

**IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF ALABAMA
SOUTHERN DIVISION**

MARCUS CASTER, LAKEISHA
CHESTNUT, BOBBY LEE DUBOSE,
BENJAMIN JONES, RODNEY ALLEN
LOVE, MANASSEH POWELL,
RONALD SMITH, and WENDELL
THOMAS,

Plaintiffs,

v.

JOHN H. MERRILL, in his official
capacity as Alabama Secretary of State,

Defendant.

Case No. 2:21-CV-1536-AMM

DECLARATION OF WILLIAM S. COOPER

WILLIAM S. COOPER, acting in accordance with 28 U.S.C. § 1746,
Federal Rule of Civil Procedure 26(a)(2)(B), and Federal Rules of Evidence 702
and 703, does hereby declare and say:

I. INTRODUCTION

1. My name is William S. Cooper. I have a B.A. in Economics from Davidson College. As a private consultant, I currently serve as a demographic and redistricting expert for the Plaintiffs. I am being compensated at a rate of \$150 per hour. No part of my compensation is dependent upon the conclusions that I reach or the opinions that I offer.

(a) Redistricting Experience

2. I testified during the preliminary injunction phase of this case on January 5, 2022. I also filed declarations in this matter on December 10, 2021 and December 20, 2021.

3. I have testified at trial as an expert witness on redistricting and demographics in federal courts in about 57 voting rights cases since the late 1980s. Seven of these lawsuits resulted in changes to statewide legislative boundaries: *Rural West Tennessee African-American Affairs Council, Inc. v. McWhorter*, No. 92-cv-2407 (W.D. Tenn.); *Old Person v. Brown*, No. 96-cv-0004 (D. Mont.); *Bone Shirt v. Hazeltine*, No. 01-cv-3032 (D.S.D.); *Alabama Legislative Black Caucus v. Alabama*, No. 12-cv-691 (M.D. Ala.); *Thomas v. Reeves*, No. 18-cv-441 (S.D. Miss.); *Caster v. Merrill*, No. 21-1356-AMM (N.D. Ala.); *Pendergrass v. Raffensperger*, No. 21-05337-SCJ (N.D. Ga.); and *Alpha Phi Alpha Fraternity v. Raffensperger*, No. 21-05339-SCJ (N.D. Ga.). In *Bone Shirt v. Hazeltine*, the court adopted the remedial plan I developed. Approximately 27 of the cases where I provided trial testimony led to changes in local election district plans.

4. Since the release of the 2020 Census, I have testified at trial as an expert witness in redistricting and demographics in nine cases challenging district boundaries under Section 2 of the Voting Rights Act: *Caster v. Merrill*, No. 21-

1356-AMM (N.D. Ala.) (*Allen v. Milligan*); *Pendergrass v. Raffensperger*, No. 21-05337-SCJ (N.D. Ga.); *Alpha Phi Alpha Fraternity v. Raffensperger*, No. 21-05339-SCJ (N.D. Ga.); *NAACP v. Baltimore County*, No. 21-cv-03232-LKG (D. Md.); *Christian Ministerial Alliance v. Hutchinson*, No. 4:19-cv-402-JM (E.D. Ark.); *Robinson v. Landry*, No. 3:22-cv-00211-SDD-SDJ (M.D. La.); *Caroline County Branch of the NAACP v. Town of Federalsburg*, No. 23-00484-SAG (D. Md.); *Nairne v. Landry* No. 3:22-cv-00178-SDD-SDJ (M.D. La.); and *Mississippi State Conference of the NAACP v. State Board of Election Commissioners*, No. 3:22-cv-734-DPJ-HSO-LHS (S.D. Miss.).

5. In affirming the district court’s determination in this case that Alabama likely violated Section 2, the U.S. Supreme Court noted that my testimony was deemed to be “highly credible.” *Allen v. Milligan*, 599 U.S. 1, 31 (2023).

6. During that same post-2020 Census timeframe, I testified at trial as an expert in demographics in *Florida State Conference of the NAACP v. Lee*, No. 4:21-cv-187-MW/MAF (N.D. Fla.). In 2023, I also testified at trial in a school desegregation case involving the St. Martin Parish School Board in *Thomas v. St. Martin Parish School Board*, No. 6:65-cv-11314 (W.D. La.).

7. Since the release of the 2020 Census, local-level plans I developed as a private consultant have been adopted by governments in San Juan County, Utah,

Bolivar County, Mississippi, Washington County, Mississippi, and the City of Grenada, Mississippi.

8. I currently serve as a redistricting and demographics expert to plaintiffs in *McClure v. Jefferson County Commission*, No. 2:23-cv-00443 (N.D. Ala.). I also serve as a demographics expert for plaintiffs in *Braxton v. Stokes*, No. 2:23-00127-KD-N (S.D. Ala.).

9. In November 2019, I testified in the Northern District of Alabama at trial on behalf of plaintiffs challenging Alabama's 2011 congressional plan under Section 2 of the Voting Rights Act in *Chestnut v. Merrill*, No. 2:18-cv-00907 (N.D. Ala.). Also in 2019, I prepared a consent decree election plan for the Jefferson County, Alabama Board of Education (*Jones v. Jefferson County Board of Education*, No. 2:19-cv-01821-MHH (N.D. Ala.)).

10. I served as a redistricting consultant to the City of Decatur, Alabama (*Voketz v. City of Decatur*, No. 5:14-cv-00540-AKK (N.D. Ala.)) between 2015 and 2020. I also served as a redistricting consultant to the plaintiffs in *Alabama State NAACP v. City of Pleasant Grove*, No. 2:18-cv-02056-JHE (N.D. Ala.) in 2018 and 2019. In 2018, I testified on behalf of the plaintiffs in a Section 2 case captioned *Alabama State Conference of the NAACP v. Alabama*, No. 2:16-cv-731-WKW-CSC (M.D. Ala.), involving at-large judicial elections.

11. For additional information on my background and expertise, see a summary of my redistricting work attached as **Exhibit A**.

(b) Purpose of Report

12. The attorneys for the Plaintiffs in this case asked me to determine whether the African American population in Alabama is “sufficiently large and geographically compact”¹ to allow for the creation of two U.S. House majority-Black congressional districts—one more than under the Enacted Plan (the “2023 Plan”).²

13. **Exhibit B** describes the sources and methodology I have employed in the preparation of this report. In addition, I reviewed the “Reapportionment Committee Guidelines for Redistricting,” which addresses Alabama’s legislative and congressional redistricting;³ the 2023 Legislative Findings issued by the

¹ *Thornburg v. Gingles*, 478 U.S. 30, 50 (1986).

² In this report, “Black” and “African American” are synonymous, as are “Latino” and “Hispanic.” Unless otherwise noted, “Black” refers to persons of all ages who are any part Black (“AP Black”), *i.e.*, single-race Black or two or more races and some part Black. “White” or “NH White” means non-Hispanic White. The AP Black classification includes all persons who self-identified in the 2020 Census as single-race Black or some part Black, including Hispanic Black. It is my understanding that following the U.S. Supreme Court decision in *Georgia v. Ashcroft*, 539 U.S. 461 (2003), the “Any Part” definition is the appropriate Census classification to use in most Section 2 cases.

³ Source:

<http://www.legislature.state.al.us/aliswww/reapportionment/Reapportionment%20Guidelines%20for%20Redistricting.pdf>.

legislature;⁴ and the September 25, 2023 *Report and Recommendation of the Special Master*, ECF No. 241.

14. This declaration updates and expands on my December 10, 2021 Declaration (“Cooper Initial Report”), which was submitted during the preliminary injunction phase of this lawsuit.

(c) Summary Conclusions

15. Based on the 2020 Census, African Americans in Alabama are sufficiently numerous and geographically compact to allow for the creation of two majority-Black congressional districts in Alabama’s seven-district plan consistent with traditional redistricting principles.

16. All eight illustrative plans that I have prepared (described *infra*) contain two majority-Black congressional districts and adhere to traditional redistricting principles.

(d) Organization of Declaration

17. The remainder of this declaration is organized as follows: **Section II** reviews state and regional demographics; **Section III** reviews the 2023 Plan; **Section IV** provides background context and an overview of the illustrative plans

⁴ Source:
<https://alison.legislature.state.al.us/files/pdfdocs/SearchableInstruments/2023SS2/SB5-enr.pdf>.

that I have prepared; **Section V** presents eight illustrative plans that feature a second majority-Black congressional district in central and south Alabama; and **Section VI** summarizes and compares plan metrics for the illustrative plans, the 2023 Plan, and the Special Master’s Remedial Plan 3 (“Special Master Plan”), which is the court-ordered plan for Alabama’s 2024 congressional elections.

II. DEMOGRAPHIC PROFILE OF ALABAMA

(a) 2010 to 2020 – Population by Race and Ethnicity

18. As shown in **Figure 1**, according to the 2020 Census, Alabama has a total population of 5,024,279.⁵ The population in Alabama grew by 5.12% between 2010 and 2020, from about 4.78 million to 5.02 million.

⁵ NH refers to non-Hispanic. SR refers to single-race.

Figure 1

**Alabama – 2010 Census to 2020 Census
Population by Race and Ethnicity⁶**

| | 2010 Number | Percent | 2020 Number | Percent | Change 2010 to | % Change 2010-2020 |
|---|------------------------|----------------|------------------------|----------------|---------------------------|-------------------------------|
| Total Population | 4,779,736 | 100.00% | 5,024,279 | 100.00% | 244,543 | 5.12% |
| NH White | 3,204,402 | 67.04% | 3,171,351 | 63.12% | -33,051 | -1.03% |
| Total Minority Pop. | 1,575,334 | 32.96% | 1,852,928 | 36.88% | 277,594 | 17.62% |
| Latino (all races) | 185,602 | 3.88% | 264,047 | 5.26% | 78,445 | 42.27% |
| NH SR Black | 1,244,437 | 26.04% | 1,288,159 | 25.64% | 43,722 | 3.51% |
| NH SR Asian | 25,907 | 0.54% | 75,918 | 1.51% | 50,011 | 193.04% |
| NH SR Hawaiian and Pacific | 52,937 | 1.11% | 23,119 | 0.05% | -29,818 | -56.33% |
| NH SR American Indian and Alaska Native | 1,976 | 0.04% | 2,612 | 0.46% | 636 | 32.19% |
| NH SR Other | 4,030 | 0.08% | 14,455 | 0.29% | 10,425 | 258.68% |
| SR Black (including Black Hispanics) | 1,251,311 | 26.18% | 1,296,162 | 25.80% | 44,851 | 3.58% |
| Any Part Black (including Black Hispanics) | 1,281,118 | 26.80% | 1,364,736 | 27.16% | 83,618 | 6.53% |

19. Single-race non-Hispanic Whites (“NH Whites”) are a majority of the population (63.12%). Any Part Black Alabamians (“AP Black”) comprise 27.16% of the population and are the largest minority population, followed by Latinos (5.26%), who may be of any race.

20. In 2010, minorities represented about one-third (32.96%) of the population. By 2020, that figure grew to 36.88% of the statewide population. In fact, all of Alabama’s population growth between 2010 and 2020 (244,543) can be

⁶ **PL94-171 Redistricting File** (Census 2010 and Census 2020).

attributed to an increase in the minority population (277,594), offsetting a population loss of 33,051 NH White persons.

21. Alabama's Any Part Black population grew by 6.53% between 2010 and 2020, from 1.28 million to 1.36 million. African Americans represent 34% of the population increase between 2010 and 2020 in Alabama (83,618 of 244,543 persons).

(b) Voting Age and Citizen Voting Age

22. As shown in **Figure 2**, African Americans in Alabama constitute a slightly smaller percentage of the voting age population (VAP) than the total population. According to the 2020 Census, Alabama has a total VAP of 3,917,166—of whom 1,014,372 (25.90%) are AP Black. The NH White VAP is 2,564,544 (65.47%).

Figure 2

**Alabama – 2020 Voting Age Population &
2022 Estimated Citizen Voting Age Population By Race and Ethnicity**

| | 2020 VAP | 2020 VAP Percent | 2022 CVAP Percent |
|---|---------------------|-----------------------------|------------------------------|
| Total | 3,917,166 | 100.00% | 100.00% |
| NH White 18+ | 2,564,544 | 65.47% | 68.4% |
| Total Minority 18+ | 1,352,622 | 34.53% | 31.6% |
| Latino 18+ | 166,856 | 4.26% | 2.6% |
| Any Part Black 18+ (including Black Hispanics) | 1,014,372 | 25.90% | 26.6% |

23. The rightmost column in **Figure 2** reveals that both the Black and NH White population comprise a higher percentage of the citizen voting age population (“CVAP”) than the corresponding voting age population, owing to higher non-citizenship rates among other minority populations.⁷

24. According to estimates from the 1-year 2022 *American Community Survey* (“ACS”), African Americans represent 26.6% of the statewide CVAP. The NH White CVAP is 68.4%.

25. Black CVAP is poised to go up over the remainder of the decade. According to the 2022 ACS, Black children represent 30.56% of the 11 to 17 citizen population.⁸

⁷ Sources:
PL94-171 Redistricting File (Census 2020).

Table S2901 -- CITIZEN, VOTING-AGE POPULATION BY SELECTED CHARACTERISTICS (1-year 2022 ACS)

<https://data.census.gov/table?q=S2901&g=040XX00US01&y=2022>.

