

**UNITED STATES DISTRICT COURT  
FOR THE EASTERN DISTRICT OF ARKANSAS  
CENTRAL DIVISION**

THE CHRISTIAN MINISTERIAL  
ALLIANCE, PATRICIA BREWER,  
CAROLYN BRIGGS, LYNETTE  
BROWN, MABLE BYNUM, and  
VELMA SMITH, on behalf of  
themselves and all other similarly  
situated persons,

Plaintiffs,

vs.

JOHN THURSTON, in his official  
capacity as the Secretary of State of  
Arkansas,

Defendant.

CIVIL ACTION

Case No. 4:23-cv-471-DPM-DRS-  
JM

**THREE-JUDGE PANEL**

**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 in the above-captioned case. I am being  
compensated at a rate of \$170 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 have testified at trial as an expert witness on redistricting and demographics in federal courts in about 58 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. McWherter*, 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.

3. 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.); *Mississippi State Conference of the NAACP v. State Board of Election Commissioners*, No. 3:22-cv-734-DPJ-HSO-LHS (S.D. Miss.); and *White v. State Board of Election Commissioners*, No. 4:22-cv-62-MPM-JMV(N.D. Miss.). In *Caster v. Merrill*, as one example, a three-judge panel unanimously found my testimony “highly credible,” which was cited by the Supreme Court in *Allen v. Milligan*, 599 U.S. 1, 31-33 (2023).

4. 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.).

5. 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.

6. Since 2022, two school districts have adopted remedial plans that I developed on behalf of the prevailing plaintiffs: the East Ramapo School District in

Rockland County, NY (*NAACP Spring Valley Branch v. East Ramapo Central School District et al*, No. 7:2017-cv-08943 (S.D.N.Y. 2020), and, in 2024, the Sunnyside School District in Yakima County, WA (*Empowering Latina Leadership and Action (ELLA) v. Sunnyside School District*) under the Washington Voting Rights Act.

7. For additional historical information on my testimony as an expert witness and experience preparing and assessing proposed redistricting maps, primarily for Voting Rights Act litigation, see a summary of my redistricting work attached as **Exhibit A**.

8. In preparing this report, I relied on the materials cited throughout this report. **Exhibit B** describes the sources and methodology I have employed in the preparation of this report, as well as additional materials I considered in forming my opinions other than those cited in this report.

## **B. Purpose of Report**

9. The attorneys for the Plaintiffs in this case asked me to offer my expert opinion on:

- a. demographic information against the backdrop of the congressional district map passed by the Arkansas General Assembly (the “Legislature”) on October 7, 2021 (the “Enacted Plan”), including with a specific focus on the composition of one of the Enacted

Plan’s four single-member districts, Congressional District 2 (“CD” 2);

- b. the splitting of the central and southeast portion of Pulaski County, where the Black<sup>1</sup> population is concentrated, among CDs 1, 2, and 4 in the Enacted Plan; and
- c. whether splitting the central and southeast portion of Pulaski County among CDs 1, 2, and 4 was necessary to create a plan that: (1) equalizes population across the four congressional districts, (2) adheres to other traditional redistricting principles, including keeping the political boundaries of Pulaski County and other communities of interest whole, and/or (3) achieves the Enacted Plan’s level of partisan effect.

### **C. Organization of Declaration**

10. The remainder of this declaration is organized as follows:

- a. **Section II** discusses traditional redistricting principles.

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<sup>1</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 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.

- b. Section III** reviews the congressional plans enacted in Arkansas between 1981 and 2021, as well as statewide and county racial and ethnic demographics. Included in Section III are two hypothetical plans I developed (based on the 2000 Census and 2020 Census, respectively) that adhere to traditional redistricting principles and, in so doing, do not split concentrations of Black voters among congressional districts.
- c. Section IV** reviews the congressional district map enacted in Arkansas in 2011 based on the 2010 Census data (the “2011 Benchmark Plan”) and the 2021 Enacted Plan in more detail.
- d. Section V** presents two alternative plans:

  - i.** Alternative Plan 1 demonstrates that the split of Pulaski County was not necessary to equalize populations across the districts while adhering to traditional redistricting principles to the same extent as, if not to a greater extent than, the Enacted Plan. Alternative Plan 1 is drawn for the purposes of my report in this lawsuit, from what I understand to be the relevant criteria, and adheres to traditional redistricting principles to the same extent as, if not to a greater extent than, the Enacted Plan.

- ii. Alternative Plan 2 demonstrates the split of Pulaski County was not necessary to maintain the same partisan advantage as is reflected in the Enacted Plan. Alternative Plan 2 is drawn for the purposes of my report in this lawsuit, and from what I understand to be the relevant criteria, maintains the partisan tilt in the Enacted Plan without splitting Pulaski County, while still adhering to traditional redistricting principles.

#### **D. Summary Conclusion**

11. I determined that the Enacted Plan fragments or divides the Black population in CD 2 (known as “cracking”). In particular, the Enacted Plan unnecessarily cracks the Black population by spreading the community in central and southeast Pulaski County across three congressional districts.

12. Based on my analysis, I conclude that cracking the Black population in Pulaski County cannot be explained by an objective to equalize population across congressional districts while adhering to traditional redistricting principles. Nor can the cracking of Black population in Pulaski County be explained by a desire to achieve a partisan end.

## **II. TRADITIONAL REDISTRICTING PRINCIPLES**

13. Following the decennial census, state governments are required to redraw the boundaries for congressional districts to reflect any changes in

populations. There are several legal criteria and redistricting principles that guide the process. Equalizing population—one person, one vote—is among the most critical. States must also comply with the federal constitutional prohibition against racial gerrymandering and any statutory obligations under the Voting Rights Act, as well as other state laws and constitutions.

**14.** In addition to the statutory and constitutional requirements, traditional redistricting principles are an inherent part of the hands-on plan drawing process. The items below describe traditional redistricting principles that I considered as I reviewed Arkansas’s current and historical congressional plans. I also considered criteria that the Arkansas legislative staff shared with the General Assembly to guide their congressional redrawing as I drew the two alternative plans.

- a.** Election plans must meet one person, one-vote requirements. For congressional plans that means achieving a minimal deviation to the extent practicable. Unless a legislature stipulates otherwise, a congressional plan need not achieve zero deviation (+/- one person) because such a requirement would usually force the map drawer to split counties or precincts. It is my understanding that the Legislature did not stipulate to a required minimal deviation for the 2021 redistricting process. Like the Enacted Plan, the alternative plans do not achieve zero deviation. But, like the

Enacted Plan, they are well within the deviation range (0.79%) approved by the U.S. Supreme Court in *Tennant v. Jefferson County*, 567 U.S. 758 (2012).

- b.** Election plans must not excessively use race to pack or crack minority voters into too many or too few districts without a good justification (known as racial gerrymandering). They must also not pack or crack minority voters into too many or too few districts to prevent minority voters from electing their preferred candidates where the conditions allow those voters to elect a candidate of choice from one or more ability-to-elect districts (known as vote dilution).
- c.** Election plans must contain contiguous districts, i.e. all parts of an election district should directly touch one another—by land, bridge, or water. Like the Enacted Plan, all districts in the alternative plans are contiguous.
- d.** Election plans and the underlying districts must be reasonably shaped and compact. There are various methods to quantitatively measure compactness. I have relied on a few of the numerous methods that have been accepted by courts. Like the Enacted Plan, the alternative plans are reasonably shaped and compact.

- e. Election plans should respect political subdivision boundaries (sometimes subsumed under “communities of interest”). To the extent practicable for the purposes of the report in this lawsuit, the alternative plans do so. Owing to the three-way split of Pulaski County, the Enacted Plan does not respect political subdivision boundaries.
- f. Election plans should respect communities of interest. As defined by the Brennan Center in a 2010 document, communities of interest “are groups of individuals who are likely to have similar legislative concerns, and who might therefore benefit from cohesive representation in the legislature.”<sup>2</sup> Within the context of this lawsuit, the alternative plans respect communities of interest. At a minimum, owing to the three-way split of Pulaski County, the Enacted Plan does not respect communities of interest to the extent practicable.

15. Though not typically identified as a traditional redistricting principle, but always in the background, is that election plans should avoid pairing incumbents. Also, to the extent practicable, election plans should keep the core

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<sup>2</sup> <https://www.brennancenter.org/our-work/research-reports/communities-interest>.

population in prior districts together in new districts. Like the Enacted Plan, the alternative plans do not pair incumbents. Like the Enacted Plan, the alternative plans have high levels of core retention.

### **III. DEMOGRAPHIC PROFILE OF ARKANSAS**

#### **A. 1980s to 2020s: Cracking of the Black Population in the Enacted Plans**

**16.** The Legislature’s 2021 decision to split the Black population in central and southeast Pulaski County into three congressional districts in the Enacted Plan reinforces a pattern of cracking the Black population in Arkansas into different congressional districts that has persisted through redistricting cycles for at least the past 35 years. The congressional district with the highest Black voting age population “BVAP” in Arkansas’s congressional plans has consistently decreased each of the past four decades despite the statewide BVAP increasing over that same time period.

**17.** **Figure 1** identifies the five congressional plans enacted by Arkansas since 1981 and the percent BVAP in each of the districts at the time of the next decennial census redistricting cycle. The “Benchmark Plan” (referenced in the leftmost column of Figure 1) is the congressional plan that was in effect in the decade before the release of the next decade’s decennial census. “BVAP % from Benchmark Plans” in the rightmost column is the difference in BVAP between the district with the highest BVAP under the newly enacted plan minus BVAP in the

district with highest BVAP under the benchmark plan.

**Figure 1: BVAP by District 1981 Plan to 2021 Plan<sup>3</sup>**

Enacted Plans	% BVAP				BVAP % from Benchmark Plans
	CD 1	CD 2	CD 3	CD 4	
2021 Enacted (2020 Census)	16.89%	<b>20.33%</b>	3.56%	19.76%	-2.31%
2011 Benchmark (2020 Census)	17.23%	<b>22.64%</b>	3.48%	18.84%	-0.65%
2001 Benchmark (2010 Census)	15.06%	19.47%	2.46%	<b>23.29%</b>	-1.18%
1991 Benchmark (2000 Census)	15.32%	17.56%	1.73%	<b>24.47%</b>	-0.19%
1981 Benchmark (1990 Census)	15.13%	15.12%	1.87%	<b>24.66%</b>	NA

**18.** As revealed in **Figure 1**, since the 1990 Census round of redistricting, the enacted plans in successive decades have consistently cut the BVAP percentage in the district with the highest BVAP from the prior decade. Under the 1981, 1991, and 2001 Enacted Plans, CD 4 had the highest BVAP. Under the 2011 and 2021 Plans, CD 2 has had the highest BVAP. For reference, the **Exhibit C** series contains maps of the 1981 through 2021 plans.

**19.** In sum, between 1991 and 2021, at each successive decennial census, the enacted maps cracked Arkansas's Black population by decreasing the BVAP in the congressional district with the highest BVAP.

**20.** Between 1991 and 2021, the congressional district with the highest BVAP—CD 4 in the 1980s and CD 2 in the 2020s—had its BVAP *decrease* by

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<sup>3</sup> **PL94-171 Redistricting File** (Census 1990 to Census 2020).

more than 4 percentage points even as the Black population (all ages) percentage *increased* statewide from 15.91% Black in 1990 to 16.46% Black in 2020.

21. Meanwhile, as shown in **Figure 2**, over that same 30-year timeframe, the statewide non-Hispanic white percentage declined from 82.23% in 1990 to 68.48% in 2020. The BVAP percentage change from the 2011 Benchmark Plan is greater in the 2021 Enacted Plan as compared to any other maps enacted between 1981 and 2021.

