

**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 compensated at a rate of \$150 per hour.

**(a) Redistricting Experience**

2. I have been qualified in federal courts at trial as an expert witness on  
redistricting and demographics in about 45 voting rights cases in 19 states. My

testimony in these lawsuits almost always included a review of demographics and socioeconomic characteristics for the jurisdictions at issue. Five of these lawsuits resulted in changes to statewide legislative boundaries: *Rural West Tennessee African-American Affairs v. McWherter*, *Old Person v. Cooney*, *Bone Shirt v. Hazeltine*, *Alabama Legislative Black Caucus v Alabama*, and *Thomas v. Reeves*. Approximately 25 of the cases led to changes in local election district plans.<sup>1</sup>

3. 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 – *Chestnut v. Merrill*, Case No. 2:18-cv-00907.

4. In 2019, I prepared a consent decree election plan for the Jefferson County, Alabama Board of Education (*James v. Jefferson County Board of Education*). I served as a redistricting consultant to the City of Decatur, Alabama (*Voketz v. City of Decatur*) between 2015 and 2020. I also served as a redistricting consultant to the plaintiffs in *Alabama State NAACP v. City of Pleasant Grove* 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* involving at-large judicial elections.

---

<sup>1</sup> I have served as an expert witness on demographics in non-voting trials. For example, in an April 2017 opinion in *Stout v. Jefferson County Board of Education* (Case No.2:65-cv-00396-MHH), a school desegregation case involving the City of Gardendale, Alabama, the court made extensive reference to my testimony.

5. I currently serve as a redistricting consultant to the San Juan County, Utah Commission, with responsibility for developing election plans for the 3-district county commission and the 5-district school board. In October 2021, I briefly served as a consultant to the city council in Wenatchee, Washington and determined that the 2018 redistricting plan I drew is not malapportioned under the 2020 Census.

6. For additional historical information on my testimony as an expert witness and experience preparing and assessing proposed redistricting maps for Section 2 litigation, see a summary of my redistricting work attached as **Exhibit A**.

**(b) Purpose of Report**

7. 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”<sup>2</sup> to allow for the creation of two U.S. House majority-Black districts – one more than under the enacted plan (the “2021 Plan”).

8. In addition, the attorneys asked me to review historical and current demographics reported in the decennial Census, as well as socioeconomic characteristics reported in the 1-year 2019 American Community Survey (“ACS”) for African Americans and non-Hispanic Whites.<sup>3</sup>

---

<sup>2</sup> *Thornburg v. Gingles*, 478 U.S. 30, 50 (1986).

<sup>3</sup> 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 more than one race and some part Black. “White” or “NH White” means non-Hispanic White. The AP Black classification includes all persons who

9. **Exhibit B** describes the sources and methodology I have employed in the preparation of this report. I also reviewed the “Reapportionment Committee Guidelines for Redistricting,” which addresses Alabama’s 2021 legislative and congressional redistricting.<sup>4</sup>

**(c) Expert Summary Conclusions**

10. Based on the 2020 Census, African Americans in Alabama are sufficiently numerous and geographically compact to allow for two majority-Black U.S. House districts in a seven-district plan.

11. As reported in the 1-Year *2019 American Community Survey*, non-Hispanic Whites significantly outpace African Americans across most key indicators of socio-economic well-being. These disparities are found statewide, as well as at the regional level in central and south Alabama.

**(d) Organization of Declaration**

12. The remainder of this declaration is organized as follows: **Section II** reviews state and regional demographics; **Section III** compares the benchmark 2011 U.S. Congressional Plan and the enacted 2021 U.S. Congressional Plan;

---

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.

<sup>4</sup> Source:

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

**Section IV** presents six illustrative plans that feature a second majority-Black congressional district in central and south Alabama; **Section V** reviews socioeconomic disparities by race –statewide and by congressional district – with corresponding charts.

## **II. DEMOGRAPHIC PROFILE OF ALABAMA**

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

13. As shown in **Figure 1**, according to the 2020 Census, Alabama has a total population of 5,024,279. 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.

**Figure 1****Alabama – 2010 Census to 2020 Census****Population by Race and Ethnicity<sup>5</sup>**

	<b>2010 Number</b>	<b>Percent</b>	<b>2020 Number</b>	<b>Percent</b>	<b>Change 2010 to 2020</b>	<b>% Change 2010-2020</b>
<b>Total Population</b>	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%
Single-race Black (including Black Hispanics)	1,251,311	26.18%	1,296,162	25.80%	44,851	3.58%
<b>Any Part Black (including Black Hispanics)</b>	1,281,118	26.80%	1,364,736	<b>27.16%</b>	83,618	6.53%

14. The population in Alabama grew by 5.12% between 2010 and 2020, from about 4.78 million to 5.02 million. 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 attributed to an increase in the minority population (277,594), offsetting a population loss of 33,051 NH White persons.

15. The 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

---

<sup>5</sup> PL94-171 Redistricting File (Census 2010 and Census 2020)

population increase between 2010 and 2020 in Alabama (83,618 of 244,543 persons).

**(b) 2020 Census – Spatial Distribution of the Black Population**

16. 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.<sup>6</sup> 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.

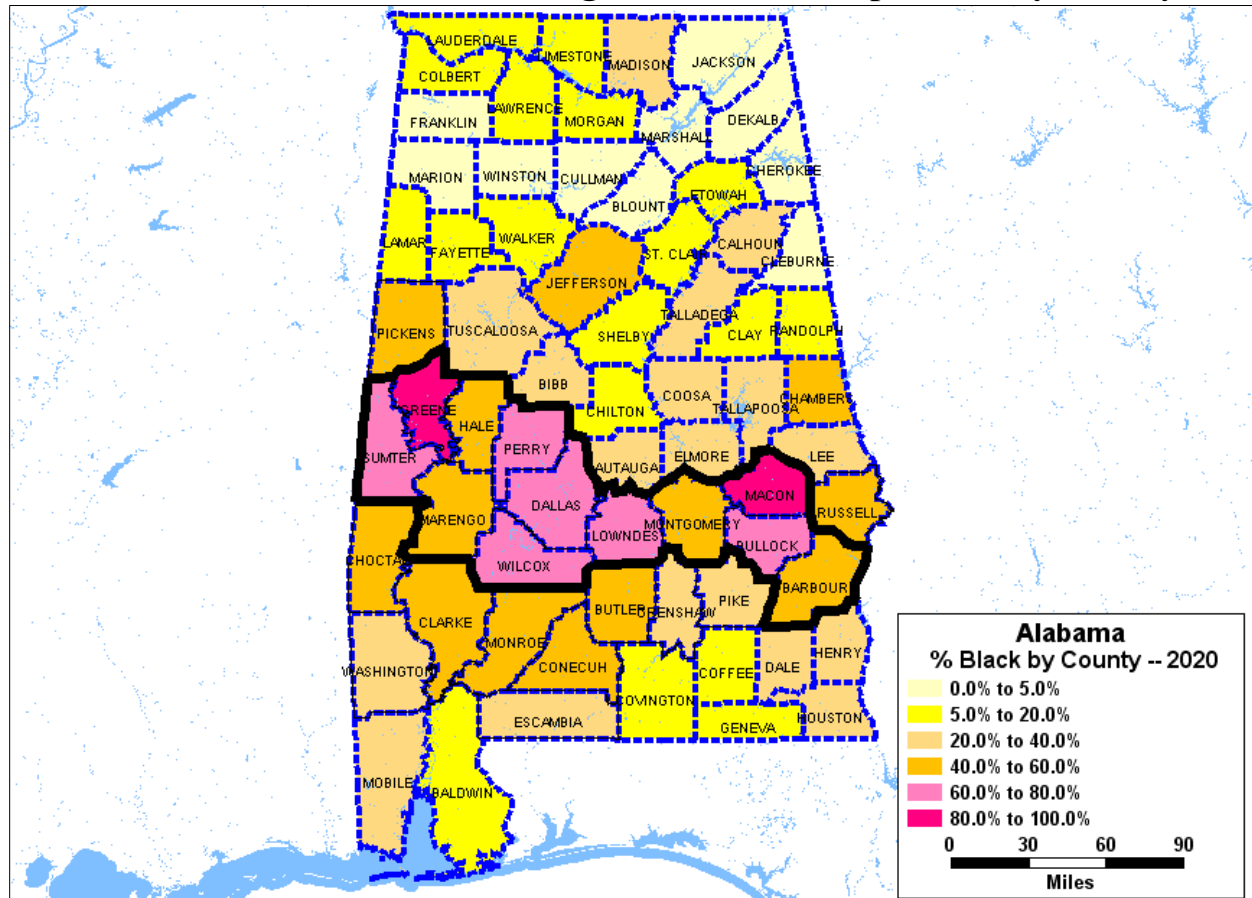
17. The map in **Figure 2** displays the state’s Black population by county under the 2020 Census, with bold lines demarcating the Black Belt region. The table in **Exhibit C** reports 2020 population by county by race and ethnicity.

