

**Expert Report of Thomas M. Bryan
Expert in Demography for the
Alabama Attorney General**

August 3, 2023

EXPERT REPORT OF THOMAS M. BRYAN

I, Thomas M. Bryan, affirm the conclusions I express in this report are provided to a reasonable degree of professional certainty.

EXPERT QUALIFICATIONS

I am an expert in demography with more than 30 years of experience. Described more fully below, I have been retained by the Alabama Attorney General's office as an expert to provide redistricting analysis related to State Congressional redistricting plans.

I graduated with a Bachelor of Science in History from Portland State University in 1992. I graduated with a Master of Urban Studies (MUS) from Portland State University in 1996, and in 2002 I graduated with a Master in Management and Information Systems (MIS) from George Washington University. Concurrent with earning my Management and Information Systems degree, I earned my Chief Information Officer certification from the GSA.¹

My background and experience with demography, census data and advanced analytics using statistics and population data began in 1996 with an analyst role for the Oregon State Data Center. In 1998 I began working as a statistician for the US Census Bureau in the Population Division – developing population estimates and innovative demographic methods. In 2001 I began my role as a professional demographer for ESRI Business Information Solutions, where I began developing my expertise in Geographic Information Systems (GIS) for population studies. In May 2004 I continued my career as a demographer, data scientist and expert in analytics in continuously advanced corporate roles, including at Altria and Microsoft through 2020.

In 2001 I developed a private demographic consulting firm “BryanGeoDemographics” or “BGD”. I founded BGD as a demographic and analytic consultancy to meet the expanding demand for advanced analytic expertise in applied demographic research and analysis. Since then, my consultancy has broadened to include litigation support, state and local redistricting, school redistricting, and municipal infrastructure initiatives. Since 2001, I have undertaken over 150 such engagements in three broad areas:

- state and local redistricting,
- applied demographic studies, and
- school redistricting and municipal infrastructure analysis.

¹ Granted by the General Services Administration (GSA) and the Federal IT Workforce Committee of the CIO Council. <http://www.gwu.edu/~mastergw/programs/mis/pr.html>.

My background and experience with redistricting began with McKibben Demographics from 2004-2012, when I provided expert demographic and analytic support in over 120 separate school redistricting projects. These engagements involved developing demographic profiles of small areas to assist in building fertility, mortality and migration models used to support long-range population forecasts and infrastructure analysis. Over this time, I informally consulted on districting projects with Dr. Peter Morrison. In 2012 I formally began performing redistricting analytics and continue my collaboration with Dr. Morrison to this day. I have been involved with over 40 significant redistricting projects, serving roles of increasing responsibility from population and statistical analyses to report writing to directly advising and supervising redistricting initiatives. Many of these roles were served in the capacity of performing Gingles analyses, risk assessments and Federal and State Voting Rights Act (VRA) analyses in state and local areas.

In each of those cases, I have personally built, or supervised the building of, one or more databases combining demographic data, local geographic data and election data from sources including the 2000, the 2010 and now 2020 decennial Censuses. I also innovated the use of the US Census Bureau's statistical technique of "iterative proportional fitting" or "IPF" of the Census Bureau's American Community Survey, and the Census Bureau's Special Tabulation of Citizen Voting Age Population Data to enable the development of districting plans at the Census block level. This method has been presented and accepted in numerous cases we have developed or litigated. These data have also been developed and used in the broader context of case-specific traditional redistricting principles and often alongside other state and local demographic and political data.

In 2012 I began publicly presenting my work at professional conferences. I have developed and publicly presented on measuring effective voting strength, how to develop demographic accounting models, applications of using big data and statistical techniques for measuring minority voting strength – and have developed and led numerous tutorials on redistricting. With the delivery of the 2020 Census, I have presented on new technical challenges of using 2020 Census data and the impact of the Census Bureau's new differential privacy (DP) system. This work has culminated with being invited to be the Session Chairman of the "Assessing the Quality of the 2020 Census" session of the 2021 Population Association of America meeting, featuring Census Director Ron Jarmin - and invited to be the Session Chairman of the "Uses of Census Data and New Analytical Approaches for Redistricting" session at the 2022 Population Association of America Applied Demographic meeting.

I have written professionally and been published since 2004. I am the author of "Population Estimates" and "Internal and Short Distance Migration" in the definitive demographic reference "The Methods and Materials of Demography". In 2015 I joined a group of professional demographers serving as experts in the matter of *Evenwel, et al. v. Texas* case. In *Evenwel* I served in a leadership role in writing an Amicus Brief on the use of the American Community Survey (ACS) in measuring and assessing one-person, one vote. In 2019 I co-authored

“Redistricting: A Manual for Analysts, Practitioners, and Citizens”, and in 2021 I co-authored “The Effect of the Differential Privacy Disclosure Avoidance System Proposed by the Census Bureau on 2020 Census Products”.

I have been deposed three times in the last four years, in the matters of *Harding v. County of Dallas*, *Navajo Nation v. San Juan Board of Commissioners et al.* and *Petteway, et al. v. Galveston County, et al.* I have testified twice, in the matters of *Milligan v. Merrill*, *Caster v. Merrill* and *Singleton v. Merrill* over Alabama’s 2021 Congressional redistricting plan and *Robinson v. Ardoin* and *Galmon v. Ardoin* over Louisiana’s Congressional redistricting initiatives.

I maintain membership in numerous professional affiliations, including:

- International Association of Applied Demographers (Member and Board of Directors)
- American Statistical Association (Member)
- Population Association of America (Member)
- Southern Demographic Association (Member)

My full CV, including my 30 years of demography experience, is attached as Appendix 4.

TABLE OF CONTENTS

I. EXECUTIVE SUMMARY	8
II. ASSIGNMENT.....	9
III. REDISTRICTING PERFORMANCE	10
A. Population and Characteristics.....	10
Table III.A.1 Voting Age Population (VAP) by white, non-Hispanic VAP and Any Part Black (APB) VAP for the Previous 2021 (HB1) Plan	11
Exhibit III.A.1 2020 Percent Any Part Black by Voting Tabulation District (VTD) Map	11
Exhibit III.A.2 2020 Percent Any Part Black with Black Belt by Voting Tabulation District (VTD) Map	12
Table III.A.2 Voting Age Population (VAP) by white, non-Hispanic VAP and Any Part Black (APB) VAP by County for Black Belt	13
Exhibit III.A.3 2020 Percent Any Part Black with Size of VAP by Voting Tabulation District (VTD) with Black Belt Map	14
Table III.A.3 Voting Age Population (VAP) by white, non-Hispanic VAP and Any Part Black (APB) VAP for the newly enacted Alabama congressional plan – known as the Livingston 3 Congressional Plan or “AL_2023”	15
Table III.A.4 VAP by white, non-Hispanic VAP and Any Part Black (APB) VAP for the 12th plan that the Milligan and Caster Plaintiffs together proposed to the Legislature last month known as the “VRA Plaintiffs Remedial Map” or “VRA_REM”	16
Exhibit III.A.4 2020 Percent Any Part Black with Size of VAP by Voting Tabulation District (VTD) for the VRA Plaintiffs Remedial Map	16
Table III.A.5 Voting Age Population (VAP) by white, non-Hispanic VAP and Any Part Black (APB) VAP for Cooper Plan 1	17
Table III.A.6 Voting Age Population (VAP) by white, non-Hispanic VAP and Any Part Black (APB) VAP for Cooper Plan 2	18
Table III.A.7 Voting Age Population (VAP) by white, non-Hispanic VAP and Any Part Black (APB) VAP for Cooper Plan 3	18
Table III.A.8 Voting Age Population (VAP) by white, non-Hispanic VAP and Any Part Black (APB) VAP for Cooper Plan 4	19

Table III.A.9 Voting Age Population (VAP) by white, non-Hispanic VAP and Any Part Black (APB) VAP for Cooper Plan 5	19
Table III.A.10 Voting Age Population (VAP) by white, non-Hispanic VAP and Any Part Black (APB) VAP for Cooper Plan 6	20
Table III.A.11 Voting Age Population (VAP) by white, non-Hispanic VAP and Any Part Black (APB) VAP for Cooper Plan 7.	20
Exhibit III.A.5 2020 Percent Any Part Black with Size of VAP by Voting Tabulation District (VTD) for Cooper Plan 7	21
B. Geographic Splits Analysis of Counties	22
Table III.B.1 Alabama County Splits by Plan	22
Table III.B.2 District 2 Voting Age Population (VAP) in Split Counties by white, non-Hispanic VAP and Any Part Black (APB) VAP by Plan	24
Table III.B.3 District 7 Voting Age Population (VAP) in Split Counties by white, non-Hispanic VAP and Any Part Black (APB) VAP by Plan	25
IV. CONCLUSION.....	26
Appendix 1 Alabama 2023 APB VAP Map	28
Appendix 2 Detailed County Splits Analysis.....	29
A. “AL_2023” Alabama “Livingston 3” County Splits VAP (% of County)	31
B. “AL_2023” Alabama “Livingston 3” County Splits VAP (% of Total).....	32
C. “VRA_REM” VRA Remedial Plan: County Splits VAP (% of County).....	33
D. “VRA_REM” VRA Remedial Plan: County Splits VAP (% of Total)	34
E. “Cooper 1” William Cooper’s 1st Plan: County Splits VAP (% of County).....	35
F. “Cooper 1” William Cooper’s 1st Plan: County Splits VAP (% of Total).....	36
G. “Cooper 2” William Cooper’s 2nd Plan: County Splits VAP (% of County)	37
H. “Cooper 2” William Cooper’s 2nd Plan: County Splits VAP (% of Total)	38
I. “Cooper 3” William Cooper’s 3rd Plan: County Splits VAP (% of County).....	39
J. “Cooper 3” William Cooper’s 3rd Plan: County Splits VAP (% of Total)	40
K. “Cooper 4” William Cooper’s 4th Plan: County Splits VAP (% of County)	41
L. “Cooper 4” William Cooper’s 4th Plan: County Splits VAP (% of Total)	42
M. “Cooper 5” William Cooper’s 5th Plan: County Splits VAP (% of County).....	43
N. “Cooper 5” William Cooper’s 5th Plan: County Splits VAP (% of Total)	44

O. “Cooper 6” William Cooper’s 6th Plan: County Splits VAP (% of County)	45
P. “Cooper 6” William Cooper’s 6th Plan: County Splits VAP (% of Total)	46
Q. “Cooper 7” William Cooper’s 7th Plan: County Splits VAP (% of County)	47
R. “Cooper 7” William Cooper’s 7th Plan: County Splits VAP (% of Total)	48
S. “Alabama 2021 Previous”: County Splits VAP (% of County)	49
T. “Alabama 2021 Previous”: County Splits VAP (% of Total).....	50
Appendix 3 Alabama Maps.....	51
A. “AL_2023” - also known as the Livingston 3 Congressional Plan	52
B. “VRA_REM” - also known as the “VRA Plaintiffs Remedial Map”	53
C. “Cooper 7” - The seventh plan prepared by Plaintiff’s expert William Cooper.....	54
D. City of Mobile: “VRA_REM” VRA Remedial Plan - Split Map	55
E. City of Mobile: “VRA_REM” VRA Remedial Plan - Race Map	56
Appendix 4 Thomas Bryan CV.....	57

I. EXECUTIVE SUMMARY

1. In this report I will be assessing the demographic characteristics and performing a geographic splits analysis on a series of Alabama congressional redistricting plans, including the previous 2021 plan (HB1), the new 2023 Alabama plan, the previous plans offered by William Cooper – plus one new Cooper Plan (7) and a VRA Plaintiffs Remedial Plan.
2. The demographic characteristics of the new Alabama 2023 plan differ from the previous 2021 plan (see [Table III.A.1](#) and [Table III.A.3](#)). This new 2023 plan features a District 2 with 39.9% APB VAP in 2023 vs. 30.1% APB VAP in 2021 and a District 7 with 50.7% APB VAP in 2023 vs. 55.3% in the previous 2021 plan.
3. The population characteristics of the new VRA Plaintiffs Remedial Plan differ from those of the previous 2021 plan (see [Table III.A.1](#) and [Table III.A.4](#)). This new plan features a new Black majority District 2 – with 50.1% APB VAP vs. 30.1% APB VAP in the previous 2021 plan and a lower APB majority District 7 – with 54.5% APB VAP in 2023 vs. 55.3% in the previous 2021 plan.
4. The population characteristics of the Cooper 7 Map plan differ from those of the previous 2021 plan (see [Table III.A.1](#) vs. [Table III.A.11](#)). This plan features a new Black majority District 2 – with 51.9% APB VAP vs. 30.1% APB VAP in the previous 2021 plan and a lower APB majority District 7 – with 50.3% APB VAP vs. 55.3% in the previous 2021 plan.
5. The Cooper 7 plan statistics are similar to the statistics in his six earlier plans (see [Table III.A.5](#) through [Table III.A.10](#) vs. [Table III.A.11](#))
6. In an effort to determine whether there is evidence that race predominated in the design of each plan, I analyzed the number of county splits and explored the size and type of population that were impacted by them.
7. The county splits I observed for the VRA Plaintiffs Remedial Plan and each of the Cooper Plans show evidence of the splits being used in both District 2 and District 7 to draw each as majority APB VAP districts. I conclude that this is evidence to suggest that race predominated in the drawing of both the 2nd and 7th districts in Plaintiffs' VRA Remedial Plan and Cooper Plans 1 – 7.

II. ASSIGNMENT

8. I have been engaged by the Alabama Attorney General's office to perform demographic analyses of nine Alabama congressional redistricting plans. Those plans are as follows:
 - a) The newly enacted Alabama congressional plan – known as the Livingston 3 Congressional Plan² or “AL_2023”
 - b) A 12th plan that the Milligan and Caster Plaintiffs together proposed to the Legislature last month known as the “VRA Plaintiffs Remedial Map” or “VRA_REM”
 - c) The seven plans Caster Plaintiffs' expert William Cooper submitted during Plaintiffs' challenge to the 2021 plan.
9. For these plans, I will perform a demographic analysis of their voting age population (VAP) by race and ethnicity and will perform a geographic “splits analysis” by county to determine whether there is evidence that race predominated in the design of the plans.
10. In Section III, I review the performance of these Alabama congressional redistricting plans with the following metrics:
 - A. Demographic characteristics; and
 - B. County splits.
11. In forming my opinions, I have considered all materials cited in this report and the appendices. I have also considered some pleadings and other filings in this matter; as well as technical resources such as Morrison & Bryan, Redistricting: A Manual for Analysts, Practitioners, & Citizens (Springer 2019) and the U.S. DOJ, Guidance under Section 2 of the Voting Rights Act, 52 U.S.C. 1301, for redistricting and methods of electing government bodies (Sept. 1, 2021).
12. I reserve the right to further supplement my report and opinions.

² <https://www.sos.alabama.gov/sites/default/files/State%20Districts/Livingston%20Congressional%20Plan%203-2023%20Map.pdf> and <https://www.sos.alabama.gov/sites/default/files/State%20Districts/Livingston%20Congressional%20Plan%203-2023%20Description.pdf>

III. REDISTRICTING PERFORMANCE

A. Population and Characteristics

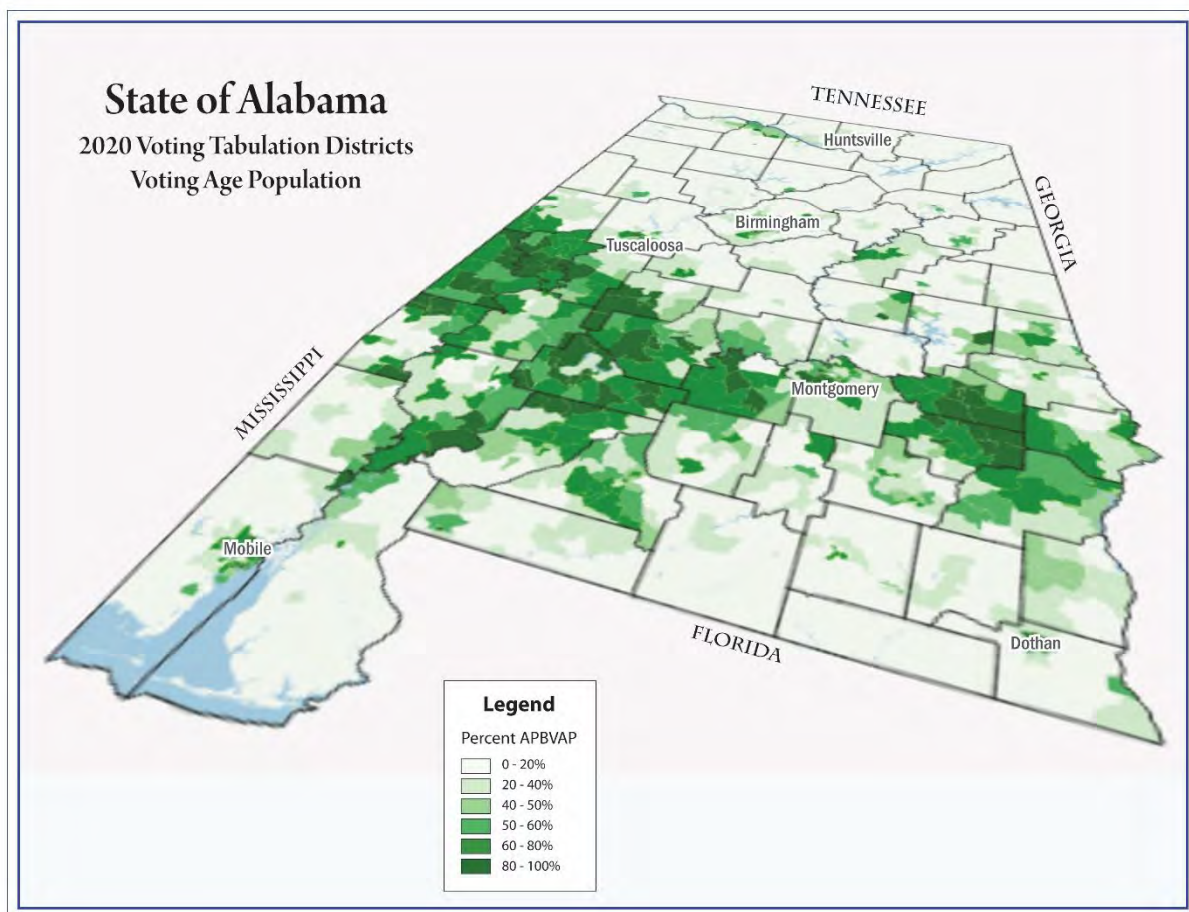
13. In the following analysis, I assess and compare the population characteristics of:
 - a. The newly enacted Alabama congressional plan – known as the Livingston 3 Congressional Plan or “AL_2023”
 - b. A 12th plan that the Milligan and Caster Plaintiffs together proposed to the Legislature last month known as the “VRA Plaintiffs Remedial Map” or “VRA_REM”
 - c. The seven maps prepared by Caster Plaintiffs’ expert William Cooper (Cooper 1 – 7)
14. This demographic analysis includes measures of the total VAP, the white alone, non-Hispanic population (WNH) VAP, and Any Part Black (APB) VAP by plan and by district.
15. My analysis begins with a brief overview of the Voting Age Population demographics of the State of Alabama. In 2020, there were 3,917,166 VAP in Alabama (see [Table III.A.1](#)). Of this VAP, 2,564,544 (or 65.5%) were white, non-Hispanic VAP and 1,014,372 (or 25.9%) were Any Part Black VAP (defined as Black alone, or Black in combination with any other race regardless of Hispanic origin). This population was distributed across seven congressional districts (the number of congressional districts did not change during the 2020 apportionment).

