BVAP of 57.5% and gave President Biden 58.8% of the vote in 2020. Based on my experience as an elections analyst, any Democrat running in this district would be strongly favored, except perhaps in the most heavily Republican years.

This is important, because there is significant racially polarized voting in the area contained in District 80 in the Benchmark Plan. I performed an ecological inference analysis on

the blocks in the area. Ecological inference is a technique that is often utilized to determine if racially polarized voting is present. As you can see from the estimates below, Black voters in the districts are estimated to give approximated 76% of their vote to Democratic candidates, while non-Hispanic White candidates give approximately 36.83% of the vote to Democrats. This indicates racially polarized voting is likely present.

EI Estimates, District 80					
Race	Party	Estimate	Lower 95%	Upper 95%	
Black	Democratic	76.39%	75.29%	77.47%	
Black	Republican	23.61%	22.53%	24.71%	
NH White	Democratic	36.83%	35.37%	38.33%	
NH White	Republican	63.17%	61.67%	64.63%	
Other	Democratic	53.76%	44.49%	62.87%	
Other	Republican	46.24%	37.13%	55.51%	

Map 13a dismembers this district. District 80 is wholly contained within Madison County, but sees its BVAP drop to 40.9%. It also gave President Trump 51.5% of the vote, meaning that it would tend to favor Republicans in most neutral-to-favorable-Republican environments. District 73 is extended eastward; it is now 13.9% Black and gave Donald Trump almost 76% of the vote. Rep. Shaw is actually placed in the 94<sup>th</sup> District, which now consists of Hardeman and Fayette counties; it is 31.2% Black and gave Donald Trump 65.7% of the vote.



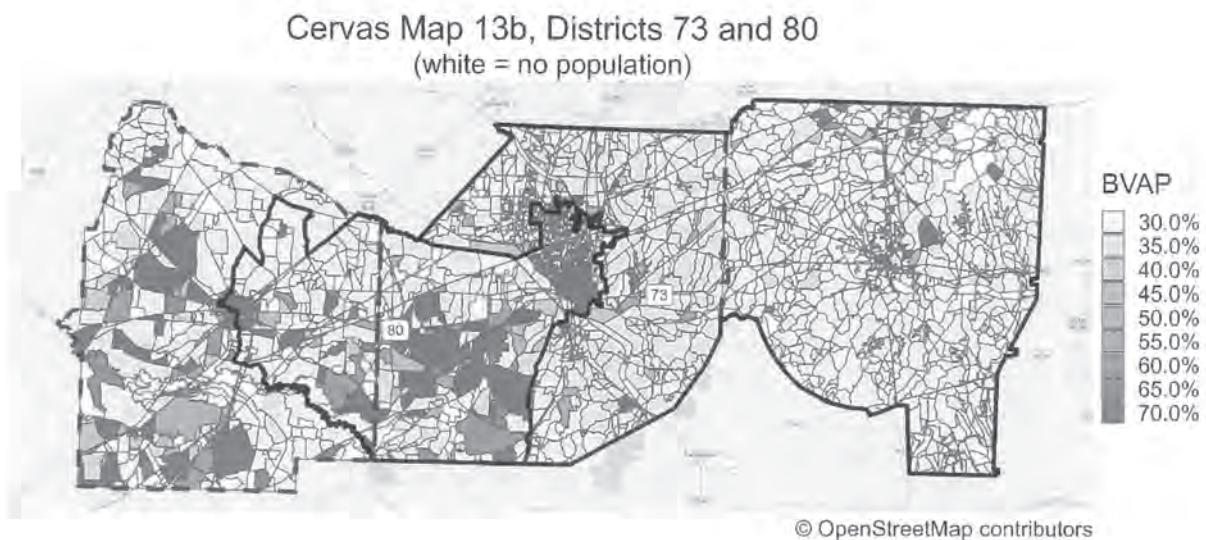
In other words, Map 13a dismembers a functioning ability-to-elect district, converting it into a district where Republicans would be favored. Strangely, the map increases the number of Trump districts from 72 under the Benchmark Map and 74 under the Enacted Map to 75. In other words, in the service of reducing county splits, the Cervas map places the legislature on a collision course with the Voting Rights Act. It is difficult to see how this map would pass the legislature, or that it would pass muster under Tennessee Supreme Court precedent.

#### b. Map 13b

Seemingly aware of this issue, Dr. Cervas tries different configurations of the area that would maintain a functioning minority-majority district in the area. For example, Map 13b keeps district 80 at 50.9% BVAP, and places the Biden vote share at 58.5%. It is configured by combining Jackson with Brownsville.

There is, however, a problem with this configuration. As Dr. Cervas notes, Madison County has sufficient population to contain an entire district, plus a portion of another. See

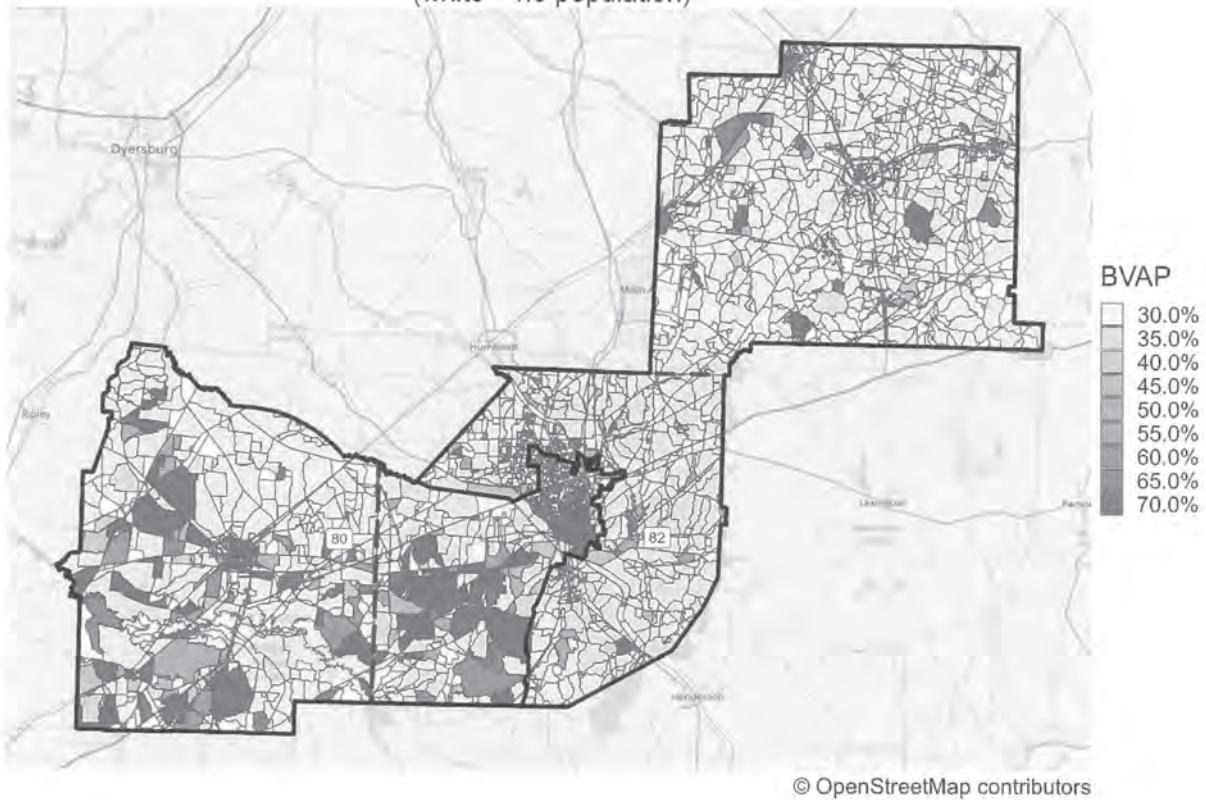
Cervas Report, at 9. This configuration, however, does not. Instead, portions of both district 80 and district 73 are contained in this district, with district 73 also taking in Henderson County. This is not a minor change; placing district 73 wholly within Madison County would require placing an additional 28,000 Madison County residents in that district. This, in turn, would have second-order effects on district 80, which would then have third- and fourth-order effects on the remaining neighboring districts. Note too that Rep. Shaw's home county of Hardeman is still placed within the heavily Republican 94<sup>th</sup>.



### c. Map 14a

The preceding maps had the virtue of keeping many of the legislature's choices in place by freezing the districts in Shelby, Rutherford, Davidson, Hamilton and Knox counties. In the remaining three maps, Dr. Cervas abandons this approach. In Map 14a, he increases the number of districts in Shelby County by one. But this again creates difficulties in the Jackson area.

Cervas Map 14a, Districts 73 and 80  
(white = no population)

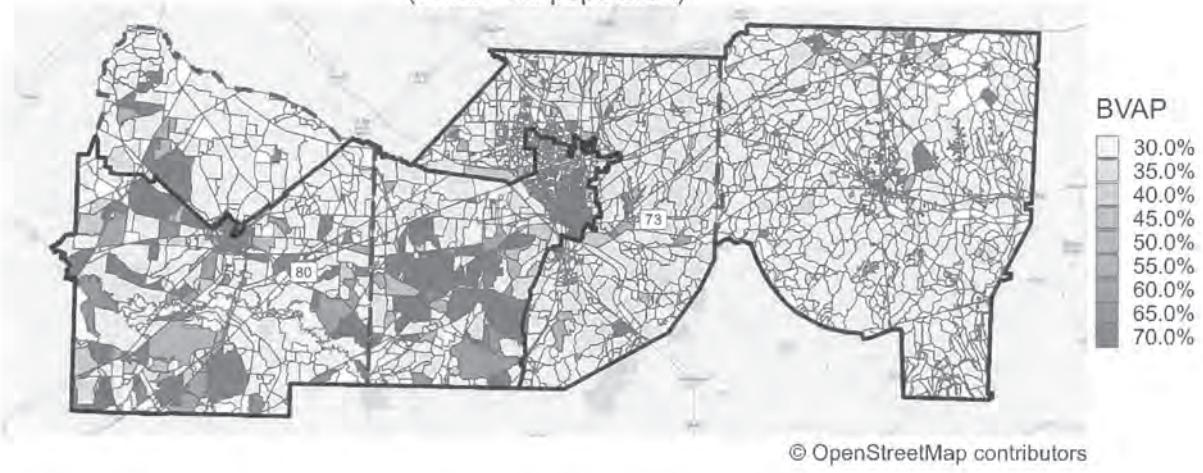


Once again, district 80 is maintained as a 50%+1 Black district where the Democrat would likely win. However, Madison County still does not contain a district wholly within its boundaries. Instead, district 82 is extended into Carroll County. In other words, although Madison County could contain a district wholly within its borders, it does not do so.

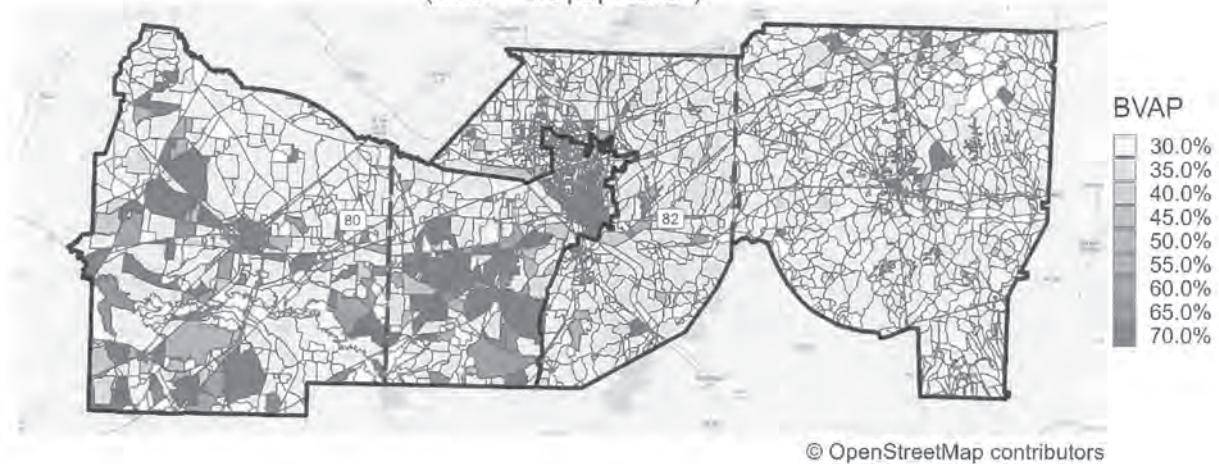
**d. Maps 13.5a and 13.5b.**

In maps 13.5a and 13.5b, Dr. Cervas allows the Shelby County boundary to be breached. Before turning to that, consider, once again the Madison County area. In both Cervas map 13.5a and 13.5b, Madison County does not contain an entire district, even though it has sufficient population to do so.

Cervas Map 13.5a, Districts 73 and 80  
(white = no population)

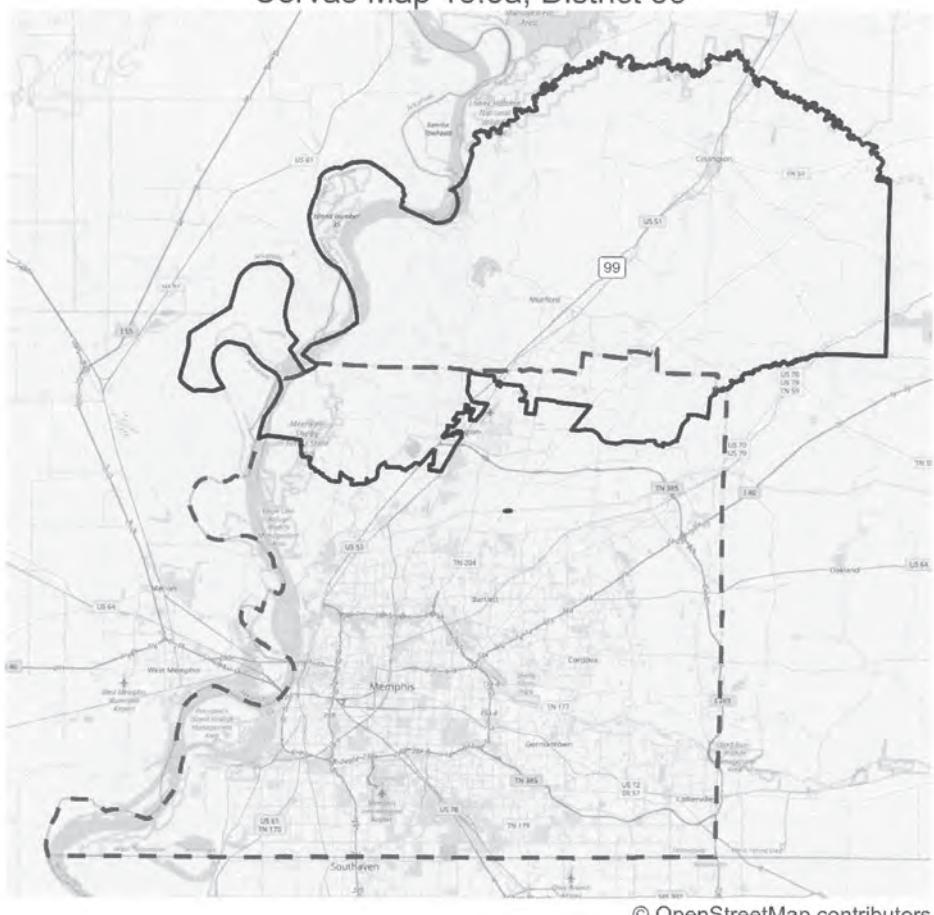


Cervas Map 13.5b, Districts 80 and 82  
(white = no population)



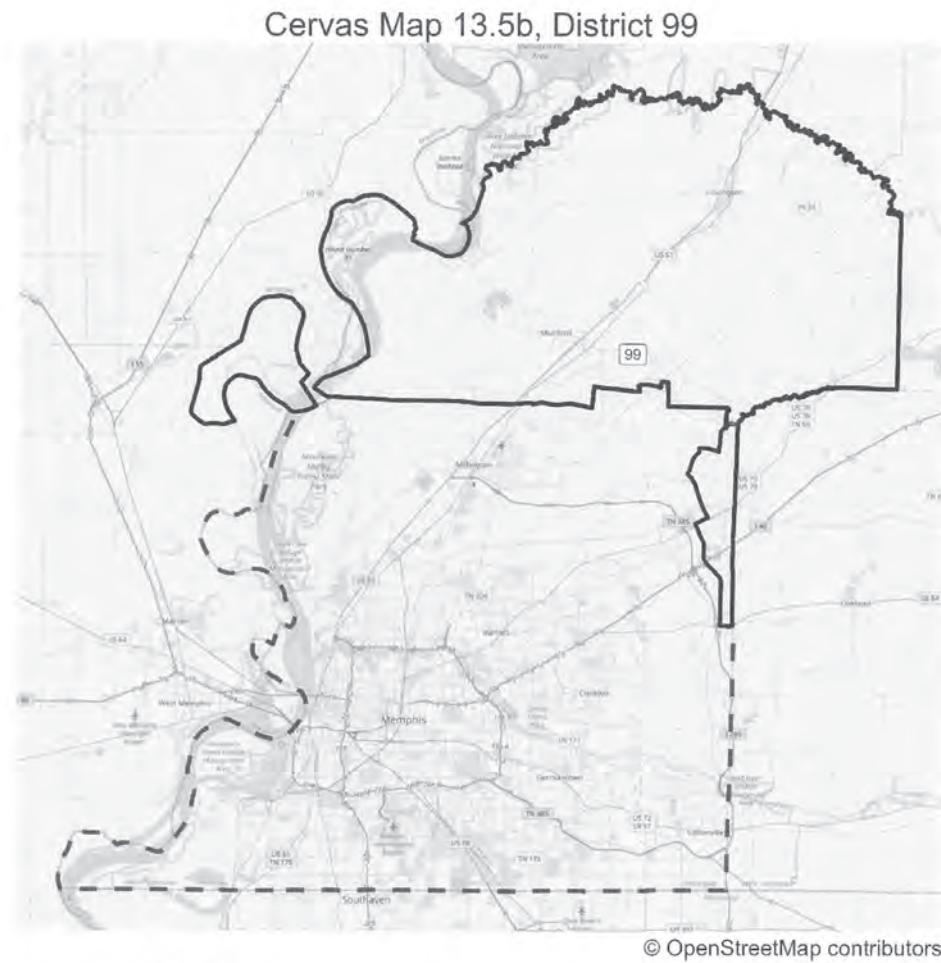
Moreover, both maps cross the Shelby County boundary, without any justification offered. In map 13.5a, district 99 is based in Tipton County, but crosses into Shelby County, spitting the City of Millington in the process.

Cervas Map 13.5a, District 99



© OpenStreetMap contributors

In map 13.5b, district 99 is likewise based in Tipton County, but again crosses the Shelby County boundary. This time, it extends down into portions of the Town of Arlington.



Regardless, Dr. Cervas demonstrates that none of these traversals are needed, because you can draw maps that do not traverse the Shelby County boundary, and include 13 or 14 districts wholly within Shelby County.

**e. Dr. Cervas' maps do not account for legitimate districting considerations.**

Finally, Dr. Cervas's analysis seemingly boils the analysis down to county splits, and elevates that consideration above all others. I have been asked by counsel to examine other traditional redistricting criteria that map drawers could consider. One such factor is core retention. Core retention is simply the percentages of voters from an old district who are kept together in their new district. To calculate this metric, I utilized the computer programming package R. The results are demonstrated in the following table:

Core Retention, Enacted Map & Cervas Maps						
Metric	Enacted	A13	B13	A14	A13.5	B13.5
Average	79.8%	71.4%	71.3%	68.7%	70.3%	67.5%
Min	57.5%	38.6%	36.6%	25.5%	32.4%	29.6%

As you can see, the Enacted Map retains a substantially higher share of district cores, on average, than the alternative maps presented. Moreover, it retains a substantially higher minimum core retention rate than other maps. In other words, Dr. Cervas's maps disturb district populations at a much higher rate than the Enacted Plan. In addition, if anything, this understates the nature of the problem, because many of these maps retain substantial portions of the Enacted Map.