---

<sup>6</sup> In this declaration, the term “Black Belt” refers to the following 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*.

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.  
<http://www.encyclopediaofalabama.org/article/h-2458>

**Figure 2**  
**2020 Census – Black Belt Region and Black Population by County**



**(c) Voting Age and Citizen Voting Age**

18. As shown in **Figure 3**, 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 3**

**Alabama – 2020 Voting Age Population &  
2019 Estimated Citizen Voting Age Population  
By Race and Ethnicity<sup>7</sup>**

	2020 VAP	2020 VAP Percent	2019 CVAP Percent
<b>Total</b>	3,917,166	100.00%	100.00%
NH White 18+	2,564,544	65.47%	68.5 %
Total Minority 18+	1,352,622	34.53%	31.5%
Latino 18+	166,856	4.26%	2.2%
Single-race Black (Including Black Hispanics) 18+	981,723	25.06%	26.7%
<b>Any Part Black (Including Black Hispanics) 18+</b>	<b>1,014,372</b>	<b>25.90%</b>	<b>27.3%</b>

19. The rightmost column in **Figure 3** 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.

20. According to estimates from the 1-year 2019 *American Community Survey* (“ACS”), African Americans represent 27.3% of the statewide CVAP – more than a percentage point higher than the 2020 AP Black VAP. The NH White

---

<sup>7</sup> Sources:

**PL94-171 Redistricting File** (Census 2020);

**Table S2901 -- CITIZEN, VOTING-AGE POPULATION BY SELECTED CHARACTERISTICS** (1-year 2019 ACS )

<https://data.census.gov/cedsci/table?q=S2901&g=0400000US01&tid=ACSS1Y2019.S2901&hidePreview=true>.

**2019 ACS 1-Year Estimates 1-Year Estimates-Public Use Microdata Sample**

[https://data.census.gov/mdat/#/search?ds=ACSPUMS1Y2019&vv=AGEP\(18:99\)&cv=RACBLK\(1\)&rv=ucgid,CIT\(1,2,3,4\)&wt=PWGTP&g=0400000US01](https://data.census.gov/mdat/#/search?ds=ACSPUMS1Y2019&vv=AGEP(18:99)&cv=RACBLK(1)&rv=ucgid,CIT(1,2,3,4)&wt=PWGTP&g=0400000US01)

CVAP is 68.5% – 3 percentage points higher than NH White VAP in the 2020 Census.<sup>8</sup>

### III. ALABAMA CONGRESSIONAL PLANS – 2021 and 2011

#### **(a) 2021 Enacted Congressional Plan**

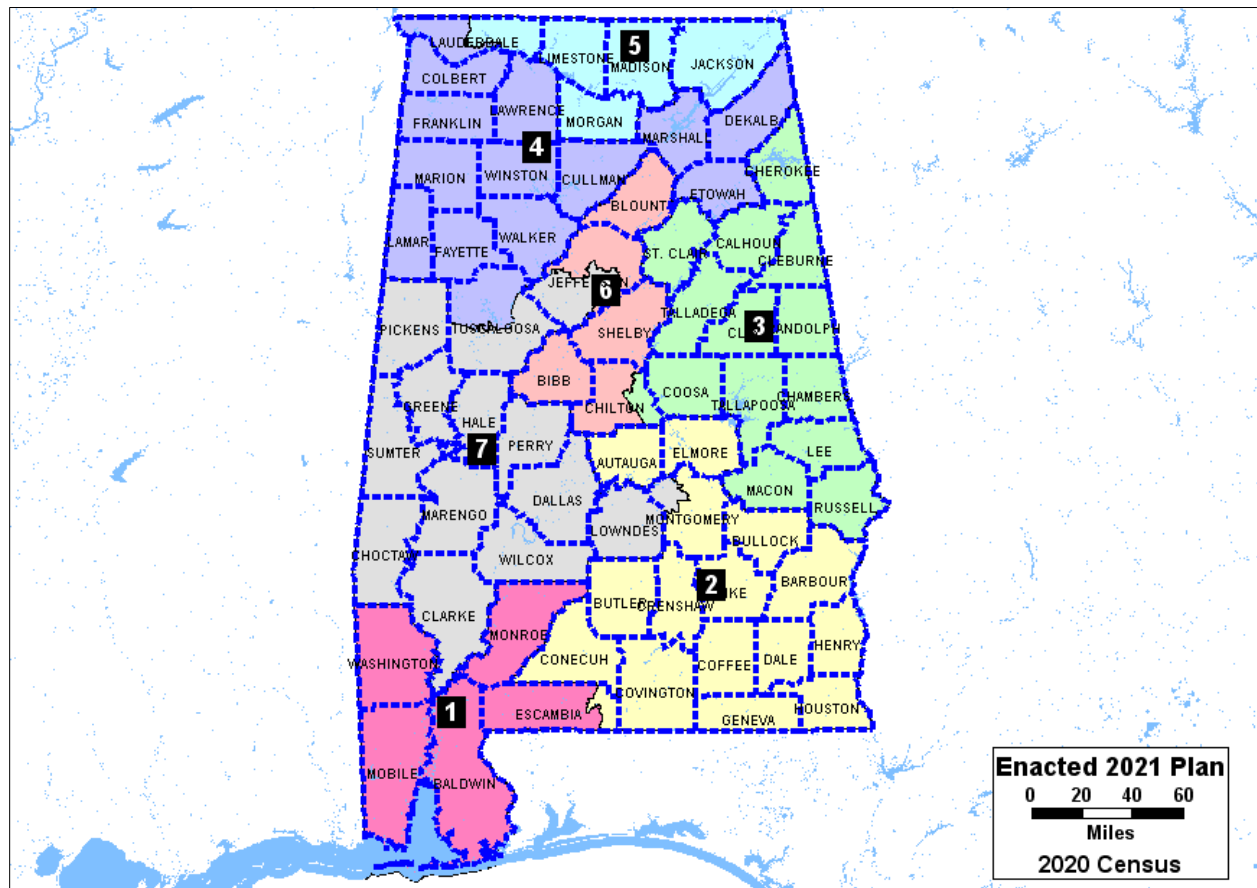
21. On November 4, 2021, Governor Ivey signed into law a new congressional plan (the “2021 Plan”) with CD 7 as the only majority-Black district and six county splits.<sup>9</sup> The map in **Figure 4** depicts the 2021 Plan.

---

<sup>8</sup> Due to the COVID-19 pandemic, the 1-year 2020 ACS results will not be published.  
Source:

<https://www.census.gov/newsroom/press-releases/2021/changes-2020-ac-s-1-year.html>

<sup>9</sup> Source for GIS shapefile: <https://redistrictingdatahub.org/state/alabama/>

**Figure 4****Alabama – Enacted 2021 U.S. House Plan**

22. Majority-Black CD 7 encompasses part of Jefferson County and extends southwest to include the southern half of Tuscaloosa County and rural Black Belt counties along the Mississippi border, then east through part of the Back Belt to northwest Montgomery County.

23. The table in **Figure 5** shows 2020 summary population statistics for the 2021 Plan. **Exhibit D-1** contains more detailed 2020 population statistics.

**Figure 5****2021 U.S. House Plan – 2020 Census**

<b>District</b>	<b>Population</b>	<b>18+ Pop</b>	<b>% 18+ AP Black</b>	<b>% 18+ NH White</b>
1	717754	557535	25.61%	66.00%
2	717755	557677	30.12%	62.03%
3	717754	564281	24.99%	67.74%
4	717754	556133	7.70%	82.41%
5	717754	561187	18.06%	70.89%
6	717754	552286	18.93%	71.16%
7	717754	568067	55.26%	38.60%

24. The map in **Exhibit D-2** is a higher resolution version of the **Figure 4** map. **Exhibit D-3** contains maps that focus on CDs 1, 2, and 7 – the general area where a second majority-Black district can be drawn. **Exhibit D-4** identifies county and VTD<sup>10</sup> splits in the 2021 Plan. The 2021 Plan splits six counties and seven populated VTDs.