2022 ACS 1-Year Estimates Public Use Microdata Sample

[https://data.census.gov/mdat/#/search?ds=ACSPUMS1Y2022&vv=AGEP\(18:99\)&cv=RACBLK&rv=ucgid,CIT\(1,2,3,4\)&wt=PWGTP&g=0400000US01](https://data.census.gov/mdat/#/search?ds=ACSPUMS1Y2022&vv=AGEP(18:99)&cv=RACBLK&rv=ucgid,CIT(1,2,3,4)&wt=PWGTP&g=0400000US01).

⁸ **2022 ACS 1-Year Estimates Public Use Microdata Sample**

[https://data.census.gov/mdat/#/search?ds=ACSPUMS1Y2022&vv=AGEP\(11:17\)&cv=RACBLK&rv=ucgid,CIT\(1,2,3,4\)&wt=PWGTP&g=0400000US01](https://data.census.gov/mdat/#/search?ds=ACSPUMS1Y2022&vv=AGEP(11:17)&cv=RACBLK&rv=ucgid,CIT(1,2,3,4)&wt=PWGTP&g=0400000US01).

(c) 2020 Census – Spatial Distribution of the Black Population

26. According to the 2020 Census, about half of Alabama’s Black population (49.53%) is concentrated in the urban counties of Jefferson (Black pop. 289,515), Mobile (Black pop. 152,471), Montgomery (Black pop. 134,029), and Madison (Black pop. 99,875). The rural Black Belt counties (excluding urban Black Belt Montgomery) account for 8.68% of the statewide Black population.⁹ The Counties of Lee and Tuscaloosa—home to the two largest state universities in Alabama—contain 8.34% of the statewide Black population. Taken together, the urban counties, rural Black Belt counties, and university counties encompass two-thirds (66.54%) of the statewide Black population.

⁹ In this declaration, the term “Black Belt” refers to the following 12 core counties: Barbour, Bullock, Dallas, Greene, Hale, Lowndes, Macon, Marengo, Montgomery, Perry, Sumter, and Wilcox. This is consistent with my testimony in *Alabama Legislative Black Caucus v. Alabama* and *Alabama State Conference of the NAACP v. Alabama*.

In August 2004, Governor Bob Riley signed an executive order creating the Governor’s Commission for Action in Alabama’s Black Belt which targeted 11 of the 12 counties that I have identified as the core counties of the Black Belt. I include Barbour County as part of the core Black Belt rather than Pickens County, which is one of the 12 counties in the 2004 executive order. The Special Master defined a more expansive 18-county area as the Black Belt.

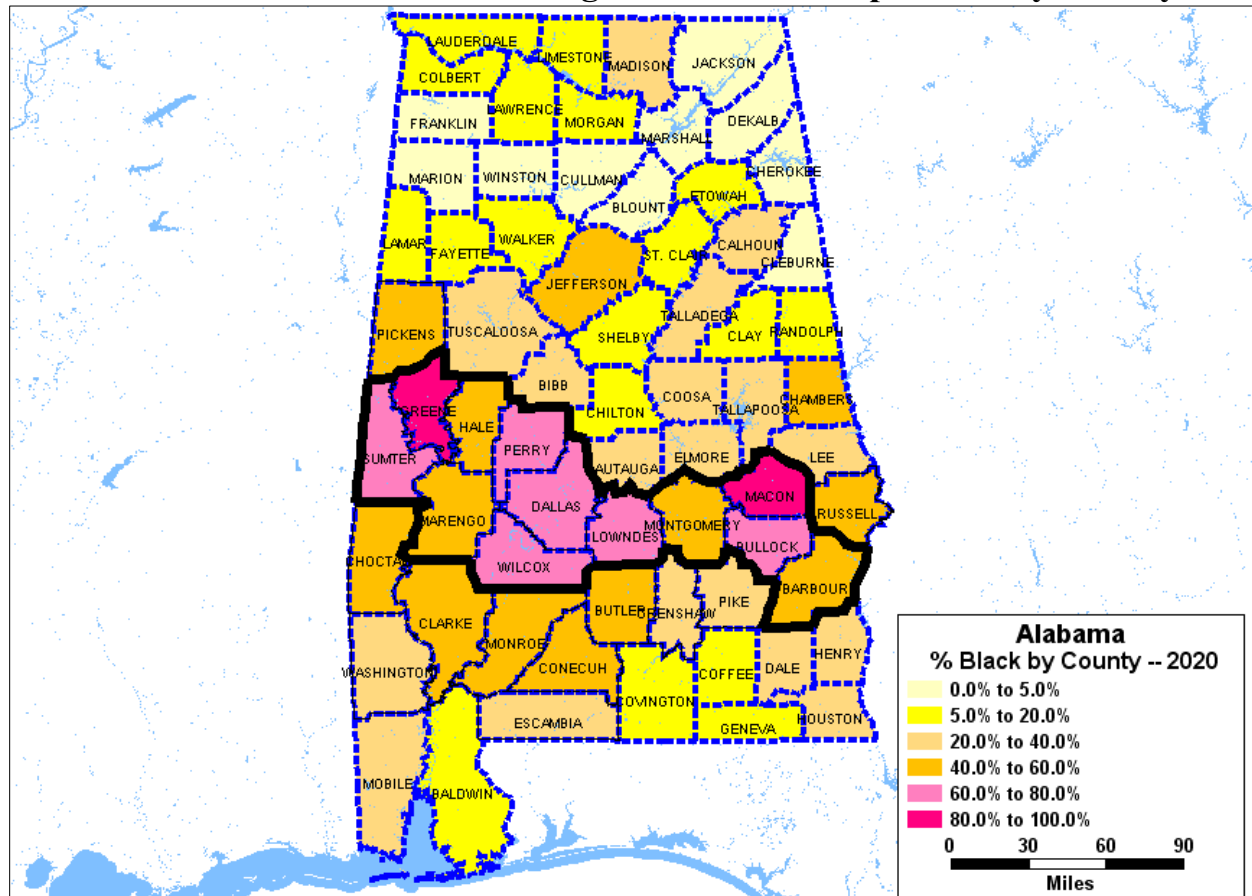
For an overview of Alabama’s Black Belt, including a listing of Black Belt counties under various definitions, see the article “Black Belt Region in Alabama” by Terance L. Winemiller, Auburn University at Montgomery, in the Encyclopedia of Alabama.

Source: <https://encyclopediaofalabama.org/article/black-belt-region-in-alabama/>.

27. The map in **Figure 3** displays the state's Black population by county under the 2020 Census, with bold lines demarcating the Black Belt region. The table in **Exhibit C** reports 2020 population by county by race and ethnicity.

Figure 3

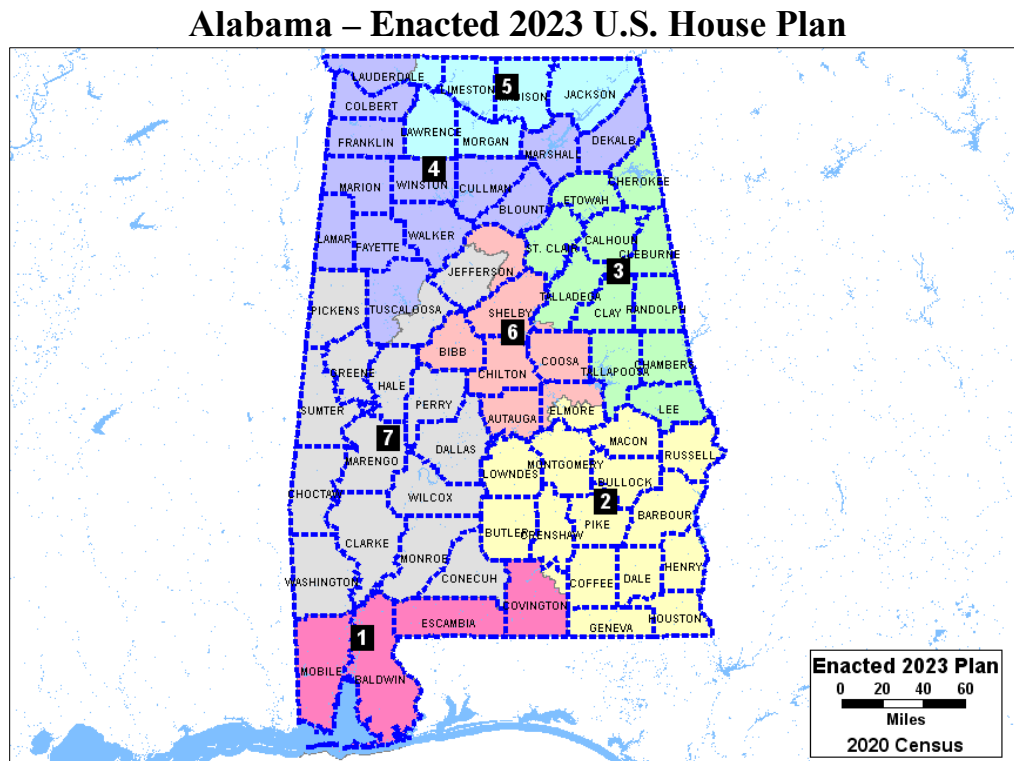
2020 Census – Black Belt Region and Black Population by County



III. THE 2023 PLAN

28. On July 21, 2023, Governor Kay Ivey signed into law a new congressional plan (the “2023 Plan”) with CD 7 as the only majority-Black district.¹⁰ The map in **Figure 4** depicts the 2023 Plan.

Figure 4



29. Majority-Black CD 7 encompasses part of Jefferson County and extends south to include the southern half of Tuscaloosa County and rural counties along the Mississippi border and western Black Belt.

¹⁰ Source for GIS shapefile: <https://redistrictingdatahub.org/state/alabama/>.

30. The table in **Figure 5** shows 2020 summary population statistics for the 2023 Plan. **Exhibit D-1** contains more detailed 2020 population statistics.

Figure 5

2023 U.S. House Plan – 2020 Census

| District | Population | 18+ Pop | % 18+ AP Black | % 18+ NH White |
|-----------------|-------------------|----------------|---------------------------|---------------------------|
| 1 | 717754 | 557393 | 24.63% | 67.08% |
| 2 | 717755 | 559067 | 39.93% | 52.50% |
| 3 | 717754 | 564595 | 20.70% | 71.76% |
| 4 | 717754 | 555217 | 7.22% | 82.83% |
| 5 | 717754 | 560406 | 18.33% | 70.27% |
| 6 | 717754 | 552230 | 19.26% | 71.65% |
| 7 | 717754 | 568258 | 50.65% | 42.70% |

31. The map in **Exhibit D-2** is a higher resolution version of the **Figure 4** map. **Exhibit D-3** contains maps focusing on majority-White District 2, majority-Black District 7, and adjacent areas. **Exhibit D-4** identifies county and VTD splits in the 2023 Plan.¹¹ The 2023 Plan splits six counties and populated areas in 11 VTDs. **Exhibit D-5** identifies the 32 municipalities where populations are divided into two districts. **Exhibit D-6** reports compactness scores by district.

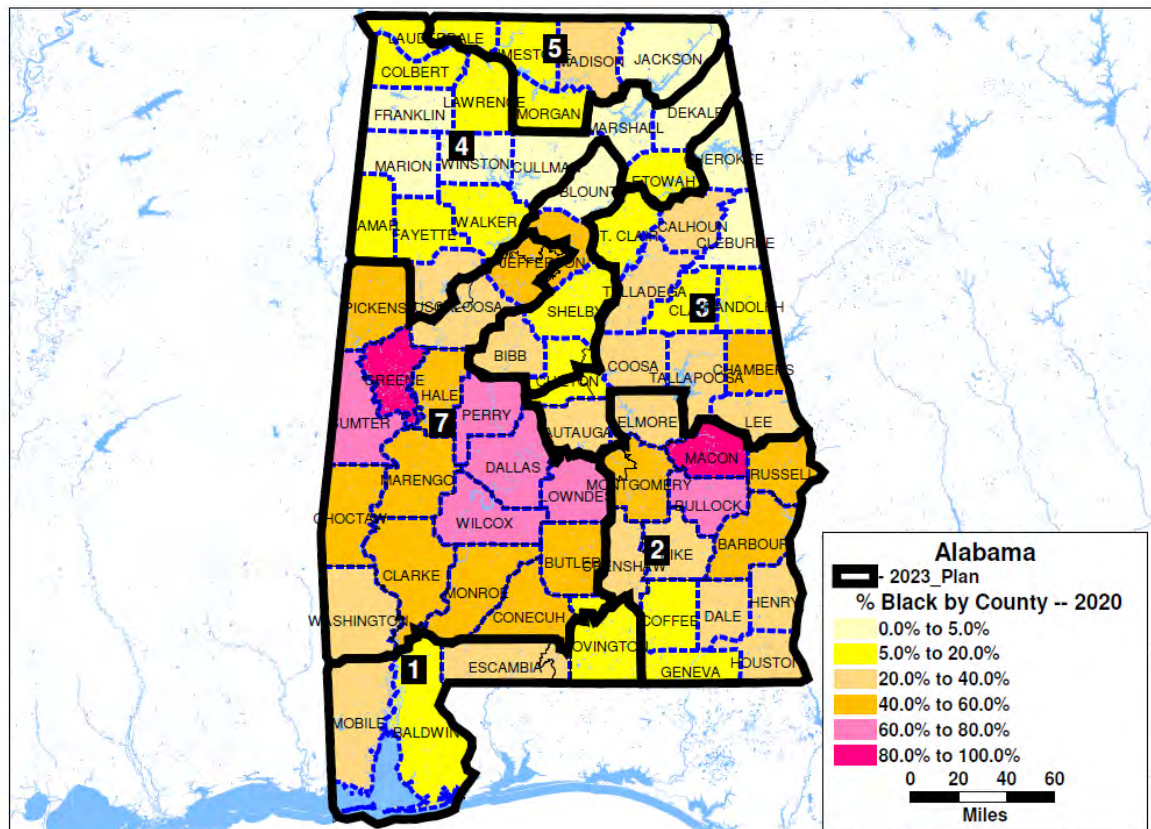
¹¹ “VTD” is a Census Bureau term meaning “voting tabulation district.” VTDs generally correspond to precincts as they existed at the time of the 2020 Census.