The maps also pay little heed to pairing incumbents. The following table reports the number of incumbents placed into districts with other incumbents. As you can see, the Enacted Map "double bunks" six incumbents with other incumbents. This compares with Dr. Cervas's maps, which all pair large numbers of incumbents. Again, this understates the differences, because Dr. Cervas's maps duplicate a large number of districts drawn in the Enacted Map.

# of Double Bunked Incumbents, Enacted Map & Cervas Maps					
Enacted	A13	B13	A14	A13.5	B13.5
6	16	16	24	20	21

#### f. The Enacted Map Balances Many Considerations Constitutionally

Against this background, it is easy to lose sight of the Enacted Map. But it should not be forgotten as it is the only constitutional map that balances the various considerations. There's little dispute that it is sufficiently compact, using Dr. Cervas's maps as comparators. It pairs very few incumbents together. It exhibits core retention at a much higher rate than the proposed alternative maps. Dr. Cervas does not claim it fails to comply with the Voting Rights Act.

Dr. Cervas's only critique is that it is possible to eliminate some of the county splits. But the map still splits only 30 counties, among the 99 districts that are being drawn. It does so, unlike Dr. Cervas's exemplars, without subordinating all other legitimate considerations to the goal of reducing splits. It does not force the legislature to play chicken with the VRA. In other words, it is the only clearly legal plan that could pass the legislature in the discussion.

## VI. CONCLUSION

Dr. Cervas's maps are all deficient. 13a raises serious legal questions by intentionally destroying a district that had been electing a Black candidate of choice, without any replacement.

The remainder of the maps fail to contain a single district wholly within Madison County. In addition, maps 13.5a and 13.5b cross the Shelby County boundary. It subordinates most other redistricting considerations in the service of redistricting county splits. The Enacted Plan, on the other hand, balances multiple considerations, while still keeping county splits low.

## APPENDIX A

**SEAN P. TRENDE**  
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Delaware, OH 43015  
[strende@realclearpolitics.com](mailto:strende@realclearpolitics.com)

## **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.

## **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.

## **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).



## **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).

*Ohio Organizing Collaborative, et al v. Ohio Redistricting Commission, et al.*, (No. 2021-1210) (Ohio) (political gerrymandering)

*NCLCV v. Hall*, No. 21-CVS-15426 (N.C. Sup. Ct.) (political gerrymandering).

*Szeliga v. Lamone*, Case No. C-02-CV-21-001816 (Md. Cir. Ct.) (political gerrymandering).

*Montana Democratic Party v. Jacobsen*, DV-56-2021-451 (Mont. Dist. Ct.) (early voting; ballot collection).

*Carter v. Chapman*, No. 464 M.D. 2021 (Pa.) (map drawing; *amicus*).

*NAACP v. McMaster*, (No. 3:21-cv-03302) (D.S.C.) (racial gerrymandering).

*Graham v. Adams*, (No. 22-CI-00047) (Ky. Cir. Ct.) (political gerrymandering).

*Harkenrider v. Hochul* (No. E2022-0116CV) (N.Y. Sup. Ct.) (political gerrymandering).

## **COURT APPOINTMENTS**

Appointed as Voting Rights Act expert by Arizona Independent Redistricting Commission (2020)

Appointed special Master by the Supreme Court of Virginia to redraw maps for the Virginia House of Delegates, the Senate of Virginia, and for Virginia's delegation to the United States Congress for the 2022 election cycle.

Appointed redistricting expert by the Supreme Court of Belize in *Smith v. Perrera*, No. 55 of 2019 (one-person-one-vote).

## **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.

## **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.

## **REAL CLEAR POLITICS COLUMNS**

Full archives available at [http://www.realclearpolitics.com/authors/sean\\_trende/](http://www.realclearpolitics.com/authors/sean_trende/)



# memo

To: The Chief Justice and Justices of the Supreme Court of Virginia  
From: Bernard Grofman, Ph.D. and Sean Trende  
CC:  
Date: 12/27/2021  
Re: Redistricting maps

## INTRODUCTION

Over the past few weeks, we have listened to the voices of dozens of Virginians, read thousands of their comments, and consulted with this Court. We have done our best to incorporate the comments that we received, and we are now pleased to present this Court with the final version of our maps for its review.

As described in this Court’s Redistricting Appointment Order (“Redistricting Order”), we have once again proposed “a single redistricting map for the Virginia House of Delegates, a single redistricting map for the Senate of Virginia, and a single redistricting map for Virginia’s representatives to the United States House of Representatives.” Redistricting Order at 1-2. We are also pleased to report that we have once again “work[ed] together to develop any plan to be submitted to the Court for its consideration,” Code § 30-399(F). These maps still reflect a true joint effort on our part. We agreed on almost all issues initially, and the few issues on which we initially disagreed were resolved by amicable discussion.



We feel that these comments greatly improved the quality of our work overall. We were familiar with the Commonwealth before – Dr. Grofman has extensive experience drawing maps in Hampton Roads, while Mr. Trende resided in Northern Virginia and in the Richmond area for almost half of his adult life – but hearing from residents from all walks of life and from all corners of the Commonwealth gave us a much deeper understanding of the issues involved and brought to our attention things that we had honestly missed.

Not only that, but as the resulting maps should demonstrate, we have paid attention, and have tried to incorporate as many of the suggestions as possible. At the same time, we reiterate an observation from our initial memorandum: Redistricting is a complex task, one that requires the balancing of multiple competing factors. Unfortunately, it simply was not possible to incorporate every request while remaining within the bounds of Virginia and federal law. Moreover, there are likely thousands of maps that accomplish certain goals of redistricting that we did not accomplish, but they come at the expense of other goals we sought to achieve. We did, however, read every comment and, where appropriate, explored ways to address the suggestion.

The following pages describe the features of the new maps, and the ways in which we worked to accommodate the various requests. It also seeks to explain why certain suggestions were or were not accepted. Before describing the features of the new maps, though, it seemed simplest to make some “global” comments to explain our reasoning with respect to general criticisms that appeared throughout the public comments on the maps. We do emphasize that we consulted with each other in several zoom calls, sometimes stretching over the better part of a day. Therefore, while this list reflects our weightiest considerations, it is not an exclusive list.

## GENERAL CRITICISMS

1. **Inc incumbency.** Perhaps the most common criticism was that we paid insufficient attention to incumbency, weakened several congressional incumbents and paired together multiple senators and delegates.

We felt that it was important to reiterate here that we began this process largely naïve as to the residences of legislators. With a few exceptions, we remain so. It is true that each of us knew some locations for Members of Congress, with Dr. Grofman generally familiar with the locations of minority incumbents, and Mr. Trende generally familiar with incumbent locations in some other districts. However, this is not as probative as many suggest. Given the convoluted nature of the current district lines, Rep. Jennifer Wexton could have been placed in the newly drawn 6<sup>th</sup>, 7<sup>th</sup>, 10<sup>th</sup>, or 11<sup>th</sup>. Likewise, Rep. Abigail Spanberger might have resided in the newly drawn 1<sup>st</sup>, 4<sup>th</sup>, 5<sup>th</sup>, 7<sup>th</sup>, or 10<sup>th</sup>. We only learned at the second hearing that we had placed Rep. Morgan Griffith in the 6<sup>th</sup>.

Much of this is simply a function of the fact that the existing lines split municipalities and counties regularly, and we have eliminated those splits. The existing congressional map splits 14 counties 16 times. The existing Senate of Virginia map splits 46 counties 78 times. The existing House of Delegates map splits 60 counties 138 times. By comparison, the submitted congressional map splits 10 counties a total of 11 times. The submitted Senate of Virginia map splits 25 counties 34 times. The submitted House of Delegates map splits 51 counties 98 times.

Any redistricting map featuring this degree of geographic consolidation will almost certainly pair incumbents together; if those incumbents live in a narrowly defined geographic area the chances of being paired together are increased. In this respect, we consider the treatment of incumbents to be an example of the redistricting process working as intended.

This leads to our second point: In consultation with the Court, we have rejected calls to actively educate ourselves further on the residences of incumbents. Incumbency protection is, as many have pointed out, frequently listed as an allowable consideration in redistricting. *See, e.g.*, Alabama Reapportionment Committee Redistricting Guidelines (“Contests between incumbents will be avoided whenever possible.”); Arkansas Redistricting Standards and Requirements (“It is permissible to try to avoid making current officeholders run against other incumbents by not drawing a new district that includes two or more incumbents.”); Guidelines and Criteria for 2012 Kansas Congressional and Legislative Redistricting (“Contests between incumbent members of the Legislature or the State Board of Education will be avoided whenever possible.”).

Incumbency protection is not, however, mentioned among the many factors listed in Code § 24.2-304.04 (hereinafter “Statutory Criteria”). This alone would not preclude us from using incumbency, at least as a prudential consideration. We believe that one reason for employing redistricting commissions, however, is to minimize the power of politicians over the drawing of lines, and a frequently voiced objection to partisan line drawing is that it “allows politicians to choose their voters, rather than allowing voters to choose the politicians.” *E.g.*, Editorial Board, “Politicians Can Pick Their Voters, Thanks to the Supreme Court,” *N.Y. Times* (June 27, 2019). As the Supreme Court of the United States has noted, the history of gerrymandering is a tale of “protecting incumbents” in a manner that effectively “enshrines a particular partisan distribution.” *Rucho v. Common Cause*, 139 S. Ct. 2484, 2500 (2019).

In Virginia, “[t]he remnants of incumbency protection . . . helped trigger the amendment that created the [Virginia Redistricting Commission].” Henry L. Chambers, Jr., The Fight over the Virginia Redistricting Commission, 24 Rich. Pub. Int. L. Rev. 81, 95 (2021). Moreover, while “incumbency considerations” were built into considerations for communities of interest in the 2011 redistricting cycle, communities of interest are now statutorily defined as “not

includ[ing] a community based upon political affiliation or relationship with a political party, elected official, or candidate for office.” *Compare* S. Comm. on Privileges & Elections, Comm. Res. No. 1 (Va. 2011), *with* Code § 24.2-304.04(5).

In other words, adopting this prudential consideration would seem to be at odds with the overall redistricting scheme enacted by Virginia voters. Having established compact districts that respect communities of interest, however, our hope is that future redistrictings utilizing the same criteria will be less severe.

2. **Preservation of Various District Cores.** While we understand the views of speakers and commentators who implored us not to eliminate their districts, or who advocated for a “minimal changes” map, we did not see that as our mission here. In fact, a minimal changes map based upon districts drawn with heavy political considerations would, in our view, bless those districts and contravene the intent of the voters when they passed the Virginia Redistricting Amendment. We do note again that, having effectively undone decades of convoluted line drawing, future remaps should not involve the same amount of disruption, since they would presumably be drawn in a fashion that permits population adjustments to existing districts without substantially affecting the preservation of cities and counties.

3. **Requests to Preserve the 7<sup>th</sup> District.** This is a specific case of the above objection. While we understand the frustration of residents of the 7<sup>th</sup> (one of us lived in the 7<sup>th</sup> for six years) we don’t believe that there is a way to preserve something akin to the 7<sup>th</sup> without splitting the Shenandoah Valley, which we have received praise for avoiding in the comments and against which we made a policy from the outset. We also note that many of the official commission-drawn maps broke up the 7th and, like our draft submission, paired much of central Virginia with the Tidewater. The only commission-drawn map that preserves the 7<sup>th</sup> district, map B5, did so at a cost of splitting western Virginia roughly into thirds. Finally, we reiterate our

basic view from the initial memorandum that Northern Virginia's population entitles it to four districts and requires us to resolve the seven-way split of the region that the current map perpetuates.

Although we were unable to identify a global resolution to this complaint that would not set off a cascade of secondary problems, we did feel it incumbent upon ourselves to pay extra care to specific complaints in this region. We have identified a series of changes that do not give these residents what they are ultimately seeking, but that do address some of the valid points that they raise regarding communities of interest.

4. **Competitiveness**. Several commenters bemoaned the lack of competitive districts. Competitiveness can be a legitimate factor in non-partisan redistricting, but it is not among the factors included in the Virginia Code. While we might consider it as a prudential factor, we believe that doing so would contravene our stated goal of drawing maps without respect to partisanship. Moreover, we wish to point out that competitive districts are often at odds with maps that do not "unduly" favor one party or the other. A map with five Democratic seats, three highly competitive districts, and three Republican seats would tend to flip back-and-forth between an 8-3 Democratic majority and a 6-5 Republican majority, instead of gently oscillating around a midpoint. While maps have been submitted that do create more competitive districts, those tend to do so at the expense of fracturing western Virginia.

5. **Nesting**. As many have pointed out, nesting is not required by the Virginia Code. We allowed ourselves to be guided by it because, unlike the protection of district cores or incumbents, employing a nesting criteria seemingly enhanced the goals of the Redistricting Amendment by reducing our discretion, creating an additional neutral criteria to follow, and ensuring that communities of interest would be respected across maps. We do, however, understand it to be a prudential consideration, and have not followed it religiously in either the initial map drawing phase or in our remap.

6. **Partisan Balance.** We reiterate our approach to partisan balance: We drew the proposed maps without referencing partisanship, except to ensure that our ability-to-elect districts would, in fact, function to elect the minority candidate of choice. At the end of the inquiry, we “unblinded” ourselves to partisanship. We believed this approach best encapsulated the spirit of the independent commission. We agreed beforehand that we would work, if necessary, to ensure that the median district in the state roughly reflected the statewide performance of the parties. We also recognized that while Democrats in recent years have been winning a majority of the statewide vote, as shown in 2021 it is still possible for Republicans to win in the Commonwealth. Thus, a balanced map should give each party a realistic chance to control the congressional delegation and each of the branches of the legislature when that party has a good year, even if the overall partisanship of the Commonwealth makes it substantially easier for Democrats to do so in most years (though the high concentration of Democrats in cities such as Richmond does lead to some “wasting” of Democratic votes). As it turned out, we accomplished this task of creating an unbiased map naturally, using neutral principles, and did not need to adjust the maps we had drawn in a partisan blind fashion.

But this partisan information has now been made widely available and we cannot re-blind ourselves to this information. More importantly, we must also be aware that other parties that are now participating in the redistricting process have access to this information. We are wary of allowing ourselves to be used as cat’s paws by those who might have seen the comment period as an opportunity to guide us toward a partisan gerrymander under the guise of preserving communities of interest or drawing compact districts. To that end, we only implemented changes to the maps if could be done in a way that was neutral as to partisanship, since the maps are already well-balanced (a central concern of the reformers who pushed for the adoption of the Virginia Redistricting Amendment).

7. **Population Equality.** Federal courts do allow mapmakers some discretion when drawing congressional districts, so long as those map-makers can demonstrate that such discretion was exercised in pursuit of legitimate interests. Here, the population deviations in our proposed maps all came about from a desire to avoid splitting precincts, census designated places (“CDPs”), cities, or counties. With that said, it was always our intention to reduce these discrepancies further in the final version of the maps. Block work in pursuit of a minimal deviation is time-consuming work, and it made little sense to engage in this pursuit until the overall shape of the maps is finalized. The final congressional maps have zero population deviation in ten districts, and a single person in the eleventh district.

Briefly, on the Senate of Virginia maps: We noted that the Senate Democrats’ proposed map involved deviations as large as 10,000 residents. This appears to be justified by interpreting the Statutory Criteria’s demand that “a deviation of no more than five percent shall be permitted for state legislative districts” as allowing districts to be drawn with deviations of +/- 5%, for a total maximum deviation of 10%. That is not our understanding of what maximum deviations typically refer to in the redistricting context. We intend to continue to confine ourselves to a maximum deviation of +/- 2.5%, for an overall maximum deviation of 5%.

We also observe that the NAACP memo has called attention to differences between CVAP estimates of African-American proportions (taken from 2019 ACS data) and VAP estimates (taken from the 2020 census). We would simply note that (a) we have examined both VAP and CVAP data, and (b) that the presence of non-citizen Latinos and Asian-Americans in a district can raise the black CVAP share above the black VAP share, making it a useful metric for assessing a district’s actual electorate.

8. **14<sup>th</sup> Amendment and Ability-to-Elect Districts.** Three proposed maps from legally sophisticated entities illustrate the difficulties presented when trying to follow the 14<sup>th</sup> Amendment, Voting Rights Act of 1965 (VRA) and Statutory Criteria’s command to draw

“ability to elect” districts. One group demanded that we lower the BVAPs to avoid “packing.”

One map asked that we raise the BVAP without using a “50% +1” threshold for BVAP to avoid “cracking”. The third asked that we raise the BVAP while using a “50% +1” threshold. It is obviously impossible for these various views of the VRA’s commands to coexist.

None of these approaches, however, reflects how we viewed racial considerations. We began with the good government criterion of preserving whole counties and cities to the greatest extent feasible. The racial geography of Virginia then effectively compels the drawing of districts with substantial minority populations when redistricting is done using good government criteria. Only after we had drawn districts that satisfied good government criterion did we examine racial effects. We were pleased that the congressional districts we drew using these neutral criteria allowed for the continuation of two minority ability to elect districts in the U.S. House of Representatives, CD3 and CD4, and enhanced the number of ability to elect districts in the legislature.<sup>1</sup>

One final note is important: Many asked that we retain the district cores Dr. Grofman drew in the *Personhubballah* and *Golden Bethune-Hill* cases, since these had already been approved by a federal court. This misses the overall context that resulted in the drawing of those district lines. Those lines were drawn as part of a remedial plan after a federal court struck down certain of the previously existing districts as racial gerrymanders. In this context, the map drawer was ordered to make only those changes needed to remedy the previous violations. It does not follow that those districts would be appropriate for a map that substantially redraws the lines for the entire Commonwealth.

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<sup>1</sup> We would note that this strategy of placing good government criteria as first priority was accepted by the federal courts in *Personhubballah* and *Golden Bethune-Hill* as an appropriate way to avoid *Shaw v. Reno* issues.

9. **Splitting precincts.** While we sought to avoid the splitting of precincts, equal population concerns often commanded it, particularly for Congress (where zero population deviations are the ideal) and the House of Delegates (where population deviations must be no more than approximately 2,100 people). Additionally, we opted to preserve towns and CDPs over precinct lines, since CDPs more likely reflect communities of interest and cannot be drawn in the future in such a way as to protect incumbents or facilitate partisan concerns.

10. **Optimization.** Finally, we address a catalogue of suggestions that might fall under the umbrella of “optimization” complaints: Maps that purport to perform better than the maps we have drawn on various metrics. While there may be states that insist upon optimization, our review of the statutory criteria lead us to conclude that Virginia does not clearly require optimization, *e.g.*, the Code requires that maps not *unduly* favor one party or the other. Additionally, we emphasize the tension between the criteria. We identified preservation of the Shenandoah region as reflecting an important community of interest worth preserving. Yet that comes at the expense of drawing compact districts, particularly at the congressional level; the resulting district will perform poorly on certain compactness standards (many of which are based upon approximating circular districts). Tradeoffs are simply inevitable.

We drew maps which did not unduly favor either party. These maps came about as part of a partisan and incumbency blind process based on good government map making. We recognize that the map we drew are not optimal; they do not have zero partisan bias, for example. We also recognized that once the maps were made publicly available analyses of their partisan implications were inevitable. Thus, once having released to the public the first draft of the good government proposals that the Court brought forth for public comment, in our revisions to those maps we maintained the basic partisan characteristics of each map in our redrawing

rather than seeking to put our thumb on the scale in a way that would now tilt the map toward either political party.