Table III.A.1 Voting Age Population (VAP) by white, non-Hispanic VAP and Any Part Black (APB) VAP for the Previous 2021 (HB1) Plan

District	VAP	WNH VAP	APB VAP	% WNH VAP	% APB VAP
1	557,535	367,960	142,777	66.0%	25.6%
2	557,677	345,900	167,971	62.0%	30.1%
3	564,281	382,226	141,011	67.7%	25.0%
4	556,133	458,324	42,819	82.4%	7.7%
5	561,187	397,809	101,339	70.9%	18.1%
6	552,286	393,028	104,551	71.2%	18.9%
7	568,067	219,297	313,904	38.6%	55.3%
Grand Total	3,917,166	2,564,544	1,014,372	65.5%	25.9%

Source: 2020 Census PL94-171 P3 and P4 Tables

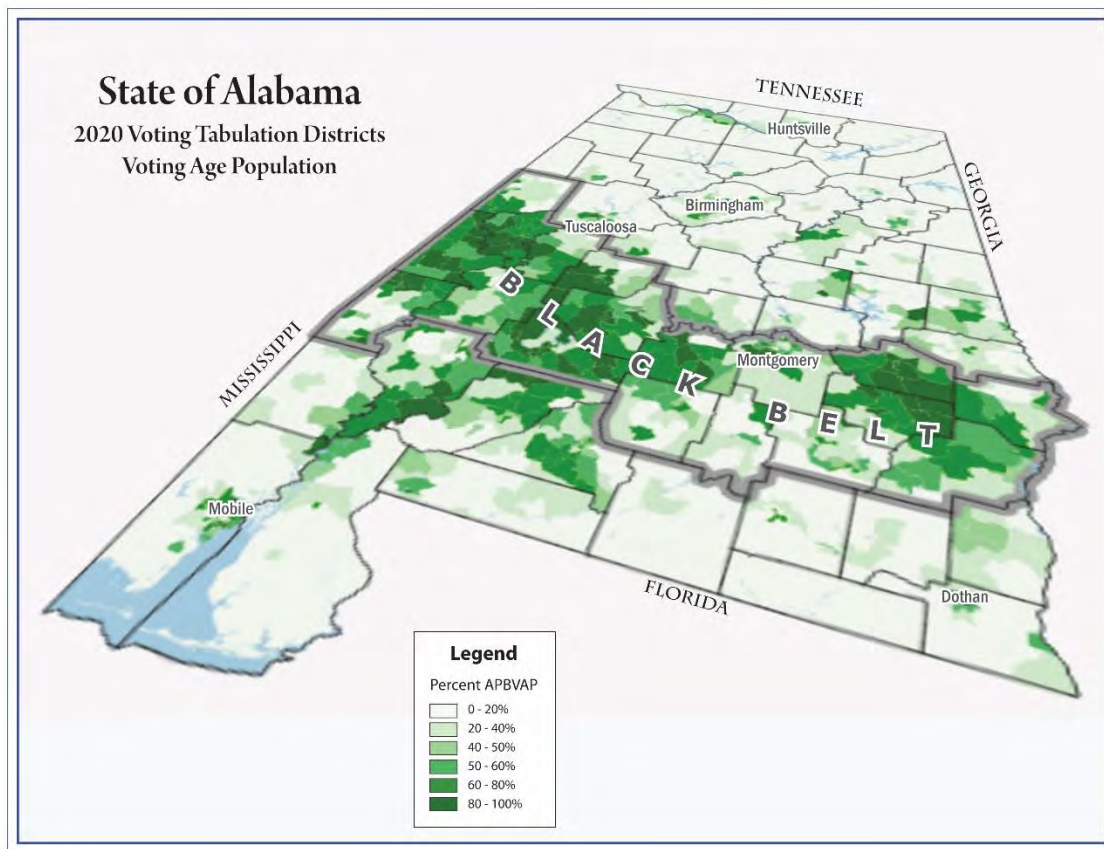
Exhibit III.A.1 2020 Percent Any Part Black by Voting Tabulation District (VTD) Map



Source: 2020 Census PL94-171 P3 and P4 Tables

16. What is distinctive about Alabama is that the Black VAP is concentrated very differently across the state. In looking at *Exhibit III.A.1* above, which shows the percent Black voting age population, it is clear that there are very different concentrations of Black VAP across the state – with large swaths of central Alabama with very high percentages of Black VAP (the Black Belt).

Exhibit III.A.2 2020 Percent Any Part Black with Black Belt by Voting Tabulation District (VTD) Map



Source: 2020 Census PL94-171 P3 and P4 Tables

17. What is notable in these shaded maps of % of a VAP is that they only show *one* dimension of their racial demography. While many counties in the Black Belt have high *percentages* of Black VAP, most of those counties besides Montgomery are rural, meaning the relative number of Black VAP in those rural counties is relatively low.³

³ There are several counties outside of and to the southwest of the traditional Black Belt (Clarke and Monroe Counties for example) that still have high proportions of APB VAP. These counties are among

18. **Table III.A.2** shows the percent Black voting age population by VTD with the Black Belt boundary.⁴ This table shows that these 18 counties include the majority (but not all) of the counties with the highest % APB VAP.

Table III.A.2 Voting Age Population (VAP) by white, non-Hispanic VAP and Any Part Black (APB) VAP by County for Black Belt

Name	VAP	WNH VAP	APB VAP	% WNH VAP	% APB VAP
Barbour County	20,134	9,456	9,456	47.0%	47.0%
Bullock County	8,356	2,075	5,956	24.8%	71.3%
Butler County	14,903	7,953	6,498	53.4%	43.6%
Choctaw County	10,168	5,690	4,286	56.0%	42.2%
Crenshaw County	10,360	7,477	2,517	72.2%	24.3%
Dallas County	29,613	8,645	20,496	29.2%	69.2%
Greene County	6,070	1,099	4,886	18.1%	80.5%
Hale County	11,483	4,793	6,494	41.7%	56.6%
Lowndes County	8,283	2,426	5,724	29.3%	69.1%
Macon County	16,226	2,699	13,096	16.6%	80.7%
Marengo County	15,053	6,816	7,860	45.3%	52.2%
Perry County	6,740	2,051	4,592	30.4%	68.1%
Pickens County	15,447	8,395	5,931	54.3%	38.4%
Pike County	26,809	15,241	9,830	56.9%	36.7%
Russell County	44,681	21,606	19,859	48.4%	44.4%
Sumter County	9,914	2,530	7,144	25.5%	72.1%
Wilcox County	8,260	2,445	5,713	29.6%	69.2%
Rural Black Belt	262,500	111,397	140,338	42.4%	53.5%
Montgomery County	177,427	62,431	99,936	35.2%	56.3%
Total Black Belt	439,927	173,828	240,274	39.5%	54.6%
Not Black Belt	3,477,239	2,390,716	774,098	68.8%	22.3%
Grand Total	3,917,166	2,564,544	1,014,372	65.5%	25.9%

Source: 2020 Census PL94-171 P3 and P4 Tables

those sometimes described as comprising a “secondary Black Belt”.

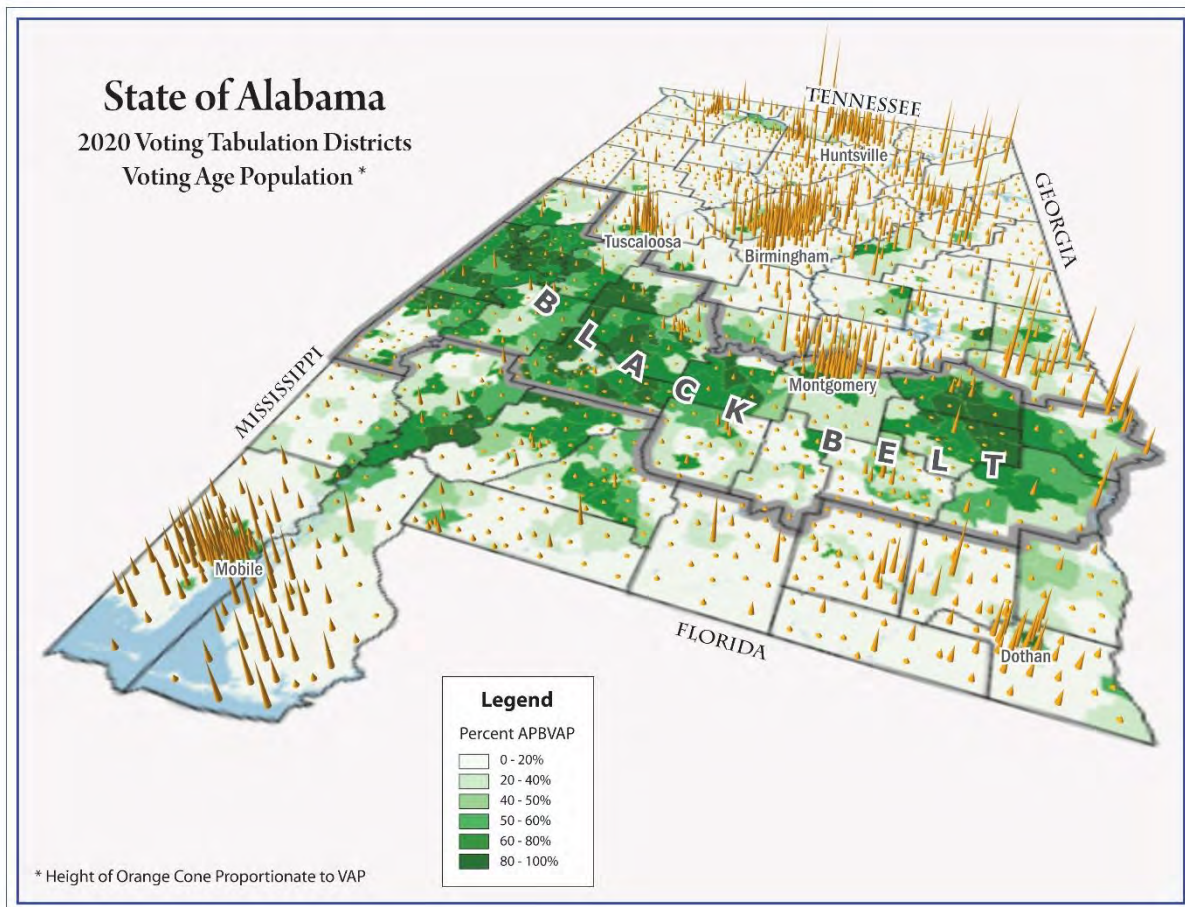
<https://www.al.com/news/2020/10/alabama-cant-agree-which-counties-are-in-the-black-belt-and-thats-a-problem.html>

⁴ <https://alafricanamerican.com/beyond-the-book-honoree-archives/beyond-the-book-the-alabama-black-belt/#:~:text=From%20an%20agricultural%20standpoint%20and,%2C%20Russell%2C%20Sumter%20and%20Wilcox:> “Traditionally, 17 Alabama counties—Barbour, Bullock, Butler, Choctaw, Crenshaw, Dallas, Greene, Hale, Lowndes, Macon, Marengo, Montgomery, Perry, Pike, Russell, Sumter, and Wilcox—were included in the region.” The Alabama Legislature in Act No. 2023-563 also includes Pickens County as a “core” Black Belt county.

The Encyclopedia of Alabama provides a thorough description and history of the Black Belt: <https://encyclopediaofalabama.org/article/black-belt-region-in-alabama/>.

19. While these Black Belt counties have high proportions of APB VAP, that APB VAP makes up only a fraction of the total APB VAP population in the State of Alabama. In [Table III.A.2](#), the VAP population for each of 17 rural Black Belt counties is shown (including a rural Black Belt total), plus Montgomery County (regarded as an urban Black Belt county). Combined, these 18 counties have 439,927 VAP, of which 240,274 (or 54.6%) are APB VAP.
20. The Black Belt VAP of 439,927 represents 11.2% of the statewide total VAP of 3,917,166. The Black Belt white, non-Hispanic VAP of 173,828 represents 6.8% of the statewide WNH VAP of 2,564,544. And the Black Belt Any Part Black VAP of 240,274 represents 23.7% of the statewide APB VAP of 1,014,372. That is to say: more than 90% of WNH VAP and $\frac{3}{4}$ of APB VAP in Alabama live *outside* of the Black Belt.

Exhibit III.A.3 2020 Percent Any Part Black with Size of VAP by Voting Tabulation District (VTD) with Black Belt Map



Source: 2020 Census PL94-171 P3 and P4 Tables

21. In [Exhibit III.A.3](#) above, the vertical orange cones around the state depict the size of the VAP in each Alabama Voting Tabulation District (VTD).⁵ The taller the colored cone, the larger the size of the VAP in that VTD. So for example, a VTD could have a very high percentage Any Part Black (shown in dark green) – but that may be based on a very low number. 100 Any Part Black out of 100 VAP in a given VTD is 100% - but this number is so low that it would have relatively low impact on the overall demographics of a district. Another VTD may have 3,000 Any Part Black out of 5,000 VAP in a given VTD - or 60% APB VAP. While this example reflects a lower percentage – the sheer size of the VTD means that it will potentially have a greater impact on the demographics of the district than the 100% APB VAP VTD. So while in [Exhibit III.A.2](#) that VTD may not look like it is impactful, it in fact be *more* impactful on the overall demographics of the district than a VTD with a higher % APB VAP with very low numeric APB VAP. [Exhibit III.A.3](#) reinforces [Table III.A.2](#) in showing that the majority of VAP (including APB VAP) are outside of the Black Belt.
22. Knowing that different parts of the state contribute very differently to the demographic compositions of the state overall and of each district that comprises each plan, I now turn my attention to the demographic performance of each plan. First, in [Table III.A.3](#) for the new Alabama 2023 plan, the 2nd District has 52.5% white, non-Hispanic (WNH) VAP and 39.9% Any Part Black (APB) VAP. The 7th District has 42.7% white, non-Hispanic (WNH) VAP and 50.7% Any Part Black (APB) VAP.

Table III.A.3 Voting Age Population (VAP) by white, non-Hispanic VAP and Any Part Black (APB) VAP for the newly enacted Alabama congressional plan – known as the Livingston 3 Congressional Plan or “AL_2023”

District	VAP	WNH VAP	APB VAP	% WNH VAP	% APB VAP
1	557,393	373,897	137,268	67.1%	24.6%
2	559,067	293,496	223,228	52.5%	39.9%
3	564,595	405,145	116,843	71.8%	20.7%
4	555,217	459,881	40,112	82.8%	7.2%
5	560,406	393,794	102,735	70.3%	18.3%
6	552,230	395,669	106,353	71.6%	19.3%
7	568,258	242,662	287,833	42.7%	50.7%
Grand Total	3,917,166	2,564,544	1,014,372	65.5%	25.9%

Source: 2020 Census PL94-171 P3 and P4 Tables

23. Next, in [Table III.A.4](#) for the new Plaintiff’s VRA Remedial Map, the 2nd District has 43.2% white, non-Hispanic (WNH) VAP and 50.1% Any Part Black (APB) VAP. The 7th District has 38.9% white, non-Hispanic (WNH) VAP and 54.5% Any Part Black (APB) VAP.

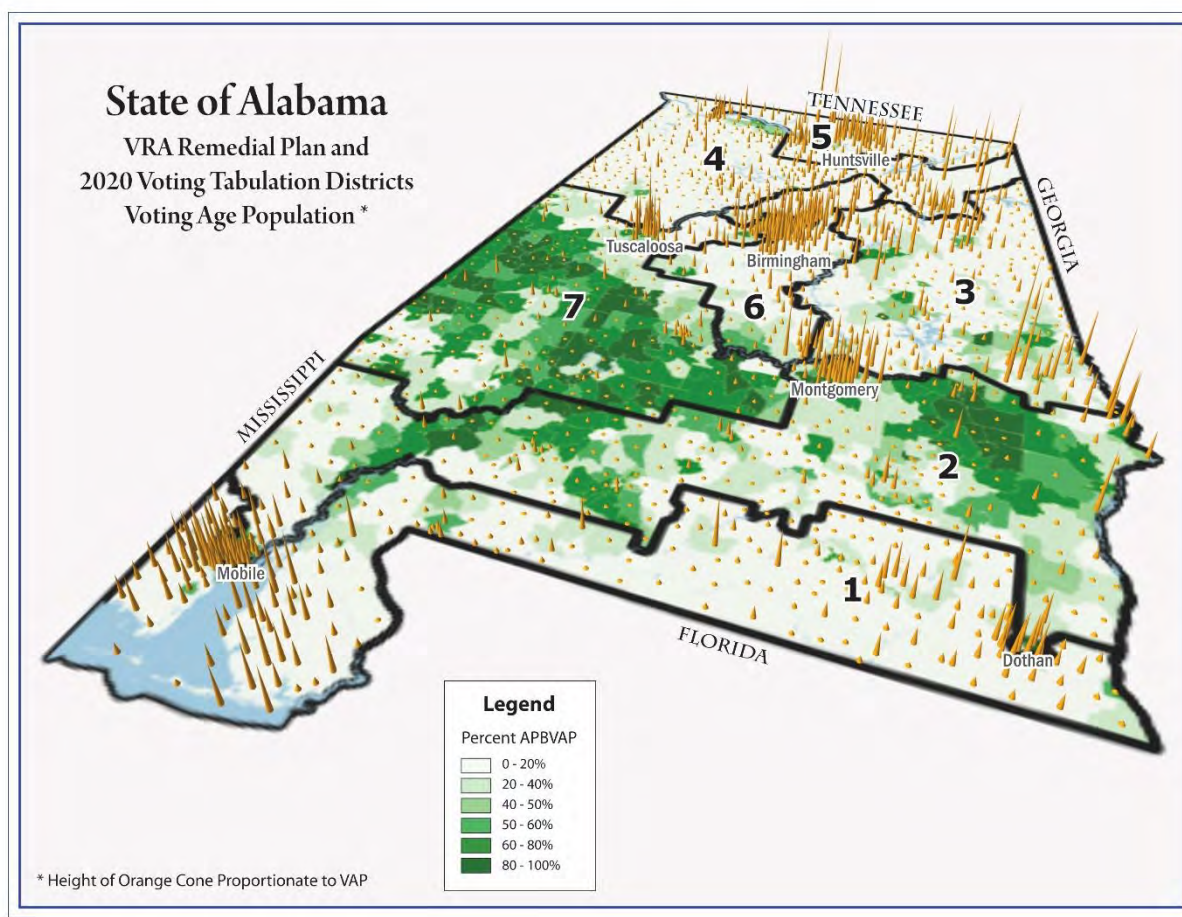
⁵ This map for the Alabama 2023 Plan may be found in Appendix 1.