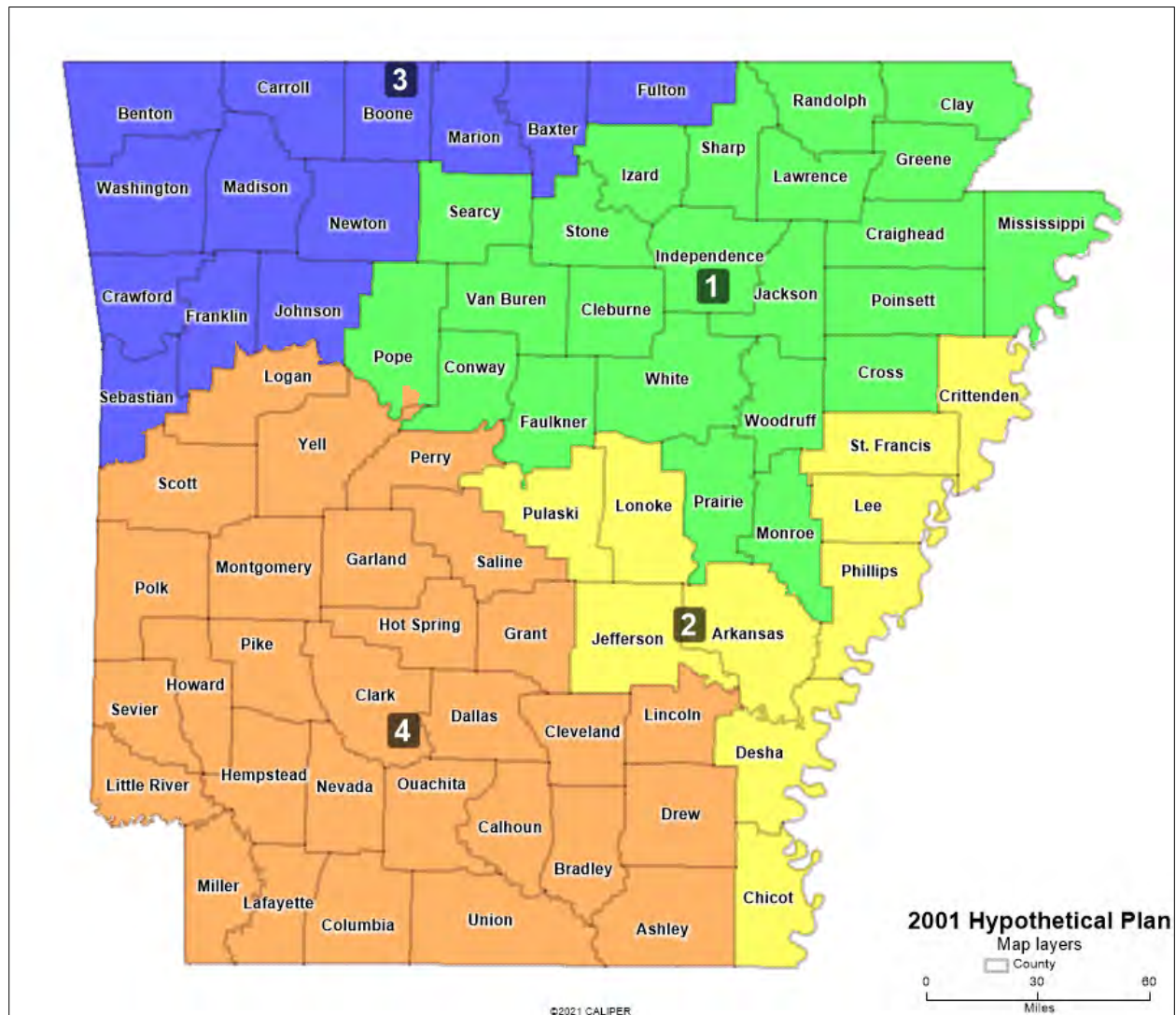
**Figure 2: Arkansas – 1990-2020 Population by Race and Ethnicity<sup>4</sup>**

	1990 Number	Percent	2000 Number	Percent	2010 Number	Percent	2020 Number	Percent	Total Pop Change from 1990 to 2020
<b>Total Population</b>	2,350,725	100.00%	2,673,400	100.00%	2,915,918	100.00%	3,011,524	100.00%	660,799
NH white	1,933,08	82.23%	2,100,135	78.56%	2,173,469	74.54%	2,063,550	68.52%	130,468
<b>Minority Subtotal</b>	406,528	17.78%	573,265	21.44%	742,449	25.46%	947,974	31.48%	543,466
Latino	19,876	0.85%	86,866	3.25%	186,050	6.38%	256,847	8.53%	236,971
AP Black (SR in 1990)	373,912	15.91%	427,152	15.98%	468,710	16.07%	495,968	16.47%	122,056

22. As shown in the hypothetical plan in **Figure 3** below, since at least the 2000 Census, it has been possible to draw a whole-county district map encompassing Pulaski County, Jefferson County, and counties along the Mississippi River and where minority populations are not cracked.<sup>5</sup>

<sup>4</sup> **PL94-171 Redistricting File** (Census 1990, 2000, 2010, and 2020)

<sup>5</sup> Throughout this declaration, I define “minority” to include: (1) persons who are not non-Hispanic single-race (“SR”) white; and (2) persons who are SR white and Hispanic (i.e. the white subset of the Latino population).

**Figure 3: Census 2000 Hypothetical Plan**

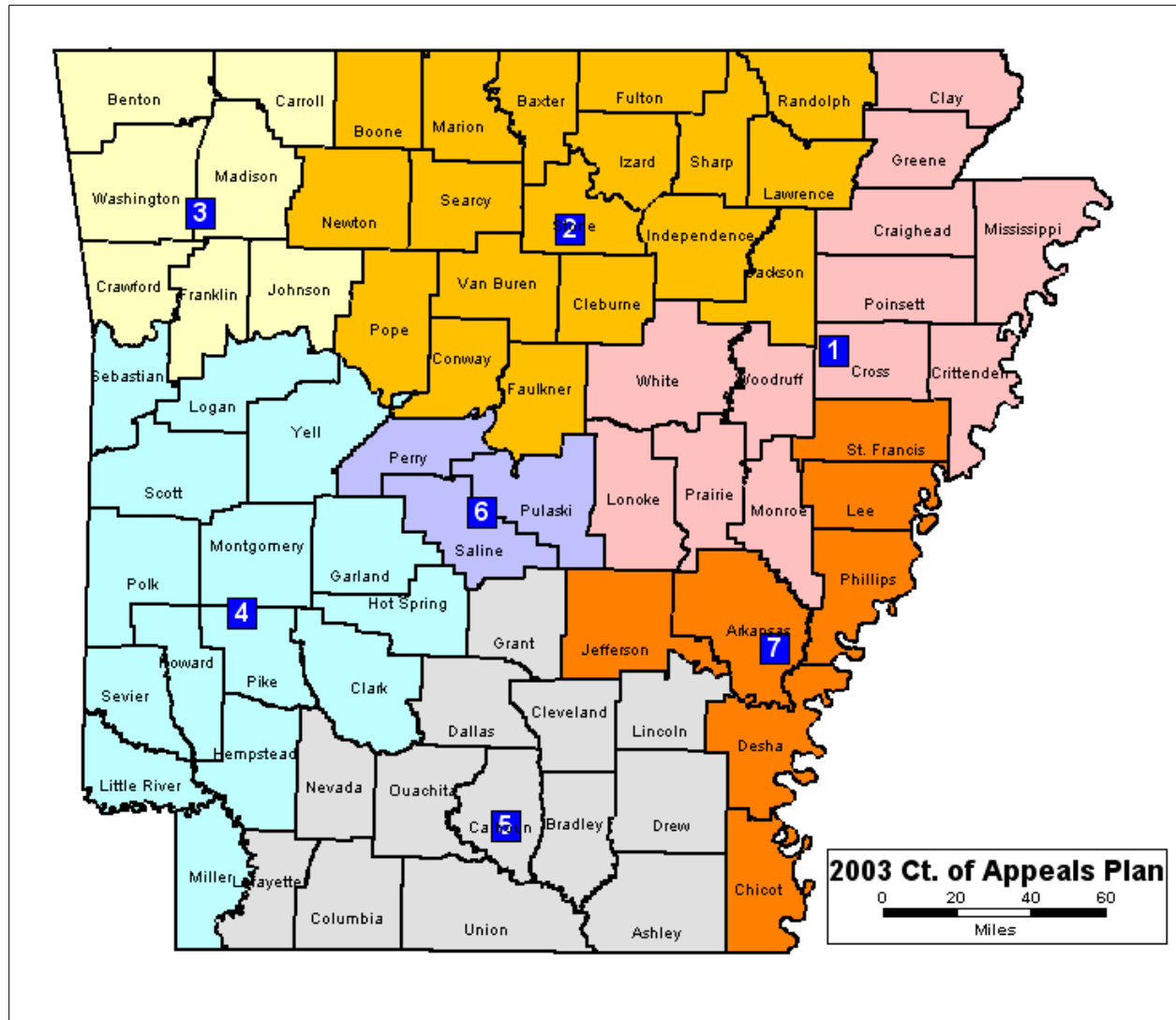
23. The Census 2000 Hypothetical Plan does not crack the Black population and adheres to traditional redistricting principles—including one person, one vote, compactness, contiguity, and respect for communities of interest.

24. The Census 2000 Hypothetical Plan also splits just one county, Pope County (split between CD 1 and CD 4), resulting in an overall deviation from the ideal population size of .01%—ranging from 365 persons in CD 1 to -343 persons

in CD 2. A voting tabulation district, or “VTD,” is a precinct proxy that is developed by the U.S. Census Bureau in consultation with the State of Arkansas for the use in the 2020 Census. No 2000 Census VTDs are split.