## UNITED STATES CONGRESS

### District Changes

#### Districts 8 and 11 (Fairfax and Arlington counties, Alexandria, Fairfax and Falls Church cities:

Following the advice of several written comments, we have made a number of small changes to our maps here. Both of these districts are heavily Democratic, so we were not concerned with the political implications of these changes.

1. We allowed ourselves to cross the I-495 boundary to keep Tyson's CDP whole.
2. The lines were altered to keep Kingstowne CDP together.
3. The lines were altered to keep Lorton intact.
4. The 8<sup>th</sup> district was extended down to Mason Neck (facilitating 2 and 3 above).
5. A precinct near Annandale was trimmed, at the urging of a submitted comment.

This had the benefit of keeping I-495 as a boundary between the districts.

6. Because of the redrawing of districts 7 and 10 (see below), it no longer made sense to extend the 7<sup>th</sup> into Fairfax County to pick up the 18,000 or so residents who could not be placed in either the 8<sup>th</sup> or 11<sup>th</sup> districts due to equal population considerations. Instead, the 10<sup>th</sup> now crosses over into the Bull Run and Clifton areas.
7. Slight changes were then made to ensure population equality.

#### Districts 6 and 9 (Appalachia, Shenandoah Valley)

We made only minimal changes here. Some commenters expressed dismay that Roanoke County was not kept intact. Doing so would require drawing Cave Spring's substantial population into the 6<sup>th</sup>, which in turn would require significant alterations elsewhere. We did learn, however, that if Craig County were placed into the 9<sup>th</sup> – increasing the number of Virginia's Appalachian counties placed into the 9<sup>th</sup> – that we could add a few additional precincts

in Roanoke County to the 6<sup>th</sup>. We have done so. We also made some slight changes to ensure population equality.

**Districts 2 and 3 (Hampton Roads and Virginia Beach)**

Many of the comments here urged us to either utilize the district cores from the *Bethune-Hill* case, or to pair Norfolk with Virginia Beach. As an initial matter, it was difficult to separate legitimate concerns about compactness or communities of interest from concerns based upon a desire to protect an incumbent or desires to alter the partisan balance of the plan by taking the 5<sup>th</sup> most Republican district in the state and giving it a substantial Democratic lean (see General Criticisms #6 above). We did explore options that would keep northern Norfolk together with Virginia Beach without altering the partisan balance, but that required a larger number of county splits. We simply note that we drew the 3<sup>rd</sup> district first and identified early on that it was possible to keep Norfolk, Newport News, Hampton and Portsmouth together in a single compact district that, when combined with neighboring precincts, would preserve minority groups' ability to elect a candidate of choice. This was our starting point, and we did not see a reason to abandon it this late in the game. We made slight changes to ensure population equality.

**Districts 1, 4, 5, 7, and 10 (North Tidewater, Richmond Area, and outer Northern Virginia)**

This is the one area where we made significant alterations to the map. We heard a substantial number of residents of Louisa County testify that they were unhappy to be placed in a district with the Tidewater area. We received a number of written comments expressing unhappiness with the split in Albemarle County. Finally, we heard from a number of residents of Chesterfield County arguing that they did not wish to be placed in the 5<sup>th</sup> district, but rather wanted to be paired with Henrico County.

The inclusion of Fluvanna, Louisa, and Goochland counties in the tidewater area is indeed not a natural fit. Similarly, northern Albemarle County is not a natural fit with Northern

Virginia. But often population considerations force the combining of counties that are far apart in terms of distance and/or in terms of shared economic and social characteristics or communities of interest.

We decided that if we could find a roughly politically neutral way to address these issues that improved the features of the map otherwise, we would do so. Further analysis of options allowed us to substantially redraw central Virginia without substantially affecting the drawing of most congressional districts. While our solution is imperfect, we believe it improves the map overall. Albemarle County is kept intact and placed wholly within the 5<sup>th</sup> (where it resides today) with the exception of a small sliver needed for population equality purposes. Joining it are Louisa, Fluvanna, and Goochland counties, along with a portion of outer Hanover County. While it is still not a perfect match, it aligns the agricultural portions of their economy more with other piedmont areas, and not with the distinct economy of the tidewater.

Offsetting this, Chesterfield is removed from the 5<sup>th</sup> district, and is paired with Henrico County in the 1st district. The Tidewater area is simply not large enough in population terms to form a congressional district of its own; here we have joined it with a highly populated areas to the west of it in a way that preserves the Richmond, Henrico, Chesterfield area in only two congressional districts, ending the three way split of this area found in our original map.

This forced changes in Northern Virginia. Having lost northern Albemarle County, the 10<sup>th</sup> needed to pick up population. We looked to add northern Prince William County, which kept the I-66 corridor intact. This set off a sequence of shifts until we were left with a compact 10<sup>th</sup> district, with the northern Piedmont counties moved to the 7th. Our concern, though, was that the resulting 7<sup>th</sup> district was too Republican, resulting in a map that did not fairly reflect the partisanship of the state. We also felt that it no longer achieved our goal of creating a district largely anchored in Prince William County. We then pushed the 7<sup>th</sup> up almost to the Occoquan River in Prince William County and pushed the 10<sup>th</sup> down to include Rappahannock County (whose officials had expressed

an interest in being paired with Fauquier County) and Culpeper County. This effectively flips the partisanship of the two districts from the initial proposed districts, while preserving the overall partisan balance, while improving compactness and making more sense from a community of interest perspective. Slight changes were then made to ensure population equality.

## Assessment of Congressional Districts Under Statutory Criteria

**Equal Representation:** We have effectively zeroed out the population deviations.

### Evaluation of Equal Population Criteria, Virginia Congressional Districts

District	Population	Deviation	Pct. Deviation
1	784,672	0	0.00%
2	784,672	0	0.00%
3	784,672	0	0.00%
4	784,672	0	0.00%
5	784,672	0	0.00%
6	784,672	0	0.00%
7	784,672	0	0.00%
8	784,672	0	0.00%
9	784,672	0	0.00%
10	784,672	0	0.00%
11	784,673	1	0.00%

**Equal Protection and Ability-to-Elect Districts:** The following table provides racial breakdowns for the draft Congressional Districts. Districts three and four are minority-majority districts, and Black voters represent 42.14% and 45.37% of the voting age populations, respectively. We believe this is sufficient to elect a Black candidate of choice in both districts. These minority proportions are very similar to those drawn by the federal court in *Personhubballah v. Alcorn*, No. 3:13cv678 (E.D. Va.). We also note that we now report voting age population, rather than citizen voting age population, following numerous comments to the draft maps.

## Evaluation of Racial Criteria, Virginia Congressional Districts

District	Non-Hispanic White	Total Minority	Hispanic	Black	Asian	Native	API
1	73.06%	26.94%	4.45%	14.17%	6.34%	1.84%	0.17%
2	61.29%	38.71%	6.29%	23.95%	6.94%	2.16%	0.37%
3	41.96%	58.04%	7.37%	45.37%	4.42%	2.37%	0.41%
4	45.18%	54.82%	8.26%	42.14%	3.35%	1.95%	0.19%
5	69.99%	30.01%	3.56%	21.73%	2.96%	1.69%	0.11%
6	80.88%	19.12%	6.38%	8.66%	2.14%	1.96%	0.12%
7	54.15%	45.85%	15.32%	22.44%	6.66%	2.56%	0.30%
8	52.17%	47.83%	18.41%	13.99%	14.51%	1.94%	0.23%
9	86.97%	13.03%	2.46%	6.41%	2.16%	1.74%	0.09%
10	55.83%	44.17%	16.04%	9.90%	16.93%	1.88%	0.21%
11	51.25%	48.75%	12.84%	9.45%	25.41%	1.43%	0.22%

**Contiguity:** The districts are all contiguous under both standards for contiguity (described above).

**Compactness:** Below are the Reock and Polsby-Popper scores for the districts. These are two commonly used measures of spatial compactness. To simplify greatly, Reock scores measure how “stretched” a district is, while Polsby-Popper scores measure how “dimpled” the district is. Under both metrics, higher scores are better.

Districts 2, 6, and 9 score relatively poorly using Reock scores. This is to be expected, given the geographic constraints placed upon them. All of the districts perform well under the Polsby-Popper metric.

However, since we are drawing a whole map for the state, the most important compactness comparison is for the state as whole. Dave's Redistricting App provides a composite compactness score for a whole map. The Special Masters' ("SMs") congressional map is more compact than the current congressional map, a value of 46 for the SMs map as compared to a value of only 25 for the current map. In other words, we have nearly doubled the degree to which the congressional map is a compact one.

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### Evaluation of Compactness Criteria, Virginia Congressional Districts

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District	Reock	Polsby-Popper
1	0.4084	0.2031
2	0.2214	0.2008
3	0.4233	0.3305
4	0.4923	0.2941
5	0.4595	0.3545
6	0.2319	0.2060
7	0.3158	0.2078
8	0.3979	0.3144
9	0.1696	0.1769
10	0.4843	0.2854
11	0.5384	0.2697

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**Partisanship:** A summary of the average Democratic performance in Virginia statewide races from 2016 to 2020 is provided below. The results are sorted by Democratic vote share. Over this time, the average Democratic performance was 54.01% to the Republicans' 44%. The median district, district 7, went for Democrats by, on average, a seven-point margin, making it a

little more than a point more Republican than the Commonwealth overall. In a very good Republican year, Republicans could win a majority of the seats in Virginia's delegation. Generally, however, we would expect to see a 6-5 Democratic edge in Virginia's delegation. In very good Democratic years, Democrats might perhaps achieve the same 7-4 advantage that they now enjoy from having won two highly competitive seats in 2020. Overall, this map is well-balanced, does not unduly favor any party, and does not require further adjustment. We also provide, for further context, the 2020 presidential election results.

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### 2016-2020 Composite Election Results, Virginia Congressional Districts

Average Dem Performance = 54.01%

District	Democratic	Republican
8	75.6%	22.0%
3	68.3%	29.7%
11	67.8%	29.9%
4	66.8%	31.6%
10	56.2%	41.7%
7	52.3%	45.7%
2	49.6%	48.4%
5	45.2%	53.0%
1	44.8%	53.2%
6	38.6%	59.4%
9	30.7%	67.7%

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## 2020 Presidential Results, Virginia Congressional Districts

Average Dem Performance = 54.11%

District	Democratic	Republican
8	76.7%	21.1%
11	69.5%	28.4%
3	68.1%	29.9%
4	67.1%	31.3%
10	58.0%	40.0%
7	52.4%	45.7%
2	49.9%	48.1%
1	45.7%	52.4%
5	45.0%	53.2%
6	38.0%	60.1%
9	28.3%	70.2%

## SENATE OF VIRGINIA

We made a number of slight changes to the Senate of Virginia map, some of which were significant, particularly in Northern Virginia. We also examined a number of suggestions that we were not able to accommodate. While we cannot list all of these suggestions, nor can we list every reason for accepting or rejecting a suggestion, the major reasons follow.

Outside of Northern Virginia, our changes were minimal:

- Many people asked to keep Augusta County intact. We could not make this work with equal population concerns.
- The Roanoke Valley/New River Valley areas were perhaps the most vexing areas to assess, especially since we received so many contradictory claims regarding what areas should be included in which districts and where exactly the COIs lay. Had we started in this area we might have drawn different districts, but we ultimately decided we could not enact major changes here. The Roanoke suburb of Vinton was placed with Roanoke to accommodate a request that appeared to be sensible given transportation lines and population patterns. We also kept Glenvar whole.
- We allowed an additional county split to keep the city of Scottsville intact for both the House of Delegates and Senate.
- The precinct lines in Louisa County create an odd-shaped appendage and split the community surrounding the county seat. To eliminate this feature, we split a precinct and utilized the South Anna River as a boundary between districts.
- We utilized Forest Hill Avenue as a more consistent boundary between the 14<sup>th</sup> and 15<sup>th</sup> districts near Westover Hills.

- The boundaries between the 25<sup>th</sup> and 26<sup>th</sup> districts were altered to improve compactness and to accommodate a reasonable request to keep the Northern Neck intact.
- Per a comment, Shell and Wesleyan Chase in Virginia Beach are kept together as a part of a COI.
- We were unable to use Garrisonville Rd. as a boundary in Stafford County, as requested by Supervisor Crystal Vanuch, due to equal population concerns. We did, however, strive to use it as a boundary in the House of Delegates map. We also received multiple requests to keep the Battlefield District south of Fredericksburg intact. Doing so would negatively affect the compactness of the districts and make changes to the partisanship of a swing district (see General Criticisms #6 above).

We made more significant changes in Northern Virginia. In particular, we paid less attention to precinct lines, and more attention to CDP lines:

- We received a number of complaints regarding placing Falls Church in a district with Arlington. We ultimately decided that these complaints were well-founded. Addressing these complaints also allowed us to create a senate district entirely within Arlington County. This, however, set off a chain reaction of map shifts that we accepted since they allowed us to also correct some splits of CDPs.
- Bailey's Crossroads and Seven Corners were made intact and placed with Alexandria in the 39<sup>th</sup>. The 39<sup>th</sup> is now also paired with the Crystal City area as a more natural division of the districts between Arlington and Alexandria.
- The precincts from Difficult Run CDP were moved into the 37<sup>th</sup>, along with Falls Church.
- Fair Oaks was moved in its entirety to the 36<sup>th</sup>.

- Kings Park West was kept intact in the 35<sup>th</sup>. While we believe the George Mason CDP made more sense in the 37th, we moved it to the 35<sup>th</sup> for population equality purposes. Springfield and West Springfield were placed in the 35<sup>th</sup> due to changes made to the surrounding districts.
- Following the advice of numerous online requesters, the 34<sup>th</sup> district was extended south to Mason Neck; we also placed Lorton and Laurel Hill in this district.
- Burke Center was placed in the 33<sup>rd</sup>. Burke is now split at Burke Station Park.
- While we liked the idea suggested in one of the online comments to place Nokesville in with the 30<sup>th</sup> district, the swaps required between the 30<sup>th</sup> and 29<sup>th</sup> would result in a substantial change in the partisanship in a swing district. The change was therefore rejected (see General Criticisms #6 above).
- We made some minor changes to better follow CDP lines in Loudoun County. While we wanted to accommodate requests to increase the Asian population in district 32 by taking in some population in Fairfax County, doing so would require an additional county split and would still not likely result in an ability to elect district. We do believe that we have drawn a reasonable ability to elect district in the area in the House of Delegates, however.

## Assessment of Senate Districts Under Statutory Criteria

**Equal Representation:** The ideal population size for a senate district in Virginia is 215,785. The largest positive deviation from the ideal population comes in district 32, which is overpopulated by 5,000 residents. The largest negative deviation from the ideal population comes in district 29, which is underpopulated by 5,118 residents. All absolute percentage deviations are under 2.5%, as required by Virginia law.

## Evaluation of Equal Population Criteria, Virginia Senate Districts, 1-20

District	Population	Deviation	Pct. Deviation
1	219,464	3,679	1.70%
2	213,860	-1,925	-0.90%
3	213,402	-2,383	-1.10%
4	220,600	4,815	2.20%
5	219,146	3,361	1.60%
6	213,557	-2,228	-1.00%
7	217,620	1,835	0.90%
8	214,868	-917	-0.40%
9	214,702	-1,083	-0.50%
10	214,277	-1,508	-0.70%
11	214,453	-1,332	-0.60%
12	219,101	3,316	1.50%
13	213,623	-2,162	-1.00%
14	219,881	4,096	1.90%
15	219,647	3,862	1.80%
16	218,175	2,390	1.10%
17	216,724	939	0.40%
18	213,095	-2,690	-1.20%
19	212,136	-3,649	-1.70%
20	217,760	1,975	0.90%

## Evaluation of Equal Population Criteria, Virginia Senate Districts, 21-40

District	Population	Deviation	Pct. Deviation
21	214,208	-1,577	-0.70%
22	214,017	-1,768	-0.80%
23	215,570	-215	-0.10%
24	211,657	-4,128	-1.90%
25	211,418	-4,367	-2.00%
26	217,507	1,722	0.80%
27	213,276	-2,509	-1.20%
28	211,795	-3,990	-1.80%
29	210,667	-5,118	-2.40%
30	215,164	-621	-0.30%
31	220,298	4,513	2.10%
32	220,785	5,000	2.30%
33	218,140	2,355	1.10%
34	216,619	834	0.40%
35	220,336	4,551	2.10%
36	212,521	-3,264	-1.50%
37	213,326	-2,459	-1.10%
38	215,783	-2	0.00%
39	220,720	4,935	2.30%
40	211,495	-4,290	-2.00%

**Equal Protection and Ability-to-Elect Districts:** The following table provides racial breakdowns for the draft senate districts. As above, we now report the BVAP populations, to

better align our numbers with numbers being used by other groups. We note, however, that the actual electorate would probably be slightly more heavily African-American due to higher rates of non-citizenship among Hispanic and Asian-American populations.

### Evaluation of Racial Criteria, Virginia Senate Districts, 1-20

District	Non-Hispanic White	Total Minority	Hispanic	Black	Asian	Native	API
1	81.85%	18.15%	8.27%	5.41%	2.12%	2.23%	0.12%
2	83.08%	16.92%	8.40%	4.98%	2.25%	1.63%	0.13%
3	86.43%	13.57%	2.81%	6.93%	1.66%	1.91%	0.13%
4	74.24%	25.76%	4.74%	15.75%	3.19%	2.04%	0.11%
5	85.60%	14.40%	2.65%	4.84%	4.88%	1.68%	0.09%
6	93.13%	6.87%	1.21%	3.15%	0.54%	1.70%	0.09%
7	82.33%	17.67%	3.52%	11.71%	0.64%	1.70%	0.10%
8	76.42%	23.58%	3.06%	16.40%	1.97%	1.88%	0.11%
9	60.87%	39.13%	2.61%	34.53%	0.77%	1.45%	0.07%
10	75.07%	24.93%	2.98%	18.57%	1.32%	1.87%	0.12%
11	72.60%	27.40%	5.31%	13.07%	7.21%	1.70%	0.12%
12	71.90%	28.10%	4.97%	16.68%	4.84%	1.73%	0.14%
13	41.15%	58.85%	5.11%	50.60%	1.65%	2.20%	0.23%
14	49.39%	50.61%	4.88%	40.40%	4.50%	1.57%	0.15%
15	39.31%	60.69%	16.95%	39.39%	3.51%	2.25%	0.17%
16	62.55%	37.45%	6.43%	15.34%	14.05%	1.38%	0.13%
17	51.50%	48.50%	3.04%	42.21%	1.86%	1.91%	0.19%
18	44.27%	55.73%	5.69%	45.27%	3.44%	2.41%	0.32%
19	68.58%	31.42%	6.22%	16.67%	6.69%	2.18%	0.41%
20	69.87%	30.13%	7.03%	16.67%	4.64%	2.16%	0.37%

## Evaluation of Racial Criteria, Virginia Senate Districts, 21-40

District	Non-Hispanic White	Total Minority	Hispanic	Black	Asian	Native	API
21	41.19%	58.81%	8.80%	43.89%	5.44%	2.28%	0.48%
22	49.61%	50.39%	8.26%	28.30%	12.91%	2.28%	0.50%
23	37.60%	62.40%	6.54%	51.24%	3.90%	2.43%	0.38%
24	56.37%	43.63%	7.66%	28.88%	5.94%	2.18%	0.44%
25	67.19%	32.81%	5.35%	23.03%	2.21%	2.48%	0.19%
26	81.18%	18.82%	3.30%	10.37%	2.76%	2.14%	0.18%
27	60.77%	39.23%	11.61%	20.57%	5.19%	2.71%	0.31%
28	76.79%	23.21%	7.48%	11.26%	2.15%	2.32%	0.18%
29	41.80%	58.20%	22.37%	24.34%	10.59%	2.64%	0.36%
30	45.71%	54.29%	26.53%	13.63%	13.20%	2.36%	0.21%
31	66.55%	33.45%	12.25%	7.56%	12.02%	1.65%	0.21%
32	44.35%	55.65%	13.53%	9.49%	31.79%	1.43%	0.21%
33	42.56%	57.44%	20.17%	21.96%	14.86%	1.99%	0.33%
34	46.12%	53.88%	18.88%	20.77%	13.49%	2.01%	0.35%
35	44.60%	55.40%	20.16%	10.18%	24.10%	1.79%	0.19%
36	48.89%	51.11%	11.19%	7.95%	31.00%	1.29%	0.20%
37	53.04%	46.96%	14.65%	5.99%	25.09%	1.47%	0.20%
38	57.21%	42.79%	11.99%	7.86%	21.68%	1.33%	0.19%
39	49.58%	50.42%	18.41%	19.50%	11.80%	2.20%	0.24%
40	61.22%	38.78%	14.82%	9.87%	13.03%	1.74%	0.20%

**Contiguity:** The districts are all contiguous.

**Compactness:** Below are the Reock and Polsby-Popper scores for the districts. These are two commonly used measures of spatial compactness. To simplify greatly, Reock scores measure how “stretched” a district is, while Polsby-Popper scores measure how “dimpled” the district is. Under both metrics, higher scores are better.