32. As shown in **Figure 5**, CD 7 in the 2023 Plan is 50.65% BVAP. CD 2, encompassing all of Montgomery County and the eastern Black Belt is 39.93% BVAP. The remaining five districts are all under 25% BVAP.

33. **Figure 6** is a map that overlays the 2023 Plan congressional districts (demarcated by bold lines) onto a map displaying 2020 Black population by county.

Figure 6

2023 U.S. House Plan - Black Population by County



34. Under the 2023 Plan, majority-Black Macon County, majority-Black Bullock County, majority-Black Montgomery County, and plurality-Black Barbour and Russell Counties are joined with southeast Alabama counties in majority-White CD 2. The majority-Black City of Mobile (Black pop. 100,265) is in majority-White CD 1.

35. According to the 2020 Census, 28.5% of Alabama's Black population lives within majority-Black CD 7 under the 2023 Plan. By contrast, 91.1% of the 2020 NH White population lives in one of the six majority-White districts.

36. As shown in **Figure 5** *supra*, most of the remainder of the Black population outside of CD 7 is distributed into CD 1 (24.63% BVAP), CD 2 (39.93% BVAP), and CD 3 (20.7% BVAP). Taken together, these three districts have a total 2020 Black population of 644,899 (and a BVAP of 477,339), which is nearly enough total population to comprise an entire congressional district (89.8% of a congressional district).

37. As shown in **Exhibit E**, the 2023 Plan keeps 85% of the population in their 2021 Plan districts.

IV. BACKGROUND AND OVERVIEW OF ILLUSTRATIVE PLANS

(a) The Board of Education Plan – 1996-2021

38. The area covered by the two majority-Black districts in the Plaintiffs' illustrative congressional plans presented in **Section V** and the Special Master Plan is very similar to the coverage area for the two majority-Black districts in Alabama's 2021 Board of Education Plan ("BOE Plan").

39. For the past quarter century, more than half of the African Americans in Alabama have lived in one of the two state Board of Education ("BOE") districts with over 46% SR BVAP in 8-district plans.

40. According to the 2000 Census, under the court-ordered 1996 BOE Plan, BOE District 4 was 46.63% SR BVAP and BOE District 5 was 51.75% SR BVAP. Under the 2001 BOE Plan, BOE District 4 was 47.61% SR BVAP and BOE District 5 was 51.97% SR BVAP.¹²

¹² Source:
February 2, 2002 Section 5 letter from the Alabama Attorney General to the U.S. Department of Justice, available at the Web Archive link below:

<https://web.archive.org/web/20141018111338/http://www.legislature.state.al.us/reapportionment/boe/boe.html>.

The Any Part Black population count was not directly reported in the Census 2000 PL94-171 file and therefore is not included here.

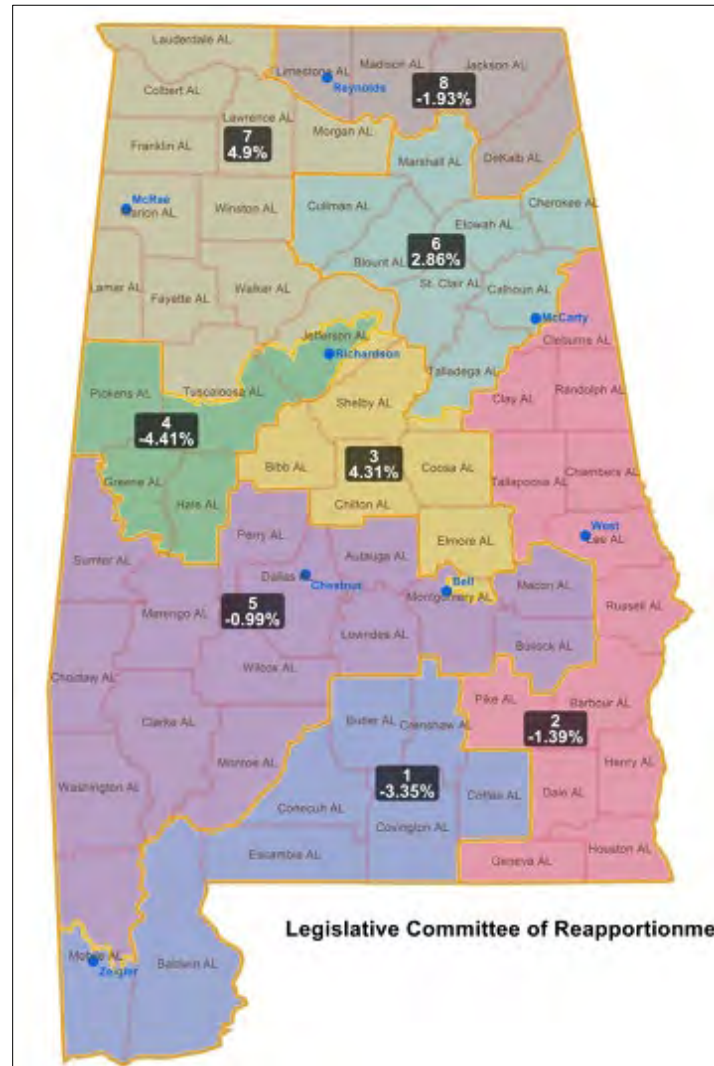
41. According to the 2010 Census, under the 2011 BOE Plan, District 4 and District 5 were both majority-BVAP. BOE District 4 was 51.43% BVAP and BOE District 5 was 57.5% BVAP. According to the 2010 Census, the combined Black population in these two districts was 683,923, which represented more than half (53.38%) of the statewide Black population.

42. According to the 2020 Census, under the 2011 BOE Plan, District 4 and District 5 remain majority-BVAP. 2011 BOE District 4 is 51.51% BVAP and 2011 BOE District 5 is 57.72% BVAP.

43. In 2021, the Legislature once again created two majority-Black BOE districts in central and south Alabama. According to the 2020 Census, the combined SR Black population in 2021 BOE District 4 and BOE District 5 was 646,759, which represents more than half (51.69%) of the statewide Black population.

44. The 2021 BOE Plan is depicted in **Figure 7**.¹³

¹³ The source for 2021 BOE Map in **Figure 9** is an October 25, 2021 tweet from Alabama Rep. Chris England, available at: <https://twitter.com/RepEngland70/status/1452674057640550407>.

Figure 7**Alabama – 2021 Board of Education Plan**

45. **Exhibit F-1** is a state-produced map of the 2021 BOE Plan.¹⁴

¹⁴ Sources:

<https://www.sos.alabama.gov/alabama-votes/state-district-maps>.

https://www.sos.alabama.gov/sites/default/files/State%20Districts/McClendon%20SBOE%20Plan%201_Letter%20size%20map.pdf.

46. **Exhibit F-2** contains 2020 population statistics by district in the 2021 BOE Plan. District 4 is 51.21% SR BVAP. District 5 is 51.27% SR BVAP.¹⁵

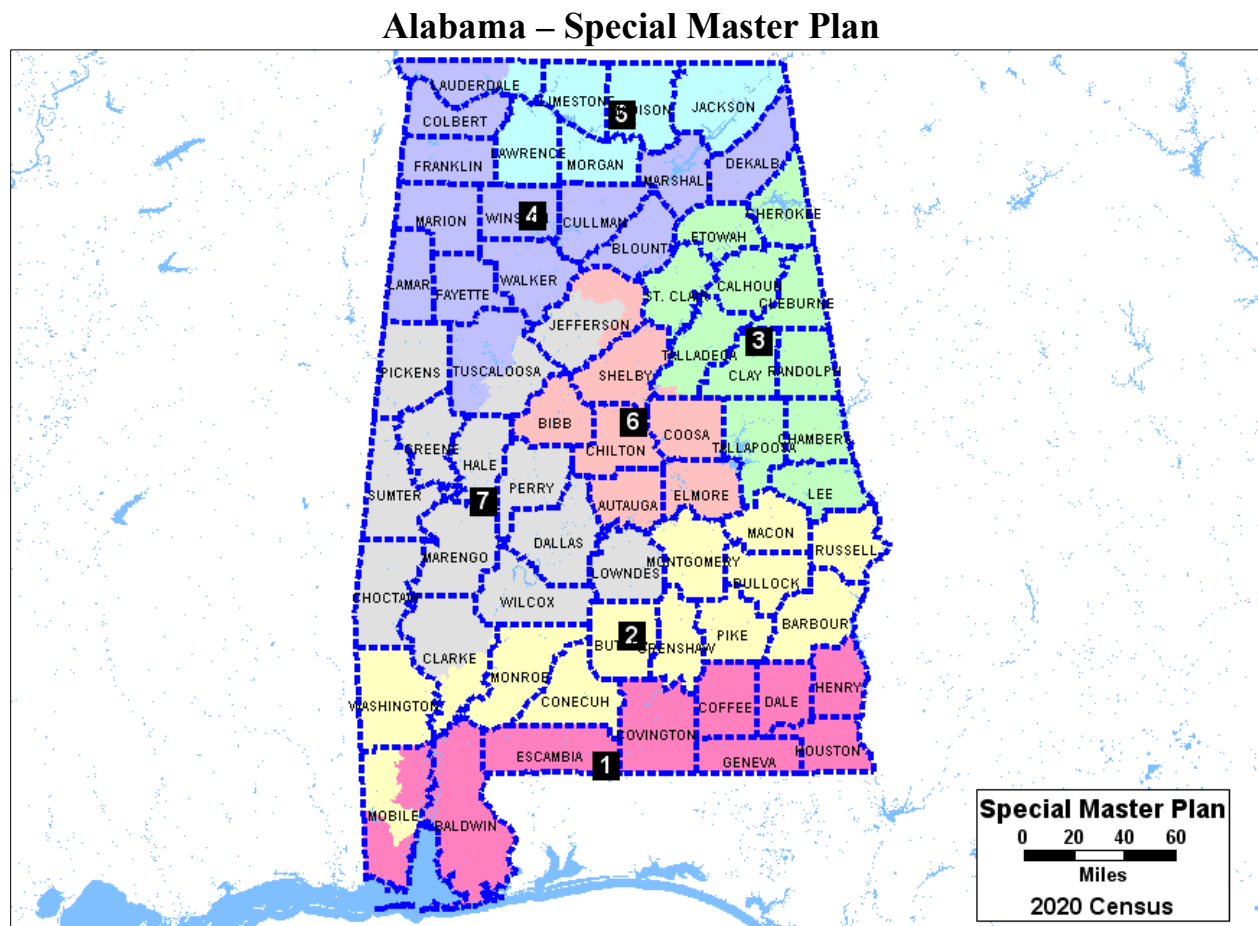
(b) Special Master Plan

47. The Special Master Plan includes all 12 of the core Black Belt counties in either District 2 (48.69% BVAP) or District 7 (51.91% BVAP). While District 2 is below 50% BVAP, with minor adjustments to the Special Master Plan, numerous illustrative plan configurations that contain two majority-Black districts and comply with traditional redistricting principles can be developed.

48. The map in **Figure 8** depicts the Special Master Plan. The **Exhibit P** series contains maps and statistics for the Special Master Plan. A highly detailed analysis of the Special Master Plan is found in the *Report and Recommendation of the Special Master*, ECF No. 241.

¹⁵ The source for 2021 BOE Plan population statistics in **Exhibit F-2** is an October 25, 2021 tweet from Alabama Rep. Chris England, available at: <https://twitter.com/RepEngland70/status/1452674057640550407>.

I do not have access to a GIS shapefile of the 2021 BOE Plan, so I am unable to produce detailed statistics that would include Any Part Black VAP percentages.

Figure 8

49. Under the Special Master Plan, District 2 includes most of the majority-Black City of Mobile and extends east across the Black Belt to include Montgomery County and on to Barbour and Russell Counties on the Georgia state line. Majority-Black District 7 includes counties in the western and central Black Belt along with Tuscaloosa and Jefferson Counties. Tuscaloosa County and Jefferson County are paired in District 7 under both the 2023 Plan and the Special Master Plan, as well as in all of the illustrative plans.

50. The table in **Figure 9** shows 2020 summary population statistics for the Special Master Plan. **Exhibit P-1** contains detailed 2020 population statistics by district.