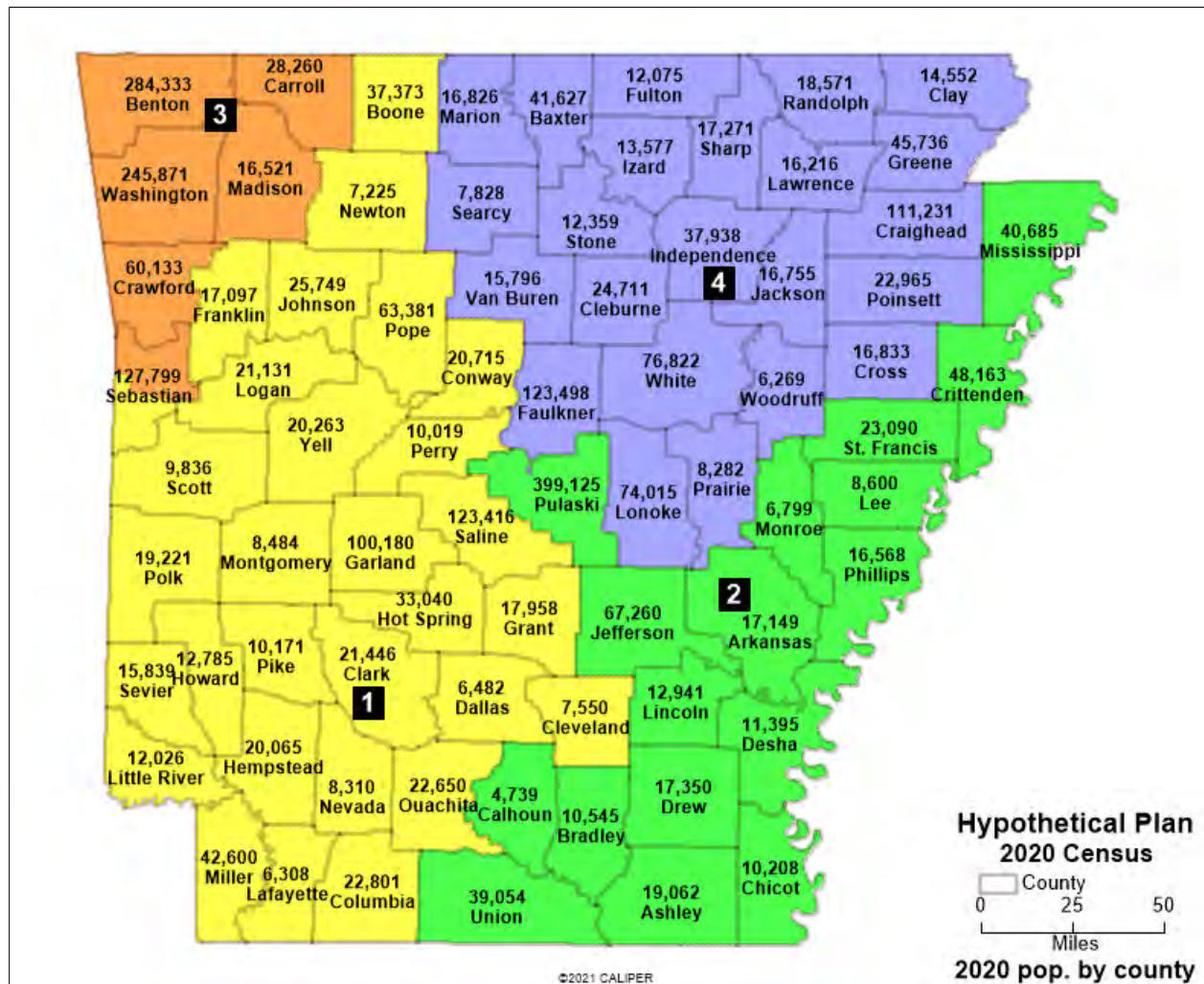
**25.** **Figure 4** reveals that in the Delta region, CD 2 in the Census 2000 Hypothetical Plan closely tracks current State Court of Appeals District 7 (2020 pop. 154,270; 50.99% BVAP) enacted by the Legislature in 2003.

**Figure 4: 2003 Court of Appeals Plan**



**26.** According to the 2000 Census, the hypothetical CD 2 in **Figure 3** above would have a BVAP of 32.57%, which is about 8 percentage points higher than CD 4 under the 1991 Benchmark Plan (see **Figure 1** *supra*). That CD 2 in the Census 2000 Hypothetical Plan would have encompassed ten whole counties with no splits, extending from Pulaski, Lonoke, and Jefferson Counties to the Mississippi River.

**27.** Based on the 2020 Census, CD 2 in the **Figure 3** Census 2000 Hypothetical Plan above would be severely under-populated at 24% below the ideal district size, with a 40.48% BVAP. Nonetheless, the Hypothetical Plan depicted in **Figure 5** demonstrates that a 2020 Census congressional district could be drawn (under an expanded geographic configuration compared to the Census 2000 Hypothetical Plan), while adhering to one-person one vote, and other traditional redistricting principles.

**Figure 5: Hypothetical Plan (2020 Census)**

28. The table in **Figure 6** shows 2020 summary population statistics for the **Figure 5** Hypothetical Plan. **Exhibit D-1** contains detailed 2020 population statistics by district. **Exhibit D-2** is a higher resolution version of the map in **Figure 5** map.

**Figure 6: Hypothetical Plan – 2020 Census**

District	Population	Deviation	% Deviation	% 18+ Black	% 18+ Latino	% 18+ NH White
1	751753	-1128	-0.15%	7.30%	3.41%	84.23%
2	752733	-148	-0.02%	38.80%	5.25%	52.10%
3	753219	338	0.04%	3.56%	13.89%	71.62%
4	753819	938	0.12%	10.88%	5.65%	78.17%

29. As shown in the redistricting metrics table in **Figure 7**, the Hypothetical Plan is generally on par or superior to the Enacted Plan across a broad range of redistricting metrics.

**Figure 7: Redistricting Metrics – Benchmark and Enacted vs. Hypothetical<sup>6</sup>**

Metric	2011 Benchmark	2021 Enacted	Hypothetical Plan
Total Split Counties*	5	2	1
Total County Splits*	10	5	2
VTD Splits*	1	0	0
Split Municipalities*	5	6	2
Municipal Splits*	10	6	4
Core-based Statistical Area splits*	13	12	9
Unified School District splits*	100	84	57
One-person, one-vote (deviation)*	20.26%	0.09%	0.27%
DRA Compactness higher=better)#	41	59	61
Core Retention	NA	92.16%	73.5%
Incumbent Conflicts	0	0	0
CD 2 BVAP	22.64%	20.33%	38.80%

\* Excluding unpopulated splits

<sup>6</sup> For a similar chart to facilitate comparisons across the various plans reviewed in my declaration—including the Alternative Plans discussed in Section V, *infra*—see **Exhibit J-1**.

# See n. 12 *infra*

**30.** Core retention in the Hypothetical Plan is lower than the Enacted Plan, but within the expected norm after eliminating the cracking of the Black population in central Arkansas and the Delta under the Enacted Plan.

**31.** **Exhibit D-3** documents that the Hypothetical Plan splits only one county (Sebastian) with zero VTD splits. **Exhibit D-4** shows municipal splits in the plan. **Exhibit D-5** reports compactness scores by district. **Exhibit D-6** reports school district splits. **Exhibit D-7** reports Core Based Statistical Area (“CBSA”)<sup>7</sup> splits (see Census Bureau-produced map in **Exhibit E**). **Exhibit D-8** reports district-by-district core retention vis-à-vis the Benchmark Plan.

**32.** The cracking embodied in the Enacted Plan is an order of magnitude more severe than the two point BVAP cut from the 2011 Benchmark Plan to the

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<sup>7</sup> CBSAs are defined by the U.S. Office of Management and Budget and reported in historical and current census data produced by the Census Bureau. CBSAs encompass Metropolitan Statistical Areas (“MSA”s) and Micropolitan Statistical Areas.

Metropolitan Statistical Areas “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.”

Source: [https://www.census.gov/geo/reference/gtc/gtc\\_cbsa.html](https://www.census.gov/geo/reference/gtc/gtc_cbsa.html).

Enacted Plan. It is not just a matter of four points down from the 1981 Plan as shown in **Figure 1**, *supra*, but rather 20 points down, in effect, from 40.48% BVAP in CD 2 in the Census 2000 Hypothetical Plan to 20.33% in Enacted CD 2.

**B. 2020 Black Population in Arkansas**

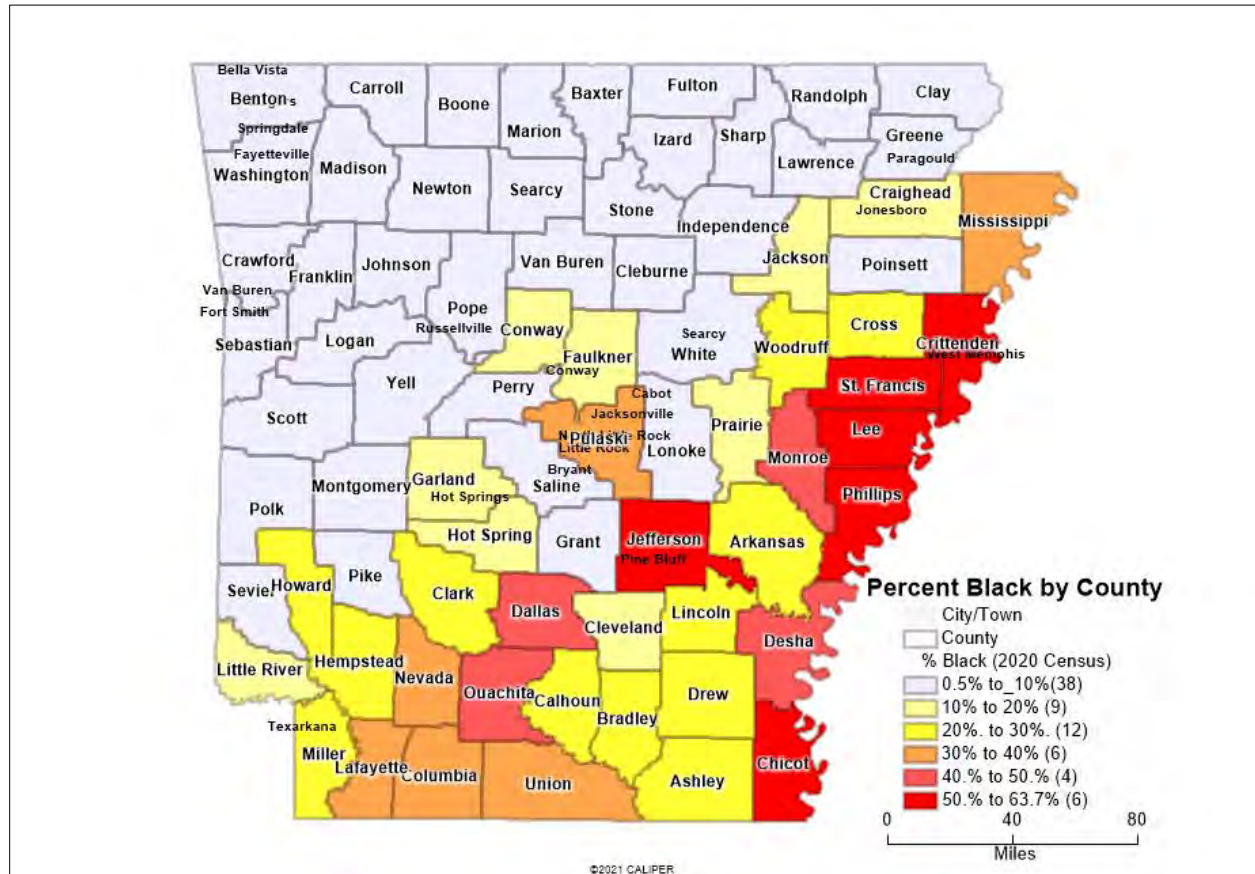
**33.** About 38% of the Black population in Arkansas is concentrated in Pulaski County (Pop. 399,125; 38.0% Black) and adjacent Jefferson County (Pop. 67,620; 57.62% Black). Pulaski County (the most populous county in Arkansas) accounts for 38.21% of the state’s overall Black population. Jefferson County is ranked eleventh in total population, but with the second highest Black population in the state after Pulaski County. Taken together, Pulaski County and Jefferson County have a total population of 495,968 (40.8% Black), representing almost two-thirds (65.88%) of the population necessary to meet the ideal district size (752,881) of a congressional district.