25. As shown in **Figure 5**, CD 7 in the 2021 Plan is 55.26% BVAP, and the remaining six districts are all 30% BVAP or lower, consistent with the “cracking”<sup>11</sup> that was also evident in the 2011 Plan (discussed further below).

26. The map in **Figure 6** illustrates cracking in the 2011 and 2021 congressional plans. The **Figure 6** map overlays the four 2021 Plan congressional districts in central and south Alabama – CDs 1, 2, 3, and 7 (demarcated by bold

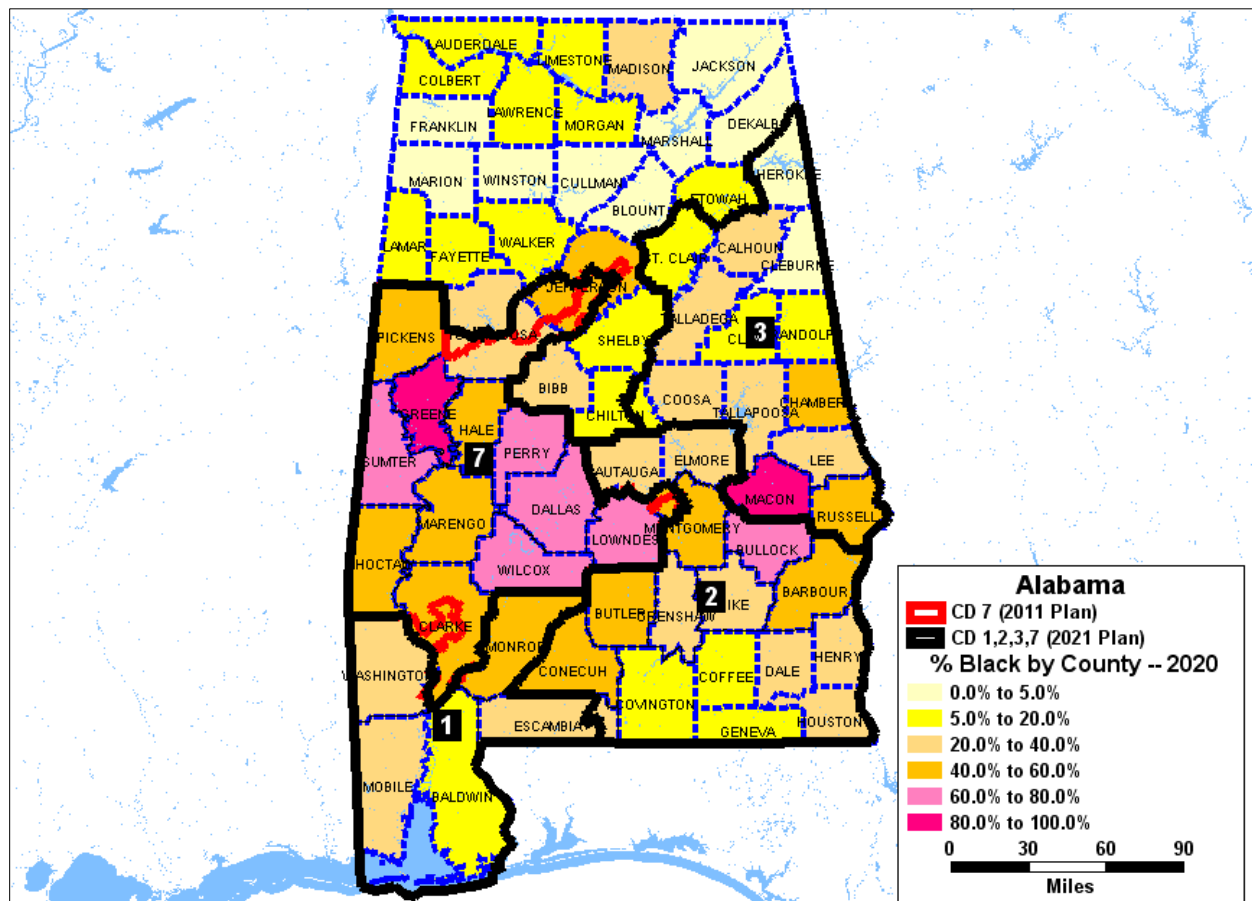
---

<sup>10</sup> “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.

<sup>11</sup> “Cracking” is a term which describes redistricting plans characterized with one or more districts that fragment or divide the minority population, resulting in an overall dilution of minority voting strength in the voting plan.

lines) onto a map displaying 2020 Black population by county. Red lines show areas where CD 7 was different under the 2011 Plan. Under both the 2011 and 2021 plans, Black voters who do not live in CD 7 are divided or cracked into neighboring districts, rather than joined into a second majority-Black opportunity district.

**Figure 6**  
**Central and South Alabama Under the 2021 Plan and 2011 Plans**



27. Under both the 2011 Plan and the 2021 Plan, majority-Black Macon County is in majority-White CD 3, which extends north to encompass Cherokee County in Appalachian Alabama. Majority-Black Bullock County and plurality-

Black Barbour County 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. Most of majority-Black Montgomery County is in majority-White CD 2.

28. According to the 2020 Census, less than one-third (30.02%) of Alabama's Black population lives within majority-Black 2021 CD 7. By contrast, 91.8% of the 2020 NH White population lives in one of the six majority-White districts.

29. As shown in **Figure 5** *supra*, most of the remainder of the Black population outside of CD 7 is distributed relatively evenly into CD 1 (25.61% BVAP), CD 2 (30.12% BVAP), and CD 3 (24.99% BVAP). Taken together, these three districts have a total 2020 Black population of 612,759 (and a BVAP of 451,759), which is nearly enough population to comprise an entire congressional district (85.4% of a full congressional district).

30. For reference, **Exhibit E-1** contains detailed 2020 population statistics by district for the 2011 Plan, which are summarized below in **Figure 7**.

**Figure 7****2011 U.S. House Plan – 2020 Census**

District	Population	Deviation	% Dev.	18+ Pop	% 18+ AP Black	% 18+ NH White
1	726276	8522	1.19%	564302	25.67%	66.00%
2	693466	-24288	-3.38%	539812	30.60%	61.87%
3	735132	17378	2.42%	576455	25.83%	66.45%
4	702982	-14772	-2.06%	543423	7.18%	82.84%
5	761102	43348	6.04%	595873	17.97%	71.19%
6	740710	22956	3.20%	572838	16.37%	73.88%
7	664611	-53143	-7.40%	524463	60.16%	33.84%

31. **Exhibit E-2** is a state-produced map of the 2011 Plan<sup>12</sup> and **Exhibit E-3** is a state-produced map of the 2021 Plan.<sup>13</sup> As shown in **Exhibit E-4**, there are seven county splits in the 2011 Plan. Under the 2020 Census geography, the 2011 Plan splits populated areas in 47 VTDs.

#### **IV. ILLUSTRATIVE PLANS**

##### **A. GEOGRAPHICAL AREA**

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

32. The area covered by the two majority-Black districts in Alabama’s 2021 Board of Education Plan (“BOE Plan”) is strikingly similar to the coverage area for the two majority-Black districts in the Plaintiffs’ illustrative congressional plans presented in **Section B**.

---

<sup>12</sup> Source:

[http://www.legislature.state.al.us/aliswww/Legislature/2011\\_Congressional\\_Districts.pdf](http://www.legislature.state.al.us/aliswww/Legislature/2011_Congressional_Districts.pdf)

<sup>13</sup> Source:

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

33. 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”) minority opportunity districts in 8-district plans.