## Evaluation of Compactness Criteria, Draft Virginia Senate Districts 1-20

District	Reock	Polsby-Popper
1	0.3745	0.4002
2	0.2564	0.2493
3	0.2540	0.2264
4	0.3342	0.2264
5	0.3402	0.2451
6	0.2509	0.2898
7	0.2332	0.2985
8	0.4159	0.3181
9	0.3268	0.3734
10	0.3604	0.2151
11	0.2845	0.2724
12	0.3853	0.3010
13	0.5010	0.2871
14	0.3220	0.2294
15	0.3081	0.1676
16	0.4649	0.2839
17	0.2757	0.2549
18	0.4424	0.4223
19	0.3812	0.4630
20	0.3215	0.4040

## Evaluation of Compactness Criteria, Draft Virginia Senate Districts 21-40

District	Reock	Polsby-Popper
21	0.3860	0.3615
22	0.5711	0.4223
23	0.3648	0.3497
24	0.3029	0.2435
25	0.3346	0.2931
26	0.1924	0.1326
27	0.5667	0.3387
28	0.4889	0.3274
29	0.3377	0.2161
30	0.4421	0.3111
31	0.4003	0.2657
32	0.4404	0.4185
33	0.4891	0.2570
34	0.4524	0.4216
35	0.3872	0.3004
36	0.5244	0.3276
37	0.3019	0.2897
38	0.3123	0.3527
39	0.3467	0.2428
40	0.4605	0.5049

However, since we are drawing a whole map for the state, the most important compactness comparison is for the state as whole. Dave's Redistricting App provides a

composite compactness score for a whole map. The Special Masters' ("SMs") Senate map is more compact than the current Senate map, a value of 46 for the SMs map as compared to a value of 9 for the current Senate map. In other words, we have effectively more than quintupled the degree to which the senate map is a compact one.

**Partisanship:** Because state races occur in the off-years, which can have very different turnout patterns from presidential and midterm election years, we determined that it was important not to use elections from presidential or midterm elections to evaluate partisanship. In the draft maps, we used the Attorney General's race as our benchmark. The median districts, districts 31 and 17, gave the Democratic Attorney General candidate 54.3% and 53.2% of the vote, respectively. Under these proposed maps, those districts give the Democratic Attorney General candidate 54.2% and 53.2% of the vote, respectively, which reflect nominal changes and still suggests a marginal Democratic advantage to the map. We also provide data on the Lieutenant Governor's race from 2017 to give a better view of how the districts perform with an African-American candidate. Overall, this map is well-balanced, does not unduly favor any party, and does not require further adjustment.

## 2017 Attorney General Election Results, Virginia Senate Districts, Part 1

Average Dem Performance = 53.33%

District	Democratic	Republican
40	79.8%	20.1%
14	79.5%	20.4%
39	77.8%	22.1%
21	74.8%	25.1%
23	71.0%	28.9%
37	70.1%	29.8%
34	69.3%	30.6%
35	68.4%	31.5%
38	67.8%	32.1%
18	65.0%	34.9%
33	64.7%	35.2%
32	63.9%	36.0%
36	62.9%	37.0%
15	62.3%	37.6%
11	62.2%	37.7%
13	62.0%	37.9%
29	59.5%	40.3%
22	57.4%	42.6%
30	54.9%	45.0%
31	54.2%	45.7%

## 2017 Attorney General Election Results, Virginia Senate Districts, Part 2

Average Dem Performance = 53.33%

District	Democratic	Republican
17	53.2%	46.8%
16	52.3%	47.6%
24	51.6%	48.2%
4	47.9%	52.0%
27	47.6%	52.2%
20	46.1%	53.8%
12	43.1%	56.8%
19	42.1%	57.8%
25	42.0%	57.9%
9	39.6%	60.3%
26	37.2%	62.7%
28	37.1%	62.8%
1	36.4%	63.5%
5	36.3%	63.6%
10	36.0%	63.9%
3	35.8%	64.1%
2	33.2%	66.7%
8	31.8%	68.1%
7	30.6%	69.3%
6	23.3%	76.6%

## 2017 Lt. Gov. Election Results, Virginia Senate Districts, Part 1

Average Dem Performance = 52.7%

District	Democratic	Republican
14	79.7%	20.2%
40	79.5%	20.4%
39	77.7%	22.2%
21	73.7%	26.1%
23	70.8%	29.0%
37	70.2%	29.7%
34	69.4%	30.5%
35	68.6%	31.3%
38	67.6%	32.3%
33	64.8%	35.1%
18	64.0%	35.9%
32	63.1%	36.9%
36	63.0%	36.9%
15	62.4%	37.5%
13	61.8%	38.1%
11	61.6%	38.3%
29	59.7%	40.2%
22	56.4%	43.5%
30	54.6%	45.2%
17	52.3%	47.7%

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## 2017 Lt. Gov. Election Results, Virginia Senate Districts, Part 2

Average Dem Performance = 52.7%

District	Democratic	Republican
16	52.2%	47.6%
31	52.0%	47.9%
24	51.2%	48.7%
27	47.3%	52.6%
4	45.9%	54.0%
20	44.3%	55.7%
12	43.3%	56.6%
25	41.3%	58.6%
19	41.2%	58.7%
9	38.9%	61.1%
26	37.0%	63.0%
28	36.0%	63.8%
10	35.5%	64.4%
5	34.8%	65.1%
3	34.2%	65.7%
1	33.8%	66.1%
2	32.7%	67.2%
8	30.0%	69.9%
7	29.2%	70.7%
6	24.4%	75.5%

## VIRGINIA HOUSE OF DELEGATES

Because there are so many districts, we will not endeavor to describe each one. The basic underlying changes that we made were:

- As with the state Senate, we decided to place Falls Church with Fairfax County, which set off a cascade of changes throughout the area. We tried to keep the three Arlington districts situated in North, South and East Arlington. We likewise attempted to realign the districts along U.S. 1 on north-south axes, pursuant to multiple public comments. We tried to avoid the split of Centreville but were unable to do so given population concerns. Beyond this, the Fairfax districts were realigned to better reflect the underlying CDPs.
- We realigned the precincts in the Occoquan Basin to make them more compact and to better reflect CDPs. We also took some suggestions from the comments on how best to split places like Dale City.
- In Loudoun County, we worked to better follow CDP lines, and to make districts more compact.
- Pursuant to a comment from local officials, we altered the lines in southern Frederick County to reflect new precincts. We considered altering the lines in north-central Frederick County, but the change created a jagged peninsula that we would not have otherwise drawn.
- We examined different configurations for the 34<sup>th</sup> district to make it more compact and centered around Harrisonburg, but the changes made the 35<sup>th</sup> district unacceptably non-compact.
- We once again examined changes in the Roanoke area and New River Valley. We once again found ourselves in a situation where multiple commenters had conflicting

definitions of the communities of interest, where the equal population criteria imposed limitations on what we could accomplish, and where most of the proposed changes had significant political consequences on the districts. We ultimately did not change the districts.

- We attempted to place the Hurt precinct in Pittsylvania County with the rest of that county, per a comment, but could not do so without substantially reconfiguring the map due to population equality concerns.
- We made a few minor changes in the Charlottesville area to place certain suburbs of Charlottesville in the Charlottesville district, per comments.
- As with the Senate districts, the district line within Louisa County was moved to the South Anna River.
- The district line between the 57<sup>th</sup> and 59<sup>th</sup> districts was slightly altered to keep a subdivision intact, per a comment.
- We attempted to keep Culpeper County intact, per a comment, but ultimately could not do so without substantially reconfiguring the map.
- We examined ways to address those who wanted Williamsburg in a Hampton Roads-based district, as well as those who complained about the inclusion of a portion of Gloucester County in that district for equal population purposes, but ultimately could not find a satisfactory solution to the problem, given the second- and third-order “ripple” effects.
- We shifted the boundary between district 64 and district 23 to Garrisonville Rd., per a comment.
- We made some minor changes in the Virginia Beach area districts, per comments.

### Statutory Criteria

**Equal Representation:** The ideal population size for a House of Delegates district in Virginia is 86,314. The largest positive deviation from the ideal population comes in district 75, which is overpopulated by 2,149 residents. The largest negative deviation from the ideal population comes in district 27, which is underpopulated by 2,101 residents. All absolute percentage deviations are under 2.5%, as required by Virginia law.

### Evaluation of Equal Population Criteria, Virginia House Districts, 1-25

District	Population	Deviation	Pct. Deviation
1	85,070	-1,244	-1.40%
2	84,583	-1,731	-2.00%
3	86,111	-203	-0.20%
4	88,352	2,038	2.40%
5	88,099	1,785	2.10%
6	84,634	-1,680	-1.90%
7	85,669	-645	-0.70%
8	87,350	1,036	1.20%
9	86,572	258	0.30%
10	85,775	-539	-0.60%
11	88,267	1,953	2.30%
12	87,110	796	0.90%
13	84,507	-1,807	-2.10%
14	85,276	-1,038	-1.20%
15	88,404	2,090	2.40%
16	86,719	405	0.50%
17	84,241	-2,073	-2.40%
18	87,676	1,362	1.60%
19	87,408	1,094	1.30%
20	85,357	-957	-1.10%
21	85,907	-407	-0.50%
22	84,821	-1,493	-1.70%
23	86,276	-38	0.00%
24	85,355	-959	-1.10%
25	86,403	89	0.10%

Evaluation of Equal Population Criteria, Virginia House Districts, 25-50

District	Population	Deviation	Pct. Deviation
26	85,307	-1,007	-1.20%
27	84,213	-2,101	-2.40%
28	87,454	1,140	1.30%
29	87,418	1,104	1.30%
30	87,404	1,090	1.30%
31	87,248	934	1.10%
32	85,153	-1,161	-1.30%
33	87,217	903	1.00%
34	86,651	337	0.40%
35	87,055	741	0.90%
36	86,397	83	0.10%
37	87,329	1,015	1.20%
38	87,965	1,651	1.90%
39	84,495	-1,819	-2.10%
40	86,918	604	0.70%
41	87,677	1,363	1.60%
42	84,571	-1,743	-2.00%
43	86,222	-92	-0.10%
44	87,779	1,465	1.70%
45	85,313	-1,001	-1.20%
46	85,468	-846	-1.00%
47	85,048	-1,266	-1.50%
48	86,018	-296	-0.30%
49	84,673	-1,641	-1.90%
50	84,359	-1,955	-2.30%

### Evaluation of Equal Population Criteria, Virginia House Districts, 51-75

District	Population	Deviation	Pct. Deviation
51	85,784	-530	-0.60%
52	87,218	904	1.00%
53	86,080	-234	-0.30%
54	88,233	1,919	2.20%
55	85,332	-982	-1.10%
56	86,824	510	0.60%
57	87,140	826	1.00%
58	84,577	-1,737	-2.00%
59	86,095	-219	-0.30%
60	85,394	-920	-1.10%
61	84,921	-1,393	-1.60%
62	87,359	1,045	1.20%
63	84,966	-1,348	-1.60%
64	84,809	-1,505	-1.70%
65	87,139	825	1.00%
66	85,065	-1,249	-1.40%
67	85,966	-348	-0.40%
68	85,450	-864	-1.00%
69	87,386	1,072	1.20%
70	88,236	1,922	2.20%
71	84,328	-1,986	-2.30%
72	88,033	1,719	2.00%
73	87,751	1,437	1.70%
74	88,305	1,991	2.30%
75	88,463	2,149	2.50%

### Evaluation of Equal Population Criteria, Virginia House Districts, 76-100

District	Population	Deviation	Pct. Deviation
76	85,270	-1,044	-1.20%
77	87,759	1,445	1.70%
78	87,774	1,460	1.70%
79	87,800	1,486	1.70%
80	85,693	-621	-0.70%
81	84,718	-1,596	-1.80%
82	86,012	-302	-0.30%
83	86,459	145	0.20%
84	87,624	1,310	1.50%
85	87,829	1,515	1.80%
86	85,949	-365	-0.40%
87	87,516	1,202	1.40%
88	86,371	57	0.10%
89	86,704	390	0.50%
90	87,890	1,576	1.80%
91	87,076	762	0.90%
92	86,158	-156	-0.20%
93	85,906	-408	-0.50%
94	84,653	-1,661	-1.90%
95	85,171	-1,143	-1.30%
96	85,578	-736	-0.90%
97	86,997	683	0.80%
98	86,690	376	0.40%
99	84,766	-1,548	-1.80%
100	84,882	-1,432	-1.70%

**Equal Protection and Ability-to-Elect Districts:** The following table provides racial breakdowns for the draft House districts. Once again, we use Voting Age Population, rather than Citizen Voting Age Population, to better align the data with those being used by outside groups.

### Evaluation of Racial Criteria, Virginia House Districts, 1-25

District	Non-Hispanic White	Total Minority	Hispanic	Black	Asian	Native	API
1	71.51%	28.49%	10.25%	5.42%	11.44%	1.35%	0.16%
2	62.28%	37.72%	10.59%	9.35%	16.63%	1.50%	0.22%
3	50.29%	49.71%	21.69%	15.61%	11.80%	2.31%	0.27%
4	32.02%	67.98%	27.17%	26.61%	14.07%	2.68%	0.20%
5	59.96%	40.04%	14.02%	16.96%	7.90%	2.04%	0.24%
6	68.32%	31.68%	5.10%	2.72%	22.20%	0.82%	0.16%
7	64.84%	35.16%	10.73%	8.66%	14.43%	1.43%	0.21%
8	40.79%	59.21%	16.69%	10.21%	31.57%	1.55%	0.17%
9	45.45%	54.55%	13.64%	8.55%	31.43%	1.39%	0.19%
10	51.95%	48.05%	10.99%	6.87%	29.06%	1.36%	0.24%
11	50.88%	49.12%	12.86%	9.75%	25.28%	1.42%	0.21%
12	53.65%	46.35%	10.16%	6.24%	28.73%	1.10%	0.23%
13	49.82%	50.18%	21.62%	6.02%	21.38%	1.90%	0.18%
14	39.14%	60.86%	23.39%	12.01%	24.69%	1.94%	0.18%
15	59.14%	40.86%	11.68%	7.22%	20.77%	1.41%	0.21%
16	47.43%	52.57%	23.83%	19.37%	8.48%	2.12%	0.30%
17	48.64%	51.36%	16.28%	18.33%	15.93%	1.91%	0.32%
18	43.59%	56.41%	18.56%	12.25%	24.90%	1.73%	0.30%
19	28.72%	71.28%	29.69%	28.44%	13.17%	2.50%	0.40%
20	35.61%	64.39%	39.65%	13.68%	10.30%	2.88%	0.18%
21	50.95%	49.05%	20.19%	13.54%	14.25%	2.19%	0.22%
22	60.62%	39.38%	12.74%	11.91%	13.16%	2.10%	0.20%
23	29.69%	70.31%	20.75%	38.86%	10.46%	2.60%	0.49%
24	35.88%	64.12%	25.29%	26.70%	11.60%	2.47%	0.34%
25	42.23%	57.77%	21.81%	22.62%	12.79%	2.29%	0.33%

### Evaluation of Racial Criteria, Virginia House Districts, 26-50

District	Non-Hispanic White	Total Minority	Hispanic	Black	Asian	Native	API
26	36.97%	63.03%	7.42%	10.31%	44.72%	1.10%	0.20%
27	44.74%	55.26%	24.26%	8.47%	21.56%	1.80%	0.22%
28	57.12%	42.88%	11.55%	9.20%	20.96%	1.44%	0.20%
29	59.56%	40.44%	14.52%	9.46%	15.34%	1.45%	0.21%
30	75.10%	24.90%	7.16%	5.50%	10.09%	1.85%	0.23%
31	82.96%	17.04%	6.64%	5.44%	2.31%	2.32%	0.13%
32	77.70%	22.30%	10.97%	6.83%	2.46%	2.16%	0.13%
33	89.49%	10.51%	4.96%	2.48%	1.02%	1.93%	0.07%
34	73.97%	26.03%	14.39%	6.74%	4.16%	1.60%	0.16%
35	88.00%	12.00%	4.81%	4.55%	0.99%	1.67%	0.12%
36	83.74%	16.26%	3.74%	8.80%	1.36%	2.05%	0.12%
37	90.26%	9.74%	1.82%	4.53%	1.22%	1.87%	0.14%
38	57.45%	42.55%	7.36%	30.36%	2.95%	2.29%	0.09%
39	86.93%	13.07%	2.49%	7.20%	1.27%	1.86%	0.11%
40	82.10%	17.90%	3.60%	8.60%	3.88%	1.71%	0.12%
41	79.04%	20.96%	3.97%	4.05%	11.33%	1.36%	0.10%
42	85.89%	14.11%	2.83%	6.98%	1.84%	1.97%	0.10%
43	94.35%	5.65%	0.87%	2.54%	0.49%	1.46%	0.10%
44	93.18%	6.82%	1.36%	2.58%	0.72%	1.93%	0.08%
45	91.74%	8.26%	1.35%	4.32%	0.47%	1.76%	0.09%
46	91.49%	8.51%	1.69%	4.11%	0.58%	1.86%	0.05%
47	89.12%	10.88%	3.57%	4.80%	0.52%	1.76%	0.12%
48	66.13%	33.87%	3.95%	27.92%	0.77%	1.39%	0.09%
49	55.12%	44.88%	2.96%	39.79%	1.04%	1.45%	0.07%
50	58.70%	41.30%	2.92%	36.32%	0.76%	1.47%	0.10%