**34.** The map in **Figure 8** shows the Black population percentage by county, according to the 2020 Census.

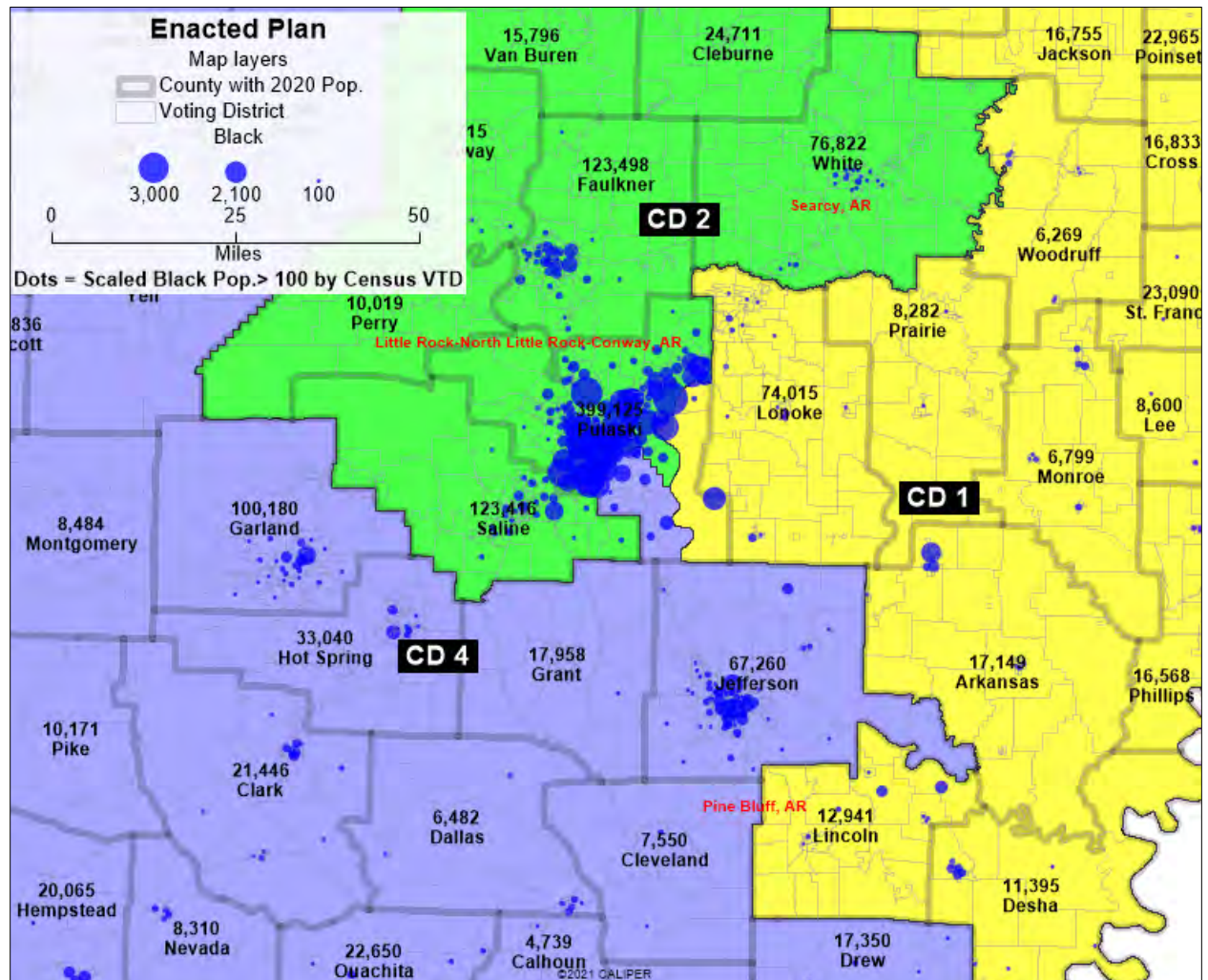
**35.** The U.S. Census also releases American Community Survey (“ACS”) data annually, which contains data about social, economic, housing, and demographic data for a single geographic area. That data is easily accessible and relied upon by officials and community members throughout the country to understand various changes taking place. For reference as reported in the 1-Year

2023 ACS and documented in the state-level charts and tables in **Exhibit J-2**, non-Hispanic whites significantly outpace African Americans across most key indicators of socio-economic well-being.

**Figure 8: Percent Black By County (2020)**



**36.** The map in **Figure 9** below zooms in on central Arkansas, showing the distribution of the Black population by Census VTD, according to the 2020 Census, with scaled blue dots representing Black population by VTD.

**Figure 9: Black Population Distribution in Central and Southeast Arkansas****C. Statewide Population Change, 2010-2020**

37. As shown in the rightmost columns of **Figure 10**, during the 2010s, the statewide Black population grew by 5.82% (a gain of 27,250 persons). The white population declined by 5.06% (a loss of 109,919 persons). The Latino

population exhibited the fastest growth (38.05%), adding 70,797 persons from a smaller population base of 186,050 in 2010.<sup>8</sup>

**Figure 10: Arkansas – 2010 and 2020 Population by Race and Ethnicity<sup>9</sup>**

	2010 Number	Percent	2010 Number	Percent	2020 Number	Percent	2010-2020 Change	2010-2020 % Change
<b>Total Population</b>	2,915,918	100.00%	2,915,918	100.00%	3,011,524	100.00%	95,606	3.28%
NH white	2,173,469	74.54%	2,173,469	74.54%	2,063,550	68.52%	-109,919	-5.06%
<b>Minority Subtotal</b>	742,449	25.46%	742,449	25.46%	947,974	31.48%	205,525	27.68%
Latino	186,050	6.38%	186,050	6.38%	256,847	8.53%	70,797	38.05%
Any Part Black	468,710	16.07%	468,710	16.07%	495,968	16.47%	27,258	5.82%

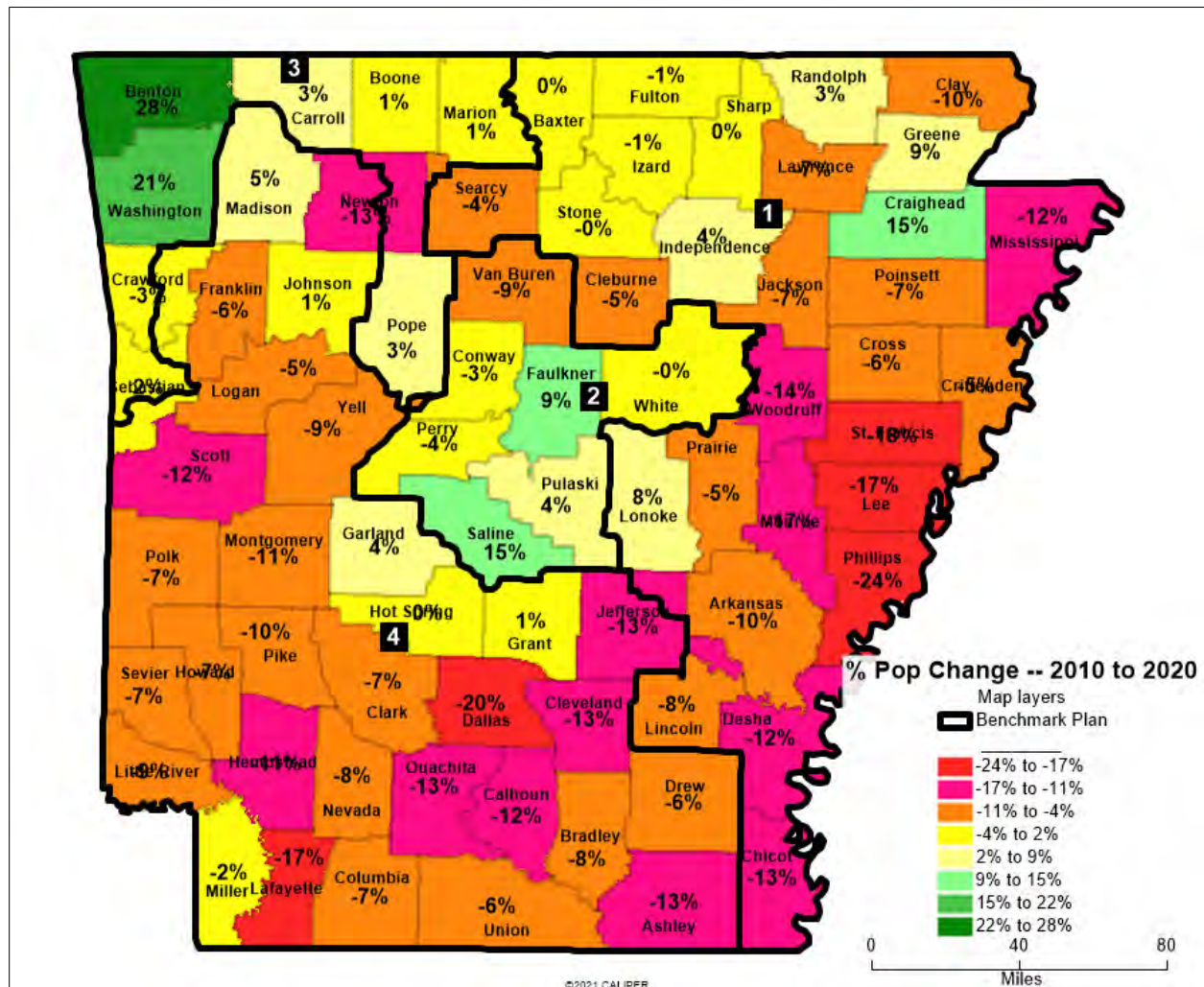
**38.** Population loss in many of the rural counties along the periphery of the state (Delta, Lower Arkansas, and parts of the Ozark region), coupled with strong growth in Northwest Arkansas, meant that the congressional map would have to change after the 2020 Census to comply with one person, one vote requirements.

**39.** The map in **Figure 11** shows the percent population change by county between 2010 and 2020. Bolded lines show district boundaries under the 2011 Benchmark Plan.

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<sup>8</sup> Estimates available from the Census Bureau indicate modest growth in the statewide population since 2020. As of July 1, 2023, the Census Bureau estimates that Arkansas has a population of 3,067,732, of whom 70.24% are NH white, 16.24% AP Black, and 9.25% Latino. Source: <https://arstatedatacenter.youraedi.com/population-estimates/>.

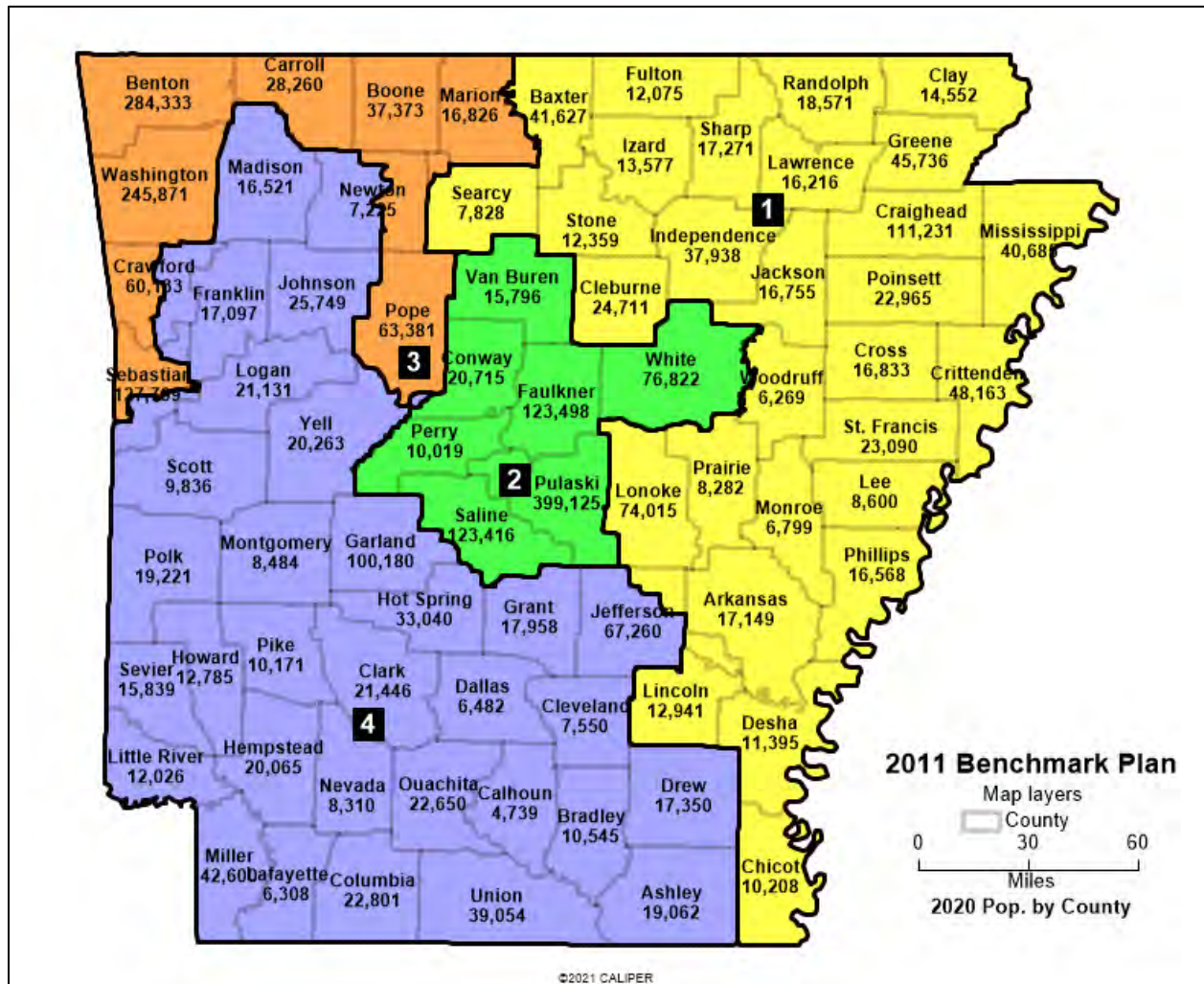
<sup>9</sup> **PL94-171 Redistricting File** (Census 2010 and Census 2020).