Figure 9

Special Master Plan – 2020 Census

| District | Population | 18+ Pop | % 18+ AP Black | % 18+ NH White |
|----------|------------|---------|-------------------|-------------------|
| 1 | 717754 | 557336 | 16.25% | 74.76% |
| 2 | 717754 | 558661 | 48.69% | 44.38% |
| 3 | 717754 | 564595 | 20.70% | 71.76% |
| 4 | 717754 | 555217 | 7.22% | 82.83% |
| 5 | 717754 | 560406 | 18.33% | 70.27% |
| 6 | 717755 | 552411 | 17.55% | 73.41% |
| 7 | 717754 | 568540 | 51.91% | 41.44% |

51. The map in **Exhibit P-2** is a higher resolution version of the **Figure 8** map. **Exhibit P-3** contains maps focusing on District 2 and District 7 and adjacent areas. As shown in **Exhibit P-4**, the Special Master Plan splits six counties and populated areas in 14 VTDs. **Exhibit P-5** identifies 31 municipalities where populations are divided into two districts. **Exhibit P-6** reports compactness scores by district.

52. Similar to the configurations in the 2021 BOE Plan and the Special Master Plan, the eight illustrative plans described *infra* create a second majority-BVAP congressional district in central and south Alabama.

(c) Illustrative Plans with Two Majority-Black Districts

53. There are a variety of ways to draw two majority-Black congressional districts in Alabama that adhere to traditional redistricting principles and Alabama's redistricting guidelines, and this has been true since at least the 2010 Census. At the November 2019 *Chestnut v. Merrill* trial and by way of expert reports, I presented four illustrative plans, based on the 2010 Census, all of which contained two majority-Black districts out of seven.

54. Based on the 2020 Census, it remains possible to draw two majority-Black congressional districts, while adhering to traditional redistricting principles. At the preliminary injunction hearing in January 2022, I presented seven illustrative plans based on the 2020 Census—all of which contained two majority-Black districts out of seven. Those same seven maps are included in this report as Illustrative Plans 1 through 7.

55. I prioritized keeping VTDs whole in four of the seven preliminary injunction plans to allow for more efficient election administration in the event that a remedial plan would have been ordered for the 2022 election.

56. In this declaration, I add another illustrative plan to the mix, which was drawn after enactment of the 2023 Plan and after adoption of the Special Master Plan. This map is Illustrative Plan 8.

57. The eight illustrative plans described herein demonstrate that there are multiple ways to draw congressional plans in Alabama that respect traditional redistricting criteria and contain two majority-Black districts.

58. All eight illustrative plans comply with traditional redistricting principles, including population equality, compactness, contiguity, respect for political subdivision boundaries, and respect for communities of interest.

59. The illustrative plans are drawn to follow, to the extent possible, county boundaries. Where counties are split to comply with one-person one-vote requirements, I have generally used whole 2020 Census VTDs as sub-county components. Where VTDs are split, I have followed census block group or block boundaries that are aligned with roads, natural features, or municipal boundaries.

60. The illustrative plans demonstrate that the Black population in Alabama is sufficiently numerous and geographically compact to allow for the creation of an additional majority-Black district.

(d) Common Characteristics of the Illustrative Plans

61. The eight illustrative plans have the following key features:

- The 2020 Black VAP in the illustrative majority-Black districts is above 50% in all eight plans.

- Based on citizenship data available (from the 5-year 2017-2021 ACS Special Tabulation), NH DOJ Black CVAP in the illustrative majority-Black districts is above 50% in all eight plans.¹⁶
- Based on a geocoded 2023 statewide list of registered voters, Black registered voters represent more than 50% of all registered voters in the illustrative majority-Black districts in all eight plans.¹⁷
- Five of the eight illustrative plans split six counties—the same number of split counties in the 2023 Plan and the Special Master Plan. Illustrative Plan 2 and Illustrative Plan 6 split seven counties.
- Illustrative Plan 7 splits just five counties—one less than the 2023 Plan and the Special Master Plan.
- New majority-Black District 2 under the illustrative plans has a configuration that is similar to District 5 in the 2021 BOE Plan and the 2011 BOE Plan, as well as District 2 in the Special Master Plan.
- Under the illustrative plans, District 7 includes African American communities in Jefferson County, Tuscaloosa County, and the western rural Black Belt counties, as District 7 does in the 2023 Plan and the Special Master Plan.
- Mobile County is split between majority-White District 1 and majority-Black District 2 in all of the illustrative plans, as it is in the 2021 BOE Plan and the Special Master Plan.

¹⁶ The CVAP estimates reported are based on block group level information published by the U.S. Census Bureau’s American Communities Survey (ACS). I report the NH DOJ Black CVAP metric. The NH DOJ Black CVAP category includes voting age citizens who are either NH Single-race Black or NH Black and some part White. An “Any Part Black CVAP” category, which would include Black Hispanics, cannot be calculated from the 5-Year ACS Census Bureau Special Tabulation. Source: <https://www.census.gov/programs-surveys/decennial-census/about/voting-rights/cvap.html>.

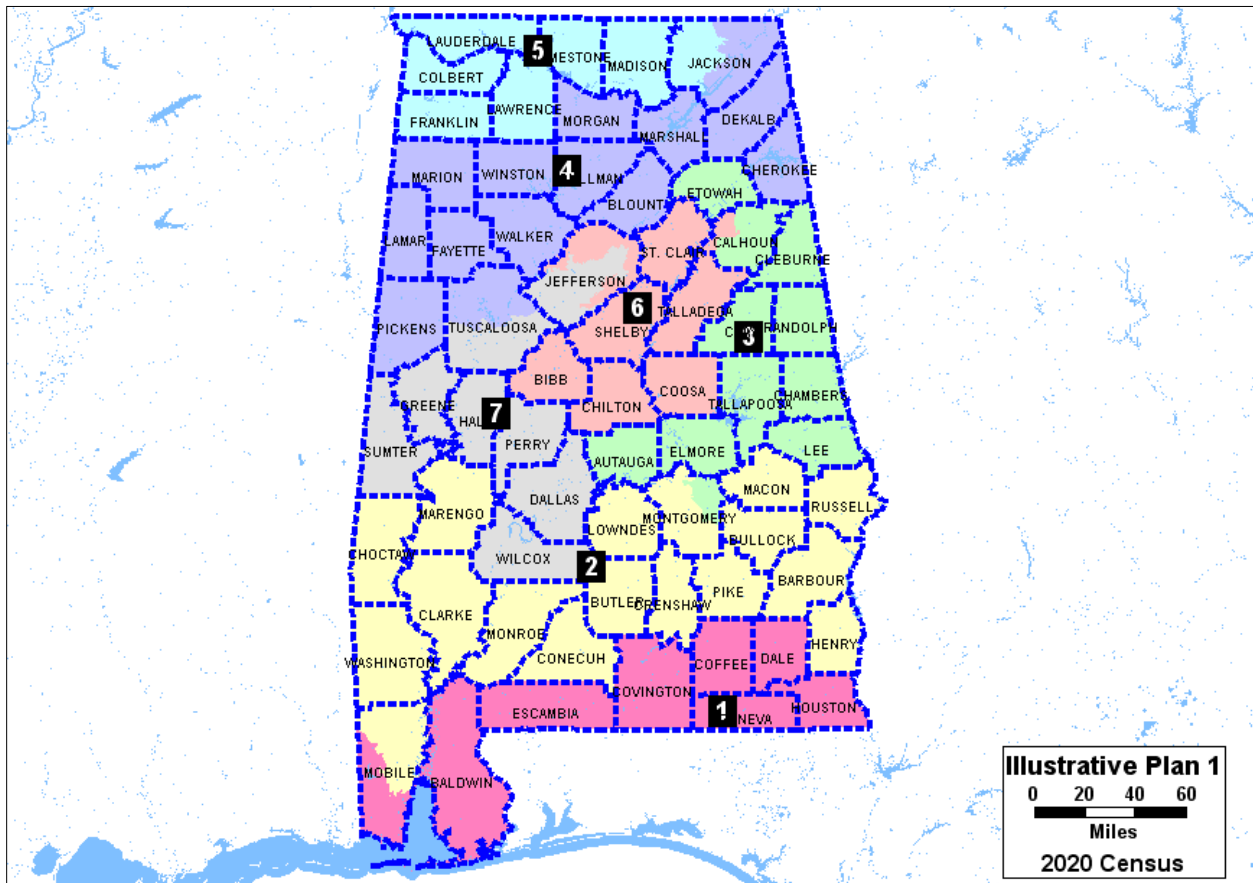
¹⁷ An electronic list of registered voters was provided to the Plaintiffs’ attorneys by the Defendants in July 2023. I geocoded the list of registered voters using *Mapitude for Redistricting*.

- Baldwin County is entirely in District 1 under all of the illustrative plans, as it is under the 2021 BOE Plan, the 2023 Plan, and the Special Master Plan.
- Under all of the illustrative plans, one can travel from the District 1 portion of Mobile County to Baldwin County without leaving the district.
- All eight plans connect the District 1 portion of Mobile County to Baldwin County via the Mobile Bay Ferry and State Routes 193 and 180.
- Five of the illustrative plans also join the District 1 portion of Mobile County to Baldwin County following I-10 and U.S. 98 across Mobile Bay. Under Illustrative Plan 6 (placing all of the City of Mobile into District 1), secondary roads directly connect the District 1 portion of Mobile County to Baldwin County.
- All Plaintiffs reside in one or more of the majority-minority districts under the illustrative plans.

V. DESCRIPTION OF ILLUSTRATIVE PLANS

(a) Illustrative Plan 1

62. The map in **Figure 10** depicts Illustrative Plan 1. District 2 is 50.09% BVAP and District 7 is 53.28% BVAP.

Figure 10**Alabama U.S. House – Illustrative Plan 1**

63. Majority-Black District 2 encompasses part of Mobile County, extends north to include all of Washington and Choctaw Counties, then east through the Black Belt counties. Henry, Barbour, and Russell Counties form the eastern boundary. The northeast part of Montgomery County is merged into District 3.

64. Majority-Black District 7 encompasses part of Jefferson and Tuscaloosa Counties as well as Sumter County on the Mississippi state line. Dallas and Wilcox Counties form the eastern border of District 7.

65. The table in **Figure 11** shows 2020 summary population statistics for Illustrative Plan 1. **Exhibit G-1** contains detailed 2020 population statistics by district.

Figure 11

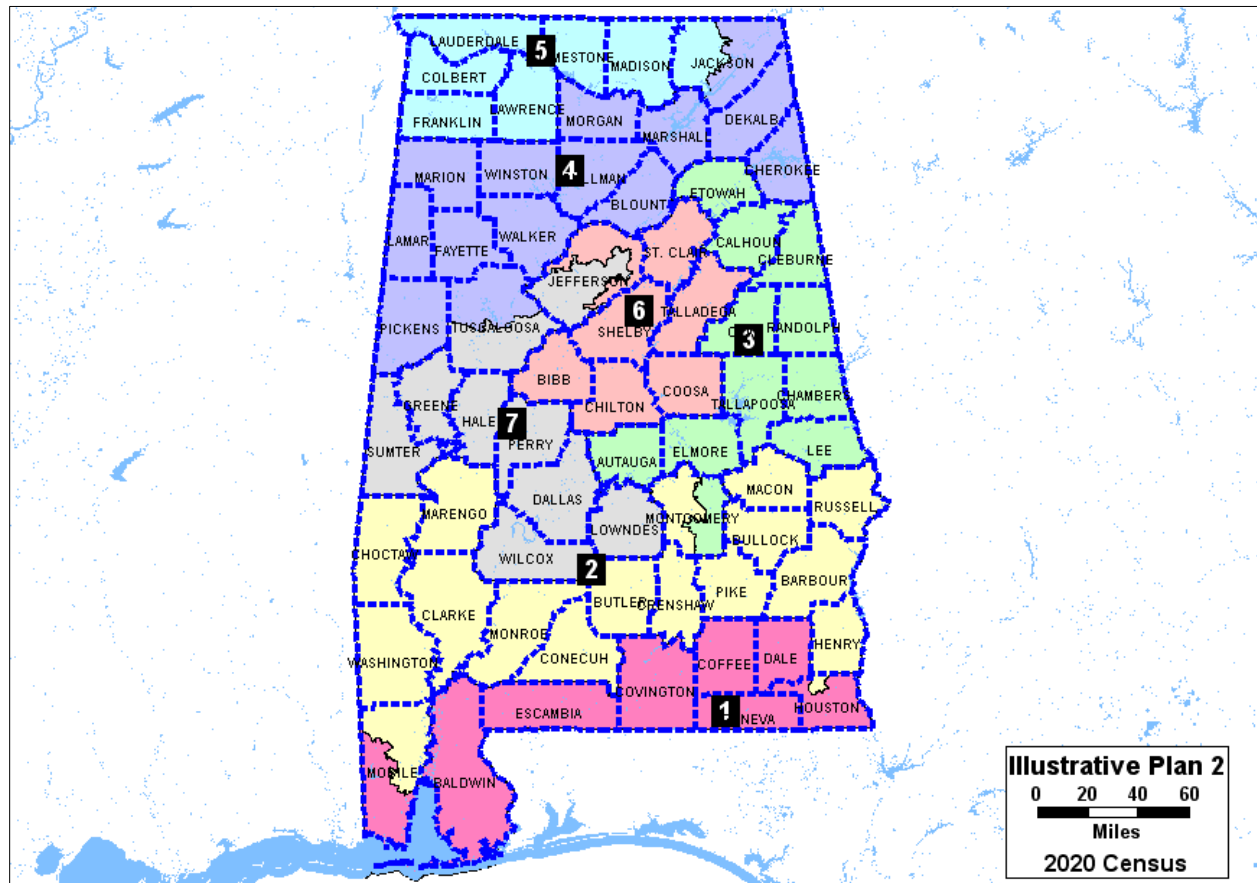
Illustrative Plan 1 – 2020 Census

| District | Population | 18+ Pop | % 18+ AP Black | % 18+ NH White |
|----------|------------|---------|----------------|----------------|
| 1 | 717755 | 557084 | 16.03% | 74.88% |
| 2 | 717754 | 559442 | 50.09% | 43.97% |
| 3 | 717753 | 563119 | 22.53% | 68.99% |
| 4 | 717753 | 555541 | 6.31% | 83.20% |
| 5 | 717755 | 561688 | 18.66% | 70.63% |
| 6 | 717754 | 556122 | 13.95% | 77.62% |
| 7 | 717755 | 564170 | 53.28% | 39.41% |

66. The map in **Exhibit G-2** is a higher resolution version of the **Figure 10** map. **Exhibit G-3** contains maps focusing on District 2 and District 7 and adjacent areas. As shown in **Exhibit G-4**, Illustrative Plan 1 splits six counties and populated areas in 16 VTDs. **Exhibit G-5** identifies 38 municipalities where populations are divided into two districts. **Exhibit G-6** reports compactness scores by district.