### Evaluation of Racial Criteria, Virginia House Districts, 51-75

District	Non-Hispanic White	Total Minority	Hispanic	Black	Asian	Native	API
51	83.13%	16.87%	2.01%	11.50%	1.11%	1.95%	0.06%
52	65.52%	34.48%	4.42%	25.30%	2.82%	1.81%	0.16%
53	80.79%	19.21%	2.39%	12.96%	1.35%	2.24%	0.09%
54	62.69%	37.31%	7.65%	15.36%	13.10%	1.37%	0.12%
55	81.93%	18.07%	4.09%	8.14%	3.84%	1.59%	0.13%
56	72.14%	27.86%	2.49%	22.55%	0.99%	1.69%	0.13%
57	64.61%	35.39%	4.26%	9.82%	19.71%	1.10%	0.07%
58	70.61%	29.39%	6.52%	11.00%	10.12%	1.30%	0.12%
59	74.63%	25.37%	3.54%	15.99%	3.57%	2.10%	0.13%
60	83.22%	16.78%	2.45%	9.30%	2.59%	2.01%	0.13%
61	79.62%	20.38%	7.63%	8.07%	2.35%	2.25%	0.20%
62	73.87%	26.13%	8.44%	13.58%	2.07%	2.17%	0.18%
63	72.16%	27.84%	8.33%	14.07%	3.05%	2.57%	0.18%
64	59.05%	40.95%	12.33%	21.35%	5.77%	2.71%	0.40%
65	63.08%	36.92%	10.16%	19.64%	4.90%	2.82%	0.27%
66	61.77%	38.23%	8.49%	24.20%	3.62%	2.56%	0.23%
67	69.59%	30.41%	4.19%	22.33%	1.58%	2.30%	0.22%
68	77.84%	22.16%	2.37%	15.81%	1.15%	2.77%	0.13%
69	70.15%	29.85%	6.54%	16.71%	4.92%	2.14%	0.37%
70	45.23%	54.77%	9.04%	39.58%	5.66%	2.22%	0.45%
71	70.59%	29.41%	4.79%	18.91%	3.77%	1.99%	0.25%
72	75.84%	24.16%	3.14%	16.52%	2.62%	1.74%	0.12%
73	77.38%	22.62%	4.23%	10.67%	6.09%	1.50%	0.13%
74	62.35%	37.65%	5.28%	27.68%	3.10%	2.14%	0.23%
75	50.76%	49.24%	9.72%	34.38%	3.92%	2.08%	0.29%

### Evaluation of Racial Criteria, Virginia House Districts, 76-100

District	Non-Hispanic White	Total Minority	Hispanic	Black	Asian	Native	API
76	43.60%	56.40%	15.30%	36.20%	3.91%	2.17%	0.15%
77	37.15%	62.85%	17.49%	41.74%	2.87%	2.13%	0.13%
78	71.44%	28.56%	5.07%	15.79%	6.67%	1.14%	0.15%
79	28.80%	71.20%	6.69%	60.99%	3.02%	1.94%	0.17%
80	36.70%	63.30%	7.61%	49.42%	5.32%	1.90%	0.15%
81	38.81%	61.19%	7.50%	50.08%	1.62%	2.79%	0.14%
82	45.77%	54.23%	3.95%	47.62%	1.36%	1.98%	0.20%
83	52.87%	47.13%	2.27%	42.57%	0.95%	1.64%	0.19%
84	49.30%	50.70%	3.59%	43.24%	2.61%	1.87%	0.19%
85	38.68%	61.32%	8.52%	48.09%	4.01%	2.41%	0.36%
86	61.47%	38.53%	5.26%	25.62%	5.88%	2.57%	0.41%
87	30.24%	69.76%	5.32%	60.39%	3.74%	2.15%	0.42%
88	40.56%	59.44%	4.01%	51.87%	2.27%	2.30%	0.33%
89	59.00%	41.00%	4.24%	30.69%	4.25%	2.34%	0.32%
90	70.96%	29.04%	4.59%	16.78%	5.75%	2.10%	0.30%
91	38.68%	61.32%	7.63%	48.64%	3.96%	2.50%	0.33%
92	38.00%	62.00%	5.07%	52.07%	4.23%	1.89%	0.30%
93	36.87%	63.13%	7.95%	49.16%	5.27%	2.31%	0.39%
94	55.65%	44.35%	12.77%	24.35%	5.80%	3.00%	0.74%
95	46.58%	53.42%	8.94%	34.73%	9.08%	2.32%	0.45%
96	45.61%	54.39%	8.23%	27.48%	17.96%	2.22%	0.54%
97	58.53%	41.47%	8.06%	22.50%	9.42%	2.54%	0.52%
98	72.22%	27.78%	6.84%	11.64%	7.42%	2.09%	0.45%
99	77.10%	22.90%	6.17%	10.52%	4.40%	1.91%	0.40%
100	66.76%	33.24%	7.26%	20.29%	4.08%	1.96%	0.22%

**Contiguity:** The districts are all contiguous under the census standard for contiguity (described above). To our knowledge, they are contiguous under functional contiguity as well.

**Compactness:** Below are the Reock and Polsby-Popper scores for the districts. Only a handful of districts perform poorly under the Reock metric, while all perform well under the Polsby-Popper metric. Looking at the map as a whole using the metric in Dave's Redistricting App the Special Masters' ("SMs") House map is more compact than the current House map, a value of 51 for the SMs map as compared to a value of 34 for the current House map. In other words, compactness in the proposed map is nearly 1.5 times that of the current House map.

### Evaluation of Compactness Criteria, Virginia House Districts 1-25

District	Reock	Polsby-Popper
1	0.4902	0.5468
2	0.3822	0.3474
3	0.3861	0.3926
4	0.3354	0.2671
5	0.2929	0.2607
6	0.3001	0.3448
7	0.4644	0.4180
8	0.3815	0.3723
9	0.4539	0.3368
10	0.4461	0.3361
11	0.5194	0.2964
12	0.4919	0.3453
13	0.4920	0.4496
14	0.3645	0.2778
15	0.4529	0.2343
16	0.4905	0.4878
17	0.2869	0.4601
18	0.3555	0.2565
19	0.4033	0.3741
20	0.4235	0.2633
21	0.4523	0.3663
22	0.4069	0.2684
23	0.3927	0.3236
24	0.3562	0.3819
25	0.3237	0.2712

Evaluation of Compactness Criteria, Virginia House Districts 26-50

District	Reock	Polsby-Popper
26	0.3178	0.2402
27	0.2221	0.2628
28	0.4628	0.3288
29	0.4388	0.3025
30	0.3883	0.3326
31	0.4288	0.3249
32	0.3910	0.3116
33	0.4441	0.2838
34	0.3476	0.2749
35	0.3534	0.2405
36	0.3706	0.2259
37	0.3585	0.2932
38	0.5652	0.2847
39	0.5563	0.3235
40	0.3254	0.1642
41	0.3280	0.1609
42	0.5063	0.1996
43	0.2108	0.2210
44	0.4157	0.5079
45	0.2414	0.2815
46	0.3722	0.2945
47	0.3658	0.2875
48	0.3312	0.2616
49	0.2936	0.2619
50	0.5403	0.3644

### Evaluation of Compactness Criteria, Virginia House Districts 51-75

District	Reock	Polsby-Popper
51	0.2930	0.2405
52	0.4074	0.3101
53	0.2978	0.2068
54	0.4819	0.3008
55	0.3830	0.2913
56	0.3319	0.2729
57	0.2769	0.2567
58	0.4107	0.3229
59	0.3249	0.2767
60	0.2959	0.1781
61	0.3927	0.3311
62	0.2850	0.2468
63	0.4321	0.3886
64	0.3547	0.3084
65	0.4605	0.2728
66	0.4118	0.2028
67	0.2321	0.1991
68	0.3129	0.2365
69	0.2061	0.1396
70	0.3304	0.2576
71	0.3202	0.1584
72	0.5226	0.2916
73	0.5351	0.3079
74	0.4351	0.3665
75	0.3916	0.1766

### Evaluation of Compactness Criteria, Virginia House Districts 76-100

District	Reock	Polsby-Popper
76	0.4152	0.3846
77	0.3409	0.2858
78	0.2761	0.2205
79	0.3078	0.2349
80	0.2617	0.2236
81	0.3001	0.2181
82	0.2051	0.2037
83	0.2805	0.2561
84	0.2388	0.1770
85	0.2800	0.3213
86	0.5226	0.5063
87	0.3463	0.3023
88	0.4524	0.4121
89	0.2984	0.2447
90	0.5333	0.4835
91	0.2538	0.1600
92	0.3579	0.2764
93	0.4740	0.2882
94	0.3017	0.3996
95	0.4016	0.3158
96	0.3406	0.4120
97	0.2774	0.2391
98	0.5686	0.5319
99	0.5732	0.4714
100	0.3051	0.4110

**Partisanship:** The results below are sorted by Democratic vote share. In the draft maps, the median districts, districts 97 and 65, gave the Democratic Attorney General candidate 52.6% and 51.2% of the vote, respectively. Under the revised maps, he received the exact same vote shares. This suggests a small Republican advantage in the House of Delegates. Overall, this map is well-balanced, does not unduly favor any party, and does not require further adjustment. As with the Senate map, we now provide the data for the Lieutenant Governor election as well.

## 2017 Attorney General Election Results, Virginia House Districts, Part 1

Average Dem Performance = 53.3%

District	Democratic	Republican
79	91.6%	8.2%
4	81.4%	18.4%
3	80.4%	19.5%
54	79.3%	20.6%
2	78.8%	21.1%
92	78.6%	21.3%
87	77.8%	22.0%
1	77.7%	22.2%
5	77.0%	22.9%
80	76.8%	23.1%
93	76.7%	23.2%
13	74.6%	25.2%
77	72.6%	27.3%
78	72.6%	27.3%
23	72.4%	27.5%
17	71.7%	28.2%
91	71.7%	28.2%
7	71.0%	28.8%
12	70.5%	29.4%
19	70.4%	29.5%
14	69.8%	30.1%
85	69.0%	30.9%
8	68.9%	30.9%
16	68.2%	31.7%
88	68.0%	31.8%

## 2017 Attorney General Election Results, Virginia House Districts, Part 2

Average Dem Performance = 53.33%

District	Democratic	Republican
11	67.6%	32.2%
81	67.0%	32.9%
18	66.7%	33.2%
26	65.3%	34.6%
24	64.8%	35.0%
27	64.2%	35.7%
25	63.5%	36.3%
38	63.2%	36.8%
9	62.6%	37.3%
28	61.9%	38.0%
15	61.5%	38.4%
6	61.3%	38.6%
95	61.0%	38.9%
76	60.8%	39.2%
10	60.6%	39.3%
29	59.5%	40.5%
96	59.1%	40.8%
70	58.6%	41.2%
20	58.1%	41.8%
55	57.5%	42.5%
94	56.5%	43.4%
82	55.8%	44.1%
84	55.8%	44.2%
21	52.8%	47.1%
97	52.6%	47.3%

2017 Attorney General Election Results, Virginia House Districts, Part 3

Average Dem Performance = 53.33%

District	Democratic	Republican
65	51.2%	48.7%
89	51.1%	48.8%
41	50.6%	49.4%
58	49.6%	50.3%
86	48.8%	51.0%
71	48.6%	51.3%
22	48.4%	51.5%
83	48.3%	51.6%
30	47.9%	52.1%
66	47.8%	52.1%
75	47.4%	52.5%
57	47.2%	52.7%
34	46.1%	53.8%
100	45.7%	54.2%
69	45.4%	54.4%
49	44.6%	55.3%
64	44.3%	55.6%
99	44.2%	55.7%
52	44.2%	55.7%
40	42.5%	57.4%
73	42.4%	57.5%
74	41.6%	58.3%
59	41.3%	58.6%
50	41.2%	58.7%
98	41.1%	58.8%

## 2017 Attorney General Election Results, Virginia House Districts, Part 4

Average Dem Performance = 53.33%

District	Democratic	Republican
32	39.7%	60.2%
67	39.7%	60.2%
36	39.5%	60.4%
56	39.4%	60.5%
63	38.8%	61.1%
42	38.6%	61.3%
62	38.2%	61.7%
90	38.2%	61.7%
31	37.4%	62.5%
61	37.4%	62.5%
48	37.1%	62.8%
68	35.6%	64.3%
72	34.7%	65.2%
37	32.9%	67.0%
60	31.3%	68.5%
39	31.1%	68.8%
53	31.1%	68.8%
33	27.7%	72.2%
47	26.6%	73.4%
35	26.5%	73.4%
46	24.8%	75.1%
44	24.6%	75.3%
51	24.5%	75.4%
43	22.0%	77.9%
45	20.8%	79.1%

## 2017 Lt. Gov. Election Results, Virginia House Districts, Part 1

Average Dem Performance = 52.7%

District	Democratic	Republican
79	92.0%	8.0%
4	81.4%	18.5%
3	80.4%	19.5%
54	79.0%	20.9%
2	78.5%	21.4%
87	78.0%	21.8%
92	77.6%	22.2%
1	77.2%	22.7%
5	77.0%	22.9%
80	76.7%	23.2%
93	75.9%	24.0%
13	74.8%	25.1%
77	73.0%	26.9%
78	72.7%	27.3%
23	72.6%	27.3%
17	71.8%	28.1%
91	71.4%	28.5%
7	70.9%	29.0%
19	70.7%	29.2%
12	70.5%	29.3%
14	70.2%	29.7%
8	68.9%	31.0%
85	68.8%	31.2%
16	67.9%	31.9%
11	67.8%	32.1%

## 2017 Lt. Gov. Election Results, Virginia House Districts, Part 2

Average Dem Performance = 52.7%

District	Democratic	Republican
18	66.9%	33.0%
81	66.8%	33.1%
88	66.7%	33.2%
24	64.9%	34.9%
26	64.6%	35.3%
25	63.7%	36.1%
27	63.6%	36.3%
9	62.8%	37.1%
15	61.6%	38.3%
38	61.6%	38.3%
76	61.0%	38.9%
6	60.9%	39.0%
28	60.7%	39.2%
10	60.6%	39.3%
95	60.2%	39.7%
96	58.5%	41.4%
70	58.5%	41.5%
20	58.0%	41.8%
29	57.1%	42.8%
55	56.8%	43.1%
82	55.6%	44.4%
84	54.5%	45.5%
94	54.2%	45.7%
21	52.3%	47.6%
97	51.3%	48.6%

### 2017 Lt. Gov. Election Results, Virginia House Districts, Part 3

Average Dem Performance = 52.7%

District	Democratic	Republican
65	50.7%	49.1%
89	50.3%	49.6%
58	49.6%	50.3%
41	48.7%	51.2%
71	48.4%	51.5%
86	48.0%	51.9%
83	47.8%	52.1%
57	47.4%	52.4%
22	47.4%	52.4%
66	47.4%	52.6%
75	47.1%	52.8%
34	46.0%	53.9%
30	45.3%	54.6%
69	45.0%	54.9%
100	44.4%	55.6%
64	44.0%	55.9%
49	43.6%	56.4%
73	42.6%	57.3%
52	42.2%	57.7%
99	41.8%	58.2%
74	41.1%	58.8%
59	40.8%	59.1%
50	40.8%	59.1%
40	40.1%	59.8%
98	40.1%	59.8%

## 2017 Lt. Gov. Election Results, Virginia House Districts, Part 4

Average Dem Performance = 52.7%

District	Democratic	Republican
67	38.9%	61.0%
56	38.8%	61.1%
36	38.7%	61.2%
63	38.3%	61.5%
62	37.3%	62.6%
90	37.2%	62.7%
32	37.0%	62.9%
42	36.3%	63.6%
48	36.0%	63.9%
61	35.9%	64.0%
31	35.0%	64.9%
68	35.0%	64.9%
72	34.8%	65.1%
60	31.1%	68.8%
37	30.7%	69.2%
53	29.6%	70.3%
39	28.9%	71.0%
35	25.9%	74.0%
33	25.5%	74.4%
47	25.4%	74.5%
44	25.1%	74.8%
46	23.8%	76.1%
51	22.9%	77.0%
45	22.4%	77.5%
43	22.2%	77.6%

631 S.W.2d 702

Supreme Court of Tennessee, at Nashville.

STATE of Tennessee ex rel. W. B. LOCKERT, Jr., District Attorney General for the 21st Judicial Circuit and Tom P. Thompson, Jr., District Attorney General for the 5th Judicial Circuit, Bill Jim Davis, Cheatham County, and Wilson County, K. Dickson Grissom, Denis Dozier Haile, George H. Harding and Don Simpson, individually and in his official capacity as County Judge of Wilson County, Tennessee (and each as individual plaintiff as well as relator), Plaintiffs-Appellees,  
v.

Gentry CROWELL, Secretary of State of the State of Tennessee; Lamar Alexander, Governor of the State of Tennessee; William M. Leech, Jr., Attorney General of the State of Tennessee; David Collins, Coordinator of Elections of the State of Tennessee; and James E. Harpster, Jack C. Seaton, Tommy Powell, Richard Holcomb, and Lytle Landers, Commissioner of the State Board of Elections, Defendants-Appellants.

March 31, 1982.

#### Synopsis

Suit was brought challenging constitutionality of act reapportioning the state senate. The Chancery Court, Davidson County, Robert S. Brandt, Chancellor, granted plaintiffs' motion for summary judgment, and defendants appealed. The Supreme Court, Drowota, J., held that: (1) foremost requirement in reapportionment plan is equality of population among districts, insofar as practicable, but prohibition against crossing county lines should be complied with insofar as it is possible under equal protection requirement; (2) evidence should be heard concerning whether minorities are invidiously discriminated against by any of the apportionment plans before the court; (3) variance between largest and smallest districts could increase substantially above the 1.65% provided by the Act in order to preserve county boundaries and comply with other constitutional standards, but plan drawn without crossing any lines having maximum total of variance of over 22% could not be upheld; and (4) there were issues of fact, precluding summary judgment, as whether the plan under the Act was actually necessary, in view of other action which the legislature could have taken in order to comply with paramount constitutional standards.

Order overruled and cause remanded.

Fones, J., filed a dissenting opinion in which Brock, J., concurred.

**Procedural Posture(s):** On Appeal; Motion for Summary Judgment.

West Headnotes (11)

[1] Constitutional Law—Justiciability

Challenge to legislative reapportionment of the state senate presented a justiciable issue.

1 Cases that cite this headnote

[2] States—Population as basis and deviation therefrom

First and foremost standard to be considered in legislative reapportionment case is requirement of equality of population among districts, insofar as practicable. U.S.C.A. Const. Amend. 14.

[3] Constitutional Law—Population deviation

Although a "rule of thumb" appears to have developed whereunder variances of 10% or less, among districts, in reapportioning state legislatures need not be justified absent showing of invidious discrimination, and greater variances will be held constitutional if the state has a rational policy in support thereof, variance of less than figures which have been upheld by the Supreme Court will not automatically be upheld in the face of equal protection challenge, as the variance for any state will be judged solely by the circumstances present in that state. U.S.C.A. Const. Amend. 14.

EXHIBIT

4

1 Cases that cite this headnote

[4] **States**=Population as basis and deviation therefrom

Variance between largest and smallest state senate districts could increase substantially above the 1.65% provided for in legislative enactment, in order to preserve county boundaries and comply with other constitutional standards, but a plan having maximum total variance of over 22% could not be upheld. U.S.C.A. Const. Amend. 14; Const. Art. 2, § 6.

1 Cases that cite this headnote

[5] **States**=Judicial review and control

In evaluating legislative reapportionment plan, evidence should be heard concerning whether minorities are invidiously discriminated against.

[6] **Constitutional Law**=Boundaries of political subdivisions, consideration of  
**States**=Method of apportionment in general

Prohibition in State Constitution against crossing county lines in drawing state senate districts should be complied with insofar as is possible under equal protection requirements. U.S.C.A. Const. Amend. 14; Const. Art. 2, §§ 4, 6.

4 Cases that cite this headnote

[7] **States**=Method of apportionment in general

Where necessary to meet federal constitutional requirements concerning legislative

reapportionment, state constitutional provision may be violated to an extent, but still must be given due consideration and all possible effect. U.S.C.A. Const. Amend. 14; Const. Art. 2, §§ 3, 4, 6.

[8] **States**=Judicial review and control

In passing on constitutionality of state senate apportionment plan, courts must consider requirements that each district be contiguous and that, in county having more than one senatorial district, such districts shall be numbered consecutively. Const. Art. 2, §§ 3, 6.

[9] **Constitutional Law**=Apportionment, election, and discipline of members of legislature  
**States**=Method of apportionment in general  
**States**=Judicial review and control

It would be constitutional for the state senate to have fewer than 33 members though this would be less than one-third the number of representatives, which is the maximum set by the Constitution, but the decision as to number of senators provided for in reapportionment plan belongs to the General Assembly and will not be intruded upon by the courts, in light of doctrine of separation of powers. Const. Art. 2, §§ 1–4, 6; T.C.A. § 3–1–101.