Table III.A.4 VAP by white, non-Hispanic VAP and Any Part Black (APB) VAP for the 12th plan that the Milligan and Caster Plaintiffs together proposed to the Legislature last month known as the “VRA Plaintiffs Remedial Map” or “VRA_REM”

District	VAP	WNH VAP	APB VAP	% WNH VAP	% APB VAP
1	558,142	423,469	83,257	75.9%	14.9%
2	557,855	241,133	279,348	43.2%	50.1%
3	565,115	402,042	121,850	71.1%	21.6%
4	556,133	458,324	42,819	82.4%	7.7%
5	561,187	397,809	101,339	70.9%	18.1%
6	554,731	422,414	78,396	76.1%	14.1%
7	564,003	219,353	307,363	38.9%	54.5%
Grand Total	3,917,166	2,564,544	1,014,372	65.5%	25.9%

Source: 2020 Census PL94-171 P3 and P4 Tables

Exhibit III.A.4 2020 Percent Any Part Black with Size of VAP by Voting Tabulation District (VTD) for the VRA Plaintiffs Remedial Map



Source: 2020 Census PL94-171 P3 and P4 Tables

24. What is clear from an examination of [Exhibit III.A.4](#) is that the large areas of District 2 and District 7 in the Black Belt have high *proportions* of APB VAP— but relatively low *numbers* of VAP. In the case of District 2 – there is not enough population to create a district that is properly apportioned, and not enough APB VAP from the Black Belt to support a majority APB VAP in that district. Similarly, for District 7, the western portions of the Black Belt have high proportions of APB VAP, but again they are not numerous. Both districts are able to become majority APB VAP only by including split pieces of nearby populous areas—Mobile for CD2 and Tuscaloosa and Jefferson Counties for District 7.
25. Next, in **Table III.A.5** for the original Cooper Map 1, the 2nd District has 44.0% white, non-Hispanic (WNH) VAP and 50.1% Any Part Black (APB) VAP. The 7th District has 39.4% white, non-Hispanic (WNH) VAP and 53.3% Any Part Black (APB) VAP.

Table III.A.5 Voting Age Population (VAP) by white, non-Hispanic VAP and Any Part Black (APB) VAP for Cooper Plan 1

District	VAP	WNH VAP	APB VAP	% WNH VAP	% APB VAP
1	557,084	417,122	89,315	74.9%	16.0%
2	559,442	246,011	280,226	44.0%	50.1%
3	563,119	388,487	126,853	69.0%	22.5%
4	555,541	462,235	35,033	83.2%	6.3%
5	561,688	396,725	104,784	70.6%	18.7%
6	556,122	431,641	77,568	77.6%	13.9%
7	564,170	222,323	300,593	39.4%	53.3%
Grand Total	3,917,166	2,564,544	1,014,372	65.5%	25.9%

Source: 2020 Census PL94-171 P3 and P4 Tables

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26. Next, in **Table III.A.6** for the original Cooper Map 2, the 2nd District has 43.3% white, non-Hispanic (WNH) VAP and 50.9% Any Part Black (APB) VAP. The 7th District has 39.1% white, non-Hispanic (WNH) VAP and 53.8% Any Part Black (APB) VAP.

Table III.A.6 Voting Age Population (VAP) by white, non-Hispanic VAP and Any Part Black (APB) VAP for Cooper Plan 2

District	VAP	WNH VAP	APB VAP	% WNH VAP	% APB VAP
1	558,142	423,469	83,257	75.9%	14.9%
2	558,446	241,724	284,132	43.3%	50.9%
3	562,845	391,308	123,667	69.5%	22.0%
4	555,526	462,211	35,038	83.2%	6.3%
5	561,688	396,725	104,784	70.6%	18.7%
6	555,856	428,525	79,736	77.1%	14.3%
7	564,663	220,582	303,758	39.1%	53.8%
Grand Total	3,917,166	2,564,544	1,014,372	65.5%	25.9%

Source: 2020 Census PL94-171 P3 and P4 Tables

27. Next, in **Table III.A.7** for the original Cooper Map 3, the 2nd District has 43.5% white, non-Hispanic (WNH) VAP and 50.3% Any Part Black (APB) VAP. The 7th District has 42.1% white, non-Hispanic (WNH) VAP and 50.1% Any Part Black (APB) VAP.

Table III.A.7 Voting Age Population (VAP) by white, non-Hispanic VAP and Any Part Black (APB) VAP for Cooper Plan 3

District	VAP	WNH VAP	APB VAP	% WNH VAP	% APB VAP
1	557,048	411,457	95,952	73.9%	17.2%
2	559,299	243,465	281,155	43.5%	50.3%
3	562,300	373,557	143,328	66.4%	25.5%
4	559,374	459,861	40,853	82.2%	7.3%
5	561,688	396,725	104,784	70.6%	18.7%
6	554,093	442,194	66,090	79.8%	11.9%
7	563,364	237,285	282,210	42.1%	50.1%
Grand Total	3,917,166	2,564,544	1,014,372	65.5%	25.9%

Source: 2020 Census PL94-171 P3 and P4 Tables

28. Next, in **Table III.A.8** for the original Cooper Map 4, the 2nd District has 43.9% white, non-Hispanic (WNH) VAP and 50.1% Any Part Black (APB) VAP. The 7th District has 42.5% white, non-Hispanic (WNH) VAP and 50.1% Any Part Black (APB) VAP.

Table III.A.8 Voting Age Population (VAP) by white, non-Hispanic VAP and Any Part Black (APB) VAP for Cooper Plan 4

<u>District</u>	<u>VAP</u>	<u>WNH VAP</u>	<u>APB VAP</u>	<u>% WNH VAP</u>	<u>% APB VAP</u>
1	557,046	411,464	95,952	73.9%	17.2%
2	561,374	246,580	281,106	43.9%	50.1%
3	564,004	378,979	141,564	67.2%	25.1%
4	556,215	460,255	37,427	82.7%	6.7%
5	561,685	396,723	104,788	70.6%	18.7%
6	554,035	431,203	71,633	77.8%	12.9%
7	562,807	239,340	281,902	42.5%	50.1%
Grand Total	3,917,166	2,564,544	1,014,372	65.5%	25.9%

Source: 2020 Census PL94-171 P3 and P4 Tables

29. Next, in **Table III.A.9** for the original Cooper Map 5, the 2nd District has 43.2% white, non-Hispanic (WNH) VAP and 50.2% Any Part Black (APB) VAP. The 7th District has 42.0% white, non-Hispanic (WNH) VAP and 50.1% Any Part Black (APB) VAP.

Table III.A.9 Voting Age Population (VAP) by white, non-Hispanic VAP and Any Part Black (APB) VAP for Cooper Plan 5

<u>District</u>	<u>VAP</u>	<u>WNH VAP</u>	<u>APB VAP</u>	<u>% WNH VAP</u>	<u>% APB VAP</u>
1	559,475	415,036	95,759	74.2%	17.1%
2	557,367	240,759	280,044	43.2%	50.2%
3	561,513	378,950	137,702	67.5%	24.5%
4	555,656	463,965	33,887	83.5%	6.1%
5	561,688	396,725	104,784	70.6%	18.7%
6	555,380	431,220	78,632	77.6%	14.2%
7	566,087	237,889	283,564	42.0%	50.1%
Grand Total	3,917,166	2,564,544	1,014,372	65.5%	25.9%

Source: 2020 Census PL94-171 P3 and P4 Tables

30. Next, in **Table III.A.10** for the original Cooper Map 6, the 2nd District has 42.4% white, non-Hispanic (WNH) VAP and 51.3% Any Part Black (APB) VAP. The 7th District has 41.1% white, non-Hispanic (WNH) VAP and 51.1% Any Part Black (APB) VAP.

Table III.A.10 Voting Age Population (VAP) by white, non-Hispanic VAP and Any Part Black (APB) VAP for Cooper Plan 6

<u>District</u>	<u>VAP</u>	<u>WNH VAP</u>	<u>APB VAP</u>	<u>% WNH VAP</u>	<u>% APB VAP</u>
1	556,657	419,023	88,108	75.3%	15.8%
2	560,712	237,522	287,511	42.4%	51.3%
3	562,748	378,272	139,377	67.2%	24.8%
4	555,444	465,620	31,290	83.8%	5.6%
5	561,685	396,723	104,788	70.6%	18.7%
6	556,812	436,032	75,591	78.3%	13.6%
7	563,108	231,352	287,707	41.1%	51.1%
Grand Total	3,917,166	2,564,544	1,014,372	65.5%	25.9%

Source: 2020 Census PL94-171 P3 and P4 Tables

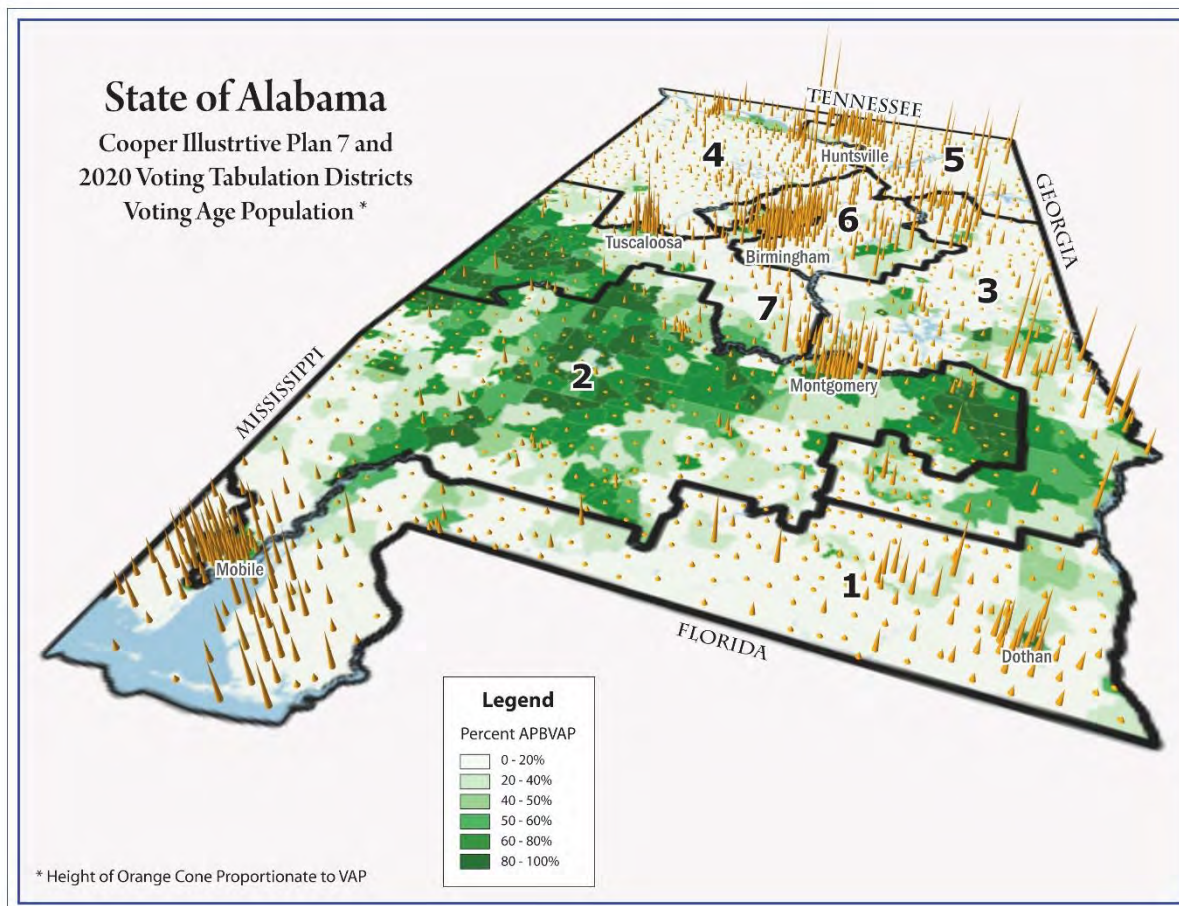
31. Last, in **Table III.A.11** for Cooper Map 7, the 2nd District has 42.0% white, non-Hispanic (WNH) VAP and 51.9% Any Part Black (APB) VAP. The 7th District has 42.1% white, non-Hispanic (WNH) VAP and 50.3% Any Part Black (APB) VAP.

Table III.A.11 Voting Age Population (VAP) by white, non-Hispanic VAP and Any Part Black (APB) VAP for Cooper Plan 7.

<u>District</u>	<u>VAP</u>	<u>WNH VAP</u>	<u>APB VAP</u>	<u>% WNH VAP</u>	<u>% APB VAP</u>
1	556,689	419,740	86,748	75.4%	15.6%
2	559,658	235,182	290,359	42.0%	51.9%
3	564,958	376,779	144,134	66.7%	25.5%
4	564,081	465,274	48,672	82.5%	8.6%
5	557,105	398,712	89,743	71.6%	16.1%
6	555,983	433,769	73,644	78.0%	13.2%
7	558,692	235,088	281,072	42.1%	50.3%
Grand Total	3,917,166	2,564,544	1,014,372	65.5%	25.9%

Source: 2020 Census PL94-171 P3 and P4 Tables

Exhibit III.A.5 2020 Percent Any Part Black with Size of VAP by Voting Tabulation District (VTD) for Cooper Plan 7



Source: 2020 Census PL94-171 P3 and P4 Tables

32. What is again clear from an examination of *Exhibit III.A.5* (just as with [Exhibit III.A.4](#)) is that the large areas of District 2 and District 7 in the Black Belt have high *proportions* of APB VAP— but relatively low *numbers* of VAP. In the case of District 2 – there is not enough population to create a district that is properly apportioned, and not enough APB VAP from the Black Belt to support a majority APB VAP in that district. Similarly, for District 7, the western portions of the Black Belt have high proportions of APB VAP, but again they are not numerous. Both districts are able to become majority APB VAP only by including split pieces of nearby populous areas—Mobile for CD2 and Tuscaloosa and Jefferson Counties for District 7.

B. Geographic Splits Analysis of Counties

34. I next turn my attention to the nature of county splits in the maps from the State and Plaintiffs. There are 67 counties in Alabama.
35. A “splits” analysis would conventionally extend to the number of split pieces of geography and stop there. Numerically fewer splits are *usually* indicative of a better performing plan than one with more splits. In the case of Alabama, my examination also assessed how these splits differ by demographic characteristics when it comes to the division of counties.
36. An examination of the number of county splits by plan in *Table III.B.1* shows each plan varying from 5 county splits (see Cooper 7) to 7 county splits (see Cooper 2, Cooper 6 and VRA Remedial plans).

Table III.B.1 Alabama County Splits by Plan

Plan	Cooper 1	Cooper 2	Cooper 3	Cooper 4	Cooper 5	Cooper 6	Cooper 7	VRA Remedial	Alabama 2023
Splits	6	7	6	6	6	7	5	7	6

37. In the course of my analysis, I created tables showing the number of splits for each plan and the size and population characteristics of the pieces that result from each county split. In [Appendix 3 Detailed County Splits Analysis](#) I show the total VAP (and share), the white, non-Hispanic VAP (and share) and APB VAP (and share) for each county piece split, by plan.
38. In the (12th) plan that the Milligan and Caster Plaintiffs together proposed to the Legislature last month known as the “VRA Plaintiffs Remedial Map” or “VRA_REM” there are seven county splits, with three of these impacting District 7 and three of these impacting District 2 (note that Clarke County is split between D2 and D7). [Appendix 3C](#) (“VRA_REM” VRA Remedial Plan: County Splits VAP % of County) and [Appendix 3D](#) (“VRA_REM” VRA Remedial Plan: County Splits VAP % of Total) show the following:
 - District 2 Split Counties Analysis: In the three counties that are split between District 2 (Clarke, Houston and Mobile) and some other district there is 188,398 VAP in District 2, with 81,181 (43.1%) WNH VAP and 95,468 (50.7%) APB VAP.
 - District 7 Split Counties Analysis: In the three counties that are split between District 7 (Clarke, Jefferson and Tuscaloosa) and some other districts, there is 442,972 VAP in District 7, with 174,463 (39.4%) WNH VAP and 234,237 (52.9%) APB VAP. This difference is heavily driven by the split of Jefferson County, which moves significantly more APB VAP into District 7 than the Alabama 2023 plan.
 - Conclusion: In the VRA Plaintiffs Remedial Plan, there is evidence that all of the counties that were split between District 7 and some other district and District 2 and some other

district were both split in such a way that moved significant and disproportionate numbers of APB VAP into D2 and D7.

39. In the seventh plan prepared by Plaintiff's expert William Cooper, there are three county splits, with two of these impacting District 7 and one of these impacting District 2. [Appendix 3Q](#) ("Cooper 7" William Cooper's 7th Plan: County Splits VAP % of County) and [Appendix 3R](#) ("Cooper 7" William Cooper's 7th Plan: County Splits VAP % of Total) show the following:
 - All Split Counties Analysis: In these three counties, there is 1,025,538 VAP, with 560,101 (54.6%) WNH VAP and 381,759 (37.2%) APB VAP.
 - District 2 Split Counties Analysis: In the one county that was split between District 2 (Mobile) and some other districts, there is 199,100 VAP in D2, with 93,184 (46.8%) WNH VAP and 92,450 (46.4%) APB VAP.
 - District 7 Split Counties Analysis: In the two counties that are split between District 7 (Jefferson and Tuscaloosa) and some other districts, there is 419,337 VAP in District 7, with 145,291 (34.6%) WNH VAP and 241,015 (57.5%) APB VAP. This difference is heavily driven by the split of Jefferson County, which moves significantly more APB VAP into District 7 than the Alabama 2023 plan.
 - Conclusion: In the Cooper 7 plan, there is evidence that the counties that were split between District 7 and some other district and District 2 and some other district were split in such a way that moved significant and disproportionate numbers of APB VAP into D2 and D7.
40. In [Table III.B.2](#) (for District 2) and [Table III.B.3](#) (for District 7) I summarize the splits in aggregate for the total, for white, non-Hispanic and Any Part Black VAP for each plan – and compare each plan to the 2023 Alabama Plan.
41. In [Table III.B.2](#) it can be seen that every alternative plan to Alabama 2023 contains significantly more VAP from split counties in District 2. In the Cooper 1, 2, 4, 5 plans, plus the Remedial VRA plan – more of this population comes from APB VAP than WNH VAP.
42. In [Table III.B.3](#) it can also be seen that every alternative plan to Alabama 2023 (except Cooper 4) contains significantly more VAP from split counties in District 7. In every alternative plan – more of this population comes from APB VAP than WNH VAP.