(b) Illustrative Plan 2

67. The map in **Figure 12** depicts Illustrative Plan 2. District 2 is 50.88% BVAP and District 7 is 53.79% BVAP.

Figure 12**Alabama U.S. House – Illustrative Plan 2**

68. Under Illustrative Plan 2, District 2 is similar in geographic extent to Illustrative Plan 1. Additional areas of Montgomery County are merged into District 3, allowing parts of Dothan in Henry County to be joined with District 2.

69. The boundary between District 1 and District 2 in and around Dothan generally tracks the boundary between current State Senate Districts 28 and 29. There are no 2020 VTD splits in Henry County under Illustrative Plan 2. (Like

current SD 28, District 2 under Illustrative Plan 2 extends north to include Henry, Barbour, Russell, Bulloch, and Macon Counties.)

70. District 7 is geographically similar to District 7 under the 2023 Plan. The eastern border of District 7 is Lowndes County, whereas District 7 in the 2023 Plan crosses into Montgomery County and includes portions of the City of Montgomery.

71. The table in **Figure 13** shows 2020 summary population statistics for Illustrative Plan 2. **Exhibit H-1** contains detailed 2020 population statistics by district.

Figure 13

Illustrative Plan 2 – 2020 Census

| District | Population | 18+ Pop | % 18+ AP Black | % 18+ NH White |
|----------|------------|---------|-------------------|-------------------|
| 1 | 717754 | 558142 | 14.92% | 75.87% |
| 2 | 717754 | 558446 | 50.88% | 43.29% |
| 3 | 717755 | 562845 | 21.97% | 69.52% |
| 4 | 717753 | 555526 | 6.31% | 83.20% |
| 5 | 717755 | 561688 | 18.66% | 70.63% |
| 6 | 717754 | 555856 | 14.34% | 77.09% |
| 7 | 717754 | 564663 | 53.79% | 39.06% |

72. The Illustrative Plan 2 maps and statistics in the **Exhibit H** series are identical in format and sequence to the Exhibit G series (Illustrative Plan 1). As shown in **Exhibit H-4**, Illustrative Plan 2 splits seven counties and populated areas

in 13 VTDs. **Exhibit H-5** identifies 40 municipalities where populations are divided into two districts.

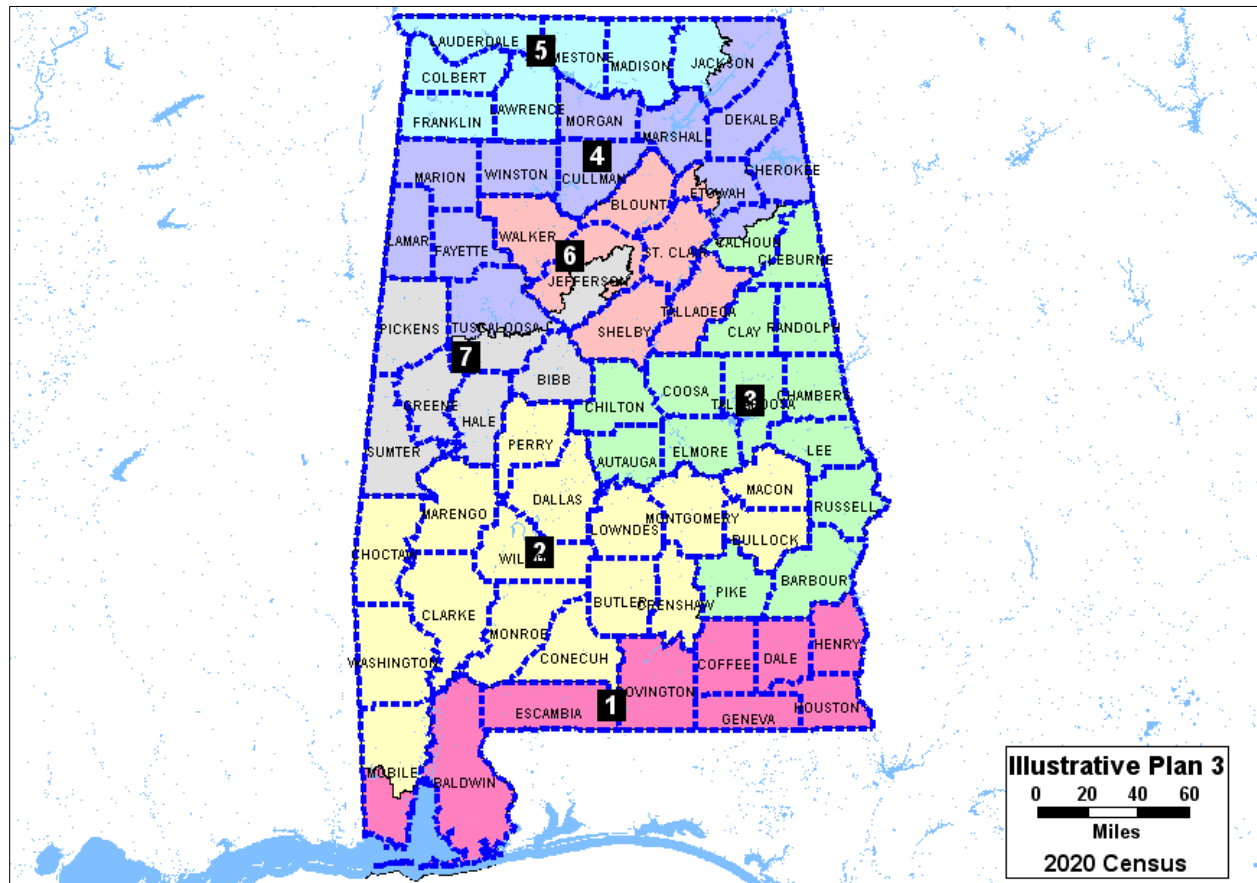
73. To reach zero deviation, 15 persons in Calhoun County are assigned to District 6, with the remainder in District 3. Arguably, this 15-person de minimis split in Calhoun County could be eliminated by assigning all of Calhoun County to District 3, resulting in just six county splits.¹⁸

(c) Illustrative Plan 3

74. The map in **Figure 14** depicts Illustrative Plan 3. District 2 is 50.27% BVAP and District 7 is 50.09% BVAP.

¹⁸ *Tennant v. Jefferson Cnty. Comm’n*, 567 U.S. 758 (2012). In the 2020 round of redistricting, several state legislatures have allowed de minimis deviations in congressional plans to avoid county splits, e.g. Louisiana and Arkansas.

The Alabama Legislature’s “Reapportionment Committee Guidelines for Redistricting,” stipulate “minimal deviation” rather than zero deviation.

Figure 14**Alabama U.S. House – Illustrative Plan 3**

75. Majority-Black District 2 encompasses part of Mobile County and extends east to encompass Macon and Bullock Counties.

76. Majority-Black District 7 encompasses part of Jefferson County and extends south to Tuscaloosa County and west to Sumter and Pickens Counties.

77. The table in **Figure 15** shows 2020 summary population statistics for Illustrative Plan 3. **Exhibit I-1** contains detailed 2020 population statistics by district.

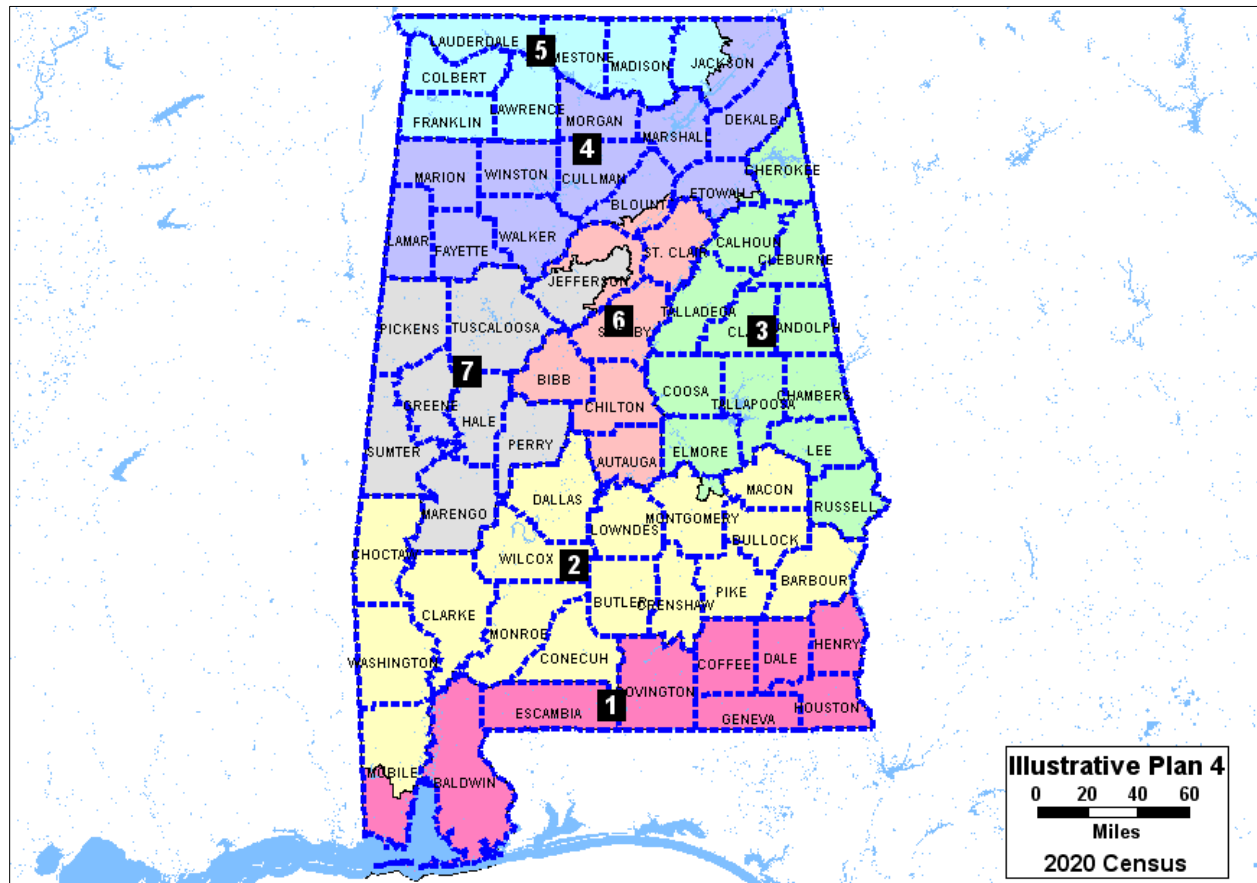
Figure 15**Illustrative Plan 3– 2020 Census**

| District | Population | 18+ Pop | % 18+ AP Black | % 18+ NH White |
|-----------------|-------------------|----------------|---------------------------|---------------------------|
| 1 | 717753 | 557048 | 17.23% | 73.86% |
| 2 | 717752 | 559299 | 50.27% | 43.53% |
| 3 | 717755 | 562300 | 25.49% | 66.43% |
| 4 | 717755 | 559374 | 7.30% | 82.21% |
| 5 | 717755 | 561688 | 18.66% | 70.63% |
| 6 | 717755 | 554093 | 11.93% | 79.81% |
| 7 | 717754 | 563364 | 50.09% | 42.12% |

78. The Illustrative Plan 3 maps and statistics in the **Exhibit I** series are identical in format and sequence to the Exhibit G and H series. As shown in **Exhibit I-4**, Illustrative Plan 3 splits six counties and populated areas in 10 VTDs. **Exhibit I-5** identifies 32 municipalities where populations are divided into two districts.

(d) Illustrative Plan 4

79. The map in **Figure 16** depicts Illustrative Plan 4. District 2 is 50.07% BVAP and District 7 is 50.09% BVAP.

Figure 16**Alabama U.S. House – Illustrative Plan 4**

80. Majority-Black District 2 encompasses part of Mobile County, extends north to include all of Choctaw County, and then east to the Georgia state line to include all of Barbour County—part of the historical Black Belt.

81. Majority-Black District 7 encompasses part of Jefferson County and all of Tuscaloosa County and stretches west to the Mississippi state line, with Perry and Marengo Counties forming the eastern border.