**Figure 11: Percent Population Change By County (2010 to 2020)**

## IV. ANALYSIS OF BENCHMARK AND ENACTED PLANS

### A. 2011 Benchmark Plan

40. The map in **Figure 12** depicts the 2011 Benchmark Plan. Labels on the **Figure 12** map report county-level 2020 population. **Exhibit F-1** contains detailed 2020 population statistics by district.

**Figure 12: 2011 Benchmark Plan**

41. **Exhibit F-2** is a higher resolution version of the Figure 11 map. As shown in **Exhibit F-3**, the 2011 Benchmark Plan contains splits five counties with a total of ten populated splits. **Exhibit F-4** identifies six municipalities where populations are divided into two districts. **Exhibit F-5** reports compactness scores by district. **Exhibit F-6** reports school district splits. **Exhibit F-7** reports CBSA splits.

42. A detailed population summary of the 2011 Benchmark Plan, based on the 2010 Census, is in **Exhibit F-8**

**43.** As shown in **Figure 13**, Pulaski County (a focal point of this lawsuit), has a total population of 399,125, according to the 2020 Census. NH white persons are a minority of the population (48.6%). This is the first decade in the state’s history where the non-white population represents a majority (51.40%) in Pulaski County—led by the Black population (38%—up from 28.34% in 1990) and followed by Latino population (8.52%—up from 0.91% in 1990).<sup>10</sup>

**Figure 13: Pulaski County – 1990 -2020 Population by Race and Ethnicity**

	1990 Number	1990 Percent	2010 Number	Percent	2020 Number	Percent	2010-2020 Change	2010-2020 % Change
<b>Total Population</b>	349,660	100.00%	382,748	100.00%	399,125	100.00%	16,377	4.28%
NH white	250,549	71.66%	211,697	55.31%	193,993	48.60%	-17,704	-8.36%
<b>Minority Subtotal</b>	99,111	28.34%	171,051	44.69%	205,132	51.40%	34,081	19.92%
Latino	3,199	0.91%	22,168	5.79%	33,153	8.31%	10,985	49.55%
AP Black (SR in 1990)	91,976	26.30%	137,860	36.02%	151,682	38.00%	13,822	10.03%

**44.** During the decade of the 2010s, the Black population in Pulaski County grew by 10.03%, while the white population declined by 8.36% (-17,704 persons). The Latino population exhibited the fastest growth (49.55%) over the course of the decade—up by 10,985 persons but below the 13,822 persons increase in the Black population.

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<sup>10</sup> As of July 1, 2023, the Census Bureau estimates that Pulaski County has a population of 400,009, of whom 39.73% are Black (any part), 8.34% are Latino, and 48.93% are NH white, Latino. Source:  
<https://arstatedatacenter.youraedi.com/population-estimates/>.

See also 2023 county-level population maps produced by the Arkansas Economic Development Institute: Source:  
<https://arstatedatacenter.youraedi.com/vintage-2023-county-population-estimates/>.

**45.** All told, the minority (non-white) population in Pulaski County accounted for all of its population gain between 2010 and 2020. As indicated in **Figure 14**, without the 34,081 non-white population increase in Pulaski County, Benchmark CD 2 would have registered a net population loss of 17,571 (34,081-16,510) between 2010 and 2020.

**Figure 14: 2011 Benchmark Plan – 2020 Census**

District	Population	Deviation	% Deviation	% 18+ Black	% 18+ Latino	% 18+ NH White
1	716388	-36493	-4.85%	17.23%	3.18%	75.48%
2	769391	16510	2.19%	22.64%	5.77%	66.33%
3	839147	86266	11.46%	3.48%	13.03%	73.15%
4	686598	-66283	-8.80%	18.84%	5.18%	71.27%

**46.** A cursory glance at **Figure 13** and **Figure 14** suggests that strictly from the vantage point of a one person, one vote “least change” plan (i.e. setting aside any other countervailing traditional redistricting principles), CD 2 required only a minor modification—for instance, removing one of the rural counties from CD 2—to satisfy equalizing population, while adhering to traditional redistricting principles.

**47.** For example, rural Van Buren County (pop. 15,796, % Black 0.05%) could have been the perfect candidate for a minor modification shift out of CD 2. As shown in **Exhibit E** (published by the U.S. Census Bureau), Van Buren County

is not within the Little Rock MSA, so commuting patterns and other connections with Pulaski County are relatively weak.

**48.** With the removal of Van Buren County, according to the 2020 Census, the deviation in CD 2 from the ideal district size would drop from 2.19% to 0.09% (714 persons over the ideal district size), with a BVAP of 23.12%—about half of a percentage point higher than the 2020 Census BVAP in the Benchmark Plan.

### **B. 2021 Enacted Plan**

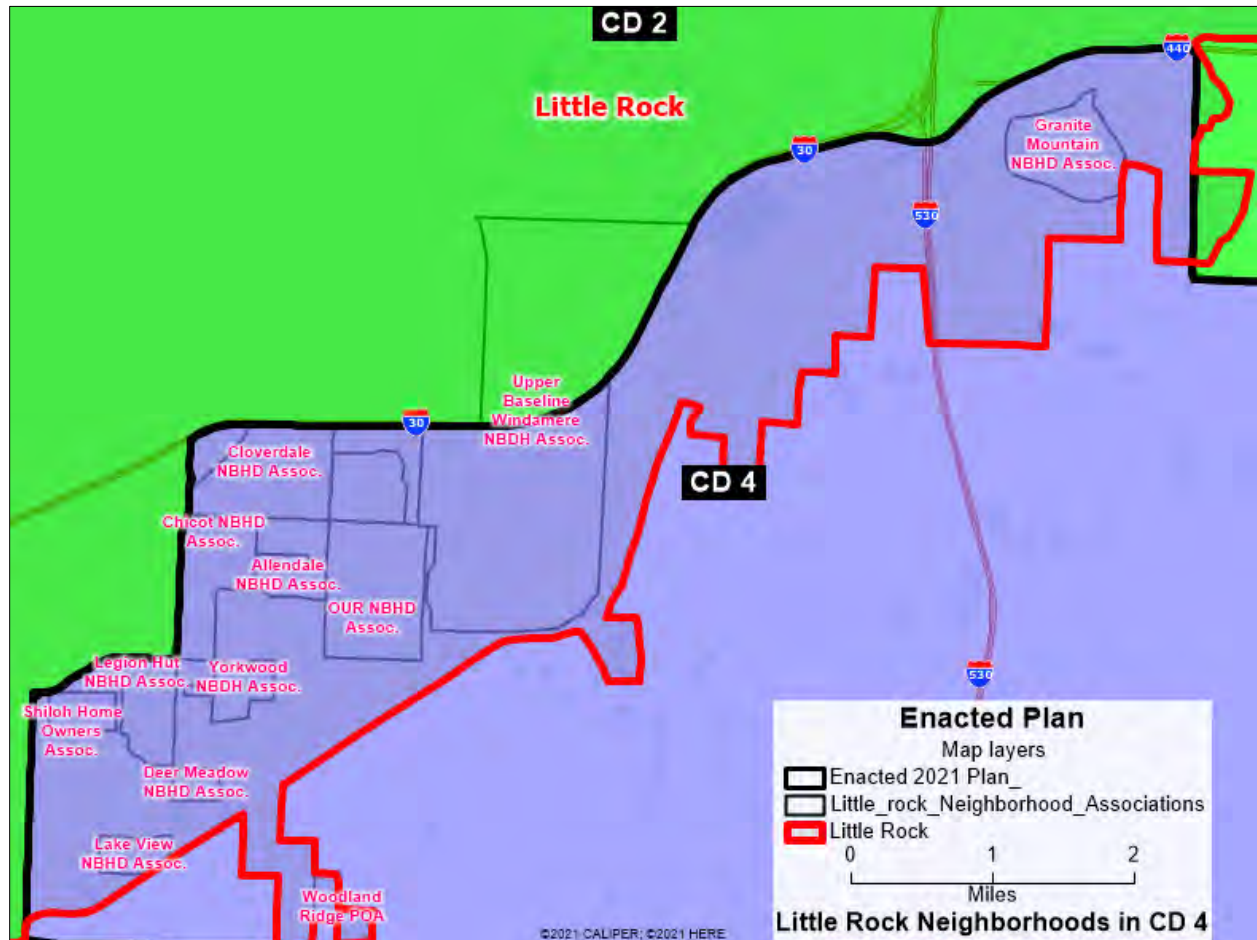
**49.** Rather than removing Van Buren County from CD 2, the Legislature chose another path: splitting Pulaski County into three pieces. Under the Enacted Plan, BVAP in CD 2 drops to 20.33%—more than 2% below the 22.64% BVAP in CD 2 under the Benchmark Plan.

**50.** The unnecessary splitting of central and southeast Pulaski County cracked the Black population in Pulaski County, which can be illustrated from a variety of perspectives.