Table III.B.2 District 2 Voting Age Population (VAP) in Split Counties by white, non-Hispanic VAP and Any Part Black (APB) VAP by Plan

	Population	Total from Split Counties	White, non-Hispanic	Any Part Black
Alabama 2023	559,067	35,959	25,378	8,543
% from Split Counties		6.4%	4.5%	1.5%
Alabama Previous 2021	557,677	128,994	54,971	61,065
Diff from Alabama 2023	-1,390	93,035	29,593	52,522
% from Split Counties		23.1%	9.9%	10.9%
Cooper 1	559,442	315,659	123,759	170,388
Diff from Alabama 2023	375	279,700	98,381	161,845
% from Split Counties		56.4%	22.1%	30.5%
Cooper 2	558,446	322,946	121,898	180,018
Diff from Alabama 2023	-621	286,987	96,520	171,475
% from Split Counties		57.8%	21.8%	32.2%
Cooper 3	559,299	198,741	101,467	83,246
Diff from Alabama 2023	232	162,782	76,089	74,703
% from Split Counties		35.5%	18.1%	14.9%
Cooper 4	561,374	353,093	151,183	176,299
Diff from Alabama 2023	2,307	317,134	125,805	167,756
% from Split Counties		62.9%	26.9%	31.4%
Cooper 5	557,367	146,134	62,830	74,065
Diff from Alabama 2023	-1,700	110,175	37,452	65,522
% from Split Counties		26.2%	11.3%	13.3%
Cooper 6	560,712	219,400	105,275	98,683
Diff from Alabama 2023	1,645	183,441	79,897	90,140
% from Split Counties		39.1%	18.8%	17.6%
Cooper 7	559,658	199,100	93,184	92,450
Diff from Alabama 2023	591	163,141	67,806	83,907
% from Split Counties		35.6%	16.7%	16.5%
VRA Remedial	557,855	188,398	81,181	95,468
Diff from Alabama 2023	-1,212	152,439	55,803	86,925
% from Split Counties		33.8%	14.6%	17.1%

Table III.B.3 District 7 Voting Age Population (VAP) in Split Counties by white, non-Hispanic VAP and Any Part Black (APB) VAP by Plan

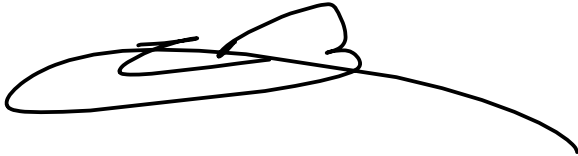
	Total VAP	Total from Split Counties	White, non-Hispanic	Any Part Black
Alabama 2023	568,258	400,341	168,908	199,196
% from Split Counties		70.5%	29.7%	35.1%
Alabama Previous 2021	568,067	428,787	164,608	232,754
Diff from Alabama 2023	-191	28,446	-4,300	33,558
% from Split Counties		75.5%	29.0%	41.0%
Cooper 1	564,170	492,090	200,760	251,268
Diff from Alabama 2023	-4,088	91,749	31,852	52,072
% from Split Counties		87.2%	35.6%	44.5%
Cooper 2	564,663	484,300	196,593	248,709
Diff from Alabama 2023	-3,595	83,959	27,685	49,513
% from Split Counties		85.8%	34.8%	44.0%
Cooper 3	563,364	502,917	207,413	254,086
Diff from Alabama 2023	-4,894	102,576	38,505	54,890
% from Split Counties		89.3%	36.8%	45.1%
Cooper 4	562,807	319,076	102,513	192,102
Diff from Alabama 2023	-5,451	-81,265	-66,395	-7,094
% from Split Counties		56.7%	18.2%	34.1%
Cooper 5	566,087	531,880	227,416	260,448
Diff from Alabama 2023	-2,171	131,539	58,508	61,252
% from Split Counties		94.0%	40.2%	46.0%
Cooper 6	563,108	509,222	207,601	258,950
Diff from Alabama 2023	-5,150	108,881	38,693	59,754
% from Split Counties		90.4%	36.9%	46.0%
Cooper 7	558,692	419,337	145,291	241,015
Diff from Alabama 2023	-9,566	18,996	-23,617	41,819
% from Split Counties		75.1%	26.0%	43.1%
VRA_Remedial	564,003	442,972	174,463	234,237
Diff from Alabama 2023	-4,255	42,631	5,555	35,041
% from Split Counties		78.5%	30.9%	41.5%

IV. CONCLUSION

43. For the reasons stated in this report and illustrated in the Appendices, I conclude that there is evidence that race predominated in the drawing of both the 2nd and 7th districts in Plaintiffs' VRA Remedial Plan and Cooper Plans 1 – 7.

* * *

Submitted: August 3, 2023

A handwritten signature in black ink, consisting of a large, stylized loop followed by a horizontal line and a small upward stroke.

Thomas M. Bryan

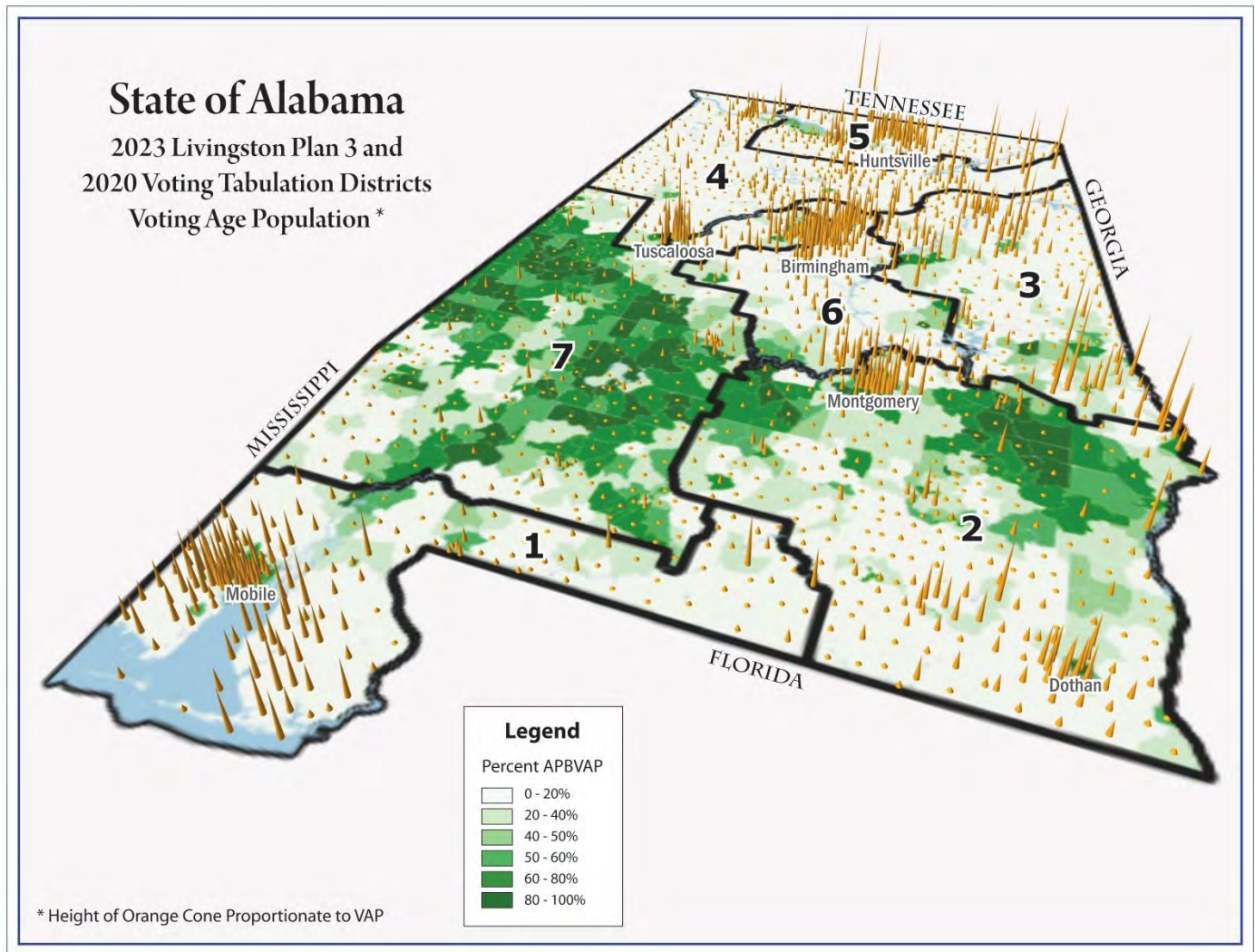
Appendix 1 Alabama 2023 APB VAP Map

Appendix 2 Detailed County Splits Analysis

Appendix 3 Alabama Maps

Appendix 4 Thomas Bryan Resume / CV

Appendix 1 Alabama 2023 APB VAP Map



Appendix 2 Detailed County Splits Analysis

- A. “AL_2023” Alabama “Livingston 3” County Splits VAP (% of County)
- B. “AL_2023” Alabama “Livingston 3” County Splits VAP (% of Total)
- C. “VRA_REM” VRA Remedial Plan: County Splits VAP (% of County)
- D. “VRA_REM” VRA Remedial Plan: County Splits VAP (% of Total)
- E. “Cooper 1” William Cooper’s 1st Plan: County Splits VAP (% of County)
- F. “Cooper 1” William Cooper’s 1st Plan: County Splits VAP (% of Total)
- G. “Cooper 2” William Cooper’s 2nd Plan: County Splits VAP (% of County)
- H. “Cooper 2” William Cooper’s 2nd Plan: County Splits VAP (% of Total)
- I. “Cooper 3” William Cooper’s 3rd Plan: County Splits VAP (% of County)
- J. “Cooper 3” William Cooper’s 3rd Plan: County Splits VAP (% of Total)
- K. “Cooper 4” William Cooper’s 4th Plan: County Splits VAP (% of County)
- L. “Cooper 4” William Cooper’s 4th Plan: County Splits VAP (% of Total)
- M. “Cooper 5” William Cooper’s 5th Plan: County Splits VAP (% of County)
- N. “Cooper 5” William Cooper’s 5th Plan: County Splits VAP (% of Total)
- O. “Cooper 6” William Cooper’s 6th Plan: County Splits VAP (% of County)
- P. “Cooper 6” William Cooper’s 6th Plan: County Splits VAP (% of Total)
- Q. “Cooper 7” William Cooper’s 7th Plan: County Splits VAP (% of County)
- R. “Cooper 7” William Cooper’s 7th Plan: County Splits VAP (% of Total)
- S. “Alabama 2021 Previous”: County Splits VAP (% of County)
- T. “Alabama 2021 Previous”: County Splits VAP (% of Total)

Alabama County Split Methodology

% of County: This method calculates the percentage of the total VAP, the white, non-Hispanic VAP and the Any Part Black (APB) that is in each district piece of a split county.

% of Total: This method calculates the percentage of the white, non-Hispanic VAP and the Any Part Black (APB) that is the share of the VAP in each split county.

A. "AL_2023" Alabama "Livingston 3" County Splits VAP (% of County)

County Name	District	VAP			Percent of County		
		Total	WhiteNH	AP Black	Total	WhiteNH	AP Black
Covington County	1	26,920	22,147	3,517	91.6%	90.7%	96.8%
	2	2,467	2,273	117	8.4%	9.3%	3.2%
<i>County Total</i>		29,387	24,420	3,634			
Elmore County	2	33,492	23,105	8,426	48.5%	46.0%	58.3%
	6	35,513	27,168	6,025	51.5%	54.0%	41.7%
<i>County Total</i>		69,005	50,273	14,451			
Jefferson County	6	239,656	159,906	59,528	45.5%	60.2%	27.2%
	7	287,431	105,844	158,977	54.5%	39.8%	72.8%
<i>County Total</i>		527,087	265,750	218,505			
Tuscaloosa County	4	66,114	48,079	12,674	36.9%	43.3%	24.0%
	7	112,910	63,064	40,219	63.1%	56.7%	76.0%
<i>County Total</i>		179,024	111,143	52,893			

Source: 2020 Census PL94-171 P3 and P4 Tables

Only includes counties that were split by Districts 2 and 7

B. “AL_2023” Alabama “Livingston 3” County Splits VAP (% of Total)

County Name	District	VAP			Percent VAP		Deviation	
		Total	WhiteNH	AP Black	WhiteNH	AP Black	WhiteNH	AP Black
Covington County	1	26,920	22,147	3,517	82.3%	13.1%	-0.8%	0.7%
	2	2,467	2,273	117	92.1%	4.7%	9.0%	-7.6%
<i>County Total</i>		<i>29,387</i>	<i>24,420</i>	<i>3,634</i>	<i>83.1%</i>	<i>12.4%</i>		
Elmore County	2	33,492	23,105	8,426	69.0%	25.2%	-3.9%	4.2%
	6	35,513	27,168	6,025	76.5%	17.0%	3.6%	-4.0%
<i>County Total</i>		<i>69,005</i>	<i>50,273</i>	<i>14,451</i>	<i>72.9%</i>	<i>20.9%</i>		
Jefferson County	6	239,656	159,906	59,528	66.7%	24.8%	16.3%	-16.6%
	7	287,431	105,844	158,977	36.8%	55.3%	-13.6%	13.9%
<i>County Total</i>		<i>527,087</i>	<i>265,750</i>	<i>218,505</i>	<i>50.4%</i>	<i>41.5%</i>		
Tuscaloosa County	4	66,114	48,079	12,674	72.7%	19.2%	10.6%	-10.4%
	7	112,910	63,064	40,219	55.9%	35.6%	-6.2%	6.1%
<i>County Total</i>		<i>179,024</i>	<i>111,143</i>	<i>52,893</i>	<i>62.1%</i>	<i>29.5%</i>		

Source: 2020 Census PL94-171 P3 and P4 Tables

Only includes counties that were split by Districts 2 and 7

C. “VRA_REM” VRA Remedial Plan: County Splits VAP (% of County)

County Name	District	VAP			Percent of County		
		Total	WhiteNH	AP Black	Total	WhiteNH	AP Black
Clarke County	2	4,392	1,249	3,048	24.1%	12.7%	38.0%
	7	13,857	8,550	4,976	75.9%	87.3%	62.0%
<i>County Total</i>		18,249	9,799	8,024			
Houston County	1	57,053	44,129	8,361	69.0%	79.8%	39.2%
	2	25,593	11,156	12,947	31.0%	20.2%	60.8%
<i>County Total</i>		82,646	55,285	21,308			
Jefferson County	6	244,903	183,968	39,536	46.5%	69.2%	18.1%
	7	282,184	81,782	178,969	53.5%	30.8%	81.9%
<i>County Total</i>		527,087	265,750	218,505			
Mobile County	1	161,014	114,432	30,888	50.4%	62.5%	28.0%
	2	158,413	68,776	79,473	49.6%	37.5%	72.0%
<i>County Total</i>		319,427	183,208	110,361			
Tuscaloosa County	4	32,093	27,012	2,601	17.9%	24.3%	4.9%
	7	146,931	84,131	50,292	82.1%	75.7%	95.1%
<i>County Total</i>		179,024	111,143	52,893			

Source: 2020 Census PL94-171 P3 and P4 Tables

Only includes counties that were split by Districts 2 and 7

D. “VRA_REM” VRA Remedial Plan: County Splits VAP (% of Total)

County Name	District	VAP			Percent VAP		Deviation	
		Total	WhiteNH	AP Black	WhiteNH	AP Black	WhiteNH	AP Black
Clarke County	2	4,392	1,249	3,048	28.4%	69.4%	-25.3%	25.4%
	7	13,857	8,550	4,976	61.7%	35.9%	8.0%	-8.1%
<i>County Total</i>		18,249	9,799	8,024	53.7%	44.0%		
Houston County	1	57,053	44,129	8,361	77.3%	14.7%	10.5%	-11.1%
	2	25,593	11,156	12,947	43.6%	50.6%	-23.3%	24.8%
<i>County Total</i>		82,646	55,285	21,308	66.9%	25.8%		
Jefferson County	6	244,903	183,968	39,536	75.1%	16.1%	24.7%	-25.3%
	7	282,184	81,782	178,969	29.0%	63.4%	-21.4%	22.0%
<i>County Total</i>		527,087	265,750	218,505	50.4%	41.5%		
Mobile County	1	161,014	114,432	30,888	71.1%	19.2%	13.7%	-15.4%
	2	158,413	68,776	79,473	43.4%	50.2%	-13.9%	15.6%
<i>County Total</i>		319,427	183,208	110,361	57.4%	34.5%		
Tuscaloosa County	4	32,093	27,012	2,601	84.2%	8.1%	22.1%	-21.4%
	7	146,931	84,131	50,292	57.3%	34.2%	-4.8%	4.7%
<i>County Total</i>		179,024	111,143	52,893	62.1%	29.5%		

Source: 2020 Census PL94-171 P3 and P4 Tables

Only includes counties that were split by Districts 2 and 7

E. “Cooper 1” William Cooper’s 1st Plan: County Splits VAP (% of County)

County Name	District	VAP			Percent of County		
		Total	WhiteNH	AP Black	Total	WhiteNH	AP Black
Jefferson County	6	181,917	149,564	17,329	34.5%	56.3%	7.9%
	7	345,170	116,186	201,176	65.5%	43.7%	92.1%
<i>County Total</i>		527,087	265,750	218,505			
Mobile County	1	134,363	96,929	23,999	42.1%	52.9%	21.7%
	2	185,064	86,279	86,362	57.9%	47.1%	78.3%
<i>County Total</i>		319,427	183,208	110,361			
Montgomery County	2	130,595	37,480	84,026	73.6%	60.0%	84.1%
	3	46,832	24,951	15,910	26.4%	40.0%	15.9%
<i>County Total</i>		177,427	62,431	99,936			
Tuscaloosa County	4	32,104	26,569	2,801	17.9%	23.9%	5.3%
	7	146,920	84,574	50,092	82.1%	76.1%	94.7%
<i>County Total</i>		179,024	111,143	52,893			