1 Cases that cite this headnote

[10] **States**=Judicial review and control

Where plaintiff in suit challenging constitutionality of state senate reapportionment statute showed that the act violated state's constitutional prohibitions against crossing county lines, burden shifted to defendants to show that the legislature was justified in passing

reapportionment act which crossed county lines.  
Const.Art. 2, § 6.

1 Cases that cite this headnote

[11] Judgment—Effect of prior decision

In suit challenging constitutionality of reapportionment of state senate, there were disputed questions of material fact precluding summary judgment as to whether the plan under the Act, which crossed numerous county lines but had minimal variance in the size of the districts, was actually necessary in view of other action which the legislature could have taken in order to comply with paramount constitutional standards. U.S.C.A. Const. Amend. 14; Const.Art. 2, § 6.

OPINION

DROWOTA, Justice,

This case comes to us on direct appeal from the Chancellor's grant of plaintiffs' motion for summary judgment. The primary question presented is the constitutionality of the Senate Reapportionment Act of \*704 1981,<sup>1</sup> which Act reapportioned the State Senate in response to the 1980 federal decennial census, as required by Art. II, s 4 of the Tennessee Constitution. The defendants cite as error the Chancellor's holding that the Act "contravenes Article II, s 6 of the Tennessee Constitution providing that no county shall be divided in forming a senate district, and the contravention of Art. II, s 6 is not necessary to meet the 'one person, one vote' requirement of the equal protection clause of the Fourteenth Amendment to the United States Constitution" and is therefore unconstitutional. The Chancellor also enjoined the defendants from conducting any primary or general election under the Act. For reasons set out below, we hold that this was not a proper case for summary judgment and we remand this cause to the trial court for further proceedings consistent with this opinion.

Attorneys and Law Firms

\*703 Robert T. Rochelle, Lebanon, Robert L. Perry, Jr., Ashland City, Henry Haile, Nashville, for plaintiffs-appellees.

Carol L. McCoy, Nashville, for amicus curiae League of Women Voters of Tenn.

James E. Lanier, Dyersburg, for amicus curiae, Dyer County.

Robert B. Littleton, Sp. Asst. Atty. Gen., and Michael Catalano, Asst. Atty. Gen., Nashville, for defendants-appellants.

Richard H. Dinkins, Nashville, Jack Greenberg, James M. Nabrit, III, and Napoleon Williams, Legal Defense Fund New York City, for amicus curiae, Tennessee Voters Council and Unincorporated Ass'n by its General Chairman Avon N. Williams, Jr.

HISTORY AND BACKGROUND

The action was brought on November 17, 1981, by the following plaintiffs: the counties of Wilson and Cheatham, by their District Attorneys General; the Senator representing District 27 under the prior apportionment act, whose incumbency was in effect abolished by the Act; and citizens and registered voters of Bedford, Cheatham and Wilson Counties, one of whom was a Wilson County Commissioner and another of whom was Wilson County Judge and ex officio Chairman of the County Commission. The plaintiffs' standing to sue is not in issue. Defendants are the Secretary of State, Governor, Attorney General, Co-ordinator of Elections and Commissioners of the State Board of Elections.

The amended complaint alleged three causes of action. One of these was that in this reapportionment, district lines were redrawn and voters were transferred from odd to even numbered districts, and vice versa. The effect of this would be to preclude many voters from voting in a Senate race as frequently as every four years, contrary to Art. I, s 5 of the Constitution. The Chancellor held that this was a necessary by-product of reapportionment and

did not violate the Constitution.

Another cause of action was that the Act violated Art. II, s. 3 of the Constitution in failing to number districts consecutively in a county having more than one senatorial district. The Chancellor reserved this issue in view of his holding that the Act was unconstitutional for another reason and that the Senate districts must be redrawn.

The third, and principal, cause of action was that the Act clearly violated Art. II, s. 6 of the Constitution, which reads:

The number of Senators shall be apportioned by the General Assembly among the several counties or districts substantially according to population, and shall not exceed one-third the number of Representatives. Counties having two or more Senators shall be divided into separate districts. In a district composed of two or more counties, each county shall adjoin at least one other county of such district; and no county shall be divided in forming such a district.

The emphasized phrase was in our original Constitution of 1796, and found in the subsequent Constitutions of 1835, 1870 and 1966.

The defendants moved for summary judgment based upon exhibits which showed that the Act complied with the "one person, one vote" requirements of the United States Constitution. Based upon population, the "ideal" district size of a 33-member Senate is 139,114, under the 1980 census. The greatest positive variance from this size was  $\pm .73\%$ , and the greatest negative variance  $- .92\%$ , for a total maximum variance of  $1.65\%$ . Thus, the plan was close to mathematical perfection. Defendants argued that if these requirements were met, there was no basis under the Tennessee Constitution on which to hold the Act invalid.

Plaintiffs filed a cross-motion for summary judgment based upon the complaint, certain stipulations by the parties, and affidavits. The stipulations included the following matters pertinent to the principal issue:

\*705 1. A map of the districts established under the Act.

2. A statement that the optimum district size for a 33-member Senate was 139,114.

3. Charts showing the population of each district under the Act, the population of each county and parts of counties in each district, the raw number and percentage variance of each district from ideal size, the total maximum variance, the distribution of variance, the average variance, and similar statistics agreed to be true.

4. A 30-member and a 31-member plan proposed by plaintiffs, which would not cross any county lines. The 30-member plan had an ideal district size of 153,025, and the total maximum variance was  $\pm 4.46\%$  and  $- 5.98\%$ , or  $10.44\%$ . The 31-member plan had an ideal district size of 148,101, with a total maximum variance of  $13.82\%$ .

5. A 33-member plan which crossed the lines of only Shelby, Davidson, and Knox Counties. Hamilton County was divided into two districts, but no part thereof was joined in a district with any other county. The total maximum variance of this plan was stipulated to be  $9.99\%$ .

6. A stipulation as to the instructions given to Mr. Frank D. Hinton, Director of Local Government, Office of Comptroller of the Treasury, by the Senate for his guidance in preparing proposed reapportionment plans: "(a) that all districts should be as near to mathematical perfection as possible, but at the same time the districts should split as few counties as possible;" (b) that districts should keep the same numbers they had previously had, or at least their odd or even numbered status; and "(c) that, if possible, no two (2) incumbents in the State Senate should be placed in the same district."

The defendants filed the affidavit of Frank D. Hinton, addressing the difficulties of drawing a 33-member plan which did not cross county lines. It stated that the primary problem arose in the four metropolitan counties because their populations are not multiples of the ideal population of 139,114. A chart set out the percentages of variance for each of these counties if no county lines were crossed, from a low variance of  $\pm 3.41\%$  in Hamilton County to a high of  $\pm 14.89\%$  in Knox County. It concluded that since each of these variances was positive, with the lowest of the four figures being  $3.41\%$ , "some of the multi-county districts will have a negative variance from optimum district size. Attempts to draw such a thirty-three member plan result in a total gross variance (combining greatest positive and greatest negative variance) of over 22%."<sup>3</sup>

The motions for summary judgment were argued February 9, 1982. On February 18, the Chancellor entered a Memorandum Opinion, and on February 23, his Decree.

In addition to the above-mentioned parties, the following have participated in the appeal from this Court as amici curiae: the League of Women Voters, the Tennessee Voters Council, and Dyer County through its County Attorney.

#### JUSTICIABILITY

¶ A threshold issue decided by the Chancellor and appealed by the defendants is that the complaint presented a justiciable issue. The defendants charge that reapportionment is nonjusticiable because it is a political question and because it is a legislative function under the Separation of Powers Doctrine. They further argue that, should the courts declare the Act unconstitutional and the General Assembly fail to pass a constitutional act, the courts would be without power to grant the ultimate remedy of formulating their own reapportionment plan.

In view of the evolution in this area of constitutional law which has taken place since the United States Supreme Court's decision in \*706 *Baker v. Carr*, 369 U.S. 186, 82 S.Ct. 691, 7 L.Ed.2d 663 (1962), we disagree, and affirm the Chancellor's holding that this is a justiciable issue. See *Egan v. Hammond*, 502 P.2d 856, 865 (Alaska 1972); *Legislature of the State of California v. Reinecke*, 10 Cal.3d 396, 110 Cal.Rptr. 718, 516 P.2d 6 (1973); *White v. Anderson*, 155 Colo. 291, 394 P.2d 333 (1964); *Guntter v. Richardson*, 47 Haw. 662, 394 P.2d 444, 449 (1964); *Bücher v. Bloom*, 415 Pa. 438, 203 A.2d 556, 559-560 (1964); *Smith v. Craddick*, 471 S.W.2d 375 (Tex. 1971); *In re Senate Bill 177*, 130 Vt. 358, 294 A.2d 653 (1972); *State v. Zimmerman*, 22 Wis.2d 544, 126 N.W.2d 551, 560-563 (1964); 25 Am.Jur.2d Elections § 32 (1966); 16 C.J.S. Constitutional Law § 147 (1956). These and other cases relied upon in this opinion are replete with statements that apportionment is primarily a legislative function, and that the courts should act only if the legislature fails to act constitutionally after having had a reasonable opportunity to do so. If the court were forced in such an event to devise its own constitutional plan, it would not in effect be preempting the General Assembly.

#### CONTENTIONS OF THE PARTIES

Plaintiffs contend that they made out a *prima facie* case of unconstitutionality, because the Act crossed the boundaries of 16 of the State's 95 counties in setting up the thirty-three Senate districts. Plaintiffs take the position that there is no unavoidable conflict between the Tennessee constitutional prohibition against dividing counties in forming Senate districts and the one person, one vote requirement of the federal constitution, if the number of Senators is reduced. Plaintiffs introduced two plans reducing the number of senatorial districts to 31 and 30, which plans had maximum total variances of 13.82% and 10.44% respectively. Plaintiffs aver that neither of these plans crosses any county lines and the variances in both plans meet the equal protection requirements.

Defendants contend that the division of counties is necessary to comply with the "one person, one vote" doctrine under the equal protection clause of the Fourteenth Amendment of the United States Constitution, as enunciated in *Baker v. Carr*, 369 U.S. 186, 82 S.Ct. 691, 7 L.Ed.2d 663 (1962), and as applied to state legislative bodies by *Reynolds v. Sims*, 377 U.S. 533, 84 S.Ct. 1362, 12 L.Ed.2d 506 (1963).

The Senate reapportionment plan with a maximum variance of 1.65% is close to mathematical perfection. The plan divides sixteen counties. A thirty-three Senator plan which conforms to Art. II, s 6 and does not divide counties would produce a total variance of over 22%. Such a variance, defendants argue, is far above the maximum deviation permitted by the equal protection clause. Defendants submit that there is an unavoidable conflict between the equal protection clause and the provisions of Art. II, s 6 of our State Constitution, and the Senate chose a plan which complied with the equal protection clause.

Defendants aver that the two proposed apportionment plans submitted by the plaintiffs to the trial court substantially increase disparities in population over the present plan. Defendants contend that reducing the size of the Senate may raise serious constitutional questions relative to the representation of minorities within the Senate. Defendants further aver that the determination of the number of Senators is vested solely in the General Assembly and imposition of such a plan would abridge the Doctrine of Separation of Powers.

Amicus curiae, the Tennessee Voters Council, contends that minority groups which are concentrated within a specific area of a county, which now have representation in the State Senate, should not be stripped of representation, by the adoption of a 30 or 31 member Senate plan.

Amici curiae, League of Women Voters of Tennessee and Dyer County, seek affirmance of the Chancellor's decision holding the Act unconstitutional.

#### STATE AND FEDERAL CONSTITUTIONAL REQUIREMENTS FOR REAPPORTIONMENT PLANS

##### A. Equal Protection—"One Person, One Vote"

[2] There are several constitutional standards which the Legislature must consider \*707 in adopting a reapportionment plan. First and foremost is the requirement of equality of population among districts, insofar as is practicable. *Gaffney v. Cummings*, 412 U.S. 735, 93 S.Ct. 2321, 37 L.Ed.2d 298 (1973); *Mahan v. Howell*, 410 U.S. 315, 93 S.Ct. 979, 35 L.Ed.2d 320 (1973); *Reynolds v. Sims*, *supra*; *Clements v. Valles*, 620 S.W.2d 112 (Tex.1981); *Smith v. Craddick*, 471 S.W.2d 375 (Tex.1971). Not only is this required by the Fourteenth Amendment of the United States Constitution, but also it is required by Art. II ss 4 and 6 of the Tennessee Constitution.

Under the Act, the General Assembly created senatorial districts with a maximum total variance between the largest and smallest districts of only 1.65%. It should be remembered that variances larger than this would be constitutional. Indeed, the United States Supreme Court in

*White v. Regester*, 412 U.S. 755, 93 S.Ct. 2332, 37 L.Ed.2d 314 (1973), and *Gaffney v. Cummings*, *supra*, held that those attacking the state apportionment plans had failed to show a *prima facie* equal protection violation where the maximum total variances were 9.9% in White, and 1.81% for the Connecticut Senate and 7.83% for the House in Gaffney. In *Mahan v. Howell*, *supra*, the Court held that a larger total variance may be constitutional if it is justified in order to further a rational state policy. In particular, a variance of 16.4% was validated for the Virginia House of Delegates when the state's purpose therefor had been to maintain the integrity

of traditional county and city boundaries. The Court in *Reynolds v. Sims*, *supra*, recognized the validity of maintaining political subdivision lines as justifying deviation from mathematical perfection in drawing state (as opposed to congressional) legislative districts.

[3] From these cases, a "rule of thumb" appears to have developed, whereunder variances of 10% or less need not be justified absent a showing of invidious discrimination; and greater variances will be constitutional if the state has a rational policy in support thereof. Virginia's 16.4% variance is the greatest which, to our knowledge, has been found constitutional, and the court in *Mahan* speculated that this approached the limit of constitutional variance. Apportionment statutes with variances greater than this have been struck down, see *Whitcomb v. Chavis*, 403 U.S. 124, 91 S.Ct. 1858, 29 L.Ed.2d 363 (1971); *Kilgarlin v. Hill*, 386 U.S. 120, 87 S.Ct. 820, 17 L.Ed.2d 771 (1967); *Swann v. Adams*, 385 U.S. 440, 87 S.Ct. 569, 17 L.Ed.2d 501 (1967).<sup>14</sup>

That is not to say that a plan with less than 10% variance must automatically be upheld in the face of an equal protection challenge. When the variance is less than 10%, the United States Supreme Court has held that there is no *prima facie* showing of unconstitutionality. Plaintiffs in such a case would have to prove more: that the plan invidiously discriminated. We also do not hold that any plan with a variance of up to 16.4% would be upheld merely because it did not cross county lines, and because 16.4% was upheld for Virginia. As the Court held in

*Reynolds v. Sims*, *supra*, "What is marginally permissible in one State may be unsatisfactory in another, depending on the particular circumstances of the case."

377 U.S. at 578, 84 S.Ct. at 1390. It later noted in *Mahan v. Howell*, *supra*, quoting from *Swann v. Adams*, *supra*, "the fact that a 10% or 15% variation from the norm is approved in one State has little bearing on the validity of a similar variation in another State." 410 U.S. at 328, 93 S.Ct. at 987. It must be remembered that "the Equal Protection Clause requires that a State make an honest and good faith effort to construct districts, in both houses of its legislature, as nearly of equal population as is practicable." *Reynolds v. Sims*, *supra*. 377 U.S. at 577, 84 S.Ct. at 1390. "For a State's policy urged in justification of disparity in district population, however rational, cannot constitutionally be permitted to emasculate the goal of substantial \*708 equality."

*Mahan v. Howell*, *supra*, 410 U.S. at 326, 93 S.Ct. at 986.

[4] Applying these principles to the reapportionment of the

Tennessee Senate, we feel that the variance between largest and smallest districts could increase substantially in order to preserve county boundaries and comply with other constitutional standards. See *Sullivan v. Crowell*, 444 F.Supp. 606 (W.D.Tenn.1978), wherein a reapportionment among several House districts increased the variance from 4.51% to 12.51% in order to avoid having voting precincts wherein voters were in two districts. The court held that this was a valid reason for increasing the variance. However, if a plan could be devised which would achieve the same end while maintaining much lower variances, the 12.51% variance would be unconstitutional. Yet the equal protection factor should certainly not be thrown to the winds. Specifically, the record indicates that the best 33-Senator plan which can be drawn without crossing any county lines would have a maximum total variance of over 22%.<sup>5</sup> We cannot conceive of such a plan being held constitutional. The one person, one vote principle would require a variance of substantially less than this.

#### B. Dilution of Minority Voting Strength

There is a second issue which, like the equal protection issue, falls under the United States Constitution. This is the issue, raised for the first time on appeal to this Court by amicus curiae Tennessee Voters Council, an unincorporated association, by the General Chairman Avon N. Williams, Jr., of whether or not the Act is "a necessary means for avoiding an unlawful dilution of minority voting strength." Many United States Supreme Court cases have dealt with the argument that a certain form of legislative districting, usually at-large, multi-member districting, has resulted in unconstitutional dilution of minority voting strength. See, e.g., *City of Mobile v. Bolden*, 446 U.S. 55, 100 S.Ct. 1490, 64 L.Ed.2d 47 (1980); *White v. Regester*, 412 U.S. 755, 93 S.Ct. 2332, 37 L.Ed.2d 314 (1973); *Whitecomb v. Chavis*, 403 U.S. 124, 91 S.Ct. 1858, 29 L.Ed.2d 363 (1971); and cases cited therein. These cases contain instructive statements as to what constitutes invidious discrimination in this area, and what does not.

<sup>15</sup> At the hearing on remand, evidence should be heard concerning whether or not minorities are invidiously discriminated against by any of the apportionment plans before the court; and whether, assuming that the Act does not invidiously discriminate, any alternative apportionment plan can be drawn which also does not invidiously discriminate and yet conforms to the guidelines for constitutionality under the Tennessee

Constitution set forth herein.

#### C. Prohibition Against Crossing County Lines, Article II, § 6

<sup>16</sup> The first two requirements discussed in Sections A and B dealt with state and federal constitutional standards. Not dividing county lines is solely a state requirement. If there is an unavoidable conflict between federal and state requirements as \*709 defendants assert, then the state requirements become secondary to the necessity of complying with the equal protection clause. All of the parties erroneously assumed that the only constitutional alternative to the present Act, which crosses 16 county lines, is a plan which crosses no county lines whatsoever. It was shown in the trial court that at least one 33 Senator plan can be devised which crosses significantly fewer county lines than does the Act, and yet clearly meets the equal protection guidelines delineated above. The prohibition against crossing county lines should be complied with insofar as is possible under equal protection requirements. There are excellent policy reasons for the presence of a provision that counties must be represented in the Senate. *Mahan v. Howell*, *supra*; *Reynolds v. Sims*, *supra*. As the complaint in this case alleges:

... Counties are divided and thus their citizens are denied their constitutional right to be represented in the State Senate as a political group by senators subject to election by all voters within that political group. These plaintiffs aver that the legal and political framework of Tennessee allows and requires that the legislature enact legislation having only a local application. Thus the legislature has the ability through local legislation to directly affect citizens merely because those citizens reside in a particular county. Therefore, the legislature has the right to govern citizens in one county differently from citizens in another county.

We find very persuasive the law which has developed in Texas under the cases of *Smith v. Craddick*, 471 S.W.2d 375 (Tex. 1971) and *Clements v. Valles*, 620 S.W.2d 112 (Tex. 1981). The pertinent provision of the Texas Constitution (Art III, s 26) dictated as follows:

1. Whenever a county has sufficient population to be entitled to a Representative, such county shall form a separate district.
2. When two or more counties are required to make up sufficient population for a district, they shall be contiguous.
3. When any county has more than sufficient population to be entitled to a Representative or Representatives, he or they shall be apportioned to that county. For any surplus population, it may be joined in a district with any other county or counties.