**51.** First, as shown in the map in **Figure 15**, all or part of 12 neighborhoods (total pop. 15,910; 58.1% Black) in southeast Little Rock were moved out of CD 2 in the transition from the Benchmark Plan to the Enacted Plan. One of these neighborhoods has one part in CD 2 and the other part in CD 4—Upper Baseline

Windmere (pop. 5,429; 50.6% Black).<sup>11</sup>

**Figure 15 – Southeast Little Rock Neighborhoods in CD 4**

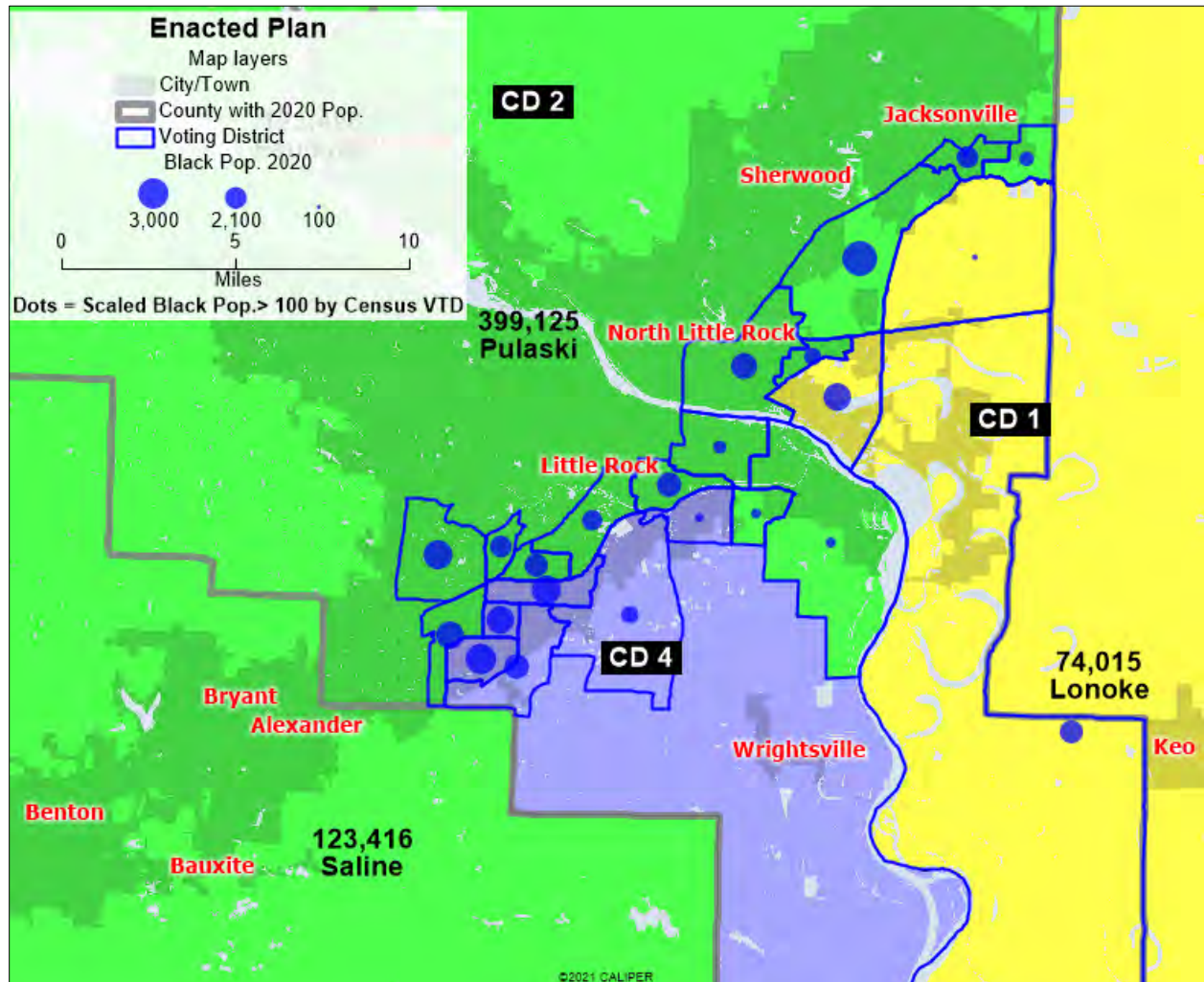


52. Second, as displayed in the Pulaski County VTD adjacency map in **Figure 16** (zoomed in from the **Figure 9** map *supra*), 23 VTDs (pop. 71,506; 64% Black) in the municipalities of Little Rock, North Little Rock, Jackson, and Sherwood are adjacent to one another but divided by the boundaries of the Enacted

<sup>11</sup> I estimated neighborhood populations by overlaying a shapefile depicting neighborhood boundaries onto 2020 census blocks. Source: [https://data.littlerock.gov/Quality-of-Life/Neighborhood-Associations/hzuh-draj/about\\_data](https://data.littlerock.gov/Quality-of-Life/Neighborhood-Associations/hzuh-draj/about_data).

Plan. All 23 were in CD 2 under the 2011 Benchmark Plan. Scaled blue dots represent 100 to 3,000+ Black persons at the VTD-level.

**Figure 16: 23 Adjacent VTDs Separated by Enacted Plan Boundaries**

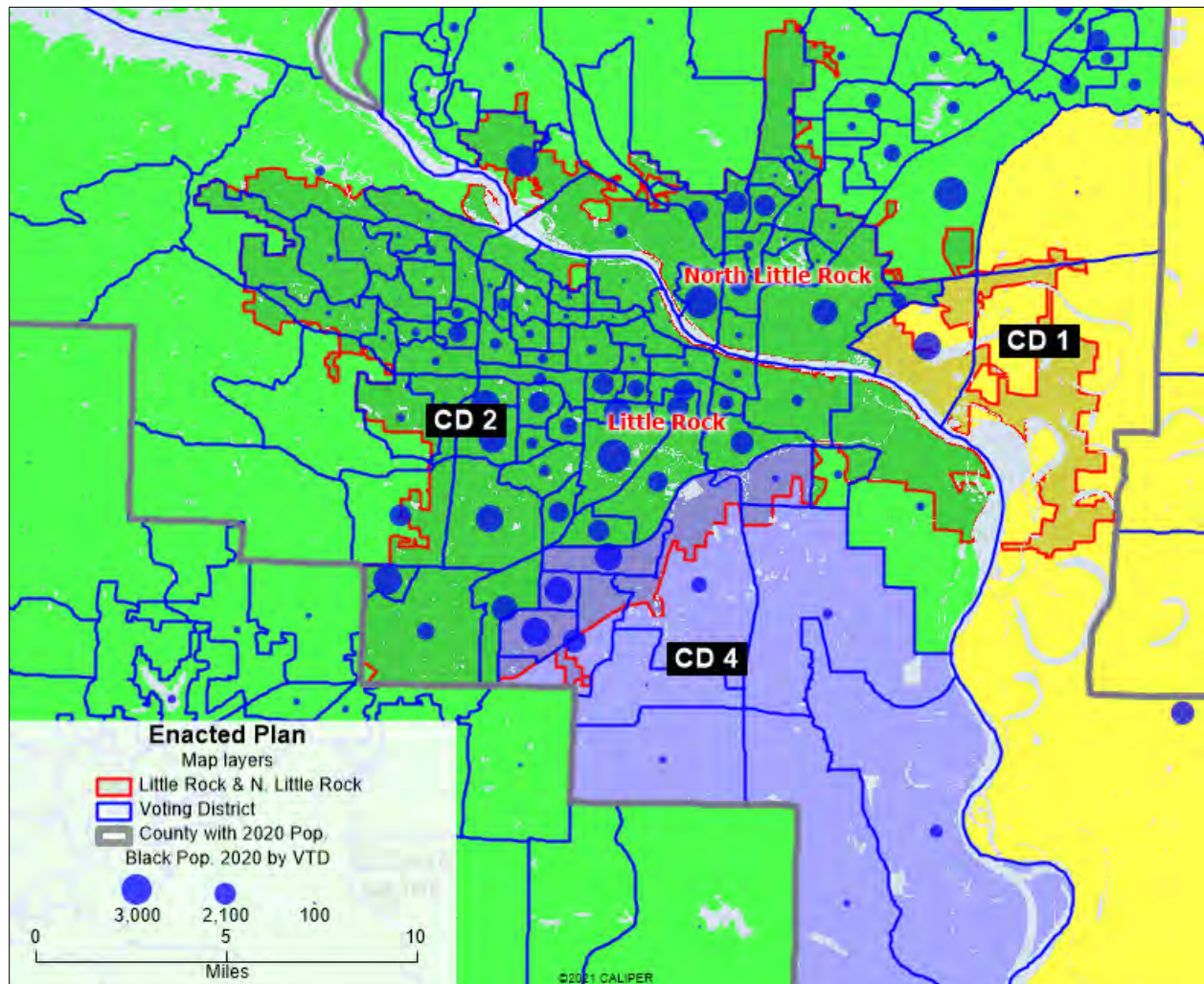


53. **Figure 17** lists the 23 adjacent VTDs, comparing the 2011 Benchmark Plan CD 2 with the Enacted Plan boundaries. The VTDs are color-coded by district under the Enacted Plan, with 2020 population by race and ethnicity.

**Figure 17: 23 Adjacent VTDs Population Detail by Race and Ethnicity**

VTD	Enacted	Bench.	City/Town	2020 Pop.	Black	% Black	Latino	% Latino	NH White	% NH White
11	CD 1	2		3,822	2,704	70.7%	176	4.6%	887	23.2%
47	CD 1	2		526	278	52.9%	38	7.2%	174	33.1%
55	CD 1	2		4,264	2,244	52.6%	118	2.8%	1,823	42.8%
<b>Subtotal</b>	<b>CD 1</b>	<b>2</b>		<b>8,612</b>	<b>5,226</b>	<b>60.7%</b>	<b>332</b>	<b>3.9%</b>	<b>2,884</b>	<b>33.5%</b>
45	CD 2	2	Jacksonville	3,344	2,044	61.1%	207	6.2%	1,044	31.2%
46	CD 2	2	Jacksonville	2,303	1,202	52.2%	163	7.1%	853	37.0%
48	CD 2	2		5,109	3,409	66.7%	522	10.2%	1,037	20.3%
52	CD 2	2	N. L. Rock	3,269	2,590	79.2%	123	3.8%	497	15.2%
53	CD 2	2	N. L. Rock	2,164	1,619	74.8%	186	8.6%	343	15.9%
82	CD 2	2	Little Rock	4,490	2,654	59.1%	1,157	25.8%	614	13.7%
83	CD 2	2	Little Rock	3,999	2,803	70.1%	523	13.1%	595	14.9%
102	CD 2	2	Little Rock	3,273	2,035	62.2%	689	21.1%	497	15.2%
122	CD 2	2	Little Rock	2,397	1,948	81.3%	310	12.9%	123	5.1%
123	CD 2	2	Little Rock	3,705	2,148	58.0%	1,196	32.3%	323	8.7%
128	CD 2	2	Little Rock	2,882	2,327	80.7%	74	2.6%	443	15.4%
129	CD 2	2		1,211	735	60.7%	55	4.5%	404	33.4%
130	CD 2	2		827	799	96.6%	10	1.2%	17	2.1%
134	CD 2	2	Little Rock	1,398	1,140	81.5%	61	4.4%	167	11.9%
<b>Subtotal</b>	<b>CD 2</b>	<b>2</b>		<b>40,371</b>	<b>27,453</b>	<b>68.0%</b>	<b>5,276</b>	<b>13.1%</b>	<b>6,957</b>	<b>17.2%</b>
103	CD 4	2	Little Rock	3,793	2,743	72.3%	785	20.7%	232	6.1%
104	CD 4	2	Little Rock	4,308	2,952	68.5%	809	18.8%	488	11.3%
105	CD 4	2		4,929	2,337	47.4%	2,011	40.8%	522	10.6%
124	CD 4	2	Little Rock	5,254	2,780	52.9%	1,923	36.6%	502	9.6%
125	CD 4	2		3,464	1,622	46.8%	712	20.6%	1,057	30.5%
135	CD 4	2	Little Rock	775	654	84.4%	23	3.0%	86	11.1%
<b>Subtotal</b>	<b>CD 4</b>	<b>2</b>		<b>22,523</b>	<b>13,088</b>	<b>58.1%</b>	<b>6,263</b>	<b>27.8%</b>	<b>2,887</b>	<b>12.8%</b>
<b>Total</b>				<b>71,506</b>	<b>45,767</b>	<b>64.0%</b>	<b>11,871</b>	<b>16.6%</b>	<b>12,728</b>	<b>17.8%</b>

**54.** Lastly, the map in **Figure 18** (scaled blue dots represent 100 to 3,000 + Black persons at the VTD-level), zooms out to display VTDs in Little Rock and North Little Rock, depicting the geographic distribution of the Black population in and around both cities that is inside versus outside of CD 2 under the Enacted Plan.