82. The table in **Figure 17** shows 2020 summary population statistics for Illustrative Plan 4. **Exhibit J-1** contains detailed 2020 population statistics by district.

Figure 17

Illustrative Plan 4 – 2020 Census

| District | Population | 18+ Pop | % 18+ AP Black | % 18+ NH White |
|----------|------------|---------|-------------------|-------------------|
| 1 | 717755 | 557046 | 17.23% | 73.87% |
| 2 | 717754 | 561374 | 50.07% | 43.92% |
| 3 | 717755 | 564004 | 25.10% | 67.19% |
| 4 | 717754 | 556215 | 6.73% | 82.75% |
| 5 | 717755 | 561685 | 18.66% | 70.63% |
| 6 | 717753 | 554035 | 12.93% | 77.83% |
| 7 | 717753 | 562807 | 50.09% | 42.53% |

83. The Illustrative Plan 4 maps and statistics in the **Exhibit J** series are identical in format and sequence to the Exhibit G, H, and I series. As shown in **Exhibit J-4** Illustrative Plan 4 splits six counties and populated areas in 12 VTDs. **Exhibit J-5** identifies 35 municipalities where populations are divided into two districts.

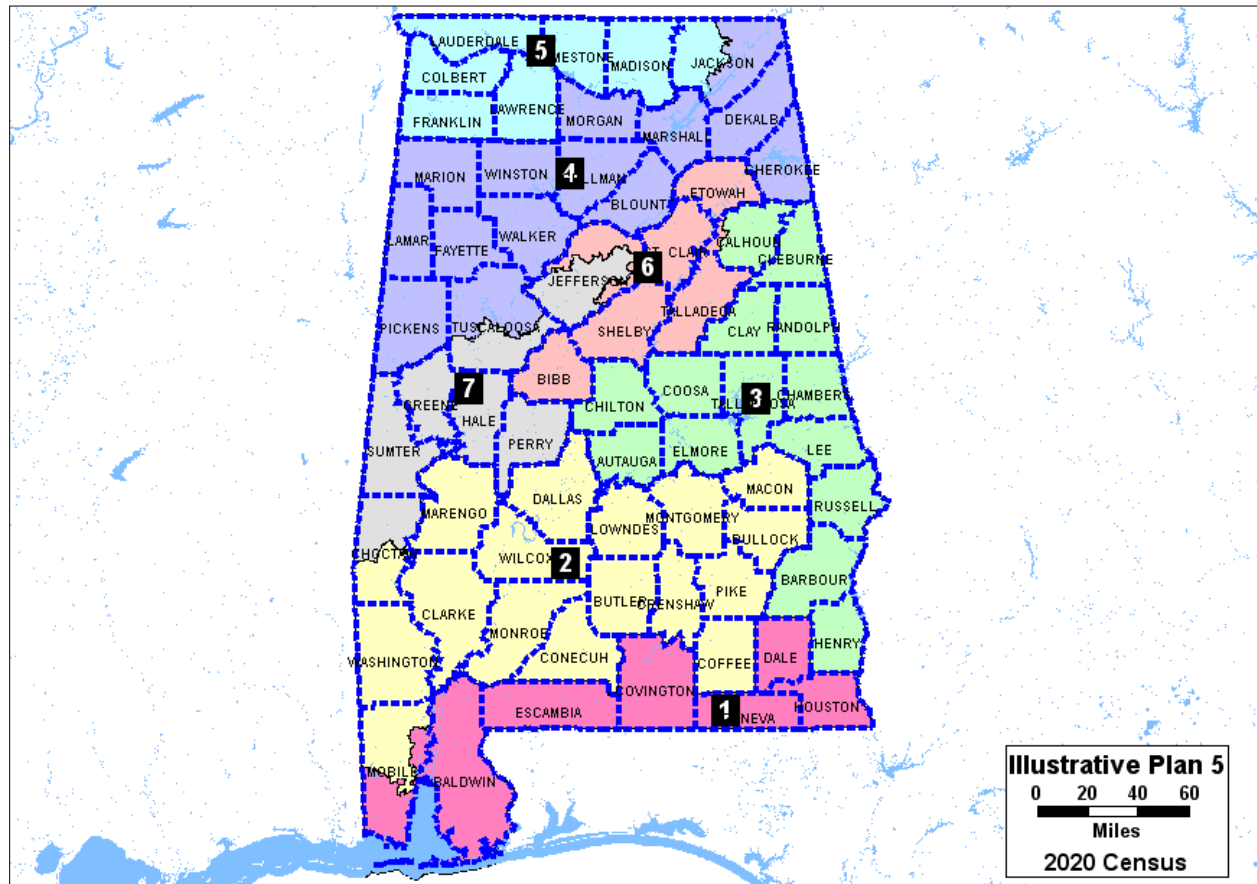
(e) Illustrative Plan 5

84. The map in **Figure 18** depicts Illustrative Plan 5. District 2 is 50.24% BVAP and District 7 is 50.09% BVAP.

85. Illustrative Plan 5 demonstrates that two majority-Black districts can be drawn that would not pair the two current incumbents who currently represent District 1 and District 2.

Figure 18

Alabama U.S. House – Illustrative Plan 5



86. Majority-Black District 2 encompasses part of Mobile County, extends north to include all of Washington County and part of Choctaw County, then east through the Black Belt counties. Macon, Bullock, and Pike Counties form the

eastern boundary, along with Coffee County, where the current District 2 incumbent resides.

87. Majority-Black District 7 encompasses part of the Counties of Jefferson and Tuscaloosa, extends west to the Mississippi state line, then south to share Choctaw County with District 2 and east to Perry County.

88. The table in **Figure 19** shows 2020 summary population statistics for Illustrative Plan 5. **Exhibit K-1** contains detailed 2020 population statistics by district.

Figure 19

Illustrative Plan 5 – 2020 Census

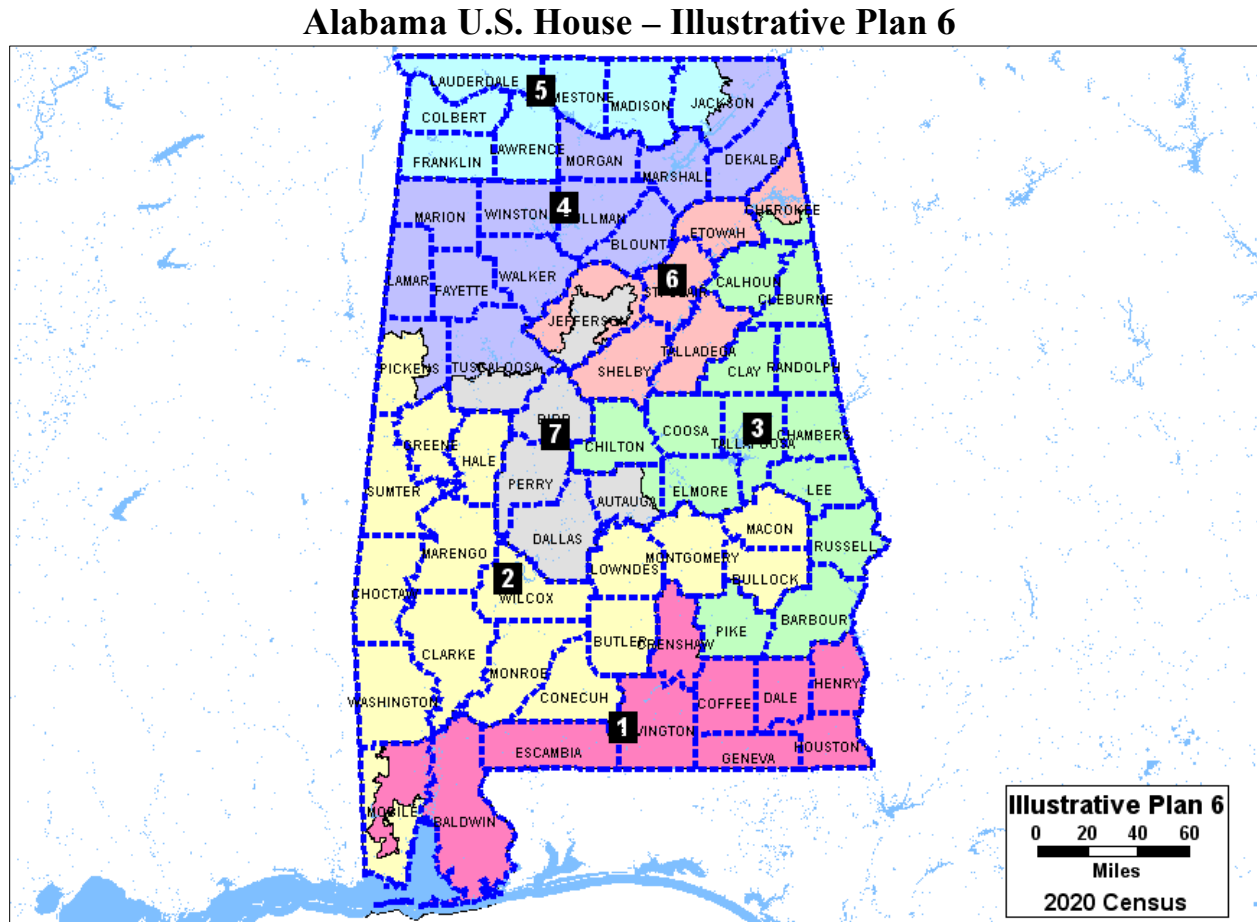
| District | Population | 18+ Pop | % 18+ | % 18+ |
|----------|------------|---------|----------|----------|
| | | | AP Black | NH White |
| 1 | 717755 | 559475 | 17.12% | 74.18% |
| 2 | 717753 | 557367 | 50.24% | 43.20% |
| 3 | 717753 | 561513 | 24.52% | 67.49% |
| 4 | 717755 | 555656 | 6.10% | 83.50% |
| 5 | 717755 | 561688 | 18.66% | 70.63% |
| 6 | 717755 | 555380 | 14.16% | 77.64% |
| 7 | 717753 | 566087 | 50.09% | 42.02% |

89. The Illustrative Plan 5 maps and statistics in the **Exhibit K** series are identical in format and sequence to the previous plans. As shown in **Exhibit K-4**, Illustrative Plan 5 splits six counties and populated areas in 20 VTDs. **Exhibit K-5** identifies 39 municipalities where populations are divided into two districts.

(f) Illustrative Plan 6

90. The map in **Figure 20** depicts Illustrative Plan 6. District 2 is 51.28% BVAP and District 7 is 51.09% BVAP.

Figure 20



91. Illustrative Plan 6 demonstrates that it is possible to create a second majority-Black district while keeping all of the population in the Cities of Mobile and Montgomery, as well as Montgomery County, together in District 2.

92. Majority-Black District 2 encompasses part of Mobile County, including all of the City of Mobile, and extends north to include the Black Belt counties on the Mississippi state line. Part of Pickens County is shared with District 4.

93. At the Washington County line, District 2 extends as far east as Macon and Bullock Counties, including all of Montgomery County.

94. Majority-Black District 7 encompasses part of the Counties of Jefferson and Tuscaloosa, extending south to Dallas County. To the east District 7 shares Autauga County with District 3.

95. The table in **Figure 21** shows 2020 summary population statistics for Illustrative Plan 6. **Exhibit L-1** contains detailed 2020 population statistics by district.