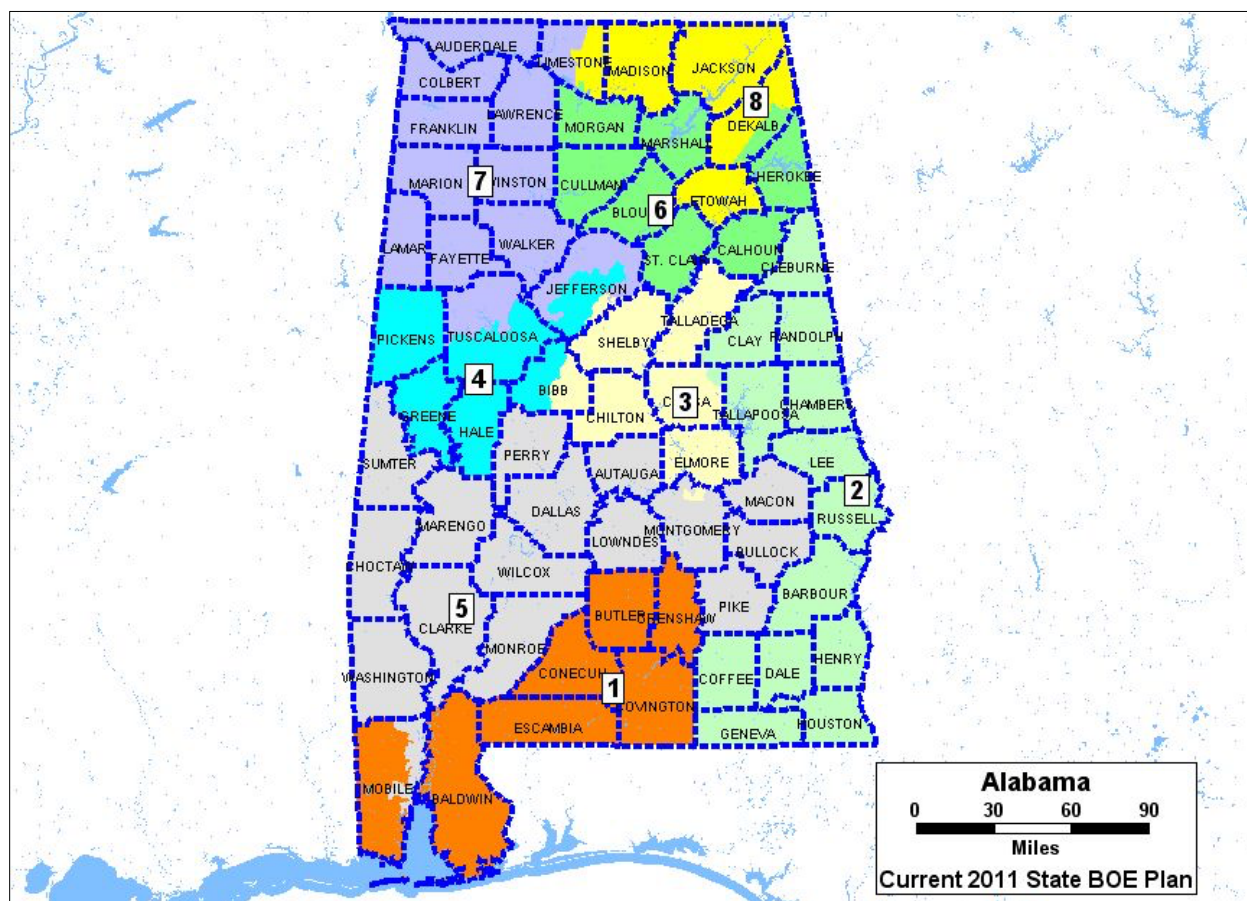
34. According to the 2000 Census, under the court-ordered 1996 BOE Plan BOE District 4 was 46.63% SR BVAP and BOE District 5 was 51.75% SR BVAP. Under the 2001 BOE Plan, BOE District 4 was 47.61% SR BVAP and BOE District 5 was 51.97% SR BVAP.<sup>14</sup>

35. 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. **Figure 8** shows the 2011 BOE Plan.

---

<sup>14</sup> 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 reported in the Census 2000 PL94-171 file and therefore could not be included here.

**Figure 8****Alabama – 2011 Board of Education Plan**

36. 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.

37. In 2021, the Legislature once again created two majority-Black BOE districts in central and south Alabama. The 2021 BOE Plan was signed into law by Governor Ivey on the same day as the 2021 U.S. House Plan. 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.

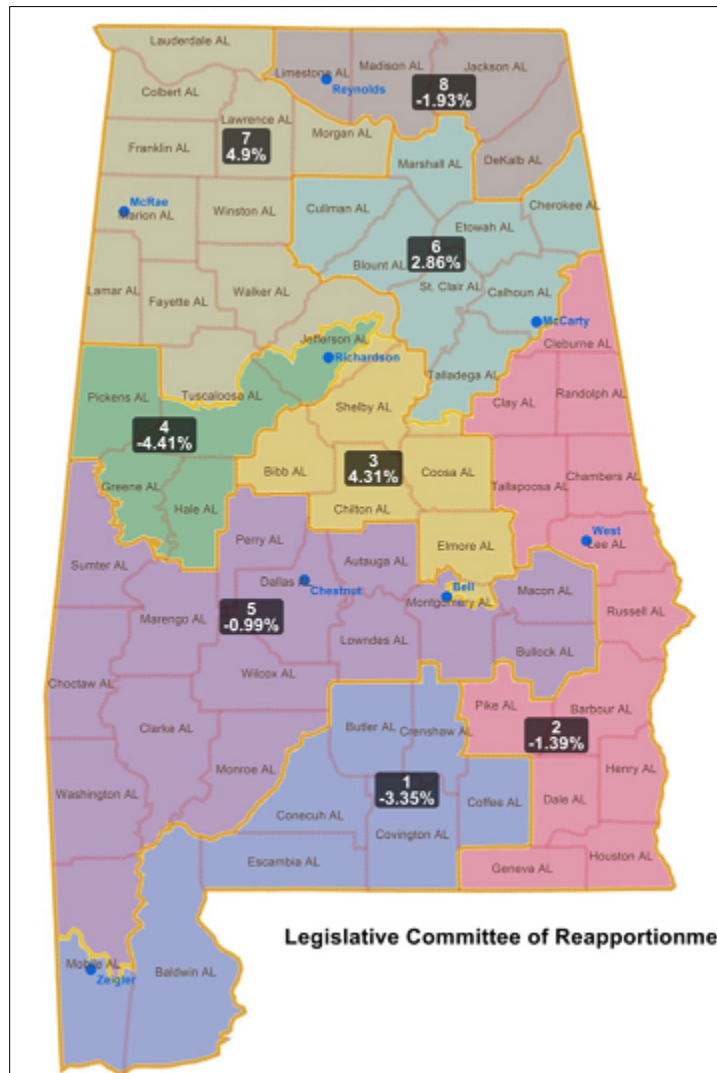
38. The 2021 BOE Plan is depicted in **Figure 9**.<sup>15</sup>

**Figure 9**

**Alabama – 2021 Board of Education Plan**

---

<sup>15</sup> Source for 2021 BOE Map in **Figure 9** is an October 25, 2021 tweet from Alabama Rep. Chris England  
via: <https://twitter.com/RepEngland70/status/1452674057640550407>.



39. **Exhibit F-1** is a state-produced map of the 2021 BOE Plan.<sup>16</sup>

40. **Exhibit F-2** contains 2020 population statistics by district. District 4 is 51.21% SR BVAP. District 5 is 51.27% SR BVAP.<sup>17</sup>

<sup>16</sup> Source for PDF map of 2021 BOE Plan via  
<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](https://www.sos.alabama.gov/sites/default/files/State%20Districts/McClendon%20SBOE%20Plan%201_Letter%20size%20map.pdf)

41. Similar to the 2021 BOE Plan, the six illustrative plans described below create a second majority-BVAP congressional district in central and south Alabama.

## **B. ILLUSTRATIVE PLAN FEATURES**

### **(a) Area Encompassed by the Illustrative Majority-Black Districts**

42. 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.

43. Based on the 2020 Census, it is still possible to draw two majority-Black congressional districts, while adhering to traditional redistricting principles.

44. The six illustrative plans described below demonstrate that there are viable remedies in this Section 2 lawsuit. Alternative configurations besides these six illustrative plans featuring two majority-Black congressional districts are

---

<sup>17</sup> Source for 2021 BOE Plan population statistics – an October 25, 2021 tweet from Alabama Rep. Chris England via:

<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.

possible.

**(b) Traditional Redistricting Principles**

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

46. All six illustrative plans comply with traditional redistricting principles, including population equality, compactness, contiguity, respect for communities of interest, and the non-dilution of minority voting strength.

47. 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 boundaries that are aligned with roads, natural features, or municipal boundaries.

**(c) Common Characteristics of the Illustrative Plans**

48. The six illustrative plans share the following features:

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

- Based on the most current citizenship data available (from the 5-year 2015-2019 ACS Special Tabulation), NH single-race Black CVAP in the illustrative majority-Black districts is above 50% in all six plans.<sup>18</sup>
- The Black VAP to NH White VAP percentage point margins in the illustrative majority-Black districts range from 6.12 percentage points (CD 2, Illustrative 1) to 14.73 percentage points (CD 7, Illustrative 2).
- Four of the six illustrative plans split six counties – the same number of split counties as the 2021 Plan. Illustrative Plan 2 and Illustrative Plan 6 split seven counties – the same number as the 2011 Plan.
- The illustrative plans create a new majority-Black District 2 that includes African American communities in Mobile County, Montgomery County and the central and eastern rural Black Belt counties.
- 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.
- 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 2021 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.
- Baldwin County is entirely in District 1 under all of the illustrative plans.
- Under all six of the illustrative plans, one can travel from District 1 in Mobile County to District 1 in Baldwin County without leaving District 1.
- Five of the illustrative plans join the District 1 part 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 part of Mobile County to District 1 in Baldwin County.
- All Plaintiffs reside in majority-minority districts under the illustrative plans.