**Figure 18: Black Population Distribution – Little Rock and N. Little Rock**

**55.** All told, 12,479 Black persons (14.55%) who live in Little Rock were removed from CD 2 and 4,605 Black persons who live in North Little Rock (16.66%) were removed from CD 2.

**56.** Twelve of the 14 VTDs in Pulaski County that the Enacted Plan moved out of 2011 Benchmark Plan's CD 2 were significantly or predominantly Black, ranging from 46.82% to 84.39% Black. 94.27% of the white population in Pulaski

County in CD 2 under the Benchmark Plan remained in CD 2 under the Enacted Plan, compared to 85.56% of the Black population.

**57. Figure 19** breaks out the net district-level population shifts by race that occurred in Pulaski County in the transition from the 2011 Benchmark Plan to the Enacted Plan.

**Figure 19: CD 2 Population Shifted in Pulaski County into Enacted CDs 1 & 4**

District	Pop.	Black	% Black	NH White	% NH White	Minority	% Minority
CD 2 to CD 1	8,612	5,226	60.68%	2,884	33.49%	5,728	66.51%
CD 2 to CD 4	32,780	16,678	50.88%	8,236	25.13%	24,544	74.87%
<b>Total</b>	<b>41,392</b>	<b>21,904</b>	<b>52.92%</b>	<b>11,120</b>	<b>26.87%</b>	<b>30,272</b>	<b>73.13%</b>

**58.** As shown in **Figure 19**, a total of 41,392 persons were shifted out of CD 2 in Pulaski County, of whom 21,904 (52.92%) were Black in a district in which BVAP comprised 22.64% of the population according to the 2020 Census. As shown in the rightmost column, the shift removed a non-white minority population of 30,272 from CD 2, representing 73.13% of the overall population shift.

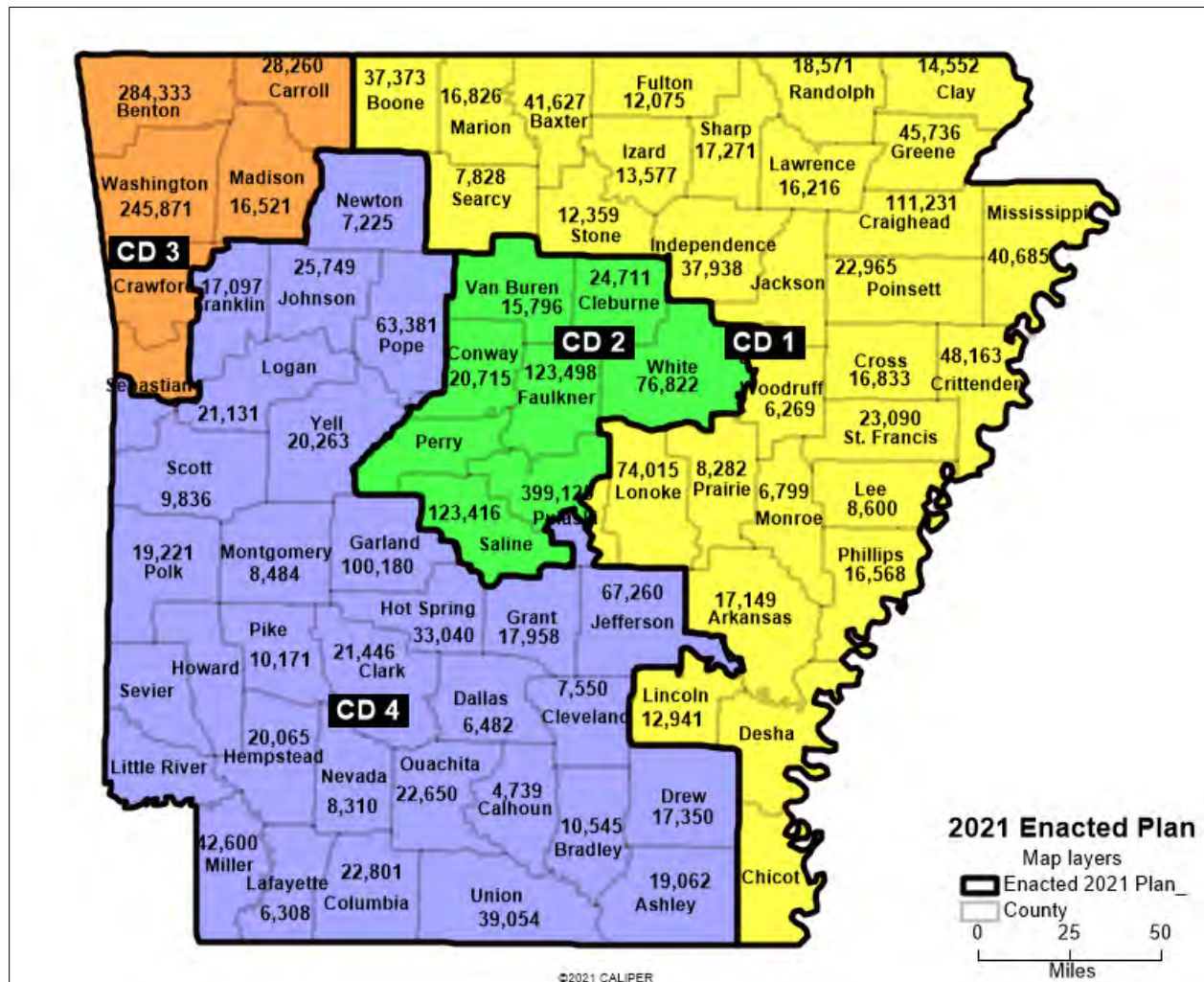
**59.** To compensate for the removal of 41,392 persons from the CD 2 portion of Pulaski County (a net loss of 24,882), population from somewhere else had to be added to CD 2 to meet one-person, one-vote requirements. The map drawers selected overwhelming white Cleburne County (pop. 24,711; 0.03% Black) to add back into CD 2.

60. The table in **Figure 20** shows 2020 summary population statistics for the Enacted Plan. **Exhibit G-1** contains detailed 2020 population statistics by district.

**Figure 20: Arkansas U.S. House Enacted Plan – 2020 Census**

District	Population	Deviation	% Deviation	% 18+ Black	% 18+ Latino	% 18+ NH White
1	752509	-372	-0.05%	16.89%	3.13%	75.76%
2	752710	-171	-0.02%	20.33%	5.15%	69.12%
3	753219	338	0.04%	3.56%	13.89%	71.62%
4	753086	205	0.03%	19.76%	6.03%	69.62%

61. The map in **Figure 21** depicts the Enacted Plan. **Exhibit G-2** is a higher resolution version of the Figure 16 map. As shown in **Exhibit G-3**, the Enacted Plan contains five splits in two counties (three splits in Pulaski and two splits in Sebastian County). **Exhibit G-4** identifies six municipalities where populations are divided into two districts. **Exhibit G-5** reports compactness scores by district. **Exhibit G-6** reports school district splits. **Exhibit G-7** reports CBSA splits. **Exhibit G-8** reports district-by-district core retention vis-à-vis the Benchmark Plan.

**Figure 21: Arkansas U.S. House Enacted Plan**

62. As summarized in **Figure 22**, the changes around Pulaski County left the Enacted Plan with the same number of county splits as the 2011 Benchmark Plan, along with modest improvements in compactness scores<sup>12</sup> and municipal and

<sup>12</sup> The composite compactness measure reported in **Figure 21** and throughout the text of this declaration is published by the widely used redistricting website, Dave's Redistricting Application ("DRA"). The DRA composite compactness score (higher is better) is based on the Reock and Polsby Popper measures using the methodology as described at <https://medium.com/dra-2020/ratings-deep-dive-c03290659b7>. The district-by-district

school district splits compared to the 2011 Benchmark Plan. But these improvements came with an unnecessary removal of concentrations of significantly or predominately Black precincts and an unnecessary division of a long-standing Black community of interest in central and southeast Pulaski County (as I show in plans I developed).

**Figure 22: Redistricting Metrics – Benchmark vs. Enacted**

<b>Metric</b>	<b>2011 Benchmark</b>	<b>2021 Enacted</b>
Total Split Counties*	5	2
Total County Splits*	10	5
VTD Splits*	1	0
Split Municipalities*	5	6
Municipal Splits*	10	12
Core-based Statistical Area splits*	13	11
Unified School District splits*	100	84
One-person, one-vote (deviation)	20.26%	0.09%
DRA Compactness (higher=better)#	41	59
Core Retention	NA	92.16%
Incumbent Conflicts	0	0
CD 2 BVAP	22.64%	20.33%
CD 2 Trump	54.5%	56.7%
CD 2 Biden	45.5%	43.3%

\* Excluding unpopulated splits

# See n. 12.

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compactness scores reported in the exhibits that I have attached by plan are produced using *Maptitude for Redistricting* and report the raw Reock and Polsby-Popper scores, which are the two most widely referenced compactness measures.

**63.** As noted *supra*, while not typically listed as a traditional redistricting principle, core retention<sup>13</sup> of districts as drawn in the Benchmark Plan is a factor to consider, along with avoiding incumbent conflicts where possible. To that end, the Enacted Plan has a very high core retention rate of 92.16% and does not pair incumbents.

**64.** The Enacted Plan generates four districts where the least-safe Republican-leaning seat, Enacted CD 2 had the highest percentage of Biden voters in the 2020 head-to-head presidential contest out of the four district, as Biden received 43.3% of the vote versus 56.7% for Trump—a net difference of about 44,000 votes.

## **VI. ALTERNATIVE PLANS**

**65.** The two alternative plans (Alternative Plan 1 and Alternative Plan 2) presented in this section are drawn to demonstrate different plan configurations that would keep Pulaski County intact and entirely within CD 2, with overall superior traditional redistricting metrics as compared to the Enacted Plan. Alternative Plan 2 also achieves the same or superior partisan outcomes as in the Enacted Plan.