Figure 21

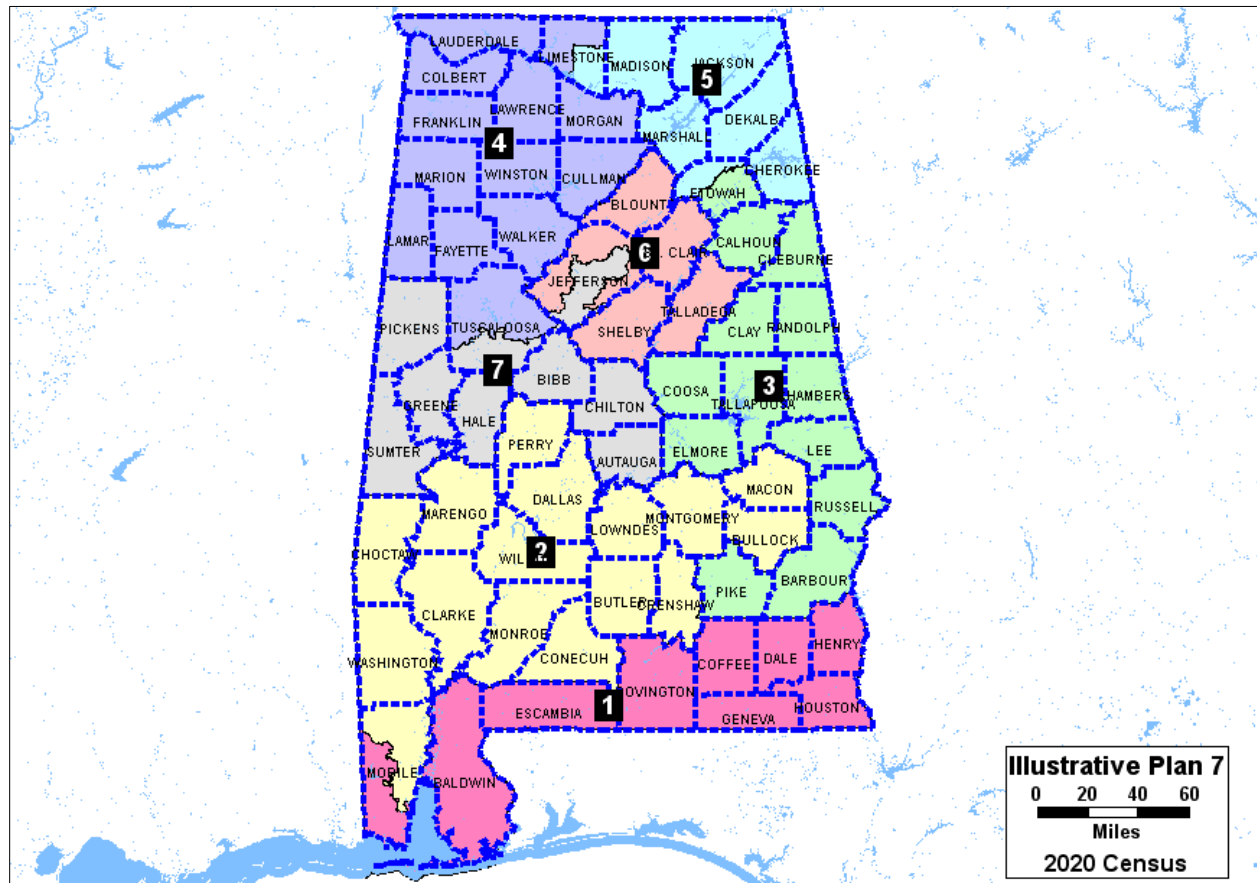
Illustrative Plan 6 – 2020 Census

| District | Population | 18+ Pop | % 18+ AP Black | % 18+ NH White |
|-----------------|-------------------|----------------|---------------------------|---------------------------|
| 1 | 717753 | 556657 | 15.83% | 75.27% |
| 2 | 717755 | 560712 | 51.28% | 42.36% |
| 3 | 717753 | 562748 | 24.77% | 67.22% |
| 4 | 717754 | 555444 | 5.63% | 83.83% |
| 5 | 717755 | 561685 | 18.66% | 70.63% |
| 6 | 717755 | 556812 | 13.58% | 78.31% |
| 7 | 717754 | 563108 | 51.09% | 41.08% |

96. The Illustrative Plan 6 maps and statistics in the **Exhibit L** series are identical in format and sequence to the previous plan exhibits. As shown in **Exhibit L-4**, Illustrative Plan 6 splits seven counties and populated areas in 27 VTDs. However, fifteen of the 27 VTD splits are created because the plan generally follows the city limits of the City of Mobile (rather than VTDs) to define the boundary between District 1 and District 2. **Exhibit L-5** identifies 41 municipalities where populations are divided into two districts.

(g) Illustrative Plan 7

97. The map in **Figure 22** depicts Illustrative Plan 7. District 2 is 51.88% BVAP and District 7 is 50.31% BVAP.

Figure 22**Alabama U.S. House – Illustrative Plan 7**

98. As in Illustrative Plan 6, majority-Black District 2 is drawn so that both the City of Mobile and the City of Montgomery (and Montgomery County) are entirely in District 2.

99. As shown in **Exhibit M-4**, Illustrative Plan 7 splits five counties and populated areas in 28 VTDs. However, ten of the 28 VTD splits are created because the plan generally follows the city limits of the City of Mobile (rather than VTDs)

to define the boundary between District 1 and District 2. **Exhibit M-5** identifies 32 municipalities where populations are divided into two districts.

100. Majority-Black District 2 extends north to Choctaw County and then east through the Black Belt, encompassing whole counties. Macon and Bullock Counties form the easternmost border.

101. Majority-Black District 7 in Illustrative Plan 7 encompasses part of the Counties of Jefferson and Tuscaloosa, extending west to Hale, Green, Sumter, and Pickens Counties. To the southeast, District 7 encompasses all of Bibb, Autauga, and Chilton Counties.

102. The table in **Figure 23** shows 2020 summary population statistics for Illustrative Plan 7. **Exhibit M-1** contains detailed 2020 population statistics by district. The **M-series** exhibits contain the same sequence of maps and statistics as the previous plan exhibits.

Figure 23**Illustrative Plan 7 – 2020 Census**

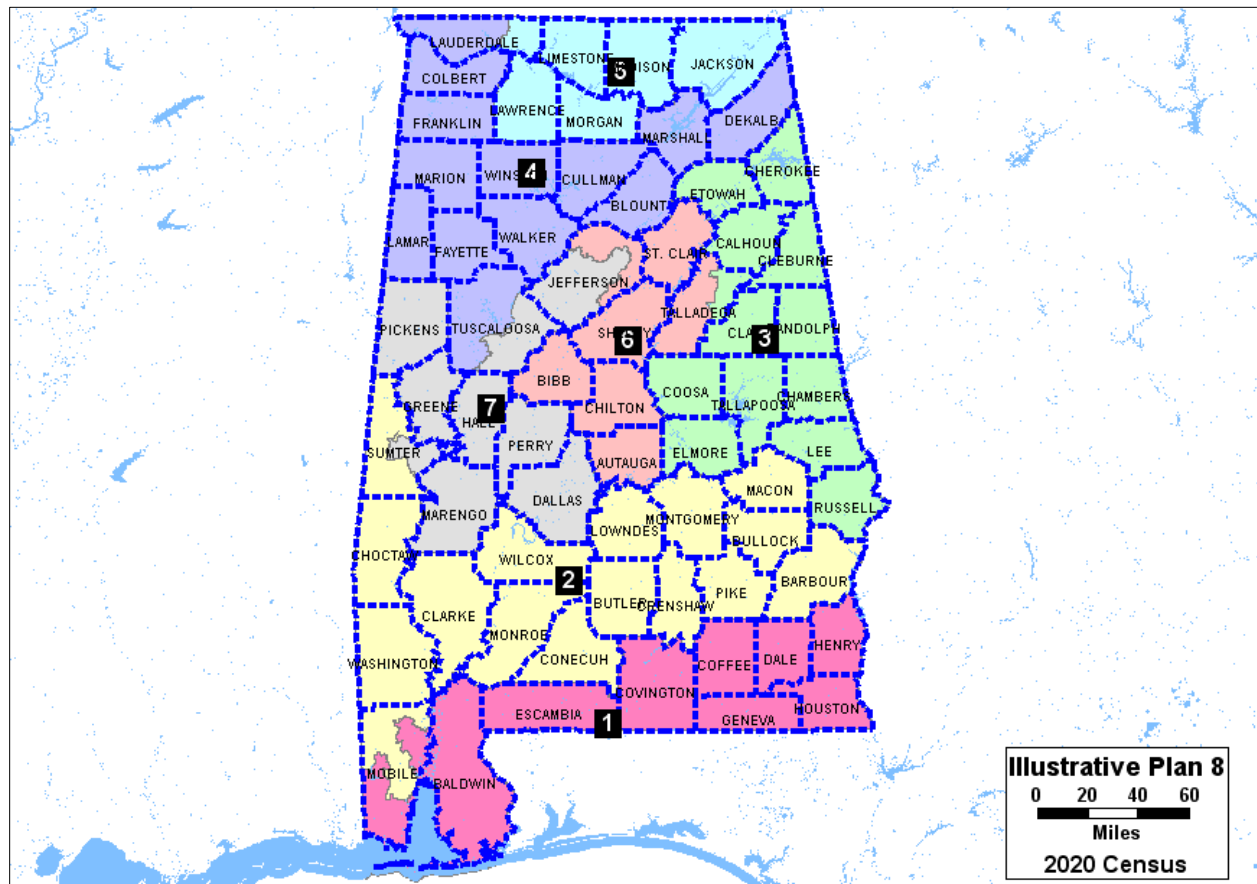
| District | Population | 18+ Pop | % 18+ AP Black | % 18+ NH White |
|-----------------|-------------------|----------------|-----------------------|-----------------------|
| 1 | 717753 | 556689 | 15.58% | 75.40% |
| 2 | 717752 | 559658 | 51.88% | 42.02% |
| 3 | 717755 | 564958 | 25.51% | 66.69% |
| 4 | 717755 | 564081 | 8.63% | 82.48% |
| 5 | 717755 | 557105 | 16.11% | 71.57% |
| 6 | 717755 | 555983 | 13.25% | 78.02% |
| 7 | 717754 | 558692 | 50.31% | 42.08% |

(h) Illustrative Plan 8

103. The map in **Figure 24** depicts Illustrative Plan 8. District 2 is 50.01% BVAP and District 7 is 51.32% BVAP.

104. As shown in **Exhibit N-4**, Illustrative Plan 8 splits six counties, with 12 VTD splits. Of the eight illustrative plans, Illustrative Plan 8 contains the least number of populated municipal splits—30—which is one less than the 2023 Plan and the same number as the Special Master Plan. *See* **Exhibit N-5**.

105. Illustrative Plan 8 closely tracks the Special Master Plan, keeping 90.5% of the population in the same district they are in under the Special Master Plan.

Figure 24**Illustrative Plan 8 – 2020 Census**

106. Majority-Black District 2 extends north from Mobile County to share Sumter County with District 7, then southeast through the Black Belt to Barbour County and the Georgia line. District 7 encompasses most of the land area in Jefferson County, extending south to include part of Tuscaloosa County and on to Dallas County then west to Marengo County and north to include Pickens County on the Mississippi line.

107. The table in **Figure 25** shows 2020 summary population statistics for Illustrative Plan 8. **Exhibit N-1** contains detailed 2020 population statistics by district. The **N-series** exhibits contain the same sequence of maps and statistics as the previous plan exhibits.

Figure 25

Illustrative Plan 8 – 2020 Census

| District | Population | 18+ Pop | % 18+ AP Black | % 18+ NH White |
|-----------------|-------------------|----------------|-----------------------|-----------------------|
| 1 | 717755 | 557166 | 15.78% | 75.31% |
| 2 | 717754 | 561030 | 50.01% | 43.44% |
| 3 | 717754 | 564022 | 22.67% | 69.57% |
| 4 | 717754 | 555217 | 7.22% | 82.83% |
| 5 | 717754 | 560406 | 18.33% | 70.27% |
| 6 | 717753 | 552875 | 15.27% | 75.95% |
| 7 | 717755 | 566450 | 51.32% | 41.54% |

VI. COMPARISON OF PLAN METRICS

108. This section provides a comparison of the eight illustrative plans, the 2023 Plan, and the Special Master Plan on various traditional redistricting criteria.

109. The districts in the illustrative plans are reasonably configured and compact—and clearly within the normal range for compactness as compared to congressional plans nationwide.¹⁹

(a) Compactness

110. **Figure 26** reports compactness scores generated by Maptitude for the 2023 Plan and the Special Master Plan.

111. The table summarizes the Reock²⁰ and Polsby-Popper²¹ scores—the two most widely-referenced measures of compactness. Higher scores indicate higher compactness.

¹⁹ See, for example, *Redrawing the Map 2012 Addendum* by geospatial firm Azavea—examining the compactness scores for post-2010 congressional plans in all states—available at: https://redistricting.azavea.com/assets/pdfs/Azavea_Redistricting-White-Paper-Addendum-2012_sm.pdf.

²⁰ “The Reock test is an area-based measure that compares each district to a circle, which is considered to be the most compact shape possible. For each district, the Reock test computes the ratio of the area of the district to the area of the minimum enclosing circle for the district. The measure is always between 0 and 1, with 1 being the most compact. The Reock test computes one number for each district and the minimum, maximum, mean and standard deviation for the plan.” *Maptitude For Redistricting* software documentation (authored by the Caliper Corporation).

²¹ “The Polsby-Popper test computes the ratio of the district area to the area of a circle with the same perimeter: $4\pi\text{Area}/(\text{Perimeter}^2)$. The measure is always between 0 and 1, with 1 being the most compact. The Polsby-Popper test computes one number for each district and the minimum, maximum, mean and standard deviation for the plan.” *Maptitude For Redistricting* software documentation (authored by the Caliper Corporation).

Figure 26**Compactness Scores – 2023 Plan and Special Master Plan**

| | Reock | | | | Polsby-Popper | | |
|----------------------------|-----------|-----|------|--|---------------|-----|------|
| | Mean avg. | Low | High | | Mean avg. | Low | High |
| 2023 Plan | | | | | | | |
| All Districts | .41 | .31 | .61 | | .28 | .18 | .40 |
| CD 2 | .61 | | | | .37 | | |
| CD 7 | .40 | | | | .23 | | |
| Special Master Plan | | | | | | | |
| All Districts | .35 | .21 | .46 | | .24 | .14 | .40 |
| CD 2 | .22 | | | | .34 | | |
| CD 7 | .46 | | | | .21 | | |

112. As shown in **Figure 27**, compared to the 2023 Plan and the Special Master Plan, the illustrative plans are generally in the same range of compactness.