---

<sup>18</sup> <https://www.census.gov/programs-surveys/decennial-census/about/voting-rights/cvap.html>

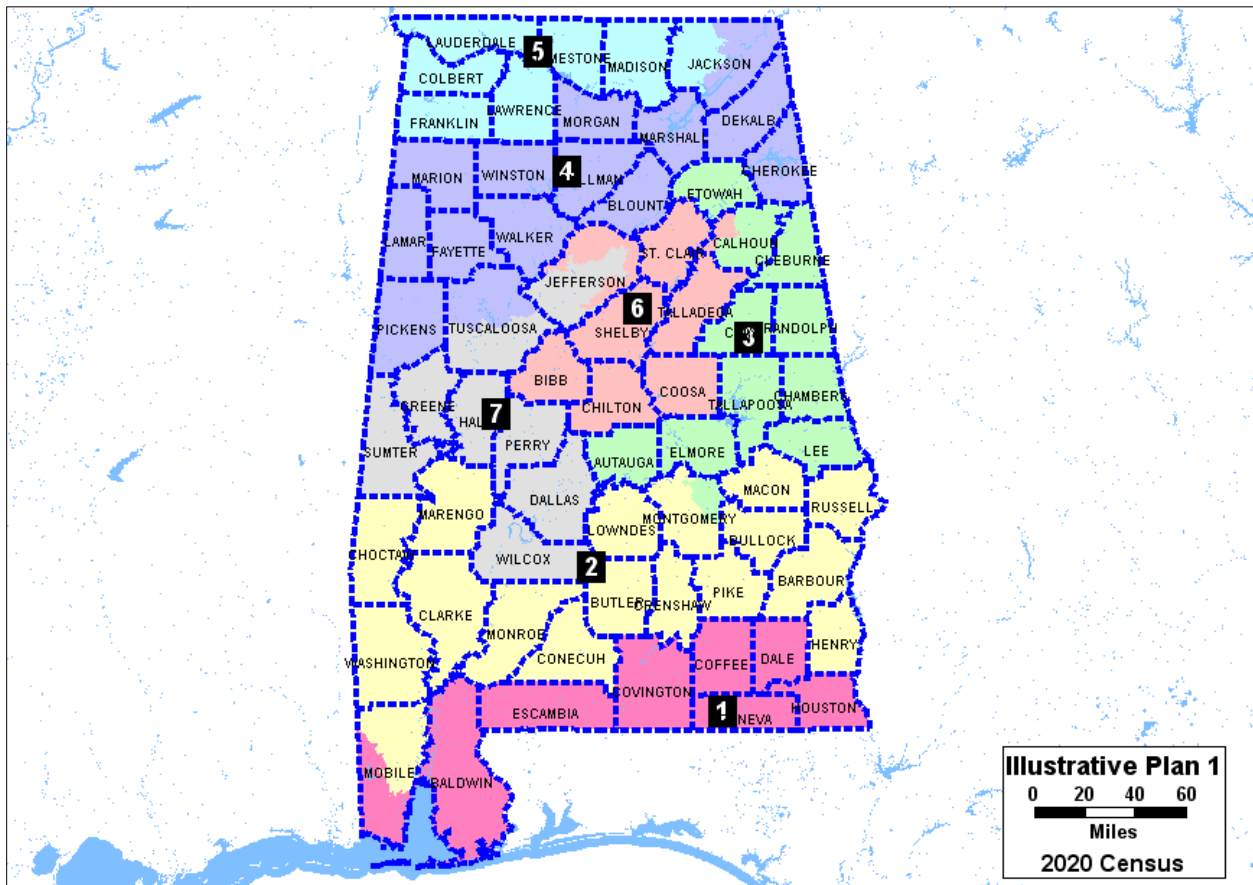
## C. SUMMARY DESCRIPTIONS OF ILLUSTRATIVE PLANS

### (a) Illustrative Plan 1

49. 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**



50. 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.

51. 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.

52. 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%

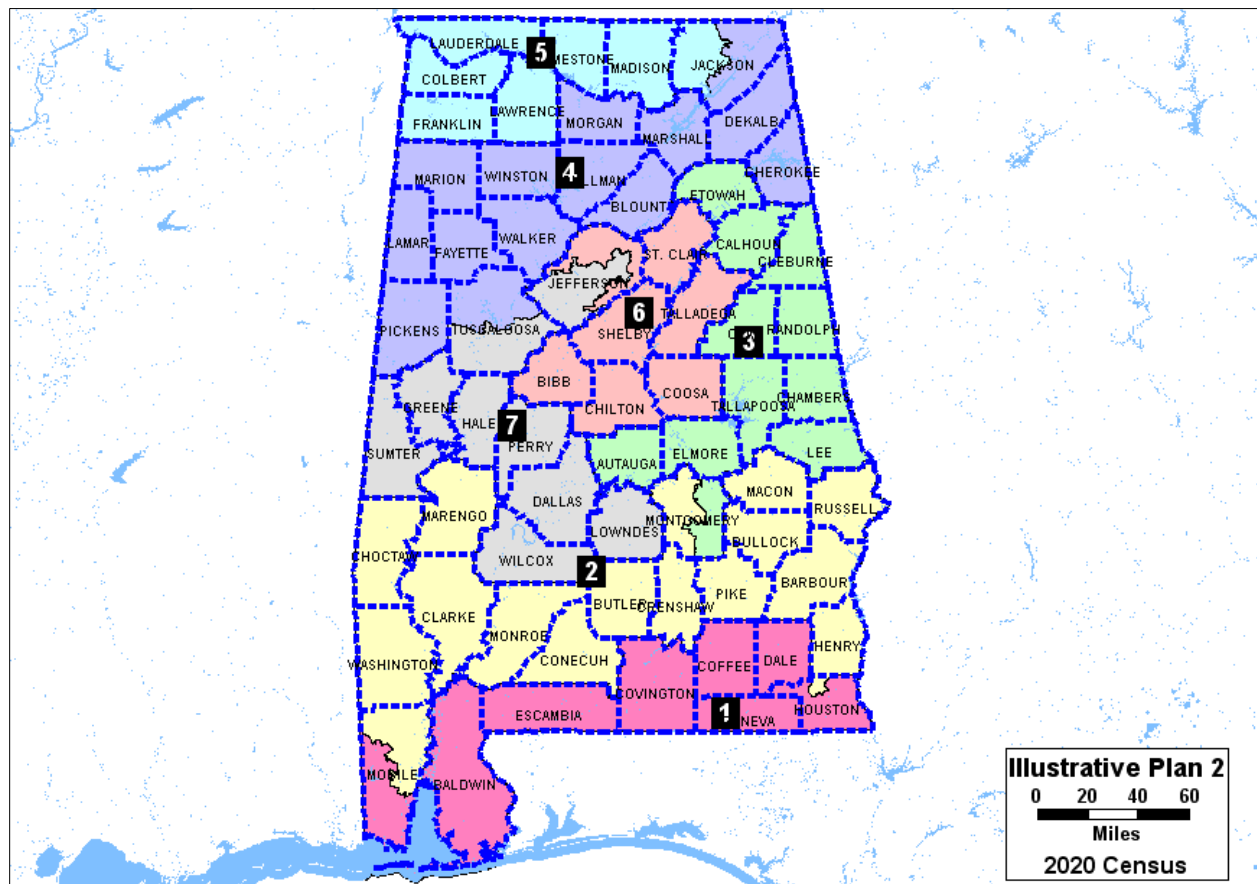
53. The map in **Exhibit G-2** is a higher resolution version of the **Figure 10** map. **Exhibit G-3** contains maps focusing on District 2 and District 7 and adjacent areas. As shown in **Exhibit G-4**, Illustrative Plan 1 splits six counties and populated areas in 16 VTDs.

**(b) Illustrative Plan 2**

54. 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**



55. 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 to be joined with District 2.