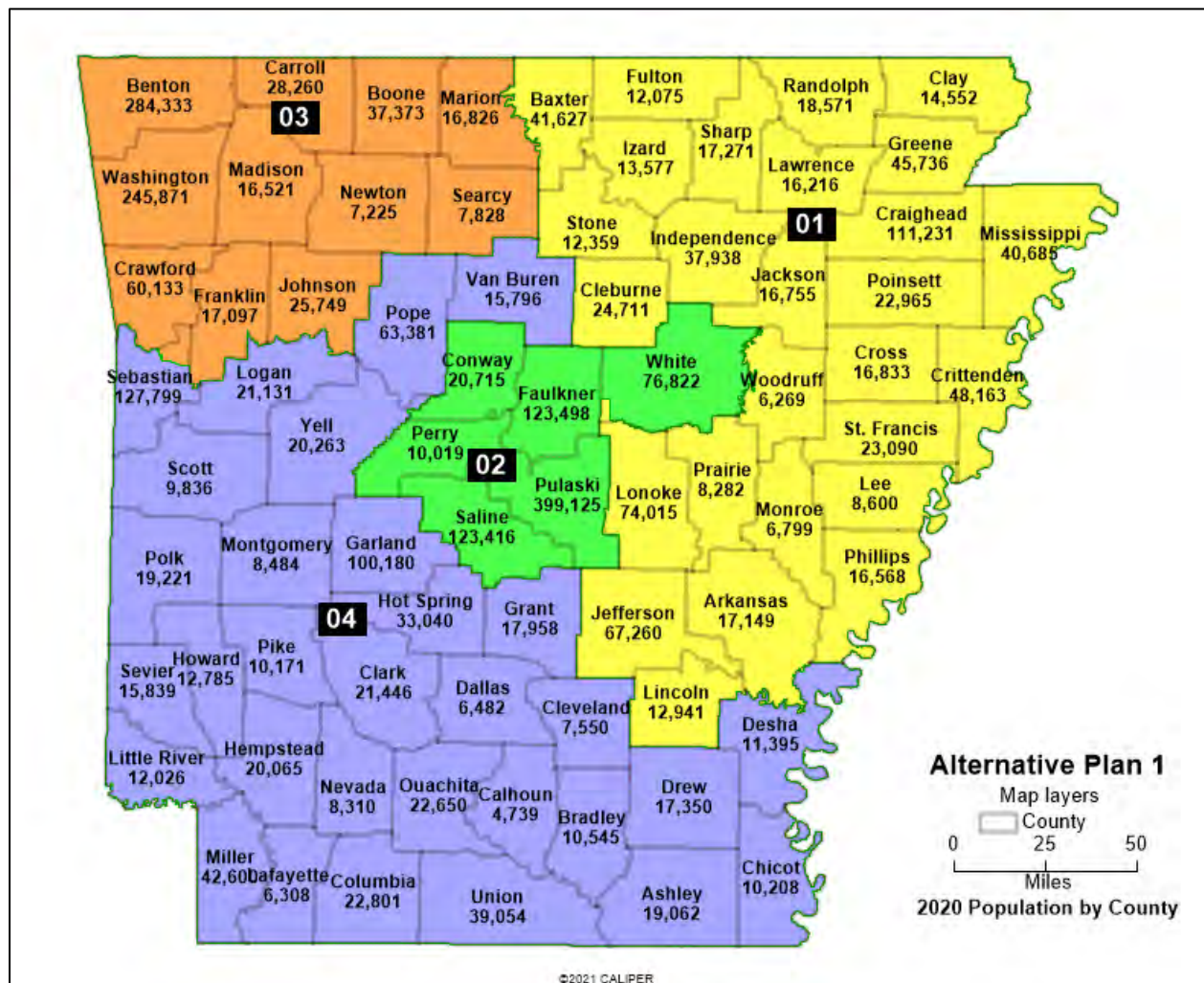
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<sup>13</sup> Core retention is the retention in the same district of that district’s core population. I define “core population” as the largest district-level subset of a population that is kept together in the shift from one plan to another (without taking into account changes in district numbers or changes in incumbent representation). The core population is identified with shading in the referenced tabular exhibits generated by *Maptitude for Redistricting*.

### A. Alternative Plan 1

66. Alternative Plan 1 is a “least change plan” that prioritizes core retention without splitting Pulaski County. As shown in the map in **Figure 23**, Alternative Plan 1 keeps Pulaski County entirely within CD 2 and maintains the northward trajectory of CD 2 as under the Enacted Plan.

**Figure 23: Alternative Plan 1**



**67.** The table in **Figure 24** shows 2020 summary population statistics for Alternative Plan 1. The district-by-district deviation from the ideal district size is near-perfect in a +51 to -40 person range by district, resulting in an overall deviation of 0.02%.

**Figure 24: Alternative Plan 1– 2020 Census**

District	Population	Deviation	% Deviation	% 18+ Black	% 18+ Latino	% 18+ NH White
1	752932	51	0.01%	19.83%	3.02%	73.14%
2	752901	20	0.00%	23.15%	5.85%	65.75%
3	752850	-31	0.00%	2.49%	12.38%	75.01%
4	752841	-40	-0.01%	15.14%	6.89%	72.26%

**68.** As shown in **Figure 25**, Alternative Plan 1 is overall superior to the Enacted Plan. Core retention is slightly lower than the Enacted Plan but still very high at 87.53%. Composite compactness scores are the same. Population deviations in Alternative Plan 1 are smaller than those in the Enacted Plan. Alternative Plan 1 splits just two counties, with zero municipal splits and fewer school district splits than the Enacted Plan.

**Figure 25: Redistricting Metrics – Enacted vs. Alternative Plan 1**

<b>Metric</b>	<b>2021 Enacted</b>	<b>Alternative Plan 1</b>
Total Split Counties*	2	2
Total County Splits*	5	4
VTD Splits*	0	0
Split Municipalities*	6	3
Municipal Splits*	12	7
Core-based Statistical Area splits*	11	9
Unified School District splits*	84	71
One-person, one-vote (deviation)	0.09%	0.02%
DRA Compactness (higher=better)#	59	59
Core Retention	92.16%	87.53%
Incumbent Conflicts	0	0
CD 2 BVAP	20.33%	23.15%

\* Excluding unpopulated splits

# See n. 12.

**69. Exhibit H-1** contains detailed 2020 population statistics by district.

**Exhibit H-2** is a higher resolution version of the Figure 22 map. As shown in

**Exhibit H-3**, the Alternative Plan 1 splits two counties (White and Sebastian).

There are no VTD splits. **Exhibit H-4** documents that there are no municipal splits.

**Exhibit H-5** reports compactness scores by district. **Exhibit H-6** reports school

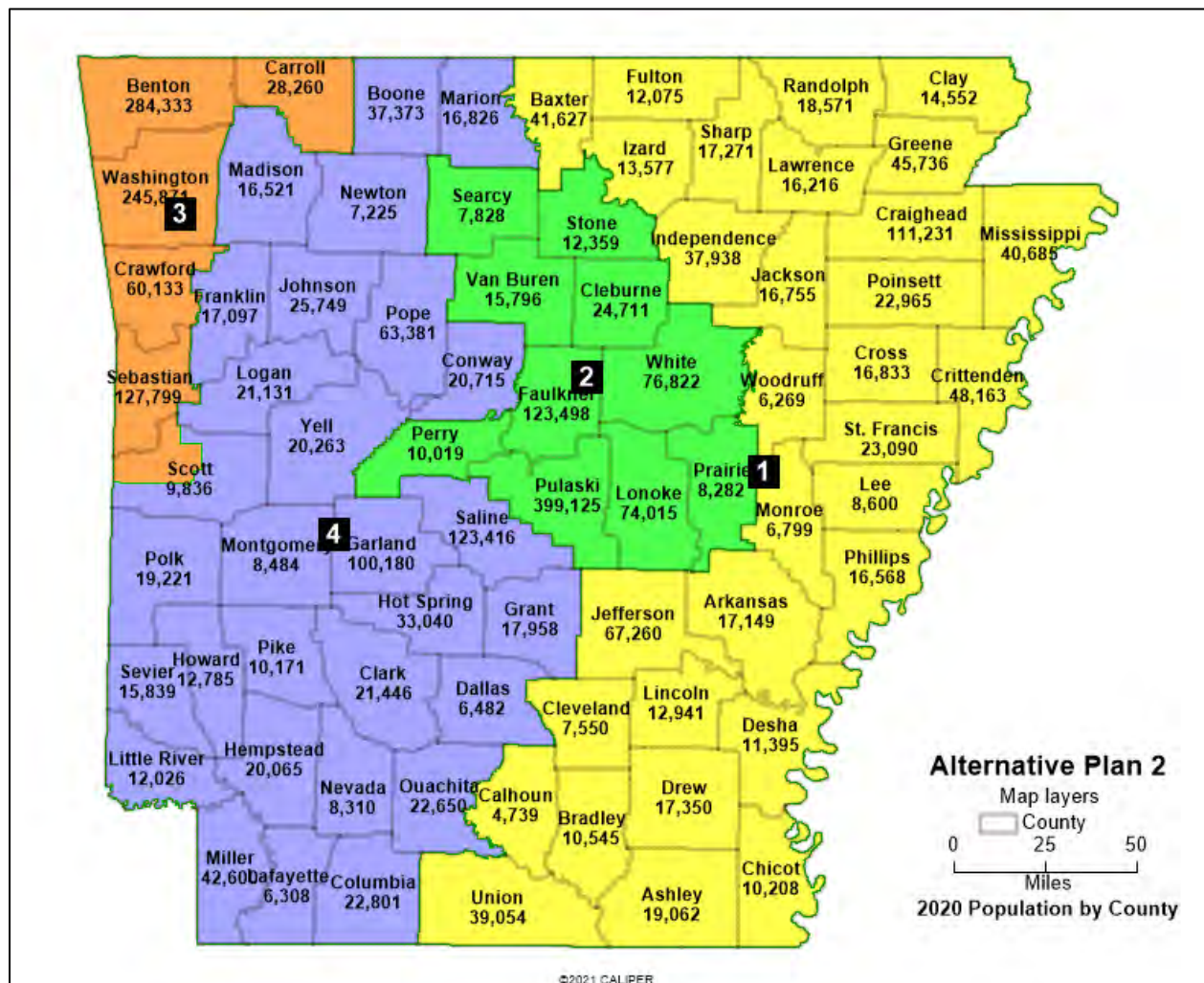
district splits. **Exhibit H-7** reports CBSA splits. **Exhibit H-8** reports district-by-

district core retention vis-à-vis the Benchmark Plan.

## B. Alternative Plan 2

70. Alternative Plan 2 demonstrates that, even if the legislature prioritized partisan goals over traditional redistricting criteria, splitting Pulaski County was still unnecessary. Under the configuration shown in **Figure 26**, CD 2 would have an 11.4 point Republican advantage in a head-to-head Trump (55.7%) vs. Biden (44.3%) contest. This mirrors the political composition as in the Enacted Plan.

**Figure 26: Alternative Plan 2**



71. The table in **Figure 27** shows 2020 summary population statistics for Alternative Plan 2. The district-by-district deviation from the ideal district size ranges from +488 in CD 3 to - 426 in CD 2, resulting in an overall deviation of just 0.12%.

**Figure 27: Alternative Plan 2– 2020 Census**

District	Population	Deviation	% Deviation	% 18+ Black	% 18+ Latino	% 18+ NH White
1	752774	-107	-0.01%	24.00%	3.26%	69.15%
2	752455	-426	-0.06%	22.26%	5.41%	67.05%
3	753369	488	0.06%	3.56%	13.88%	71.60%
4	752926	45	0.01%	10.77%	5.65%	78.27%

72. As shown in the table in **Figure 28**, Alternative Plan 2 is generally superior to the 2021 Enacted Plan across a range of redistricting metrics.

**Figure 28: Redistricting Metrics – Enacted vs. Alternative Plan 2**

Metric	2021 Enacted	Alternative Plan 2
Total Split Counties*	2	1
Total County Splits*	5	2
VTD Splits*	0	0
Split Municipalities*	6	2
Municipal Splits*	12	4
Core-based Statistical Area splits*	11	8
Unified School District splits*	84	59
One-person, one-vote (deviation)	0.09%	0.12%
DRA Compactness (higher=better)#	59	43
Core Retention	92.16%	80.31%
Incumbent Conflicts	0	0
CD 2 BVAP	20.33%	22.26%

CD 2 Trump	56.7%	55.7%
CD 2 Biden	43.3%	44.3%

\* Excluding unpopulated splits

# See n. 12.

**73. Exhibit I-1** contains detailed 2020 population statistics by district.

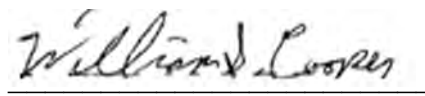
**Exhibit I-2** is a higher resolution version of the Figure 22 map. As shown in **Exhibit I-3**, the Alternative Plan 2 splits one county (Scott). There are no VTD splits. **Exhibit I-4** documents that there are just two municipal splits. **Exhibit I-5** reports compactness scores by district. Alternative Plan 2 is less compact than the Enacted Plan but still within the norm based on widely used compactness measures. **Exhibit I-6** reports school district splits. **Exhibit I-7** reports CBSA splits. **Exhibit I-8** reports district-by-district core retention vis-à-vis the Benchmark Plan.

# # #

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

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct to the best of my knowledge.

Executed on: September 16, 2024

  
WILLIAM S. COOPER