Source: 2020 Census PL94-171 P3 and P4 Tables

Only includes counties that were split by Districts 2 and 7

F. “Cooper 1” William Cooper’s 1st Plan: County Splits VAP (% of Total)

County Name	District	VAP			Percent VAP		Deviation	
		Total	WhiteNH	AP Black	WhiteNH	AP Black	WhiteNH	AP Black
Jefferson County	6	181,917	149,564	17,329	82.2%	9.5%	31.8%	-31.9%
	7	345,170	116,186	201,176	33.7%	58.3%	-16.8%	16.8%
<i>County Total</i>		527,087	265,750	218,505	50.4%	41.5%		
Mobile County	1	134,363	96,929	23,999	72.1%	17.9%	14.8%	-16.7%
	2	185,064	86,279	86,362	46.6%	46.7%	-10.7%	12.1%
<i>County Total</i>		319,427	183,208	110,361	57.4%	34.5%		
Montgomery County	2	130,595	37,480	84,026	28.7%	64.3%	-6.5%	8.0%
	3	46,832	24,951	15,910	53.3%	34.0%	18.1%	-22.4%
<i>County Total</i>		177,427	62,431	99,936	35.2%	56.3%		
Tuscaloosa County	4	32,104	26,569	2,801	82.8%	8.7%	20.7%	-20.8%
	7	146,920	84,574	50,092	57.6%	34.1%	-4.5%	4.5%
<i>County Total</i>		179,024	111,143	52,893	62.1%	29.5%		

Source: 2020 Census PL94-171 P3 and P4 Tables

Only includes counties that were split by Districts 2 and 7

G. “Cooper 2” William Cooper’s 2nd Plan: County Splits VAP (% of County)

County Name	District	VAP			Percent of County		
		Total	WhiteNH	AP Black	Total	WhiteNH	AP Black
Houston County	1	57,053	44,129	8,361	69.0%	79.8%	39.2%
	2	25,593	11,156	12,947	31.0%	20.2%	60.8%
<i>County Total</i>		<i>82,646</i>	<i>55,285</i>	<i>21,308</i>			
Jefferson County	6	189,722	153,755	19,883	36.0%	57.9%	9.1%
	7	337,365	111,995	198,622	64.0%	42.1%	90.9%
<i>County Total</i>		<i>527,087</i>	<i>265,750</i>	<i>218,505</i>			
Mobile County	1	161,014	114,432	30,888	50.4%	62.5%	28.0%
	2	158,413	68,776	79,473	49.6%	37.5%	72.0%
<i>County Total</i>		<i>319,427</i>	<i>183,208</i>	<i>110,361</i>			
Montgomery County	2	138,940	41,966	87,598	78.3%	67.2%	87.7%
	3	38,487	20,465	12,338	21.7%	32.8%	12.3%
<i>County Total</i>		<i>177,427</i>	<i>62,431</i>	<i>99,936</i>			
Tuscaloosa County	4	32,089	26,545	2,806	17.9%	23.9%	5.3%
	7	146,935	84,598	50,087	82.1%	76.1%	94.7%
<i>County Total</i>		<i>179,024</i>	<i>111,143</i>	<i>52,893</i>			

Source: 2020 Census PL94-171 P3 and P4 Tables

Only includes counties that were split by Districts 2 and 7

H. “Cooper 2” William Cooper’s 2nd Plan: County Splits VAP (% of Total)

County Name	District	VAP			Percent VAP		Deviation	
		Total	WhiteNH	AP Black	WhiteNH	AP Black	WhiteNH	AP Black
Houston County	1	57,053	44,129	8,361	77.3%	14.7%	10.5%	-11.1%
	2	25,593	11,156	12,947	43.6%	50.6%	-23.3%	24.8%
<i>County Total</i>		82,646	55,285	21,308	66.9%	25.8%		
Jefferson County	6	189,722	153,755	19,883	81.0%	10.5%	30.6%	-31.0%
	7	337,365	111,995	198,622	33.2%	58.9%	-17.2%	17.4%
<i>County Total</i>		527,087	265,750	218,505	50.4%	41.5%		
Mobile County	1	161,014	114,432	30,888	71.1%	19.2%	13.7%	-15.4%
	2	158,413	68,776	79,473	43.4%	50.2%	-13.9%	15.6%
<i>County Total</i>		319,427	183,208	110,361	57.4%	34.5%		
Montgomery County	2	138,940	41,966	87,598	30.2%	63.0%	-5.0%	6.7%
	3	38,487	20,465	12,338	53.2%	32.1%	18.0%	-24.3%
<i>County Total</i>		177,427	62,431	99,936	35.2%	56.3%		
Tuscaloosa County	4	32,089	26,545	2,806	82.7%	8.7%	20.6%	-20.8%
	7	146,935	84,598	50,087	57.6%	34.1%	-4.5%	4.5%
<i>County Total</i>		179,024	111,143	52,893	62.1%	29.5%		

Source: 2020 Census PL94-171 P3 and P4 Tables

Only includes counties that were split by Districts 2 and 7

I. “Cooper 3” William Cooper’s 3rd Plan: County Splits VAP (% of County)

County Name	District	VAP			Percent of County		
		Total	WhiteNH	AP Black	Total	WhiteNH	AP Black
Jefferson County	6	131,596	112,403	10,264	25.0%	42.3%	4.7%
	7	395,491	153,347	208,241	75.0%	57.7%	95.3%
<i>County Total</i>		527,087	265,750	218,505			
Mobile County	1	120,686	81,741	27,115	37.8%	44.6%	24.6%
	2	198,741	101,467	83,246	62.2%	55.4%	75.4%
<i>County Total</i>		319,427	183,208	110,361			
Tuscaloosa County	4	71,598	57,077	7,048	40.0%	51.4%	13.3%
	7	107,426	54,066	45,845	60.0%	48.6%	86.7%
<i>County Total</i>		179,024	111,143	52,893			

Source: 2020 Census PL94-171 P3 and P4 Tables

Only includes counties that were split by Districts 2 and 7

J. “Cooper 3” William Cooper’s 3rd Plan: County Splits VAP (% of Total)

County Name	District	VAP			Percent VAP		Deviation	
		Total	WhiteNH	AP Black	WhiteNH	AP Black	WhiteNH	AP Black
Jefferson County	6	131,596	112,403	10,264	85.4%	7.8%	35.0%	-33.7%
	7	395,491	153,347	208,241	38.8%	52.7%	-11.6%	11.2%
<i>County Total</i>		527,087	265,750	218,505	50.4%	41.5%		
Mobile County	1	120,686	81,741	27,115	67.7%	22.5%	10.4%	-12.1%
	2	198,741	101,467	83,246	51.1%	41.9%	-6.3%	7.3%
<i>County Total</i>		319,427	183,208	110,361	57.4%	34.5%		
Tuscaloosa County	4	71,598	57,077	7,048	79.7%	9.8%	17.6%	-19.7%
	7	107,426	54,066	45,845	50.3%	42.7%	-11.8%	13.1%
<i>County Total</i>		179,024	111,143	52,893	62.1%	29.5%		

Source: 2020 Census PL94-171 P3 and P4 Tables

Only includes counties that were split by Districts 2 and 7

K. “Cooper 4” William Cooper’s 4th Plan: County Splits VAP (% of County)

County Name	District	VAP			Percent of County		
		Total	WhiteNH	AP Black	Total	WhiteNH	AP Black
Jefferson County	6	208,011	163,237	26,403	39.5%	61.4%	12.1%
	7	319,076	102,513	192,102	60.5%	38.6%	87.9%
<i>County Total</i>		527,087	265,750	218,505			
Mobile County	1	120,684	81,748	27,115	37.8%	44.6%	24.6%
	2	198,743	101,460	83,246	62.2%	55.4%	75.4%
<i>County Total</i>		319,427	183,208	110,361			
Montgomery County	2	154,350	49,723	93,053	87.0%	79.6%	93.1%
	3	23,077	12,708	6,883	13.0%	20.4%	6.9%
<i>County Total</i>		177,427	62,431	99,936			

Source: 2020 Census PL94-171 P3 and P4 Tables

Only includes counties that were split by Districts 2 and 7

L. “Cooper 4” William Cooper’s 4th Plan: County Splits VAP (% of Total)

County Name	District	VAP			Percent VAP		Deviation	
		Total	WhiteNH	AP Black	WhiteNH	AP Black	WhiteNH	AP Black
Jefferson County	6	208,011	163,237	26,403	78.5%	12.7%	28.1%	-28.8%
	7	319,076	102,513	192,102	32.1%	60.2%	-18.3%	18.8%
<i>County Total</i>		527,087	265,750	218,505	50.4%	41.5%		
Mobile County	1	120,684	81,748	27,115	67.7%	22.5%	10.4%	-12.1%
	2	198,743	101,460	83,246	51.1%	41.9%	-6.3%	7.3%
<i>County Total</i>		319,427	183,208	110,361	57.4%	34.5%		
Montgomery County	2	154,350	49,723	93,053	32.2%	60.3%	-3.0%	4.0%
	3	23,077	12,708	6,883	55.1%	29.8%	19.9%	-26.5%
<i>County Total</i>		177,427	62,431	99,936	35.2%	56.3%		

Source: 2020 Census PL94-171 P3 and P4 Tables

Only includes counties that were split by Districts 2 and 7

M. “Cooper 5” William Cooper’s 5th Plan: County Splits VAP (% of County)

County Name	District	VAP			Percent of County		
		Total	WhiteNH	AP Black	Total	WhiteNH	AP Black
Choctaw County	2	4,235	2,896	1,265	41.7%	50.9%	29.5%
	7	5,933	2,794	3,021	58.3%	49.1%	70.5%
<i>County Total</i>		10,168	5,690	4,286			
Jefferson County	6	147,945	123,972	12,316	28.1%	46.6%	5.6%
	7	379,142	141,778	206,189	71.9%	53.4%	94.4%
<i>County Total</i>		527,087	265,750	218,505			
Mobile County	1	177,528	123,274	37,561	55.6%	67.3%	34.0%
	2	141,899	59,934	72,800	44.4%	32.7%	66.0%
<i>County Total</i>		319,427	183,208	110,361			
Tuscaloosa County	4	32,219	28,299	1,655	18.0%	25.5%	3.1%
	7	146,805	82,844	51,238	82.0%	74.5%	96.9%
<i>County Total</i>		179,024	111,143	52,893			

Source: 2020 Census PL94-171 P3 and P4 Tables

Only includes counties that were split by Districts 2 and 7

N. “Cooper 5” William Cooper’s 5th Plan: County Splits VAP (% of Total)

County Name	District	VAP			Percent VAP		Deviation	
		Total	WhiteNH	AP Black	WhiteNH	AP Black	WhiteNH	AP Black
Choctaw County	2	4,235	2,896	1,265	68.4%	29.9%	12.4%	-12.3%
	7	5,933	2,794	3,021	47.1%	50.9%	-8.9%	8.8%
<i>County Total</i>		10,168	5,690	4,286	56.0%	42.2%		
Jefferson County	6	147,945	123,972	12,316	83.8%	8.3%	33.4%	-33.1%
	7	379,142	141,778	206,189	37.4%	54.4%	-13.0%	12.9%
<i>County Total</i>		527,087	265,750	218,505	50.4%	41.5%		
Mobile County	1	177,528	123,274	37,561	69.4%	21.2%	12.1%	-13.4%
	2	141,899	59,934	72,800	42.2%	51.3%	-15.1%	16.8%
<i>County Total</i>		319,427	183,208	110,361	57.4%	34.5%		
Tuscaloosa County	4	32,219	28,299	1,655	87.8%	5.1%	25.8%	-24.4%
	7	146,805	82,844	51,238	56.4%	34.9%	-5.7%	5.4%
<i>County Total</i>		179,024	111,143	52,893	62.1%	29.5%		

Source: 2020 Census PL94-171 P3 and P4 Tables

Only includes counties that were split by Districts 2 and 7

O. “Cooper 6” William Cooper’s 6th Plan: County Splits VAP (% of County)

County Name	District	VAP			Percent of County		
		Total	WhiteNH	AP Black	Total	WhiteNH	AP Black
Autauga County	3	25,968	19,869	3,848	58.3%	61.3%	44.2%
	7	18,555	12,539	4,858	41.7%	38.7%	55.8%
<i>County Total</i>		44,523	32,408	8,706			
Jefferson County	6	153,363	129,582	12,256	29.1%	48.8%	5.6%
	7	373,724	136,168	206,249	70.9%	51.2%	94.4%
<i>County Total</i>		527,087	265,750	218,505			
Mobile County	1	109,935	81,830	16,754	34.4%	44.7%	15.2%
	2	209,492	101,378	93,607	65.6%	55.3%	84.8%
<i>County Total</i>		319,427	183,208	110,361			
Pickens County	2	9,908	3,897	5,076	64.1%	46.4%	85.6%
	4	5,539	4,498	855	35.9%	53.6%	14.4%
<i>County Total</i>		15,447	8,395	5,931			
Tuscaloosa County	4	62,081	52,249	5,050	34.7%	47.0%	9.5%
	7	116,943	58,894	47,843	65.3%	53.0%	90.5%
<i>County Total</i>		179,024	111,143	52,893			

Source: 2020 Census PL94-171 P3 and P4 Tables

Only includes counties that were split by Districts 2 and 7

P. “Cooper 6” William Cooper’s 6th Plan: County Splits VAP (% of Total)

County Name	District	VAP			Percent VAP		Deviation	
		Total	WhiteNH	AP Black	WhiteNH	AP Black	WhiteNH	AP Black
Autauga County	3	25,968	19,869	3,848	76.5%	14.8%	3.7%	-4.7%
	7	18,555	12,539	4,858	67.6%	26.2%	-5.2%	6.6%
<i>County Total</i>		44,523	32,408	8,706	72.8%	19.6%		
Jefferson County	6	153,363	129,582	12,256	84.5%	8.0%	34.1%	-33.5%
	7	373,724	136,168	206,249	36.4%	55.2%	-14.0%	13.7%
<i>County Total</i>		527,087	265,750	218,505	50.4%	41.5%		
Mobile County	1	109,935	81,830	16,754	74.4%	15.2%	17.1%	-19.3%
	2	209,492	101,378	93,607	48.4%	44.7%	-9.0%	10.1%
<i>County Total</i>		319,427	183,208	110,361	57.4%	34.5%		
Pickens County	2	9,908	3,897	5,076	39.3%	51.2%	-15.0%	12.8%
	4	5,539	4,498	855	81.2%	15.4%	26.9%	-23.0%
<i>County Total</i>		15,447	8,395	5,931	54.3%	38.4%		
Tuscaloosa County	4	62,081	52,249	5,050	84.2%	8.1%	22.1%	-21.4%
	7	116,943	58,894	47,843	50.4%	40.9%	-11.7%	11.4%
<i>County Total</i>		179,024	111,143	52,893	62.1%	29.5%		

Source: 2020 Census PL94-171 P3 and P4 Tables

Only includes counties that were split by Districts 2 and 7

Q. “Cooper 7” William Cooper’s 7th Plan: County Splits VAP (% of County)

County Name	District	VAP			Percent of County		
		Total	WhiteNH	AP Black	Total	WhiteNH	AP Black
Jefferson County	6	204,977	166,050	22,452	38.9%	62.5%	10.3%
	7	322,110	99,700	196,053	61.1%	37.5%	89.7%
<i>County Total</i>		<i>527,087</i>	<i>265,750</i>	<i>218,505</i>			
Mobile County	1	120,327	90,024	17,911	37.7%	49.1%	16.2%
	2	199,100	93,184	92,450	62.3%	50.9%	83.8%
<i>County Total</i>		<i>319,427</i>	<i>183,208</i>	<i>110,361</i>			
Tuscaloosa County	4	81,797	65,552	7,931	45.7%	59.0%	15.0%
	7	97,227	45,591	44,962	54.3%	41.0%	85.0%
<i>County Total</i>		<i>179,024</i>	<i>111,143</i>	<i>52,893</i>			

Source: 2020 Census PL94-171 P3 and P4 Tables

Only includes counties that were split by Districts 2 and 7

R. “Cooper 7” William Cooper’s 7th Plan: County Splits VAP (% of Total)

County Name	District	VAP			Percent VAP		Deviation	
		Total	WhiteNH	AP Black	WhiteNH	AP Black	WhiteNH	AP Black
Jefferson County	6	204,977	166,050	22,452	81.0%	11.0%	30.6%	-30.5%
	7	322,110	99,700	196,053	31.0%	60.9%	-19.5%	19.4%
<i>County Total</i>		527,087	265,750	218,505	50.4%	41.5%		
Mobile County	1	120,327	90,024	17,911	74.8%	14.9%	17.5%	19.7%
	2	199,100	93,184	92,450	46.8%	46.4%	10.6%	11.9%
<i>County Total</i>		319,427	183,208	110,361	57.4%	34.5%		
Tuscaloosa County	4	81,797	65,552	7,931	80.1%	9.7%	18.1%	19.8%
	7	97,227	45,591	44,962	46.9%	46.2%	15.2%	16.7%
<i>County Total</i>		179,024	111,143	52,893	62.1%	29.5%		

Source: 2020 Census PL94-171 P3 and P4 Tables

Only includes counties that were split by Districts 2 and 7

S. “Alabama 2021 Previous”: County Splits VAP (% of County)

County Name	District	VAP			Percent of County		
		Total	WhiteNH	AP Black	Total	WhiteNH	AP Black
Escambia County	1	27,994	17,256	8,586	98.0%	97.7%	98.4%
	2	581	409	140	2.0%	2.3%	1.6%
<i>County Total</i>		28,575	17,665	8,726			
Jefferson County	6	294,245	193,142	75,054	55.8%	72.7%	34.3%
	7	232,842	72,608	143,451	44.2%	27.3%	65.7%
<i>County Total</i>		527,087	265,750	218,505			
Montgomery County	2	128,413	54,562	60,925	72.4%	87.4%	61.0%
	7	49,014	7,869	39,011	27.6%	12.6%	39.0%
<i>County Total</i>		177,427	62,431	99,936			
Tuscaloosa County	4	32,093	27,012	2,601	17.9%	24.3%	4.9%
	7	146,931	84,131	50,292	82.1%	75.7%	95.1%
<i>County Total</i>		179,024	111,143	52,893			