The court first held that the equal protection requirement took precedence, and "any inconsistency therewith in the Texas Constitution is thereby vitiated." 471 S.W.2d at 377.

When federal requirements were "superimposed," as it were, upon the above provisions, the following effects upon the State Constitution were had:

Clause 1: This would be effective only so long as county population was within the permissible limits of variance.

Clause 2: When two or more counties are needed to make up a district, "the only impairment of this mandate is that a county may be divided if to do so is necessary in order to comply with" the Fourteenth Amendment.

Clause 3: This was nullified. It became permissible to join the portion of a county in which there was surplus population not in a district wholly within the county, with contiguous area or another county to form a district. It was still necessary for a county to receive the number of districts to which its own population was entitled when the "ideal" population was equalled or exceeded.

It was clear that the court interpreted the language of its Constitution to mean that counties must be dealt with as a whole, and that it allowed that meaning to be softened only to the extent necessary to comply with the federal constitution.

The plan passed by the Texas Legislature in *Smith v. Craddick*, supra, cut the boundaries of 33 counties. Forty-three of one hundred fifty districts contained a

portion of a county. As the court held:

(Defendants) offered no evidence to establish that the wholesale cutting of county lines ... was either required or \*710 justified to comply with the one-man, one-vote decisions. The burden is on one attacking an act to establish its invalidity. (Citations omitted.) (Plaintiffs) proved conclusively that the statute fails to do what is required by the constitution in those respects discussed ... above. No presumption of validity remains in the face of that showing. If these districting requirements were excused by the requirements of equal representation, the (defendants) had the burden of presenting that evidence. They presented none.

*Id.* at 378.

The apportionment plan struck down in *Clements v. Valles*, supra, also sets out the way in which the division of counties failed to comply with the *Smith v. Craddick* guidelines. These are analogous to the Tennessee Act. The Texas Act cut 34 counties, 24 with surplus population and 10 with insufficient population to form a district. The plaintiffs presented numerous alternative plans which more closely followed county lines and still maintained permissible population deviations.

In *Gaffney v. Cummings*, 412 U.S. 735, 93 S.Ct. 2321, 37 L.Ed.2d 298 (1973), the Supreme Court considered the constitutionality of a plan apportioning the Connecticut House. In Connecticut, towns rather than counties are the basic unit of local government. The state Constitution provides that "no town shall be divided" for the purpose of creating House districts, except where districts are formed "wholly within the town." The Constitution further provides, as does our own, that the "establishment of districts ... shall be consistent with federal constitutional standards." The House plan under scrutiny in *Gaffney* cut 47 boundary lines of the state's 169 towns. As in the case at bar, an action was brought seeking declaratory and injunctive relief against implementation of the plan.

The complaint alleged that the plan erroneously applied the Fourteenth Amendment so as to achieve smaller deviations from population equality for the districts than were required under the Fourteenth Amendment. In achieving such unnecessary mathematical precision, the plan segmented an excessive number of towns in forming the districts. At the hearing in the federal district court, plaintiffs introduced three alternative apportionment plans that required fewer town-line cuts, although all three plans involved total deviations from population equality in excess of the 7.83% contained in the House plan. A fourth alternative plan was submitted which had a maximum variation of only 2.61%, but had no regard for the integrity of town lines.

The district court invalidated the plan and enjoined its future use in elections. The Supreme Court stayed the district court's judgment and upheld the original plan, which violated the Connecticut Constitution's prohibition against crossing town lines. The Court made the following pertinent observations:

... From the very outset, we recognized that the apportionment task, dealing as it must with fundamental "choices about the nature of representation" (citation omitted), is primarily a political and legislative process....

...

... Politics and political considerations are inseparable from districting and apportionment....

...

... (M)ultimember districts may be vulnerable, if racial or political groups have been fenced out of the political process and their voting strength invidiously minimized.

412 U.S. at 749, 753, 754, 93 S.Ct. at 2329, 2331, 2332, 37 L.Ed.2d at 310, 312.

<sup>[7]</sup> This case illustrates the point that, where necessary to meet federal constitutional requirements, a state constitutional provision may be violated to an extent, but still must be given due consideration and all possible effect.

#### D. Contiguous and Consecutively Numbered Counties

<sup>[8]</sup> In addition to the above requirements in Sections A, B

and C, the courts must of course consider other factors in <sup>\*711</sup> passing upon the constitutionality of a state apportionment plan. The counties in each district must be contiguous (Art. II, s 6). In a county having more than one senatorial district, such districts shall be numbered consecutively (Art. II, s 3).

#### NUMBER OF SENATORS

Another matter which must be addressed when considering state constitutional standards is the number of members which the Senate can contain under a constitutional plan. The stipulations made to the trial court included both a 30 and 31 Senator plan, neither of which crossed county lines. The variances were 10.44% and 13.82% respectively. The Chancellor noted these plans approvingly. We, however, see several problems which should be weighed when the Legislature is considering the advisability of changing the number of Senators.

<sup>[9]</sup> Certainly, it would be constitutional for the Senate to contain fewer than 33 members. The Constitution, Art. II, s 6, sets only the maximum size of the Senate, at one-third the number of Representatives. However, the maximum number of Representatives has been set at 99 since the Constitution of 1835<sup>10</sup> and the number of Senators has remained in actual practice one-third the number of Representatives. The Code of 1884 set the number of Representatives at 99 and the number of Senators at 33, and the same composition has existed in the House and Senate since that date.<sup>11</sup> The framers of the Constitution and the Legislature as early as 1884 sought stability in the General Assembly by fixing the specific number of Senators and Representatives. For nearly 100 years the composition of the Senate has not changed. Under plaintiffs' theory the number of Senators would likely increase or decrease after each decennial census. TCA s 3-1-101 expressly mandates that there shall be 33 Senators, and the validity of this statute has not been challenged in this action. Clearly, the statute evidences a legislative intent as to the number of Senators.

We contemplate another problem in reducing the number of Senators. Under either a 30 or 31 Senator plan, the Senator elected in the 32nd senatorial district in 1980 for a 4 year term, specified by Art. II, s 3 of our Constitution, would have his senatorial district abolished during his term of office. A more serious problem in reducing the number of Senators has been raised by *amicus curiae*, that

is, that reducing the size of the Senate raises constitutional questions relative to the representation of minorities within the Senate. They contend that plaintiffs' 30 and 31 Senator plans unlawfully dilute minority voting strength, particularly in Shelby and Davidson Counties.

In our view, the decision as to the number of Senators belongs to the General Assembly; it is a political matter. Art. II, s 4. We shall not intrude upon the legislative prerogative, being mindful of the Doctrine of Separation of Powers under Art. II, ss 1 and 2 of our Constitution. The General Assembly is perfectly free to reduce the number of Senators by amending TCA s 3-1-101, or keep the membership at 33, so long as the apportionment plan which it adopts otherwise meets constitutional standards.

#### TENNESSEE FEDERAL COURT CASES FROM THE 1970'S

Mention should be made of federal district court cases decided during the 1970's \*712 and discussing Tennessee apportionment plans under the United States Constitution. These cases, in chronological order, are: Kopald v. Carr, 343 F.Supp. 51 (M.D.Tenn.1972); White v. Crowell, 434 F.Supp. 1119 (W.D.Tenn.1977); Sullivan v. Crowell, 444 F.Supp. 606 (W.D.Tenn.1978); and Mader v. Crowell, 498 F.Supp. 226 (M.D.Tenn.1980).

Interestingly, Ch. 3, s 2 of the Public Acts of 1965, which was expressly designed as a response to *Baker v. Carr*, *supra*, did not divide counties. Kopald dealt with the General Assembly's first apportionment plan after the 1970 census, which was enacted in 1972 and actually consisted of a principal and an alternate plan. It was admitted that the principal plan, which did not cross county lines, was unconstitutional; and that the alternate plan, which crossed county lines, had over a 21% variance in the House, principally from malapportionment in Knox and Shelby Counties. The court made certain changes in these and Rutherford Counties, which brought the variance to well below 10%. It noted that apportionment was primarily a legislative function; that plaintiffs had submitted plans even more mathematically precise; but that the evidence showed that "the lesser mathematical precision of the (court's) plan may be justified on the basis of legitimate state policy considerations." 343 F.Supp. at 53-54 (emphasis added).

The opinion was issued May 22, 1972. The court's modified plan was effective for the 1972 elections, with

the Legislature given until July 1, 1973, to devise a constitutional plan.

It is reflected in *White v. Crowell*, *supra*, that the Legislature passed the court-devised apportionment plan prior to July 1, 1973, deadline. This plan crossed county lines. *White* dealt with 1976 changes in three Senate ("Gilloch Amendment") and three House districts in Shelby County. After the changes, the variance from ideal district size was increased, although even then the largest of the six variances was only 3.304%. The changes were challenged in May, 1976, so that court took no action at that time since primary elections were so close. The court found that the Legislature's reasons for making the changes were unjustified, so they were held unconstitutional. The case held that the variances of the six districts would have been constitutional if they had been part of the general 1973 reapportionment ordered in *Kopald*. However, the variances which resulted from the 1973 reapportionment were much smaller than the 1976 variances, thus demonstrating that the 1976 variances could be improved upon. Clearly the court was concerned with equal protection mandated by the federal constitution almost to the exclusion of all other considerations.

*Sullivan*, *supra*, was actually three consolidated cases, referred to as "Sullivan," "Algood" and "Nelson." The *Sullivan* case dealt with four House districts altered by a 1977 act; *Algood* dealt with nine House districts altered by two 1976 acts; and *Nelson* dealt with seven House districts altered by a 1976 act.

In *Sullivan*, the maximum total variance of the districts in question was increased from 2.34% to 21.78%; in *Algood*, it was increased from 2.39% to 35.57%. The court recognized that apportionment of state legislative districts was judged with a more flexible standard than congressional apportionment; and that fairly large variances are tolerated when they result from the even-handed implementation of a rational state policy. Here, the State's justification was to "put the counties back together" by taking a small number of magisterial districts of a county and isolated in a legislative district and combining them with the larger number of other districts in the county to which they all belong." 444 F.Supp. at 610.

The court did not accept such an argument in that case because

the record does not show that these  
reapportionment measures have  
significantly reduced the division

of magisterial districts in the affected counties. Nor does the record show an attempt by the State to effect a statewide policy of "putting the counties back together." On this record, the court does not find any relationship \*713 between county unification and the reapportionment legislation before the court.

*Id.* at 611. Similarly, in *Algood*, there was "no discernible legitimate reason" advanced to justify so greatly increasing the variance in the affected district.

We agree with the court's holding in that the variances in *Sullivan* and *Algood* were significantly larger than any figure which has been held constitutional. Secondly, the creation of a huge variance would not be acceptable if only a few magisterial districts were unified. Third, the language implies that if the record had supported the argument that the State was truly trying to keep counties together, and if the variances had been smaller, the reapportionment could have been held constitutional.

In *Nelson*, maximum variance among the seven affected House districts was increased from 4.51% to 12.51%, a much smaller increase. Also, at least part of the justification for the change was to eliminate "split precincts"-precincts where voters from two legislative districts vote at the same polling place. There was no question that split precincts cause confusion, delays, long lines, and expenses for additional voting machines. Thus, the court held that their elimination "would be a valid reason for increasing population disparities among legislative districts to the 12.51 percent level demonstrated here, if no alternative creating less severe imbalances is available." *Id.* at 614 (emphasis added). It appeared that the plaintiffs had a plan which would also eliminate split precincts while maintaining lower variances. The General Assembly was instructed to study the matter and take appropriate action. "The elimination of split precincts cannot serve as a justification for malapportionment if it is possible to eliminate split precincts while maintaining legislative districts of more nearly equal population." *Id.*

The *Mader* case was brought in March, 1978, to challenge the 1973 reapportionment ordered in the *Kopald* case. The court issued its initial holding January 15, 1979, which is reported as Appendix A to the opinion of March 27, 1980, published at 498 F.Supp. 226. The 1979 opinion held the 1973 apportionment unconstitutional because the

maximum total deviation thereunder was 18.03%, far greater than the approximately 4% deviation under the plan devised by the *Kopald* court, under which the 1972 elections had been held. The State was unable to justify the 18.03% deviation under the Legislature's plan. The court observed:

Although defendants point out that Article 2, section 6 of the Tennessee Constitution "prefers districts that contain whole contiguous counties," (Defendants' Reply Brief and Argument, filed November 3, 1978, at 7), defendants have failed to indicate how the plan under attack furthers this preference or even that the preference rises to the level of an established state policy. Tennessee Code Annotated section 3-1-102 creates a number of districts that cut across county lines, and several of these districts deviate markedly from the optimum. Although *Mahan* (*supra*) teaches that other policy considerations might justify exceptions to a general policy of observing existing political boundaries, no such justifications have been identified for the noncontiguous districts now existing in this state.

498 F.Supp. at 234.

The court gave the Legislature until June 1, 1979, to devise a new plan, and this deadline was complied with.<sup>100</sup> Under such new plan, maximum total variance was a mere .89%. In the second case, plaintiffs made no equal protection challenge, but challenged the plan on two grounds not \*714 relevant in this appeal; in any case, their challenges were not upheld. Nothing further was said about districts crossing county lines.

#### THE PROPRIETY OF SUMMARY JUDGMENT-AND OUR CONCLUSIONS

The Chancellor granted plaintiffs' motion for summary judgment "because the defendants have not demonstrated an unavoidable conflict between (the prohibition against dividing counties) of the State Constitution and the one person, one vote requirement of the federal Constitution." We cannot reach the same conclusion based upon the limited record before us.

<sup>100</sup> Plaintiffs showed that the Act violates the state's constitutional prohibitions against crossing county lines, Art. II s 6. The burden therefore shifted to the defendants to show that the Legislature was justified in passing a

reapportionment act which crossed county lines. It was stipulated that the Senate reapportionment plan, which crosses county lines, has a maximum variance of 1.65%. This variance clearly meets the federal requirement of equality of population among districts.

The defendants aver and the plaintiffs concede that a 33 member apportionment plan, not crossing county lines, would result in a total gross variance of over 22%. We hold such a variance exceeds the maximum deviation permitted by the equal protection clause of the Fourteenth Amendment. We thus have an unavoidable conflict, unless we were to hold, based upon the bare conclusory evidence presented, that the 31 and 30 member plans, which cross no county lines, meet the federal constitutional requirements for reapportionment plans. It has been stipulated that these plans have maximum total variances of 13.82% and 10.44% respectively, which plans would in all probability meet the equality of population requirement of the state and federal constitutions. However, the record fails to establish whether either plan dilutes minority voting strength. This is a serious question, one which was raised by amicus curiae for the first time on this appeal, and one which has not been considered by the Chancellor.

<sup>[11]</sup> Whether the state made an honest and good faith effort to construct senatorial districts which comply with both federal and state constitutions is an issue of fact which we believe requires a full evidentiary hearing as does the question of justification. The parties should also be allowed to properly develop and present evidence on whether or not the Act is a necessary means for avoiding an unlawful dilution of minority voting strength.

We hold that this was not a proper case for summary judgment. There remained disputed questions of material fact as to whether the plan under the Act was actually necessary, in view of other action which the Legislature could have taken, in order to comply with paramount constitutional standards. This cause is therefore remanded to the Chancery Court of Davidson County, the defendants shall file their answer, and this cause shall proceed to a hearing on the merits.

As a guide to the trial court and the General Assembly we recapitulate our holding:

1. The population variance under the Act can be increased and still comply with equal protection standards. The variance should be as low as possible, because equality of population is still the principal consideration. The variance certainly should not be greater than any figure which has been approved by the United States Supreme

Court; nor would such maximum figure automatically be approved, because the variance for any state will be judged solely by the circumstances present in that state.

2. Primary consideration must also be given to preserving minority strength to the extent required by United States Supreme Court cases cited above. The Chancellor should consider whether the reapportionment Act or any other plan unconstitutionally dilutes the opportunity of minorities to participate in the political process.

3. The provisions of the Tennessee Constitution, although of secondary import to <sup>[715]</sup> equal protection requirements, are nonetheless valid and must be enforced insofar as is possible. If the State is correct in its insistence that there is no way to comply with the mandates of the federal and state constitutions without crossing county lines, then we hold that the plan adopted must cross as few county lines as is necessary to comply with the federal constitutional requirements.

4. In addition to equal protection, preserving minority voting strength, and not crossing county lines, constitutional standards which must be dealt with in any plan include contiguity of territory and consecutive numbering of districts.

Although the law on this point is not fully developed, the cases indicate that political considerations are a reality and also have a place in the creation of legislative districts. See *White v. Weiser*, 412 U.S. 783, 791, 93 S.Ct. 2348, 2352-2353, 37 L.Ed.2d 335 (1973); *Gaffney v. Cummings*, *supra*, 412 U.S. at 752-753, 93 S.Ct. at 2331, 37 L.Ed.2d at 312. But see *Legislature of State of California v. Reinecke*, 10 Cal.3d 396, 110 Cal.Rptr. 718, 721-722, 516 P.2d 6, 10 (1973).

The order sustaining plaintiffs' motion for summary judgment is overruled and the cause remanded to the Chancery Court of Davidson County for further proceedings in accordance with this opinion. The injunction issued by the Chancellor enjoining the defendants from conducting any primary or general election under Chapter 538, Public Acts of 1981, is dissolved. The costs incident to this appeal will be divided equally between the parties; all other costs will be assessed by the trial judge.

HARBISON, C.J., and COOPER, J., concur.

FONES and BROCK, JJ., dissent.

FONES, Justice, dissenting.

We respectfully disagree with the majority's action in remanding this case for further proof on two issues. The record before us, even though meager, is sufficient to support, beyond dispute, the finding that Acts of 1981, Chapter 538, is unconstitutional. Nothing beyond redundancy can result from a remand for the purpose of obtaining an adjudication that it is possible or it is not possible to meet federal population equality guidelines without crossing county lines or that chapter 538 does or does not unlawfully dilute minority voting strength. No combination of findings on those issues would result in validating chapter 538.

The majority opinion contains a full and accurate analysis of all the legal principles relevant to this lawsuit. We are in full accord with all of the conclusions reached except those that are said to support a remand for trial and dissolution of the injunction.

We would hold chapter 538 unconstitutional because this record shows, beyond dispute, that the Legislature has not restricted its breach of county lines to the minimum necessary to comply with federal population requirements. The parties have stipulated and exhibited in this record a thirty-three member plan with a total variance of 9.99% with districts numbered consecutively, that crosses only three county lines. That plan meets all constitutional requirements, state and federal, except that a portion of Shelby, Davidson and Knox Counties are combined with adjoining districts. It is beyond question that the primary problem in complying with the equal population and the county line mandates is the fact that the populations of the four metropolitan counties are not exact multiples of 139,114. It follows that if it is impossible to draw a thirty-three member plan that meets the equal population mandate without splitting counties, the minimum county line violations would be obtained by combining with adjoining counties an area of the metropolitan counties with the largest fractional results obtained by dividing 139,114 into the total county population. That is exactly what the thirty-three member, three split county plan accomplishes.

The majority opinion holds that the Tennessee county line mandate is secondary to equal protection requirements, but cannot be breached beyond the extent necessary to \*716 comply with the federal equal population guidelines. That principle was implicitly if not explicitly applied in *Smith v. Craddick*, 471 S.W.2d 375 (Tex.1971), and it is

supported by unassailable reason and logic. It was also sanctioned in *Sullivan v. Crowell*, 444 F.Supp. 606 at 614.