56. District 7 is geographically similar to District 7 under the 2021 enacted Plan. The eastern border of District 7 is Lowndes County, whereas District 7 in

the 2021 Plan crosses into Montgomery County to pick up some neighborhoods in the City of Montgomery.

57. 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**

<b>Illustrative Plan 2 – 2020 Census</b>				
<b>District</b>	<b>Population</b>	<b>18+ Pop</b>	<b>% 18+ AP Black</b>	<b>% 18+ NH White</b>
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%

58. The Illustrative Plan 2 maps in the **Exhibit H** series are identical in format to the maps in the Exhibit G series (Illustrative Plan 1). As shown in **Exhibit H-4** Illustrative Plan 2 splits seven counties – the same number as the 2011 Plan and one more than the 2021 Plan. Populated areas in 13 VTDs are split.

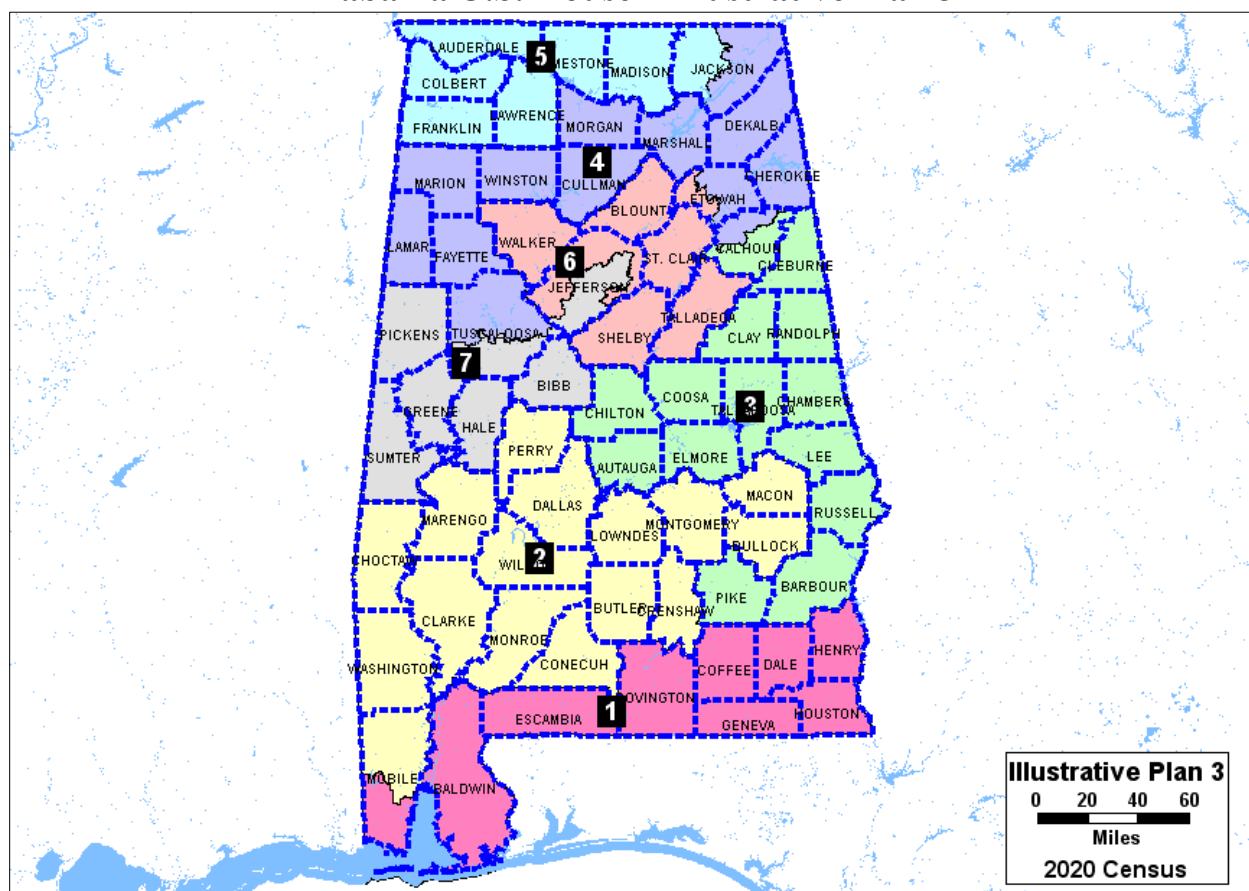
59. To reach zero deviation, 15 persons in Calhoun County are assigned to District 6, with the remainder in District 3. Arguably, this 15-person de minimis

split in Calhoun County could be eliminated by assigning all of Calhoun County to District 3, resulting in just six county splits.<sup>19</sup>

**(c) Illustrative Plan 3**

60. The map in **Figure 12** depicts Illustrative Plan 3. District 2 is 50.27% BVAP and District 7 is 50.09% BVAP.

### Figure 14



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

<sup>19</sup> *Tennant v. Jefferson Cnty. Comm'n*, 567 U.S. 758 (2012).

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

63. 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**

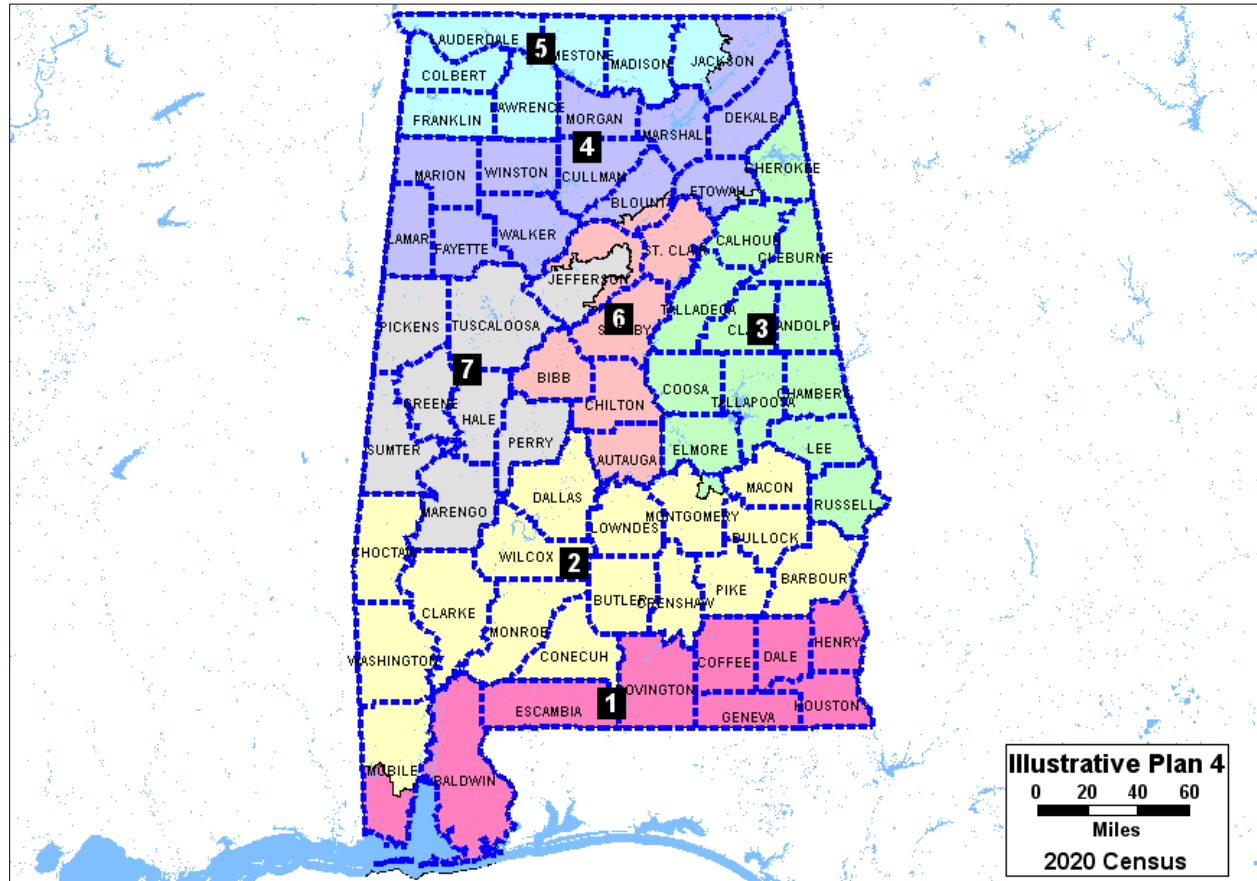
**Illustrative Plan 3– 2020 Census**

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%

64. The Illustrative Plan 3 maps in the **Exhibit I** series are identical in format 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.