Source: 2020 Census PL94-171 P3 and P4 Tables

Only includes counties that were split by Districts 2 and 7

T. “Alabama 2021 Previous”: County Splits VAP (% of Total)

County Name	District	VAP			Percent VAP		Deviation	
		Total	WhiteNH	AP Black	WhiteNH	AP Black	WhiteNH	AP Black
Escambia County	1	27,994	17,256	8,586	61.6%	30.7%	-0.2%	0.1%
	2	581	409	140	70.4%	24.1%	8.6%	-6.4%
<i>County Total</i>		28,575	17,665	8,726	61.8%	30.5%		
Jefferson County	6	294,245	193,142	75,054	65.6%	25.5%	15.2%	-15.9%
	7	232,842	72,608	143,451	31.2%	61.6%	-19.2%	20.2%
<i>County Total</i>		527,087	265,750	218,505	50.4%	41.5%		
Montgomery County	2	128,413	54,562	60,925	42.5%	47.4%	7.3%	-8.9%
	7	49,014	7,869	39,011	16.1%	79.6%	-19.1%	23.3%
<i>County Total</i>		177,427	62,431	99,936	35.2%	56.3%		
Tuscaloosa County	4	32,093	27,012	2,601	84.2%	8.1%	22.1%	-21.4%
	7	146,931	84,131	50,292	57.3%	34.2%	-4.8%	4.7%
<i>County Total</i>		179,024	111,143	52,893	62.1%	29.5%		

Source: 2020 Census PL94-171 P3 and P4 Tables

Only includes counties that were split by Districts 2 and 7

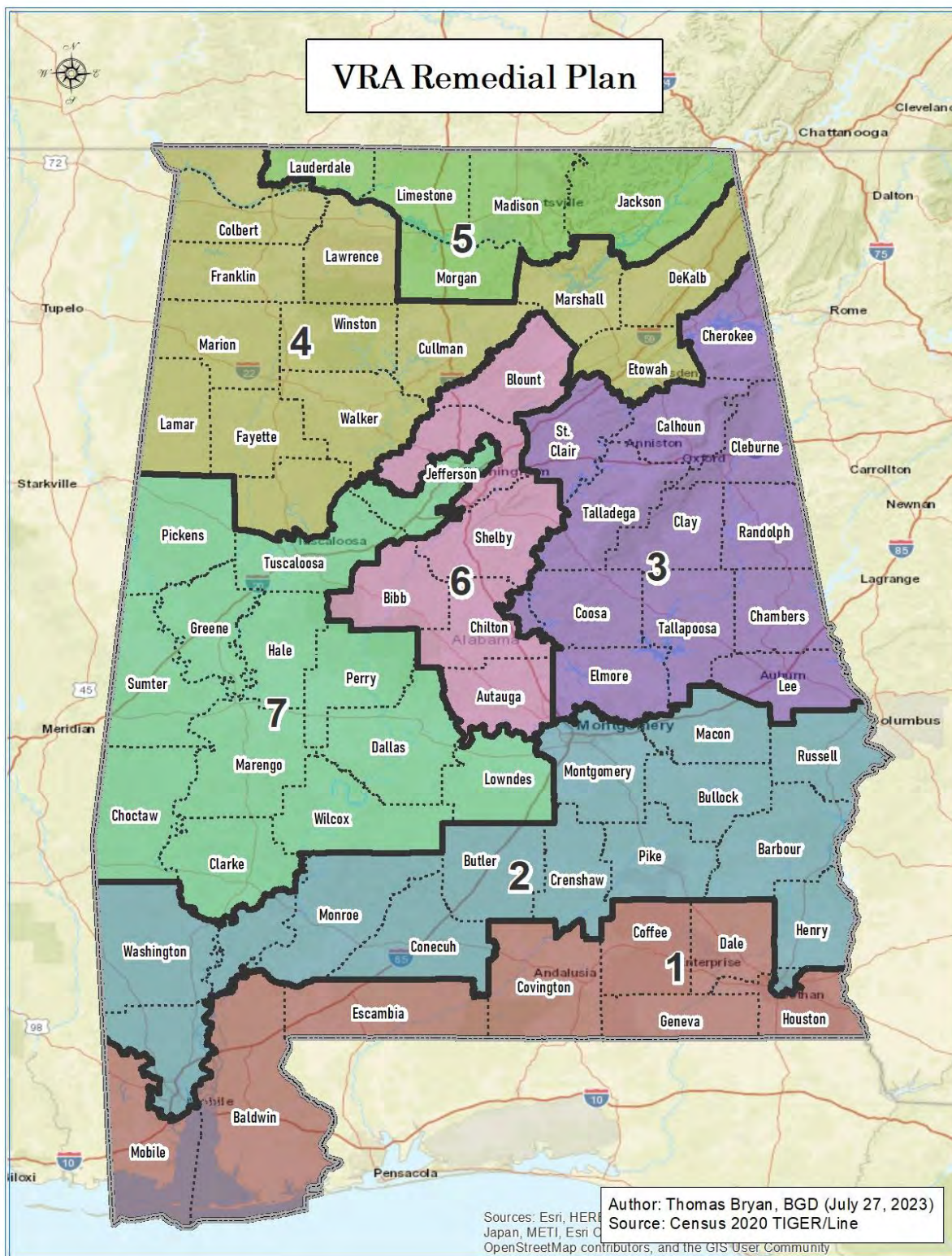
Appendix 3 Alabama Maps

Congressional Plans:

- A. “AL_2023” – The newly enacted Alabama congressional plan known as the Livingston 3 Congressional Plan
- B. “VRA_REM” – The 12th plan that the Milligan and Caster Plaintiffs together proposed to the Legislature last month known as the “VRA Plaintiffs Remedial Map”
- C. “Cooper 7” – The seventh plan prepared by Caster Plaintiffs’ expert William Cooper.
- D. City of Mobile – VRA Remedial Plan – Split Map
- E. City of Mobile – VRA Remedial Plan – Race Map

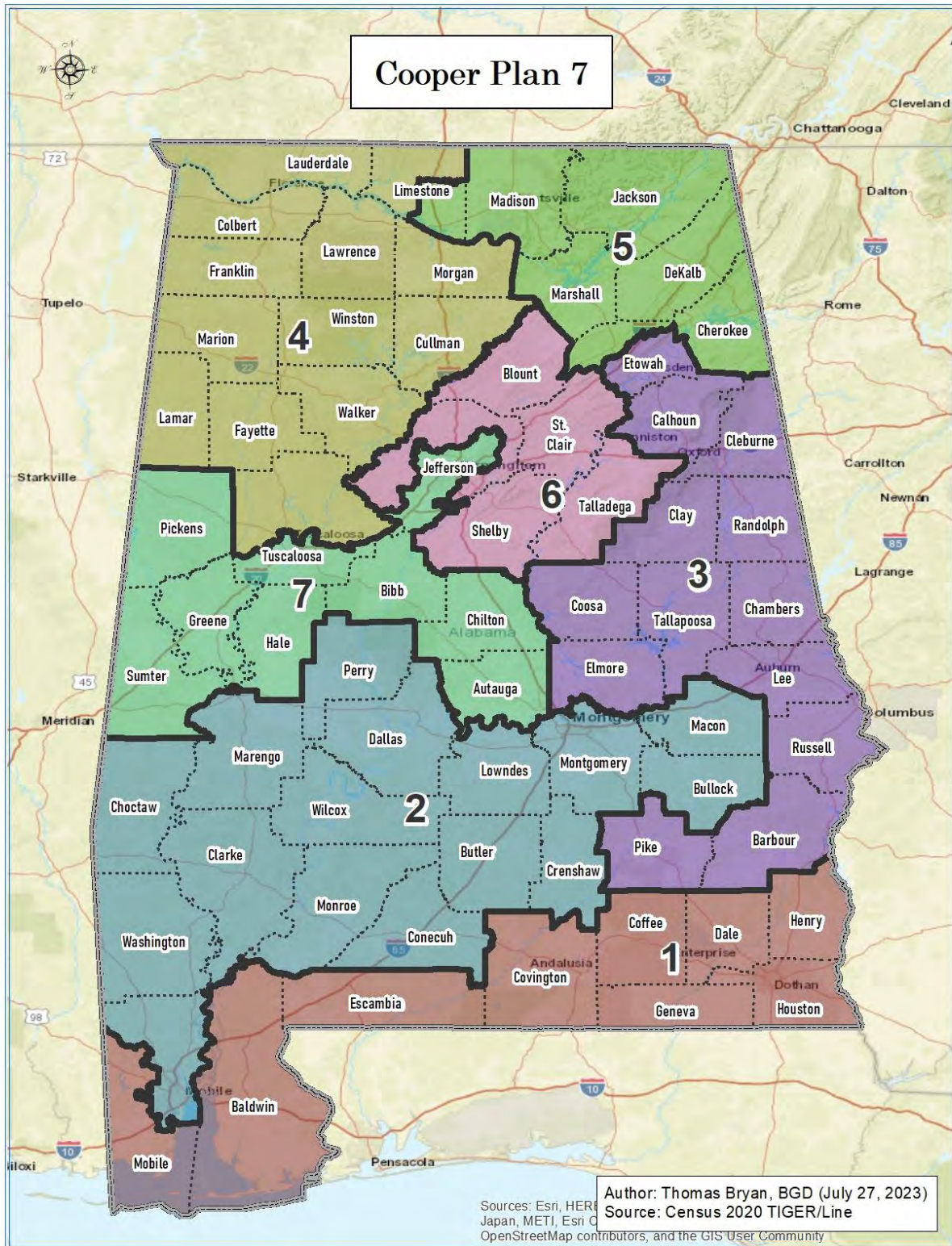


B. “VRA_REM” - also known as the “VRA Plaintiffs Remedial Map”



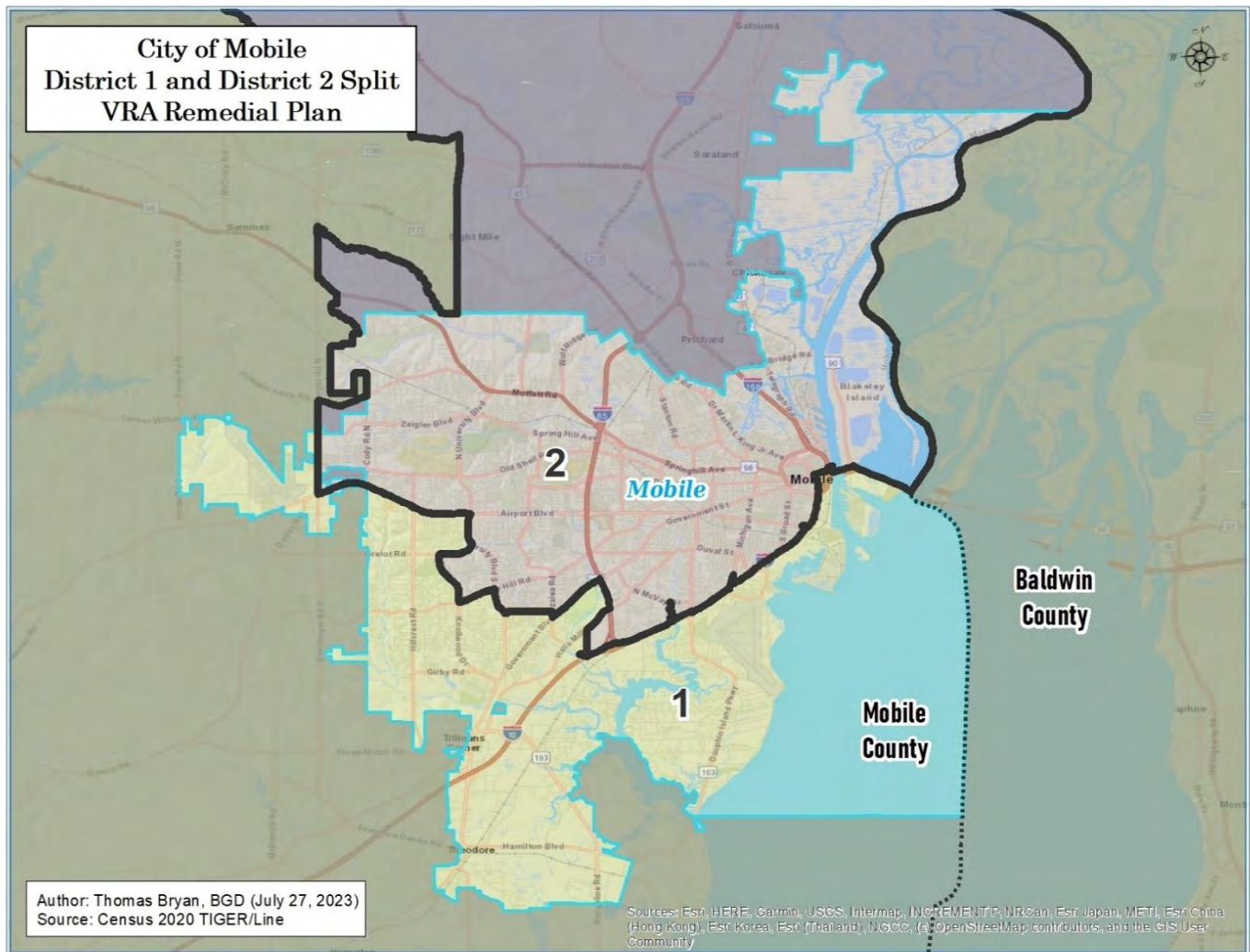
Source: Alabama Counsel for the Defendants

C. “Cooper 7” - The seventh plan prepared by Plaintiff’s expert William Cooper



Source: Alabama Counsel for the Defendants

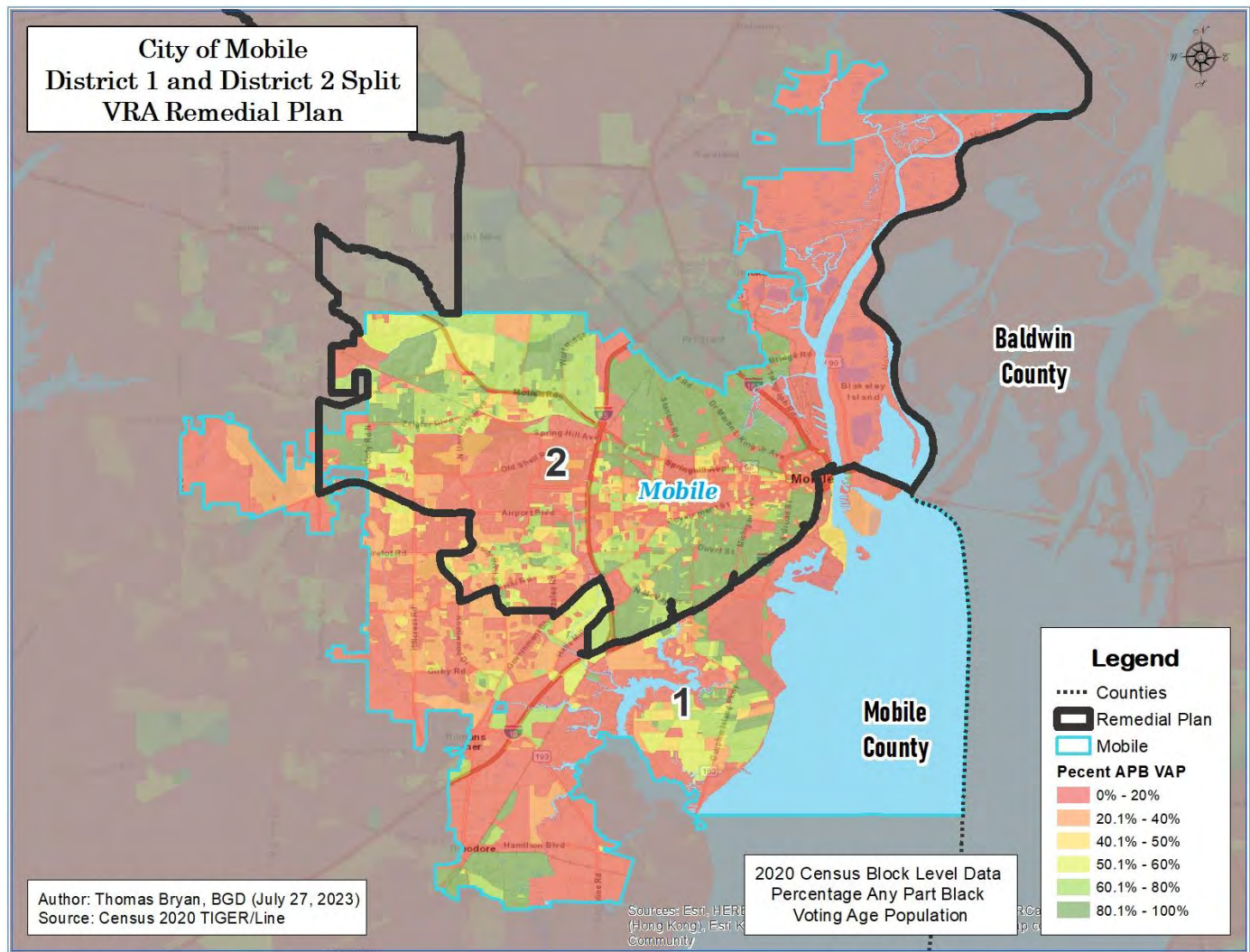
D. City of Mobile: “VRA_REM” VRA Remedial Plan - Split Map



Source: Alabama Counsel for the Defendants

* Note: the VRA_REM Plan is the only new plan that splits Mobile

E. City of Mobile: “VRA_REM” VRA Remedial Plan - Race Map



Source: Alabama Counsel for the Defendants, 2020 Census PL94171 P3 and P4 Tables

* Note: the VRA_REM Plan is the only new plan that splits Mobile

Appendix 4 Thomas Bryan CV

Thomas M. Bryan

13106 Dawnwood Terrace

Midlothian, VA 23114

425-466-9749

tom@bryangeodemo.com

Redistricting Résumé and C.V.

Introduction

I am an applied demographic, analytic and research professional who leads a team of bipartisan experts in state and local redistricting cases. I have subject matter expertise in political and school redistricting and Voting Rights Act related litigation, US Census Bureau data, geographic information systems (GIS), applied demographic techniques and advanced analytics.

Education & Academic Honors

2002 MS, Management and Information Systems - George Washington University

2002 GSA CIO University graduate* - George Washington University

1997 Graduate credit courses taken at University of Nevada at Las Vegas

1996 MUS (Master of Urban Studies) Demography and Statistics core - Portland State University

1992 BS, History - Portland State University

Online

ResearchGate: <https://www.researchgate.net/profile/Thomas-Bryan-6>

LinkedIn: <https://www.linkedin.com/in/thomas-bryan-424a6912>

Bryan GeoDemographics, January 2001-Current: Founder and Principal

Granted by the General Services Administration (GSA) and the Federal IT Workforce Committee of the CIO Council.