The State insists that it is impossible to comply with the Federal Constitution as interpreted by Federal Courts without crossing county lines and the State relies on Frank Hinton's affidavit of February 11, 1982, as proof that a variance of 22% is the minimum obtainable, without breaching a single county line. Hinton's affidavit shows that Knox, Davidson and Shelby Counties produce a variance of  $\pm 14.89\%$ ,  $\pm 14.48\%$  and  $\pm 11.71\%$  respectively, from optimum district size, and that some of the multi-county districts will have a negative variance of approximately 7%, resulting in the gross variance of 22%. As the majority opinion points out, the plaintiffs concede the accuracy of Hinton's affidavit. Plaintiffs' concession as to the accuracy of that affidavit establishes as the law of this case, that Federal population guidelines cannot be met without crossing some county lines and points clearly to the necessity of crossing three of the four metropolitan county lines. Yet, the effect of the remand is to take proof and determine the issue of whether there is an unavoidable conflict between the state county line mandate and the Federal equal protection requirements.

Upon establishing, as this record does, that county lines must be breached to meet federal population requirements, the determinative issue of the constitutionality of chapter 538 is whether or not the State has made an honest and good faith effort to construct districts breaching as few county lines as practical to comply with federal population guidelines. The thirty-three member plan breaching only three county lines conclusively answers that question in the negative. Thus, the conclusion is inescapable that chapter 538 cannot meet the test of minimum violation of the state constitution and no finding on remand can change or alter that result.

We fully agree with all that the majority has said about avoiding unlawful dilution of minority voting strength. What, we ask, will be the result of finding on remand that chapter 538 was constitutional or unconstitutional, in that respect? It seems clear to us that chapter 538 is doomed and therefore its effect on minority voting strength is moot. Such an inquiry, and judicial determination would only be appropriate if all conceivable reapportionment plans that the Legislature might adopt would have an identical effect on minority voting strength, a proposition we can judicially notice as fallacious.

We agree that legislative reapportionment is primarily a legislative function and we believe the Legislature will

reapportion itself, constitutionally under the State guidelines in the majority opinion and the Federal guidelines, so well reviewed and summarized therein. We would terminate this lawsuit with a judgment declaring chapter 538 unconstitutional, enjoin the holding of an election thereunder and give the Legislature the opportunity to accomplish that before the 1982 elections.

BROCK, J., concurs in this dissent.

All Citations

631 S.W.2d 702

**Footnotes**

<sup>1</sup> Jurisdiction of this appeal is in the Supreme Court pursuant to T.C.A. § 16-4-108.

<sup>2</sup> Ch. 538, Public Acts of 1981; T.C.A. § 3-1-102 (1981 Supp.)

<sup>3</sup> Mr. Hinton's figures, and the manner in which we conclude he arrived at them, are discussed in footnote 5 of this opinion.

<sup>4</sup> Whitcomb v. Chavis, Indiana reapportionment Act, 24.78% in the House and 28.2% in the Senate; Kilgarlin v. Hill, Texas plan, 26.58%; Swann v. Adams, Florida plan, 33.55% in the House and 25.65% in the Senate.

<sup>5</sup> The affidavit of Frank D. Hinton stated that the major problem with variance in a 33-member plan not crossing county lines is in the major metropolitan counties. Dividing their populations under the 1980 census by the ideal district population of 139,114, the Court can see that Shelby County would be entitled to 5.6 Senators; Davidson County to 3.4; Knox County to 2.3; and Hamilton County to 2.1. If Shelby County were given 5 Senators, each would represent 155,423 people, or 11.72% above the norm. If it were given 6, each would represent 129,519 people, or 6.9% below the norm. If Davidson County were given 3 Senators, each would represent 159,270 people, or 14.49% above the norm. If it were given 4 Senators, each would represent 119,453 people, or 14.13% below the norm. If Knox County were given 2 Senators, each would represent 159,847 people, or 14.90% above the norm. If it were given 3 Senators, each would represent 106,565 people, or 23.4% below the norm. Since Hamilton County would qualify for 2.1 Senators, obviously it would be given 2, each of whom would represent 143,870 people, or 3.4% above the norm. These are figures which we can derive, and they correspond to figures used in the Hinton affidavit. The affidavit does not explain his conclusion that the least possible variance in such a plan is some 22%; however, all parties conceded this figure as the lowest possible total variance during oral argument.

<sup>6</sup> Number of Members of General Assembly in Constitution

House

Senate

1796 not less than 22 not less than 1/3

not more than 26 not less than 1/2

(11 counties)

1835 not greater than 75 until  
population reaches 1.5 not greater than 1/3  
million, thereafter no

greater than 99

1870 same as in 1835 same as in 1835

1966 99 members same as in 1835

Composition of the General Assembly provided by statute:

Code of 1858, Art. IV. 91 House Senate

(Acts of 1851 52, Ch. 197. § 41 75 25

Code of 1884, Art. III, 114 99 33

Code of 1896, Art. III, 123 99 33

Acts of 1901, Ch. 122. § 2 99 33

Acts of 1965 (E.S.), Ch. 3. § 2 99 33

(TCA § 3 1 101)

<sup>8</sup> The State had appealed the January order to the United States Supreme Court. The Court in light of the General Assembly's action, ultimately remanded the cause to the district court for such further proceedings as might be appropriate. *Crowell v. Mader*, 444 U.S. 505, 100 S.Ct. 992, 62 L.Ed.2d 701 (1980).

<sup>9</sup> Under the plan, 22 county lines were crossed, and 20 Senate districts contained part of at least one county joined with at least one other county.

# Rebuttal Report of Plaintiffs' Expert Regarding Tennessee State House Reapportionment

Jonathan Cervas

December 02, 2022



## Introduction

I prepared this rebuttal report at the request of Plaintiffs' Counsel regarding the Tennessee state House reapportionment plan enacted by the Tennessee General Assembly in February 2022. I have been asked to respond to the expert reports of Sean P. Trende (Ex.Trende) and Douglas Himes (Ex.Himes).

On October 10, 2022, I prepared a report (Cervas Report) for this Court regarding the Tennessee state House reapportionment plan. In that report, I demonstrated that the plan enacted by the Tennessee Legislature (Enacted Plan) included far more TN County Splits<sup>1</sup> than necessary to comply with federal and state constitutional and statutory law. I prepared five illustrative plans to demonstrate this point. Together, these plans present the tradeoffs involved with prioritizing aspects of redistricting and show that none of these explain the excessive TN County Splits found in the Enacted Plan. I was able to achieve far fewer TN County Splits while still complying with federal and state constitutional and statutory law. I was able to achieve this reduction in TN County Splits while *improving* on other criteria found in the Tennessee Constitution.

Mr. Trende and Mr. Himes's critiques of my illustrative plans are limited and minimal. I address each critique below. Additionally, I have generated two additional illustrative maps. As I explain, these maps neutralize those critiques and demonstrate, again, that the Enacted Plan included far more TN County Splits than necessary to comply with federal and state constitutional and statutory law.

There are six undisputed facts regarding my first report (Cervas Report):

**1) Non-contiguous census blocks** Mr. Himes shows that each of my illustrative maps have non-contiguous census blocks. The non-contiguities contained zero people, and I regret failing to notice them when I submitted my initial report.<sup>2</sup> I am grateful to Mr. Himes for highlighting these zero-population non-contiguities, and I am pleased to report that I was able to quickly fix those technical errors. Revised Cervas House Maps 13b\_e, 14a\_e, 13.5a\_e, and 13.5b\_e have corrected all of these technical errors and are linked in the footnotes below. In all cases, the technical errors had no negative effect on the plans. In fact, all the revised plans have the same number of TN County Splits as their predecessors. Indeed, the only numeric effect of correcting the technical errors was to *increase* the compactness in each of the plans.

**2) Map 13a** Cervas House Map 13a was a baseline map. I do not suggest it as a viable alternative. From this map I made revisions in subsequent maps that are intended to comply with federal and state constitutional and statutory law (see below).

**3) Majority-Minority Districts** There are three maps (Map 13b, 14a, 13.5b) where neither Mr. Trende nor Mr. Himes disputes that they have *at least* as many Black-majority districts as the Enacted Plan.<sup>3</sup>

**4) Overall Deviation** All my plans are within the 10% overall population deviation range (see Table 1).<sup>4</sup>

<sup>1</sup>I defined three different ways of counting the number of county splits. "TN County Splits" is the traditional way the state has counted splits.

<sup>2</sup>Several of Tennessee's counties are themselves non-contiguous (e.g., Davidson). This make detecting non-contiguous blocks more difficult.

<sup>3</sup>Mr. Himes seems to be confusing two different measures. In his report, he says "Plan 13.5a substantially decreases the number of minority-majority districts from 13 to 11" (Ex.Himes at 29). However, the numbers he cites refer to districts that are 50%+1 Black Voting Age Population. Map 13b has 15 districts where 50%+1 of the population is Non-White (majority-minority). Maps 13.5a, 13.5b, and 14a actually have 17 majority-minority districts. The Enacted Plan has 15.

<sup>4</sup>This is true for the plans I list in Table 1 and for Map 13a. As I show in my first report, in the Enacted Plan Montgomery County has three districts that each exceed a 5% deviation. Except where we have taken the districts exactly as is from the Enacted

**5) Compactness** All my plans are more compact than the Enacted Plan (see Table 1).<sup>5</sup>

**6) County Splits** All my plans all have considerably fewer TN County Splits than the Enacted Plan (see Table 1).<sup>6</sup>

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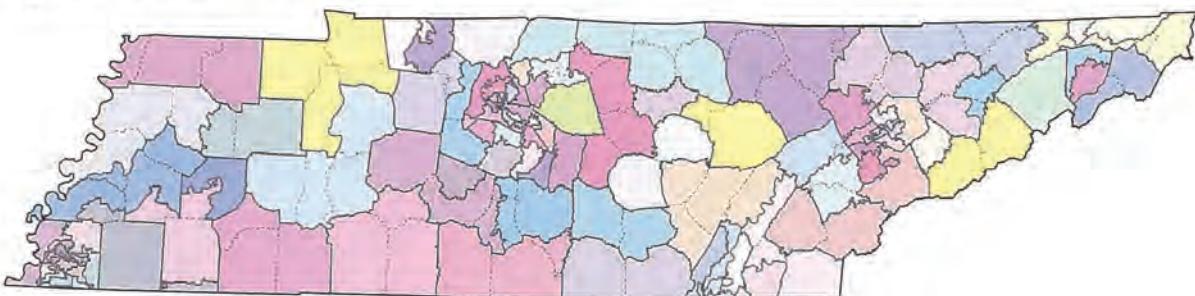
The three legal claims made by Mr. Trende and Mr. Himes, as I understand them, are:<sup>7</sup>

**7) District 73 and 80 (Madison County)** Mr. Trende and Mr. Himes both devote substantial portions of their reports to my reshaped Districts 73 and 80. District 80 was a rural majority-minority district in the prior 2010 enacted plan, and District 73 was wholly comprised of a portion of Madison County. Significant population loss in this region required adding territory, especially to District 80. My five illustrative maps altered the contours of both districts, with four of the five maps retaining District 80 as a majority-minority district and with all five maps pairing a portion of Madison County with an adjacent county. Drawing the districts in the way that I have allows for more compact districts with less counties affected by splits.

It is possible, however, to retain districts 73 and 80 exactly as the Legislature drew them and reduce the number of TN County Splits. I have generated a new illustrative map, labeled Cervas House Map 13c. This map neutralizes this argument, and demonstrates again that the Legislature could have created far fewer TN County Splits while still complying with federal and state constitutional and statutory law, if interpreted to prohibit Madison County from pairing with Henderson County. This plan has 24 TN County Splits, the same as Cervas House 13.5b and 14a, and one fewer than Cervas House 13b. This map scores better than the Enacted Map on county splits, compactness, and average deviation (see Table 1).

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**Figure 1 - Cervas House Map 13c**



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**8) Shelby County** Mr. Trende and Mr. Himes show that I split Shelby County in Maps 13.5a and 13.5b. I did indeed split the boundary of this county; doing so relieves population pressures in Shelby County. Splitting Shelby County does not imply an increase in TN County Splits. In Map 13.5a, the split allowed for

Plan, all of my maps have districts between +/-5% deviation of ideal (see Cervas Report footnote 4 at 10).

<sup>5</sup>This is true for the plans I list in Table 1 and for Map 13a.

<sup>6</sup>This is true for the plans I list in Table 1 and for Map 13a.

<sup>7</sup>Mr. Trende and Mr. Himes state opinions on the facts and also state legal conclusions. I do not respond to their legal conclusions (e.g., whether past precedent allows Shelby County's border to be crossed to create a TN County Split or whether Madison County must include one district wholly) because legal arguments are the purview of counsel for the Court to resolve. My decision not to respond to legal arguments should not be read as my agreeing to any such statements.

a further reduction in the total number of TN County Splits to 22. In Map 13.5b, the total number of TN County Splits is 24. This is compared to the 30 TN County Splits in the Enacted Plan. I did not split Shelby County in Maps 13b and 14a, nor do I split Shelby County in Map 13c or Map 13d (discussed below).

**9) Core Retention and Incumbency Protection** Mr. Trende and Mr. Himes argue that I improperly fail to account for core retention and incumbency protection and put too high a priority on limiting county splits.

Neither of these criteria are listed in the state Constitution. When I am tasked with creating plans for federal and state court, I first comply with the criteria enumerated in federal and state constitutional and statutory law. Only after that can subordinate criteria (like core retention) be considered. My illustrative plans elevate constitutional criteria before considering secondary considerations.

In my previous report, I did not have incumbent home addresses. Plaintiffs' Counsel informs me that Defendants refused to provide incumbent addresses during discovery, claiming privilege. Thus, I could not have considered incumbency protection in generating my five illustrative maps. Counsel informs me that Defendants agreed to produce this information only after their experts opined on incumbency protection. I have since been provided information on where incumbents reside.

Although I believe the modest decrease in core retention and the modest increase in incumbent pairing reflected in my initial five illustrative maps are justified in service of the Constitution's county-splitting prohibition, I have generated a seventh illustrative map, labeled Cervas House 13d, in which I revise Cervas House 13c to address these two critiques (see below under "Cervas House 13d").

#### Cervas House Map 13d

Cervas Map 13d is a modification of Cervas House Map 13c. For Map 13d, I have now made additional adjustments throughout the state to increase the core retention from the 2010 cycle map. In doing so, it also acted to place incumbents in separate districts. Map 13d does not split Shelby County. The result is that Cervas Map 13d is more compact than the Enacted Plan, it has improved on the average population deviation compared to the Enacted Plan, it has an identical overall deviation as the Enacted Plan, it pairs the same number of incumbents as the Enacted Plan, and it retains the cores at the same level as the Enacted Plan. In doing so, it retains over 90% of the map the Legislature enacted for the 2020 cycle as well as 80.1% of the 2010 cycle map.

*In Map 13d, while matching or exceeding the Enacted Plan on every primary or secondary consideration the State has identified, I still am able to limit the number of TN County Splits to 24 as compared to the Enacted Plan's 30.<sup>8</sup>*

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<sup>8</sup>I have also addressed Mr. Himes's suggestion that the Upper Cumberland Plateau was maintained in its entirety in the Enacted Plan (Ex.Himes at 36). I have now retained 100% of the core of District 38 in Map 13d.

**Figure 2 - Cervas House Map 13d**

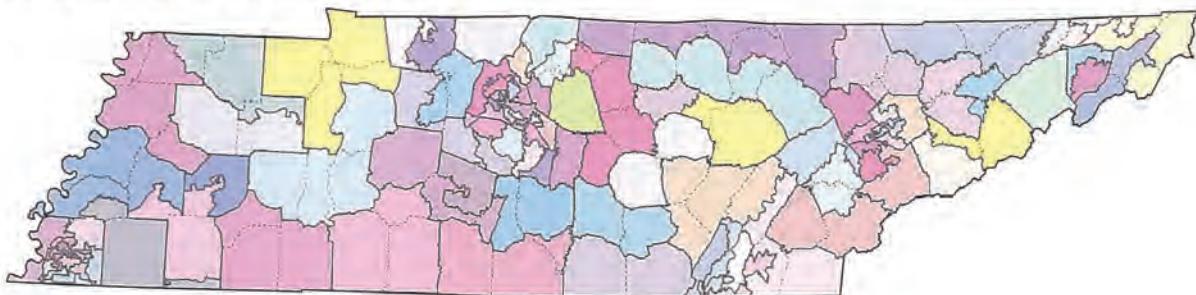


Table 1 verifies that all my illustrative maps are superior to the Enacted Plan on TN County Splits.

**Table 1 - Enacted Plan Comparison to Cervas Illustrative Maps**

	Enacted	13b_e <sup>9</sup>	14a_e <sup>10</sup>	13.5a_e <sup>11</sup>	13.5b_e <sup>12</sup>	13c <sup>13</sup>	13d <sup>14</sup>
TN County Splits	30	25	24	22	24	24	24
Overall Deviation	9.90%	9.96%	9.98%	9.98%	9.82%	9.96%	9.89%
Average Deviation	3.28%	3.19%	3.63%	3.24%	2.94%	3.07%	3.16%
Reock	0.3431	0.3581	0.3667	0.3646	0.3755	0.3565	0.3473
Polsby-Popper	0.2326	0.2567	0.2696	0.2674	0.2652	0.2543	0.2437
Core Retention	80.1%	71.5%	69.2%	70.6%	67.9%	73.7%	80.1%
“double bunks”	6	16	24	20	21	15	6

*Note: Core retention calculated in DRA. Notice trivial differences from what Mr. Trende reports (see Ex.Trende at 19), but that the two numbers give largely the same answer. The conclusions are not altered. To calculate “double bunks”, Plaintiffs’ counsel provided me with a confidential file containing incumbent addresses on November 18, 2022. I used the U.S. Census Bureau’s Geocoder to create a coordinate file. In QGIS, I used the “Count Points in Polygons” function to count the number of paired incumbents.*

## Conclusions

This is a rebuttal to points made by Mr. Trende and Mr. Himes. There are points made in my earlier report that are not reiterated here. Neither Mr. Trende nor Mr. Himes’s reports undermine the fact that the illustrative maps I offered in my initial report, and those I offer today, comply with federal and state

<sup>9</sup>13b\_e: <https://davesredistricting.org/maps#viewmap::89ad33c8-2e87-492b-ba8b-e2ade60734b4>

<sup>10</sup>14a\_e: <https://davesredistricting.org/maps#viewmap::388b6a2e-df40-4799-a85b-370a0e331b6b>

<sup>11</sup>13.5a\_e: <https://davesredistricting.org/maps#viewmap::8ba9a5dd-904c-4290-a87d-0da3a677c3f7>

<sup>12</sup>13.5b\_e: <https://davesredistricting.org/maps#viewmap::5a350341-6ccc-4fd0-a3a4-ca822f11f826>

<sup>13</sup>13c: <https://davesredistricting.org/maps#viewmap::059d4470-683a-41b1-8e5e-34f1d0223cda>

<sup>14</sup>13d: <https://davesredistricting.org/maps#ratings::2f8e2348-4f76-4db0-8b07-abbe779d777a>

constitutional and statutory law. All the maps I have prepared for this Court have considerably fewer TN County Splits than the Enacted Plan. Even after considering “other legitimate and rational state policies” (see Ex.Himes at 6 quoting Reynolds v. Sims, 377 U.S. at 577-81), I was able to draw a plan (Map 13d) that maintains most of the decisions of the Legislature in their Enacted Plan yet has only 24 TN County Splits.<sup>15</sup> None of the claims in the reports of Mr. Trende or Mr. Himes challenge the finding that it is possible to comply with federal and state constitutional and statutory law while reducing the number of TN County Splits well below the Enacted Plan’s 30 TN County Splits.

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<sup>15</sup>Compared to the 2022 Enacted Plan, Map 13d retains 90.3% of the district cores. Compared to the 2012 enacted map, it retains 80.1% of the district cores, the same percentage as the Enacted Plan in 2022.