**(d) Illustrative Plan 4**

65. 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**

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

67. 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.

68. 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**

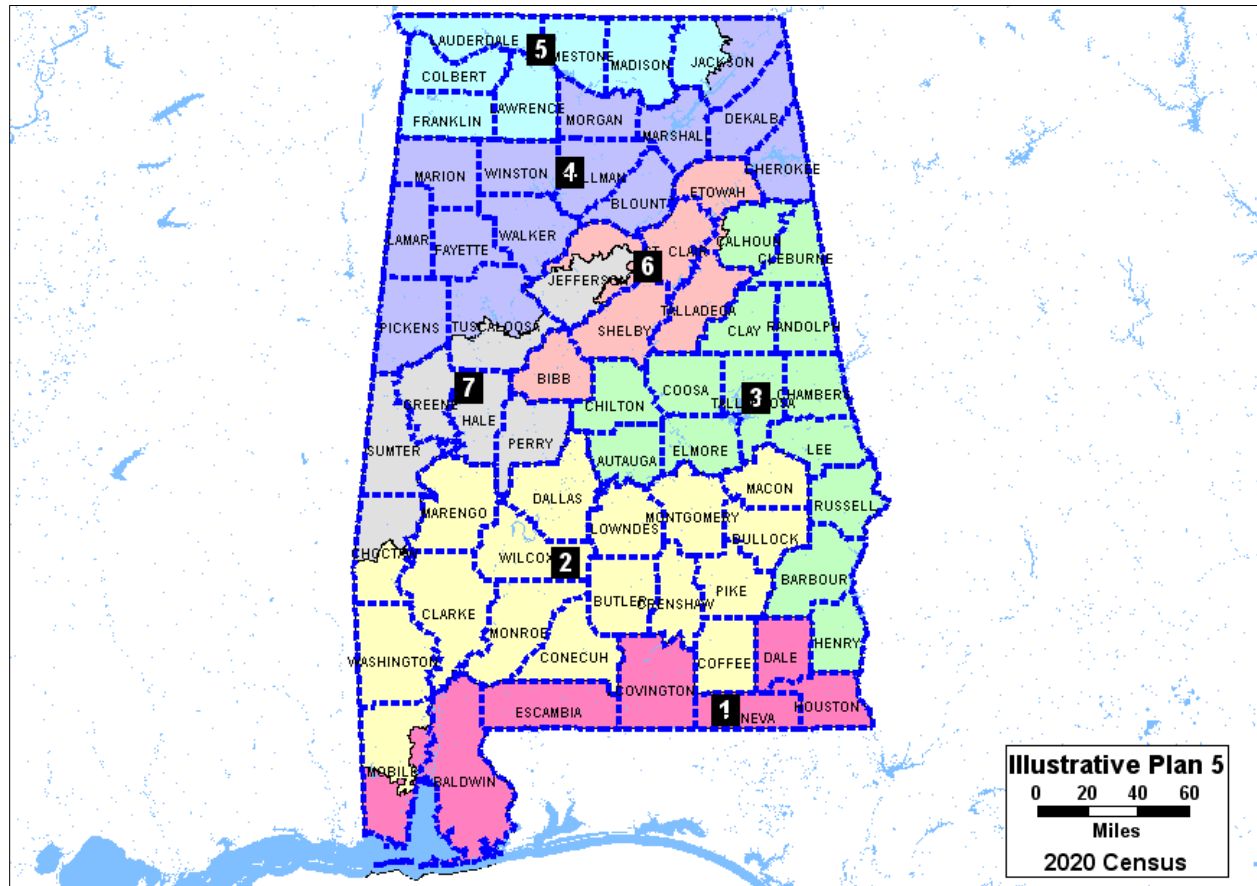
**Illustrative Plan 4 – 2020 Census**

District	Population	18+ Pop	% 18+ AP Black	% 18+ NH White
1	717753	557046	17.23%	73.87%
2	717752	561374	50.07%	43.92%
3	717755	564004	25.10%	67.19%
4	717755	556215	6.73%	82.75%
5	717755	561685	18.66%	70.63%
6	717755	554035	12.93%	77.83%
7	717754	562807	50.09%	42.53%

69. The Illustrative Plan 4 maps in the **Exhibit J** series are identical in format to the maps in 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.

**(e) Illustrative Plan 5**

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

**Figure 18****Alabama U.S. House – Illustrative Plan 5**

71. 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.

72. 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.

73. 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**

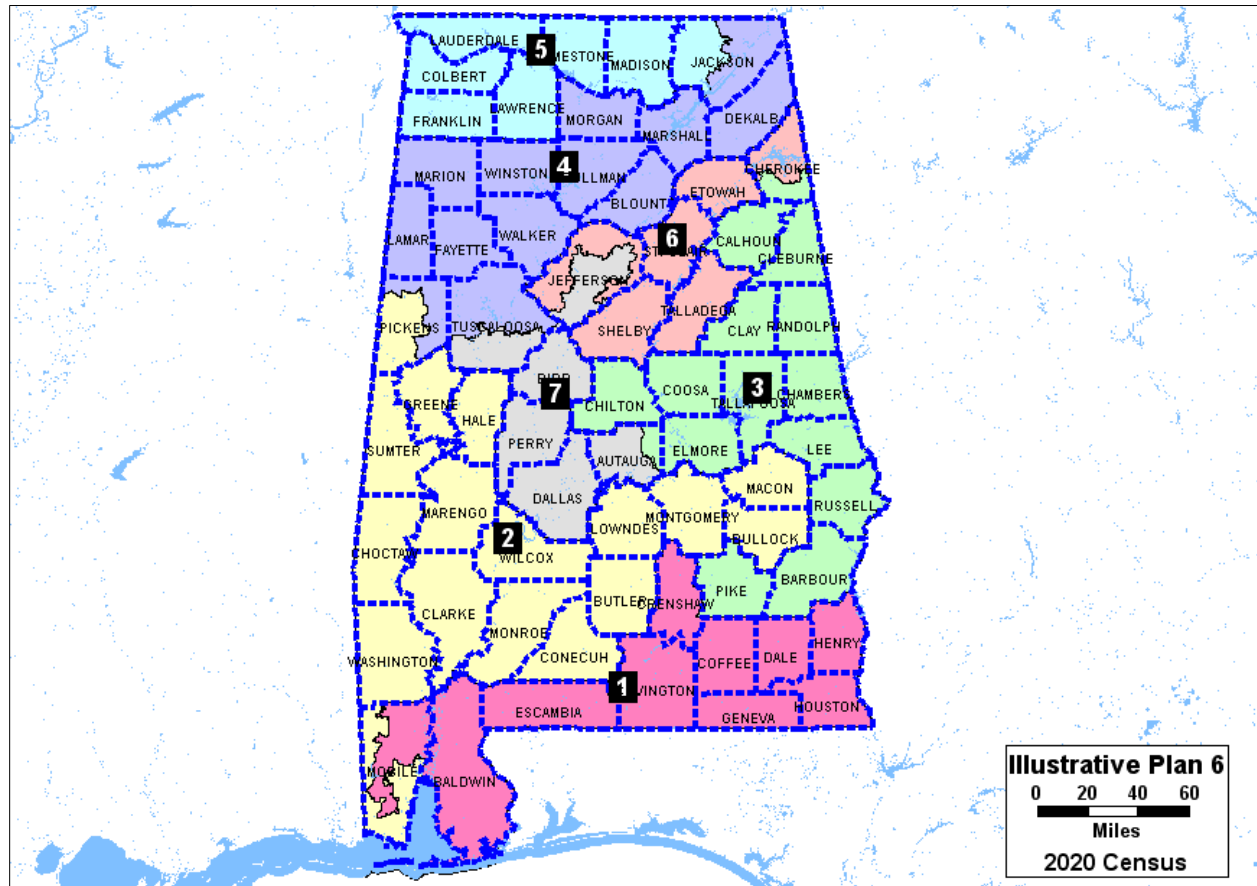
**Illustrative Plan 5 – 2020 Census**

District	Population	18+ Pop	% 18+ AP Black	% 18+ NH White
1	717754	557535	17.12%	74.18%
2	717755	557677	50.24%	43.20%
3	717754	564281	24.52%	67.49%
4	717754	556133	6.10%	83.50%
5	717754	561187	18.66%	70.63%
6	717754	552286	14.16%	77.64%
7	717754	568067	50.09%	42.02%

74. The Illustrative Plan 5 maps in the **Exhibit K** series are identical in format to the maps in the Exhibit G, H, I, and J series. As shown in **Exhibit K-4**, Illustrative Plan 5 splits six counties and populated areas in 20 VTDs.