Figure 27**Compactness Scores – Illustrative Plans**

| | Reock | | | | Polsby-Popper | | |
|----------------------------|-----------|-----|------|--|---------------|-----|------|
| | Mean avg. | Low | High | | Mean avg. | Low | High |
| Illustrative Plan 1 | | | | | | | |
| All Districts | .34 | .21 | .47 | | .18 | .13 | .33 |
| District 2 | .36 | | | | .18 | | |
| District 7 | .37 | | | | .13 | | |
| Illustrative Plan 2 | | | | | | | |
| All Districts | .34 | .21 | .52 | | .18 | .12 | .33 |
| District 2 | .31 | | | | .12 | | |
| District 7 | .40 | | | | .13 | | |
| Illustrative Plan 3 | | | | | | | |
| All Districts | .34 | .20 | .47 | | .18 | .12 | .33 |
| District 2 | .33 | | | | .14 | | |
| District 7 | .37 | | | | .13 | | |
| Illustrative Plan 4 | | | | | | | |
| All Districts | .33 | .20 | .41 | | .22 | .13 | .34 |
| District 2 | .33 | | | | .24 | | |
| District 7 | .41 | | | | .24 | | |
| Illustrative Plan 5 | | | | | | | |
| All Districts | .29 | .19 | .39 | | .18 | .11 | .33 |
| District 2 | .39 | | | | .19 | | |
| District 7 | .23 | | | | .11 | | |
| Illustrative Plan 6 | | | | | | | |
| All Districts | .31 | .24 | .35 | | .16 | .10 | .34 |
| District 2 | .29 | | | | .11 | | |
| District 7 | .34 | | | | .11 | | |
| Illustrative Plan 7 | | | | | | | |
| All Districts | .41 | .20 | .56 | | .21 | .13 | .39 |
| District 2 | .39 | | | | .19 | | |
| District 7 | .37 | | | | .13 | | |
| Illustrative Plan 8 | | | | | | | |
| All Districts | .33 | .21 | .38 | | .20 | .12 | .40 |
| District 2 | .32 | | | | .12 | | |
| District 7 | .38 | | | | .13 | | |

(b) Political Subdivision and Regional Splits

113. **Figure 28** compares plans in terms of political subdivision splits—VTDs, counties, and municipalities. Four illustrative plans have the same or fewer VTD splits than the 2023 Plan and the Special Master Plan. Seven illustrative plans have the same or fewer county splits than the 2023 Plan and the Special Master Plan.

114. Illustrative Plan 8 (30 splits) has fewer municipal splits than the 2023 Plan (32 splits) and the Special Master Plan (31 splits). With 32 municipal splits, Illustrative Plan 3 and Illustrative Plan 7 match the 2023 Plan.

115. Illustrative Plans 6 and 7 prioritize keeping 100% of the population in the City of Mobile in District 2 and for that reason split more VTDs.

Figure 28**Political Subdivision Splits²²**

| | Populated VTD Splits | Split Counties | Split Municipalities (excluding unpopulated blocks) |
|---------------------|-------------------------------------|---------------------------|--|
| 2023 Plan | 11 | 6 | 32 |
| Special Master Plan | 14 | 6 | 31 |
| Illustrative 1 | 16 | 6 | 38 |
| Illustrative 2 | 13 | 7 | 40 |
| Illustrative 3 | 10 | 6 | 32 |
| Illustrative 4 | 12 | 6 | 35 |
| Illustrative 5 | 20 | 6 | 39 |
| Illustrative 6 | 27 | 7 | 41 |
| Illustrative 7 | 28 | 5 | 32 |
| Illustrative 8 | 12 | 6 | 30 |

(c) Communities of Interest

116. Alabama has several multi-county regions that could be considered communities of interest, many of which overlap.

(1) Core-Based Statistical Areas

²² According to the 2020 Census, there are 462 municipalities in Alabama, 67 counties, and 1,988 populated VTDs. Where a number is bolded, this indicates that the plan outperforms or matches either the 2023 Plan or the Special Master Plan on the respective metric.

Some municipal splits occur naturally when a municipality spills over into two or more counties (e.g., Small populated parts of Birmingham and Hoover are in Shelby County). Municipal annexations and changes to precinct or VTD boundaries are common in Alabama.

117. Metropolitan Statistical Areas (“MSAs”) and Micropolitan Statistical Areas (“MPSAs”) are defined by the U.S. Office of Management and Budget and reported in historical and current census data produced by the Census Bureau. Together, MSAs and MPSAs are referred to as “core-based statistical areas.”

118. MSAs consist of the county or counties (or equivalent entities) associated with at least one urbanized area of at least 50,000 population, plus adjacent counties having a high degree of social and economic integration with the core as measured through commuting ties. MPSAs consist of the county or counties (or equivalent entities) associated with at least one urbanized area of at least 10,000 population, plus adjacent counties having a high degree of social and economic integration with the core as measured through commuting ties.²³ **Exhibit Q** is a Census Bureau-produced map of Alabama’s MSAs and MPSAs.²⁴

119. The middle column in **Figure 29** shows splits for all MPSAs and MSAs (including single-county core-based statistical areas in both categories).

²³ Sources: U.S. Census Bureau, “About,” <https://www.census.gov/programs-surveys/metro-micro/about.html>; Office of Information and Regulatory Affairs, Office of Management and Budget, Executive Office of the President, “2020 Standards for Delineating Core-based Statistical Areas.”

²⁴ Available at: https://www2.census.gov/programs-surveys/metro-micro/reference-maps/2020/state-maps/01_Alabama_2020.pdf.

Seven of the eight illustrative plans split the same number or fewer of these regions than the 2023 Plan and the Special Master Plan.

120. Restricting the analysis to multi-county MSA regions only (right column in **Figure 29**), Illustrative Plans 3, 4, 7 and 8 split the fewest such regions with 15 splits, as compared to 17 splits for the 2023 Plan and 18 for the Special Master Plan. The remaining illustrative plans score the same as either the 2023 Plan or the Special Master Plan.

Figure 29

Core-Based Statistical Area Splits

| | All CBSAs (MSAs and MPSAs) | Multi-County MSAs (9 areas) |
|------------------------|---|--|
| 2023 Plan | 36 | 17 |
| Special Master Plan | 37 | 18 |
| Illustrative 1 | 37 | 17 |
| Illustrative 2 | 38 | 18 |
| Illustrative 3 | 36 | 15 |
| Illustrative 4 | 35 | 15 |
| Illustrative 5 | 37 | 17 |
| Illustrative 6 | 37 | 17 |
| Illustrative 7 | 34 | 15 |
| Illustrative 8 | 35 | 15 |

(2) Legislature's Regions

121. The 2023 Legislative Findings identified three regions as communities of interest: (1) the Black Belt (18 counties), (2) Wiregrass region (nine counties), and (3) the Gulf Coast (two counties).²⁵ **Figure 30** shows how many districts each of these regions are placed into in each of the plans.

Figure 30

Legislature's Defined Communities of Interest

| | Black Belt (18 counties) | Wiregrass (9 counties) | Gulf Coast (2 counties) |
|---------------------|-------------------------------------|-----------------------------------|------------------------------------|
| 2023 Plan | 2 | 2 | 1 |
| Special Master Plan | 2 | 2 | 2 |
| Illustrative 1 | 4 | 2 | 2 |
| Illustrative 2 | 4 | 2 | 2 |
| Illustrative 3 | 3 | 3 | 2 |
| Illustrative 4 | 3 | 2 | 2 |
| Illustrative 5 | 4 | 3 | 2 |
| Illustrative 6 | 5 | 2 | 2 |
| Illustrative 7 | 3 | 3 | 2 |
| Illustrative 8 | 3 | 2 | 2 |

²⁵ Source: SB5 Enrolled, previously submitted at ECF No. 220-11 and available at: <https://alison.legislature.state.al.us/files/pdffdocs/SearchableInstruments/2023SS2/SB5-enr.pdf>. The 18 Black Belt counties are: Barbour, Bullock, Butler, Choctaw, Lowndes, Crenshaw, Dallas, Macon, Marengo, Montgomery, Perry, Greene, Hale, Pickens, Pike, Russell, Sumter, and Wilcox.

The Gulf Coast region includes Mobile and Baldwin Counties.

The nine Wiregrass counties are: Barbour, Coffee, Covington, Crenshaw, Dale, Geneva, Henry, Houston, and Pike.

122. According to the Legislature’s 18-county definition of the Black Belt, the illustrative plans place the Black Belt counties into one to three more districts than the 2023 Plan and Special Master Plan.²⁶ The illustrative plans place the Wiregrass counties into the same number of districts or one more district than the 2023 Plan and Special Master Plan. The illustrative plans split the Gulf Coast counties into two districts, like the Special Master Plan.

(d) Core Retention

123. The second and third columns in **Figure 31** show the percentage of the population kept in the same district in each illustrative plan as compared to the 2023 Plan and the Special Master Plan, which is also detailed in the **Exhibit R** series.²⁷

²⁶ Based on the 12-county Black Belt region, see *supra* n.9, the 2023 Plan, the Special Master Plan, and Illustrative Plan 8 split the Black Belt into two districts, and Illustrative Plans 1 through 7 split the Black Belt into three districts.

²⁷ I define “core population” as the largest district-level subset of a population that is kept together in the shift from one plan to another (without considering changes in district numbers or changes in incumbent representation). The core population is identified with shading in the referenced exhibits.

Figure 31**Core Constituencies**

| Core Constituencies by Plan | % Core Population Kept Together from 2023 Plan | % Core Population Kept Together from Special Master Plan | % City of Mobile Kept Together | % City of Birmingham Kept Together |
|------------------------------------|---|---|---------------------------------------|---|
| 2023 Plan | NA | NA | 100% | 74.69% |
| Special Master Plan | 73.61% | NA | 90.4% | 93.26% |
| Illustrative 1 | 69.52% | 78.26% | 82.39% | 88.64% |
| Illustrative 2 | 71.12% | 77.59% | 70.78% | 88.64% |
| Illustrative 3 | 59.70% | 70.23% | 82.46% | 97.45% |
| Illustrative 4 | 68.46% | 78.63% | 82.46% | 87.33% |
| Illustrative 5 | 66.80% | 72.64% | 53.37% | 93.63% |
| Illustrative 6 | 62.15% | 72.06% | 100% | 91.74% |
| Illustrative 7 | 62.36% | 71.98% | 100% | 89.26% |
| Illustrative 8 | 79.47% | 90.48% | 91.51% | 86.67% |

124. The fourth and fifth columns of **Figure 30** show the percentage of the population of the cities of Birmingham and Mobile that are kept together in one district under each plan.

(e) Number of Counties per District per Plan

125. **Figure 32** shows the number of counties in each district for the 2023 Plan, the Special Master Plan, and the eight illustrative plans. In the 2023 Plan, each district contains between four and 16 counties. In the Special Master Plan, each district contains between four and 16 counties. In the Illustrative Plans, each district contains between six and 13 counties. The Illustrative Plans are in the same

range, with each district containing as few as five counties and as many as 17 counties.

Figure 32

COUNTIES PER DISTRICT

| 2023 Plan | | Special Master | | Illustrative Plan 1 | |
|----------------------------|----------|----------------------------|----------|----------------------------|----------|
| DISTRICT | COUNTIES | DISTRICT | COUNTIES | DISTRICT | COUNTIES |
| 1 | 4 | 1 | 9 | 1 | 9 |
| 2 | 16 | 2 | 13 | 2 | 16 |
| 3 | 11 | 3 | 11 | 3 | 13 |
| 4 | 13 | 4 | 13 | 4 | 13 |
| 5 | 6 | 5 | 6 | 5 | 7 |
| 6 | 8 | 6 | 8 | 6 | 5 |
| 7 | 15 | 7 | 13 | 7 | 9 |
| total (inc. splits) | 73 | total (inc. splits) | 73 | total (inc. splits) | 72 |
| Illustrative Plan 2 | | Illustrative Plan 3 | | Illustrative Plan 4 | |
| DISTRICT | COUNTIES | DISTRICT | COUNTIES | DISTRICT | COUNTIES |
| 1 | 9 | 1 | 9 | 1 | 9 |
| 2 | 16 | 2 | 16 | 2 | 16 |
| 3 | 14 | 3 | 14 | 3 | 13 |
| 4 | 13 | 4 | 13 | 4 | 13 |
| 5 | 7 | 5 | 7 | 5 | 7 |
| 6 | 7 | 6 | 7 | 6 | 5 |
| 7 | 7 | 7 | 7 | 7 | 9 |
| total (inc. splits) | 73 | total (inc. splits) | 73 | total (inc. splits) | 72 |
| Illustrative Plan 5 | | Illustrative Plan 6 | | Illustrative Plan 7 | |
| DISTRICT | COUNTIES | DISTRICT | COUNTIES | DISTRICT | COUNTIES |
| 1 | 8 | 1 | 10 | 1 | 9 |
| 2 | 17 | 2 | 17 | 2 | 16 |
| 3 | 11 | 3 | 15 | 3 | 13 |
| 4 | 14 | 4 | 13 | 4 | 13 |
| 5 | 7 | 5 | 7 | 5 | 7 |
| 6 | 8 | 6 | 6 | 6 | 5 |


| | | | | | |
|----------------------------|----------|---------------------|----|---------------------|----|
| 7 | 9 | 7 | 6 | 7 | 9 |
| total (inc. splits) | 74 | total (inc. splits) | 74 | total (inc. splits) | 72 |
| Illustrative Plan 8 | | | | | |
| DISTRICT | COUNTIES | | | | |
| 1 | 9 | | | | |
| 2 | 16 | | | | |
| 3 | 13 | | | | |
| 4 | 13 | | | | |
| 5 | 7 | | | | |
| 6 | 5 | | | | |
| 7 | 9 | | | | |
| total (inc. splits) | 72 | | | | |

###

I reserve the right to continue to supplement my reports in light of additional facts, testimony and/or materials that may come to light.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on: May 17, 2024


WILLIAM S. COOPER