<http://www.gwu.edu/~mastergw/programs/mis/pr.html>

I founded Bryan GeoDemographics (BGD) in 2001 as a demographic and analytic consultancy to meet the expanding demand for advanced analytic expertise in applied demographic research and analysis. Since then, my consultancy has broadened to include expert support of political, state, local and school redistricting. Since 2001, BGD has undertaken over 150 such engagements in two broad areas:

- 1) state and local redistricting; and
- 2) applied demographic studies, including health sciences and municipal Infrastructure

The core of the BGD consultancy has been in state and local redistricting and bipartisan expert witness support of litigation. Engagements include:

State and Local Redistricting

- 2023: In the matter of *Navajo Nation v. San Juan County Board of Commissioners* in the US District Court for the District of New Mexico. Providing expert demographic and analytic litigation support to Defendants. Deposed in May 2023, expecting trial testimony in September 2023.
 - <https://dockets.justia.com/docket/new-mexico/nmdce/1:2022cv00095/470450>
- 2022: In the matter of *White v. Mississippi State Board of Election Commissioners* in United States District Court, Northern District of MS. In collaboration with demographic testifying expert Dr. David Swanson, on behalf of Defendants. Provided expert demographic and analytic litigation support of MS Supreme Court redistricting litigation.
 - <https://www.aclu-ms.org/en/cases/white-v-mississippi-board-election-commissioners>
- 2022: Retained as demographic and redistricting expert for the Louisiana Attorney General in *Robinson v. Ardoin* and *Galmon v. Ardoin* and related Louisiana redistricting litigation. Offering opinions on demography and redistricting for their congressional redistricting plan and Plaintiff's proposed illustrative plans as a testifying expert. SCOTUS hearing is pending. Testified before the 5th Circuit.
 - <https://news.ballotpedia.org/2022/04/04/louisiana-enacts-new-congressional-district-boundaries-after-legislature-overrides-governors-veto/>
- 2022: Retained by counsel as demographic and redistricting expert for the Kansas Legislature in support of *Rivera et al. v Schwab* litigation. Kansas Supreme Court found in favor of Kansas Legislature plan on June 21, 2022.
 - <https://thearp.org/litigation/rivera-v-schwab/>

- https://www.kscourts.org/KSCourts/media/KsCourts/Opinions/125092_1.pdf?ext=.pdf
- 2022: Retained by counsel as demographic and redistricting expert for the State of Michigan in the matter of *Banerian v. Benson* and related Michigan redistricting litigation. Offering opinions on demography and redistricting for Michigan's Congressional redistricting plan. Currently before SCOTUS pending jurisdictional statement.
 - <https://www.scotusblog.com/case-files/cases/banerian-v-benson/>
- 2021: Retained as demographic and redistricting expert for the Wisconsin Legislature in *Johnson v. Wisconsin Elections Commission*, No. 2021AP001450-OA (Wis. Supreme Court) and related Wisconsin redistricting litigation. Offering opinions on demography and redistricting for redistricting plans proposed as remedies in impasse suit. The Wisconsin Supreme Court decided in favor of the Democratic Governor's plan on March 2, 2022. This decision was appealed to SCOTUS. On March 25, 2022 - SCOTUS returned the case to the Wisconsin Supreme Court. On April 16, 2022, the Wisconsin Supreme Court found in favor of the Wisconsin Legislative plan and the case was resolved.
 - <https://www.wpr.org/us-supreme-court-rejects-legislative-map-drawn-evers-was-endorsed-wisconsin-supreme-court>
 - <https://www.nytimes.com/2022/04/15/us/wisconsin-districts-gerrymander-supreme-court.html>
- 2021: Retained as demographic and redistricting expert by counsel for Galveston County, TX. Galveston County, TX was later sued by the US Department of Justice (*United States v. Galveston County, Texas*) and is currently being tried by the U.S. District Court for the Southern District of Texas, Galveston Division.
 - <https://thearp.org/litigation/united-states-v-galveston-county-tex/>
- 2021: Retained as demographic and redistricting expert by the State of Alabama Attorney General's office. Currently serving as the State's demographic and redistricting testifying expert witness in the matters of *Milligan v. Merrill*, *Thomas v. Merrill* and *Singleton v. Merrill* over Alabama's Congressional redistricting initiatives. SCOTUS resolved the case for Plaintiffs in June 2023.
 - <https://www.nytimes.com/2022/02/07/us/politics/supreme-court-alabama-redistricting-congressional-map.html>
- 2021: Retained as nonpartisan demographic and redistricting expert by counsel in the State of North Carolina to prepare commissioner redistricting plans for Granville County, Harnett

County, Jones County and Nash County. Each proposed plan was approved and successfully adopted.

- 2021: Served as Consultant to the Arizona Independent Redistricting Commission, presenting “Pros and Cons of (Census data) Differential Privacy”. July 13, 2021.
 - <https://irc.az.gov/sites/default/files/meeting-agendas/Agenda%207.13.21.pdf>
- 2021: Retained as demographic and redistricting expert by Democratic Counsel for the State of Illinois in the case of *McConchie v. State Board of Elections*. Prepared expert report in defense of using the American Community Survey to comply with state constitutional
 - <https://redistricting.ils.edu/case/mcconchie-v-ill-state-board-of-elections/>.
- 2021: Retained by counsel for the Chairman and staff of the Texas House Committee on Redistricting as a consulting demographic expert. Texas House Bill 1 subsequently passed by the Legislature 83-63.
 - <https://capitol.texas.gov/BillLookup/History.aspx?LegSess=873&Bill=HB1>
- 2021: In the matter of the *State of Alabama, Representative Robert Aderholt, William Green and Camaran Williams v. the US Department of Commerce; Gina Raimondo; the US Census Bureau and Ron Jarmin* in US District Court of Alabama Eastern Division. Prepared a demographic report for Plaintiffs analyzing the effects of using Differential Privacy on Census Data in Alabama and was certified as an expert witness by the Court.
 - <https://www.alabamaag.gov/Documents/news/Census%20Data%20Manipulation%20Lawsuit.pdf>
 - <https://www.courtlistener.com/docket/59728874/3/6/the-state-of-alabama-v-united-states-department-of-commerce/>
- 2020: In the matter of *The Christian Ministerial Alliance (CMA), Arkansas Community Institute v. the State of Arkansas*. In collaboration with demographic testifying expert Dr. Peter Morrison, on behalf of Defendants. Providing demographic and analytic litigation support.
 - https://www.naacpldf.org/wp-content/uploads/CMA-v.-Arkansas_FILED-without-stamp.pdf
- 2020: In the matter of *Aguilar, Gutierrez, Montes, Palmer and OneAmerica v. Yakima County* in Superior Court of Washington under the Washington Voting Rights Act (“WVRA” Wash. Rev. Code § 29A.92.60). In collaboration with demographic testifying expert Dr. Peter Morrison, on behalf of Defendants. Providing demographic and analytic litigation support.

- <https://bloximages.newyork1.vip.townnews.com/yakimaherald.com/content/tncms/assets/v3/editorial/a/4e/a4e86167-95a2-5186-a86c-bb251bf535f1/5f0d01eec8234.pdf.pdf>
- 2018-2020: In the matter of *Rene Flores, Maria Magdalena Hernandez, Magali Roman, Make the Road New York, and New York Communities for Change v. Town of Islip, Islip Town Board, Suffolk County Board of Elections* in US District Court. On behalf of Defendants - provided a critical analysis of plaintiff's demographic and environmental justice analysis. The critique revealed numerous flaws in both the demographic analysis as well as the tenets of their environmental justice argument, which were upheld by the court. Ultimately developed mutually agreed upon plan for districting.
 - <https://nyelectionsnews.wordpress.com/2018/06/20/islip-faces-section-2-voting-rights-act-challenge/>
 - <https://casetext.com/case/flores-v-town-of-islip-3>
- 2017-2020 In the matter of *NAACP, Spring Valley Branch; Julio Clerveaux; Chevon Dos Reis; Eric Goodwin; Jose Vitelio Gregorio; Dorothy Miller; and Hillary Moreau v East Ramapo Central School District (Defendant)* in United States District Court Southern District Of New York (original decision May 25, 2020), later the U.S. Second Circuit Court of Appeals. On behalf of Defendants, developed mutually agreed upon district plan and provided demographic and analytic litigation support.
 - <https://www.lohud.com/story/news/education/2020/05/26/federal-judge-sides-naacp-east-ramapo-voting-rights-case/5259198002/>
- 2017-2020: In the matter of *Pico Neighborhood Association et al v. City of Santa Monica* brought under the California VRA. In collaboration with demographic testifying expert Dr. Peter Morrison, on behalf of Defendants. Providing demographic and analytic litigation support. Executed geospatial analysis to identify concentrations of Hispanic and Black CVAP to determine the impossibility of creating a minority majority district, and demographic analysis to show the dilution of Hispanic and Black voting strength in a district (vs at-large) system. Work contributed to Defendants prevailing in landmark ruling in the State of California Court of Appeal, Second Appellate District.
 - <https://www.santamonica.gov/press/2020/07/09/santa-monica-s-at-large-election-system-affirmed-in-court-of-appeal-decision>

- 2019: In the matter of *Johnson v. Ardoin / the State of Louisiana* in United States District Court. In collaboration with demographic testifying expert Dr. Peter Morrison, on behalf of Defendants. Provided expert demographic and analytic litigation support.
 - [https://www.brennancenter.org/sites/default/files/2019-10/2019-10-16-Johnson%20v %20Ardoin-132-Brief%20in%20Opposition%20to%20MTS.pdf](https://www.brennancenter.org/sites/default/files/2019-10/2019-10-16-Johnson%20v%20Ardoin-132-Brief%20in%20Opposition%20to%20MTS.pdf)
 - <https://casetext.com/case/johnson-v-ardoin>
- 2019: In the matter of *Suresh Kumar v. Frisco Independent School District et al.* in United States District Court. In collaboration with demographic testifying expert Dr. Peter Morrison, on behalf of Defendants. Provided expert demographic and analytic litigation support. Successfully defended.
 - <https://www.friscoisd.org/news/district-headlines/2020/08/04/frisco-isd-wins-voting-rights-lawsuit>
 - <https://www.courthousenews.com/wp-content/uploads/2020/08/texas-schools.pdf>
- 2019: At the request of the City of Frisco, TX in collaboration with demographic testifying expert Dr. Peter Morrison. Provided expert demographic assessment of the City's potential liability regarding a potential Section 2 Voting Rights challenge.
- 2019: In the matter of *Vaughan v. Lewisville Independent School District et al.* in United States District Court. In collaboration with demographic testifying expert Dr. Peter Morrison, on behalf of Defendants. Provided expert demographic and analytic litigation support.
 - <https://www.nbcdfw.com/news/local/lawsuit-filed-against-lewisville-independent-school-district/1125/>
- 2019: In the matter of *Holloway, et al. v. City of Virginia Beach* in United States District Court, Eastern District of Virginia. In collaboration with demographic testifying expert Dr. Peter Morrison, on behalf of Defendants. Provided expert demographic and analytic litigation support.
 - <https://campaignlegal.org/cases-actions/holloway-et-al-v-city-virginia-beach>
- 2018: At the request of Kirkland City, Washington in collaboration with demographic testifying expert Dr. Peter Morrison. Performed demographic studies to inform the City's governing board's deliberations on whether to change from at-large to single-member district elections following enactment of the Washington Voting Rights Act. Analyses included gauging the voting strength of the City's Asian voters and forming an illustrative district concentrating Asians; and compared minority population concentration in pre- and post-annexation city territory.

- https://www.kirklandwa.gov/Assets/City+Council/Council+Packets/021919/8b_SpecialPresentations.pdf#:~:text=RECOMMENDATION%3A%20It%20is%20recommended%20that%20City%20Council%20receive,its%20Councilmembers%20on%20a%20citywide%2C%20at-%20large%20basis
- 2018: At the request of Tacoma WA Public Schools in collaboration with demographic testifying expert Dr. Peter Morrison. Created draft concept redistricting plans that would optimize minority population concentrations while respecting incumbency. Client used this plan as a point of departure for negotiating final boundaries among incumbent elected officials.
- 2018: At the request of the City of Mount Vernon, Washington., in collaboration with demographic testifying expert Dr. Peter Morrison. Prepared a numerous draft concept plans that preserves Hispanics' CVAP concentration. Client utilized draft concept redistricting plans to work with elected officials and community to agree upon the boundaries of six other districts to establish a proposed new seven-district single-member district plan.
- 2017: In the matter of *Pico Neighborhood Association v. City of Santa Monica*. In collaboration with demographic testifying expert Dr. Peter Morrison. Worked to create draft district concept plans that would satisfy Plaintiff's claim of being able to create a majority-minority district to satisfy Gingles prong 1. Such district was not possible, and the Plaintiffs case ultimately failed in California State Court of Appeals Second Appellate District.
 - <https://law.justia.com/cases/california/court-of-appeal/2020/b295935.html>
- 2017: In the matter of *John Hall, Elaine Robinson-Strayhorn, Lindora Toudle, Thomas Jerkins, v. Jones County Board of Commissioners*. In collaboration with demographic testifying expert Dr. Peter Morrison. Worked to create draft district concept plans to resolve claims of discrimination against African Americans attributable to the existing at-large voting system.
 - <http://jonescountync.gov/vertical/sites/%7B9E2432B0-642B-4C2F-A31B-CDE7082E88E9%7D/uploads/2017-02-13-Jones-County-Complaint.pdf>
- 2017: In the matter of *Harding v. County of Dallas* in U.S. District Court. In collaboration with demographic testifying expert Dr. Peter Morrison. In a novel case alleging discrimination *against* White, non-Hispanics under the VRA, I was retained by plaintiffs to create redistricting scenarios with different balances of White-non-Hispanics, Blacks and Hispanics. Deposed and provided expert testimony on the case.
 - <https://www.courthousenews.com/wp-content/uploads/2018/08/DallasVoters.pdf>

- 2016: Retained by The Equal Voting Rights Institute to evaluate the Dallas County Commissioner existing enacted redistricting plan. In collaboration with demographic testifying expert Dr. Peter Morrison, the focus of our evaluation was twofold: (1) assess the failure of the Enacted Plan (EP) to meet established legal standards and its disregard of traditional redistricting criteria; (2) the possibility of drawing an alternative Remedial Plan (RP) that did meet established legal standards and balance traditional redistricting criteria.
 - <http://equalvotingrights.org/wp-content/uploads/2015/01/Complaint.pdf>
- 2016: In the matter of *Jain v. Coppell ISD et al* in US District Court (Texas). In collaboration with demographic testifying expert Dr. Peter Morrison. Consulted in defense of Coppell Independent School District (Dallas County, TX) to resolve claims of discriminatory at-large voting system affecting Asian Americans. While Asians were shown to be sufficiently numerous, I was able to demonstrate that they were not geographically concentrated - thus successfully proving the Gingles 1 precondition could not be met resulting the complaint being withdrawn.
 - <https://dockets.justia.com/docket/texas/txndce/3:2016cv02702/279616>
- 2016: In the matter of *Feldman et al v. Arizona Secretary of State's Office et al* in SCOTUS. In collaboration with demographic testifying expert Dr. Peter Morrison, on behalf of Defendants. Provided analytics on the locations and proximal demographics of polling stations that had been closed subsequent to *Shelby County v. Holder* (2013) which eliminated the requirement of state and local governments to obtain federal preclearance before implementing any changes to their voting laws or practices. Subsequently provided expert point of view on disparate impact as a result of H.B. 2023. Advised Maricopa County officials and lead counsel on remediation options for primary polling place closures in preparation for 2016 elections.
 - <https://arizonadailyindependent.com/2016/04/05/doj-wants-information-on-maricopa-county-election-day-disaster/>
 - https://www.supremecourt.gov/DocketPDF/19/19-1257/142431/20200427105601341_Brnovich%20Petition.pdf
- 2016: In the matter of *Glatt v. City of Pasco, et al.* in US District Court (Washington). In collaboration with demographic testifying expert Dr. Peter Morrison, on behalf of Defendants. Provided analytics and draft plans in defense of the City of Pasco. One draft plan was adopted, changing the Pasco electoral system from at-large to a six-district + one at large.

- <https://www.pasco-wa.gov/DocumentCenter/View/58084/Glatt-v-Pasco---Order---January-27-2017?bidId=>
- <https://www.pasco-wa.gov/923/City-Council-Election-System>
- 2015: In the matter of *The League of Women Voters et al. v. Ken Detzner et al* in the Florida Supreme Court. In collaboration with demographic testifying expert Dr. Peter Morrison, on behalf of Defendants. Performed a critical review of Florida state redistricting plan and developed numerous draft concept plans.
 - <http://www.miamiherald.com/news/politics-government/state-politics/article47576450.html>
 - https://www.floridasupremecourt.org/content/download/322990/2897332/file/OP-SC14-1905_LEAGUE%20OF%20WOMEN%20VOTERS_JULY09.pdf
- 2015: In the matter of *Evenwel, et al. v. Abbott / State of Texas* in SCOTUS. In collaboration with demographic testifying expert Dr. Peter Morrison, on behalf of Plaintiffs. Successfully drew map for the State of Texas balancing both total population from the decennial census and citizen population from the ACS (thereby proving that this was possible). We believe this may be the first and still only time this technical accomplishment has been achieved in the nation at a state level. Coauthored SCOTUS Amicus Brief of Demographers.
 - https://www.supremecourt.gov/opinions/15pdf/14-940_ed9g.pdf
 - <https://www.scotusblog.com/wp-content/uploads/2015/08/Demographers-Amicus.pdf>
- 2015: In the matter of *Ramos v. Carrollton-Farmers Branch Independent School District* in US District Court (Texas). In collaboration with demographic testifying expert Dr. Peter Morrison, on behalf of Defendants. Used 2009-2013 5-year ACS data to generate small-area estimates of minority citizen voting age populations and create a variety of draft concept redistricting plans. Case was settled decision in favor of a novel cumulative voting system.
 - https://starlocalmedia.com/carrolltonleader/c-fb-isd-approves-settlement-in-voting-rights-lawsuit/article_92c256b2-6e51-11e5-adde-a70cbe6f9491.html
- 2015: In the matter of *Glatt v. City of Pasco et al.* in US District Court (Washington). In collaboration with demographic testifying expert Dr. Peter Morrison, on behalf of Defendants. Consulted on forming new redistricting plan for city council review. One draft concept plan was agreed to and adopted.
 - <https://www.pasco-wa.gov/923/City-Council-Election-System>

- 2015: At the request of Waterbury, Connecticut, in collaboration with demographic testifying expert Dr. Peter Morrison. As a result of a successful ballot measure to convert Waterbury from an at-large to a 5-district representative system, consulted an extensive public outreach and drafted numerous concept plans. The Waterbury Public Commission considered alternatives and recommended one of our plans, which the City adopted.
 - <http://www.waterburyobserver.org/wod7/node/4124>
- 2014-15: In the matter of *Montes v. City of Yakima* in US District Court (Washington). In collaboration with demographic testifying expert Dr. Peter Morrison, on behalf of Defendants. Analytics later used to support the Amicus Brief of the City of Yakima, Washington in the U.S. Supreme Court in *Evenwel v. Abbott*.
 - <https://casetext.com/case/montes-v-city-of-yakima-3>
- 2014: In the matter of *Harding v. County of Dallas* in the US Court of Appeals Fifth Circuit. In the novel case of Anglo plaintiffs attempting to claim relief as protected minorities under the VRA. Served as demographic expert in the sole and limited capacity of proving Plaintiff claim under Gingles prong 1. Claim was proven. Gingles prongs 2 and 3 were not and the case failed.
 - <https://electionlawblog.org/wp-content/uploads/Dallas-opinion.pdf>
- 2014: At the request of Gulf County, Florida in collaboration with demographic testifying expert Dr. Peter Morrison. Upon the decision of the Florida Attorney General to force inclusion of prisoners in redistricting plans – drafted numerous concept plans for the Gulf County Board of County Commissioners, one of which was adopted.
 - <http://myfloridalegal.com/ago.nsf/Opinions/B640990E9817C5AB85256A9C00631387>
- 2012-2015: In the matter of *GALEO and the City of Gainesville* in Georgia. In collaboration with demographic testifying expert Dr. Peter Morrison, on behalf of Defendants -consulted on defense of existing at-large city council election system.
 - <http://atlantaprogressivenews.com/2015/06/06/galeo-challenges-at-large-voting-in-city-of-gainesville/>
- 2012-: Confidential. Consulted (through Morrison & Associates) to support plan evaluation, litigation, and outreach to city and elected officials (1990s - mid-2000s). Executed first statistical analysis of the American Community Survey to determine probabilities of minority-majority populations in split statistical/administrative units of geography, as well as the

cumulative probabilities of a “false-negative” minority-majority reading among multiple districts.