**(f) Illustrative Plan 6**

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

**Figure 20****Alabama U.S. House – Illustrative Plan 6**

76. 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, whole in the new district. The enacted 2011 Plan and the enacted 2021 Plan split the City of Montgomery.

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

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

79. 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.

80. 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	557535	15.83%	75.27%
2	717755	557677	51.28%	42.36%
3	717753	564281	24.77%	67.22%
4	717754	556133	5.63%	83.83%
5	717755	561187	18.66%	70.63%
6	717755	552286	13.58%	78.31%
7	717754	568067	51.09%	41.08%

81. The Illustrative Plan 6 maps in the **Exhibit L** series are identical in format to the maps in the Exhibit G, H, I, J, and K series. 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.

**(g) Compactness Measures**

82. The districts in the illustrative plans are reasonably shaped and compact – and clearly within the normal range for compactness as compared to congressional plans nationwide.<sup>20</sup>

83. **Figure 22** reports compactness scores generated by Maptitude for the 2011 U.S. Congressional Plan, the 2011 BOE Plan, the 2021 U.S. Congressional Plan, and the Illustrative Plans. The table summarizes the Reock<sup>21</sup> and Polsby-Popper<sup>22</sup> scores – the two most widely-referenced measures of compactness. Higher scores indicate higher compactness.

---

<sup>20</sup> See, for example, *Redrawing the Map 2012 Addendum* by geospatial firm Azavea – examining the compactness scores for post-2010 congressional plans in all states: [https://2rct3i2488gxf9jvbl1qhek9-wpengine.netdna-ssl.com/wp-content/uploads/2019/08/Azavea\\_Redistricting-White-Paper-Addendum-2012\\_sm.pdf](https://2rct3i2488gxf9jvbl1qhek9-wpengine.netdna-ssl.com/wp-content/uploads/2019/08/Azavea_Redistricting-White-Paper-Addendum-2012_sm.pdf)

<sup>21</sup> “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).

<sup>22</sup> 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 22****Compactness Scores – Illustrative Plans vs 2011 Plans and 2021 Plan**

	Reock				Polsby-Popper		
		Low	High			Low	High
2011 U.S. Congressional Plan							
All Districts (mean avg.)	.38	.22	.49		.19	.13	.29
CD 2	.49				.22		
CD 7	.38				.13		
2011 BOE Plan							
All Districts (mean avg.)	.40	.24	.52		.19	.15	.22
BOE District 4	.40				.15		
BOE District 5	.37				.15		
2021 U.S. Congressional Plan							
All Districts (mean avg.)	.38	.30	.50		.22	.15	.32
CD 2	.50				.26		
CD 7	.43				.19		
Illustrative Plan 1							
All Districts (mean avg.)	.34	.21	.47		.18	.13	.33
District 2	.36				.18		
District 7	.37				.13		
Illustrative Plan 2							
All Districts (mean avg.)	.34	.21	.52		.18	.12	.33
District 2	.31				.12		
District 7	.40				.13		
Illustrative Plan 3							
All Districts (mean avg.)	.34	.20	.47		.18	.12	.33
District 2	.33				.14		
District 7	.37				.13		
Illustrative Plan 4							
All Districts (mean avg.)	.33	.20	.41		.22	.13	.34
District 2	.33				.24		
District 7	.41				.24		
Illustrative Plan 5							
All Districts (mean avg.)	.29	.19	.39		.18	.11	.33
District 2	.39				.19		
District 7	.23				.11		
Illustrative Plan 6							
All Districts (mean avg.)	.31	.24	.35		.16	.10	.34
District 2	.29				.11		
District 7	.34				.11		

84. Compared to the 2021 Plan, the Illustrative Plans are generally in the same range of compactness.<sup>23</sup>

## V. SOCIOECONOMIC PROFILE OF ALABAMA

85. Non-Hispanic Whites in Alabama significantly outpace African Americans across a broad range of socioeconomic measures, as reported in the 1-year 2019 ACS.<sup>24</sup> This disparity is summarized below and depicted with further detail in charts found in **Exhibit M-1** and the table in **Exhibit M-2**.

86. For additional socioeconomic data by congressional district in the general region where the illustrative plans create two majority-Black districts, see **Exhibits N** (CD 1), **Exhibits O** (CD 2), **Exhibits P** (CD 3), **Exhibits Q** (CD 6), and **Exhibits R** (CD 7).<sup>25</sup>

### *(a) Income*

- African Americans in Alabama experience a poverty rate (23.4%) that is more than twice that of Whites (11.5%). (**Exhibit M-1 at p. 22 and Exhibit M-2 at p. 8**)

---

<sup>23</sup> As noted in footnote 13 (*supra*), I do not have a GIS shapefile for the 2021 BOE Plan, so I am unable to run compactness scores on that plan.

<sup>24</sup> In this section, as elsewhere in this report, “White” refers to NH White. Black or African American refers to Any Part Black.

<sup>25</sup> Source: <https://data.census.gov/cedsci/table?text=s0201&t=-0A%20-%20All%20available%20non-Hispanic%20Origin%3A005%20-%20Black%20or%20African%20American%20alone%20or%20in%20combination%20with%20one%20or%20more%20other%20races&g=0400000US01,01%245000000&y=2019&tid=ACSSPP1Y2019.S0201&hidePreview=true>

- The child poverty rate for African Americans is 34.1%, compared to 13.2% of White children. (**Exhibit M-1 at p. 22 and Exhibit M-2 at p. 8**)
- Black median household income is \$35,900, which is just 59.9% of White median household income is \$59,966. (**Exhibit M-1 at p. 14 and Exhibit M-2 at p.7**)
- Per capita income disparities in Alabama track the disparities seen in median household income. Black per capita income is \$20,402, compared to White per capita income of \$32,939. (**Exhibit M-1 at p. 17 and Exhibit M-2 at p. 8**)
- Over a quarter (25.4%) of Black households rely on food stamps, compared to 8.2% of White households. (**Exhibit M-1 at p. 15 and Exhibit M-2 at p. 7**)

*(b) Education*

- Of persons 25 years of age and over, 14.9% of African Americans have not finished high school, compared to 10.9% of their White counterparts. (**Exhibit M-1 at p. 5 and Exhibit M-2 at p. 3**)
- At the other end of the educational scale, for ages 25 and over, 19.4% of African Americans have a bachelor's degree or higher, compared to 28.8% of Whites. (**Exhibit M-1 at p. 5 and Exhibit M-2 at p. 3**)

*(c) Employment*

- The Black unemployment rate (for the population over 16, expressed as a percent of the civilian labor force) is 7.7%, compared to a 3.8% White unemployment rate. (**Exhibit M-1 at p. 11 and Exhibit M-2 at p. 5**)
- Of employed African Americans, 25.8% are in management or professional occupations, compared to 40.3% of Whites. (**Exhibit M-1 at p. 13 and Exhibit M-2 at p. 6**)

*(d) Housing*

- In Alabama, about half of Black householders (50.5%) are homeowners, while over three-quarters of White households (77.1%) are

owner-occupied. (**Exhibit M-1 at p. 21 and Exhibit M-2 at p. 9**)

- About one in eight of Black households (11.7%) lack access to a vehicle, while just 3.8% of White households are without a vehicle. (**Exhibit M-1 at p. 23 and Exhibit M-2 at p. 9**)
- Median home value for Black homeowners is \$101,800, which is just 61.4% of the median home value for Whites (\$165,800). (**Exhibit M-1 at p. 25 and Exhibit M-2 at p.10**)

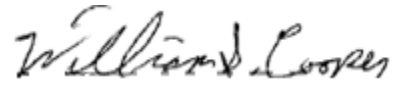
87. For comparison, I have prepared similar charts depicting socioeconomic characteristics for the state, all Alabama counties, and places with significant Black population according to the 5-year 2015-2019 ACS.<sup>26</sup> These charts are available for download at: [http://www.fairdata2000.com/ACS\\_2015\\_19/Alabama/](http://www.fairdata2000.com/ACS_2015_19/Alabama/)

###

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: December 10, 2021

  
WILLIAM S. COOPER

---

<sup>26</sup> The 2019 1-year ACS is not available for counties and places with populations under 20,000. The 5-year 2015-2019 ACS reports SR Black socioeconomic estimates only. AP Black estimates are not published in the 5-year ACS.