- 2011-: Confidential. Consulted on behalf of plaintiffs in Committee (Private) vs. State Board of Elections pertaining to citizen voting-age population. Evaluated testimony of defense expert, which included a statistical evaluation of Hispanic estimates based on American Community Survey (ACS) estimates. Analysis discredited the defendant’s expert’s analysis and interpretation of the ACS.

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School Redistricting and Municipal Infrastructure Projects

BGD worked with McKibben Demographics from 2004-2012 providing expert demographic and analytic support. These engagements involved developing demographic profiles of small areas to assist in building fertility, mortality and migration models used to support long-range population forecasts and infrastructure analysis in the following communities:

Fargo, ND 10/2012	Charleston, SC 8/08
Columbia, SC 3/2012	Woodland, IL 7/08
Madison, MS 9/2011	White County, IN 6/08
Rockwood, MO 3/2011	Gurnee District 56, IL 5/08
Carthage, NY 3/2011	Central Noble, IN 4/08
NW Allen, IN 9/2010	Charleston First Baptist, SC 4/08
Fayetteville, AR 7/2010	Edmond, OK 4/08
Atlanta, GA 2/2010	East Noble, IN 3/08
Caston School Corp., IN 12/09	Mill Creek, IN 5/06
Rochester, IN 12/09	Rhode Island 5/06
Urbana, IL 11/09	Garrett, IN 3/08
Dekalb, IL 11/09	Meridian, MS 3/08
Union County, NC 11/09	Madison County, MS 3/08
South Bend, IN 8/09	Charleston 12/07
Lafayette, LA 8/09	Champaign, IL 11/07
Fayetteville, AR 4/09	Richland County, SC 11/07
New Orleans, LA 4/09	Lake Central, IN 11/07
Wilmington New Hanover 3/09	Columbia, SC 11/07
New Berry, SC 12/08	Duneland, IN 10/07
Corning, NY 11/08	Union County, NC 9/07
McLean, IL 11/08	Griffith, IN 9/07
Lakota 11/08	Rensselaer, IN 7/07
Greensboro, NC 11/08	Hobart, IN 7/07

Guilford 9/08

Buffalo, NY 7/07

Lexington, SC 9/08

Oak Ridge, TN 5/07

Plymouth, IN 9/08

Westerville, OH 4/07

Projects Continued

Baton Rouge, LA 4/07	Allen County 11/05
Cobb County, GA 4/07	Bremen, IN 11/05
Charleston, SC District 20 4/07	Smith Green, IN 11/05
McDowell County, NC 4/07	Steuben, IN 11/05
East Allen, IN 3/07	Plymouth, IN 11/05
Mt. Pleasant, SC District 2 2/07	North Charleston, SC 11/05
Peach County, GA 2/07	Huntsville, AL 10/05
North Charleston, SC District 4 2/07	Dekalb, IN 9/05
Madison County, MS revisions 1/07	East Noble, IN 9/05
Portage County, IN 1/07	Valparaiso, IN 6/05
Marietta, GA 1/07	Penn-Harris-Madison, IN 7/05
Porter, IN 12/06	Elmira, NY 7/05
Harrison County, MS 9/06	South Porter/Merriville, IN 7/05
New Albany/Floyd County, IN 9/06	Fargo, ND 6/05
North Charleston, SC 9/06	Washington, IL 5/05
Fairfax, VA 9/06	Addison, NY 5/05
Coleman 8/06	Kershaw, SC 5/05
DeKalb, GA 8/06	Porter Township, IN 3/05
LaPorte, IN 7/06	Portage, WI 1/05
NW Allen, IN 7/06	East Stroudsburg, PA 12/04
Brunswick, NC 7/06	North Hendricks, IN 12/04
Carmel Clay, IN 7/06	Sampson/Clinton, NC 11/04
Calhoun, SC 5/06	Carmel Clay Township, IN 9/04
Hamilton Community Schools, IN 4/06	SW Allen County, IN 9/04
Dilworth, MN 4/06	East Porter, IN 9/04
Hamilton, OH 2/06	Allen County, IN 9/04
	Duplin, NC 9/04

West Noble, IN 2/06

New Orleans, LA 2/06

Norwell, IN 2/06

Middletown, OH 12/05

West Noble, IN 11/05

Madison, MS 11/05

Fremont, IN 11/05

Concord, IN 11/05

Hamilton County / Clay TSP, IN 9/04

Hamilton County / Fall Creek TSP, IN 9/04

Decatur, IN 9/04

Chatham County / Savannah, GA 8/04

Evansville, IN 7/04

Madison, MS 7/04

Vanderburgh, IN 7/04

New Albany, IN 6/04

Publications

- "Forensic Demography: An Overlooked Area of Practice among Applied Demographers" *Review of Economics and Finance* (with Emeritus David A. Swanson and Jeff Tayman). January 2023.
 - <https://refpress.org/ref-vol20-a94/>
- In the matter of *Banerian v. Benson*, No. 1:22-CV-00054-RMK-JTN-PLM, in US District Court of the Western District of Michigan. Declaration of Thomas Bryan. Assessing the performance of plaintiff and defendant plans against the Michigan Constitution and traditional redistricting principles. February 2022.
- In the matter of *Johnson v. Wisconsin Elections Commission*, No. 2021AP001450OA, in the Supreme Court of Wisconsin. Declaration and Rebuttal Declaration of Thomas M. Bryan. Assessing the features of proposed redistricting plans by the Wisconsin Legislature and other parties to the litigation. December 2021.
- In the matters of *Caster v. Merrill* and *Milligan v. Merrill* in US District Court of the Northern District of Alabama. Civil Action NOs. 2:21-cv-01536-AMM; 2:21-cv-01530-AMM. Declaration of Thomas Bryan. Assessing the compliance and performance of the demonstrative VRA congressional plans of Dr. Moon Duchin and Mr. William Cooper. December 2021.
- In the matter of *Milligan v. Merrill* in US District Court of the Northern District of Alabama. Civil Action NO. 2:21-cv-01530-AMM. Declaration of Thomas M. Bryan. Assessing the compliance and performance of the Milligan and State of Alabama congressional redistricting plans. December 2021.
- In the matter of *Singleton v. Merrill* in US District Court of the Northern District of Alabama. Civil Action NO. 2:21-cv-01291-AMM. Declaration of Thomas M. Bryan. Assessing the compliance and performance of the Singleton and State of Alabama congressional redistricting plans. December 2021.
- "The Effect of the Differential Privacy Disclosure Avoidance System Proposed by the Census Bureau on 2020 Census Products: Four Case Studies of Census Blocks in Alaska" PAA Affairs, (with D. Swanson and Richard Sewell, Alaska Department of Transportation and Public Facilities). March 2021.
 - <https://www.populationassociation.org/blogs/paa-web1/2021/03/30/the-effect-of-the-differential-privacy-disclosure>

- <https://redistrictingonline.org/2021/03/31/study-census-bureaus-differential-privacy-disclosure-avoidance-system-produces-concerning-results-for-local-jurisdictions/>
- <https://www.ncsl.org/research/redistricting/differential-privacy-for-census-data-explained.aspx>
- In the matter of the *State of Alabama, Representative Robert Aderholt, William Green and Camaran Williams v. the US Department of Commerce; Gina Raimondo; the US Census Bureau and Ron Jarmin* in US District Court of Alabama Eastern Division. Declaration of Thomas M. Bryan, Exhibit 6. Civil Action NO. 3:21-CV-211, United States District Court for Middle Alabama, Eastern Division. Assessing the impact of the U.S. Census Bureau’s approach to ensuring respondent privacy and Title XIII compliance by using a disclosure avoidance system involving differential privacy. March 2021.
 - <https://redistricting.ils.edu/wp-content/uploads/AL-commerce2-20210311-PI.zip>
 - <https://www.alabamaag.gov/Documents/news/Census%20Data%20Manipulation%20Lawsuit.pdf>
 - <https://www.courtlistener.com/docket/59728874/3/6/the-state-of-alabama-v-united-states-department-of-commerce/>
- Peter A. Morrison and Thomas M. Bryan, Redistricting: A Manual for Analysts, Practitioners, and Citizens (2019). Springer Press: Cham Switzerland.
- “From Legal Theory to Practical Application: A How-To for Performing Vote Dilution Analyses.” *Social Science Quarterly*. (with M.V. Hood III and Peter Morrison). March 2017
- In the Supreme Court of the United States *Sue Evenwel, Et Al., Appellants, V. Greg Abbott, in his official capacity as Governor of Texas, et al., Appellees. On appeal from the United States District Court for the Western District of Texas. Amicus Brief of Demographers Peter A. Morrison, Thomas M. Bryan, William A. V. Clark, Jacob S. Siegel, David A. Swanson, and The Pacific Research Institute - As amici curiae* in support of Appellants. August 2015.
 - www.scotusblog.com/wp-content/uploads/2015/08/Demographers-Amicus.pdf
- Workshop on the Benefits (and Burdens) of the American Community Survey, Case Studies/Agenda Book 6 “Gauging Hispanics’ Effective Voting Strength in Proposed Redistricting Plans: Lessons Learned Using ACS Data.” June 14–15, 2012
 - <http://docplayer.net/8501224-Case-studies-and-user-profiles.html>

- “Internal and Short Distance Migration” by Bryan, Thomas in J. Siegel and D. Swanson (eds.) The Methods and Materials of Demography, Condensed Edition, Revised. (2004). Academic/Elsevier Press: Los Angeles (with D. Swanson and P. Morrison).
- “Population Estimates” by Bryan, Thomas in J. Siegel and D. Swanson (eds.) The Methods and Materials of Demography, Condensed Edition, Revised. (2004). Academic/Elsevier Press: Los Angeles (with D. Swanson and P. Morrison).
- Bryan, T. (2000). U.S. Census Bureau Population estimates and evaluation with loss functions. *Statistics in Transition*, 4, 537–549.

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Professional Presentations and Conference Participation

- 2023 Population Association of America Applied Demography Conference, “Uses of Census Data and New Analytical Approaches for Redistricting” session. Annapolis, MD, February 2023.
 - <https://www.populationassociation.org/events-publications/adc>
 - “Differences in CVAP and VAP Reported by the USCB and the Impact on Redistricting and Changing Multi-Race Definitions and the Impact on Redistricting”
 - “DOJ Section 2 Data Requirements vs Reality and the Impact on Redistricting”
- 2022 Southern Demographic Association Meetings. “Census 2020 and Political Redistricting” session. Knoxville, TN, October 2022.
 - https://sda-demography.org/resources/Documents/SDA%202022%20Preliminary%20ProgramVfinal_V12.pdf
 - “Addressing Latent Demographic Factors in Redistricting: An Instructional Case” (with Dr. Peter Morrison)
- “Analysis of Differential Privacy and its Impacts on Redistricting” Presented as invited expert on the Panel on the 2020 Census at the American Statistical Association JSM meetings, Washington DC August 8, 2022.
 - <https://www2.amstat.org/meetings/jsm/2022/onlineprogram/AbstractDetails.cfm?abstractid=323887>
- “Re-purposing Record Matching Algorithms to assess the effect of Differential Privacy on 2020 Small Area Census Data” SAE 2022: Small Area Estimation, Surveys and Data Science University of Maryland, College Park, USA 23 - 27 May, 2022. With Dr. David Swanson.
 - <https://sae2022.org/program>
- “Redistricting 101: A Tutorial” 2022 Population Association of America Applied Demography Conference, February 2022. With Dr. Peter Morrison.
 - <https://www.populationassociation.org/paa2022/home>
- Session Chairman on Invited Session “Assessing the Quality of the 2020 Census”, including Census Director Ron Jarmin at the 2020 Population Association of America meeting May 5, 2021.
 - <https://paa2021.secure-platform.com/a/organizations/main/home>
- “The Effect of the Differential Privacy Disclosure Avoidance System Proposed by the Census Bureau on 2020 Census Products: Four Case Studies of Census Blocks in Alaska”. 2021

American Statistical Association - Symposium on Data Science and Statistics (ASA-SDSS). With Dr. David Swanson.

- <https://ww2.amstat.org/meetings/sdss/2021/index.cfm>
- “New Technical Challenges in Post-2020 Redistricting” 2020 Population Association of America Applied Demography Conference, 2020 Census Related Issues, February 2021. With Dr. Peter Morrison.
- “Tutorial on Local Redistricting” 2020 Population Association of America Applied Demography Conference, February 2021. With Dr. Peter Morrison.
- “Demographic Constraints on Minority Voting Strength in Local Redistricting Contexts” 2019 Southern Demographic Association meetings (coauthored with Dr. Peter Morrison) New Orleans, LA, October 2019. Winner of annual E. Walter Terrie award for best state and local demography presentation.
 - <http://sda-demography.org/2019-new-orleans>
- “Applications of Big Demographic Data in Running Local Elections” 2017 Population and Public Policy Conference, Houston, TX.
- “Distinguishing ‘False Positives’ Among Majority-Minority Election Districts in Statewide Congressional Redistricting,” 2017 Southern Demographic Association meetings (coauthored with Dr. Peter Morrison) Morgantown, WV.
- “Devising a Demographic Accounting Model for Class Action Litigation: An Instructional Case” 2016 Southern Demographic Association (with Peter Morrison), Athens, GA.
- “Gauging Hispanics’ Effective Voting Strength in Proposed Redistricting Plans: Lessons Learned Using ACS Data.” 2012 Conference of the Southern Demographic Association, Williamsburg, VA.
- “Characteristics of the Arab-American Population from Census 2000 and 1990: Detailed Findings from PUMS.” 2004 Conference of the Southern Demographic Association, (with Samia El-Badry) Hilton Head, SC.
- “Small-Area Identification of Arab American Populations,” 2004 Conference of the Southern Demographic Association, Hilton Head, SC.
- “Applied Demography in Action: A Case Study of Population Identification.” 2002 Conference of the Population Association of America, Atlanta, GA.

Professional Conference Chairs, Peer Reviews and Conference Discussant Roles

- Session Chairman “Uses of Census Data and New Analytical Approaches for Redistricting” at the 2022 Population Association of America Applied Demographic meeting February 7-9 Annapolis, MD.
 - <https://www.populationassociation.org/events-publications/adc>
- Session Chairman on Invited Session “Assessing the Quality of the 2020 Census”, including Census Director Ron Jarmin at the 2020 Population Association of America meeting May 5, 2021. Virtual.
 - <https://paa2021.secure-platform.com/a/organizations/main/home>
- “The Historical Roots of Contentious Litigation Over Census Counts in the Late 20th Century”. Peer reviewer for presentation at the Hawaii International Conference on the Social Sciences, Honolulu, Hawaii, June 17-19, 2004 with David A. Swanson and Paula A. Walashek.
- 2004 - Population Research and Policy Review External Peer Reviewer / MS #253 “A New Method in Local Migration and Population Estimation”.
- Session Discussant on “Spatial Demography” at the 2003 Conference of the Southern Demographic Association, Arlington, VA.
- Subject Moderator at the International Program Center (IPC) 2000 Summer Workshop on Subnational Population Projections for Planning, Suitland, MD.
- Session Chairman on “Population Estimates: New Evaluation Studies” at the 2002 Conference of the Southern Demographic Association, Austin, TX.
- Conference Session Chairman at the 2000 Conference of the Federal Forecasters Conference (FFC), Washington, DC.
- Session Discussant on “New Developments in Demographic Methods” at the 2000 Conference of the Southern Demographic Association, New Orleans, LA.
- Panel Discussant on GIS Applications in Population Estimates Review at the 2000 Conference of the Population Association of America, Los Angeles, CA.
- Panel Discussant on Careers in Applied Demography at the 2000 Conference of the Population Association of America, Los Angeles, CA.

Primary Software Competencies

ESRI ArcGIS: advanced

SAS: intermediate

Microsoft Office: advanced

Professional Affiliations

American Statistical Association (Member)

Population Association of America (Member)

Southern Demographic Association (Member)

Relevant Work Experience

January 2001- April 2003 ESRI Business Information Solutions / Demographer

Responsibilities included demographic data management, small-area population forecasting, IS management and software product and specification development. Additional responsibilities included developing GIS-based models of business and population forecasting, and analysis of emerging technology and R&D / testing of new GIS and geostatistical software.

May 1998-January 2001 U.S. Census Bureau / Statistician

Responsibilities: developed and refined small area population and housing unit estimates and innovative statistical error measurement techniques in support of the Population Estimates Program and the Current Population Survey.

Service

Eagle Scout, 1988, Boy Scouts of America. Member of the National Eagle Scout Association. Involved in leadership of the Boy Scouts of America Heart of Virginia Council.



References

Dr. David Swanson

Professional Peer

david.swanson@ucr.edu

951-534-6336

Dr. Peter Morrison

Professional Peer

petermorrison@me.com

310-266-9580