

**IN THE UNITED STATES DISTRICT COURT
FOR THE MIDDLE DISTRICT OF LOUISIANA**

DR. DOROTHY NAIRNE, JARRETT
LOFTON, REV. CLEE EARNEST LOWE,
DR. ALICE WASHINGTON, STEVEN
HARRIS, ALEXIS CALHOUN, BLACK
VOTERS MATTER CAPACITY BUILDING
INSTITUTE, and THE LOUISIANA STATE
CONFERENCE OF THE NAACP,

Plaintiffs,

v.

R. KYLE ARDOIN, in his official capacity as
Secretary of State of Louisiana,

Defendant.

CIVIL ACTION NO. 3:22-cv-00178
SDD-SDJ

Dr. Handley Surrebuttal Report

Surrebuttal Report on Remedial Louisiana State House and Senate Plans

Dr. Lisa Handley

I. Introduction

In this surrebuttal report, I provide an effectiveness analysis of the Alternative Maps Plaintiffs have introduced. I also discuss the electoral performance analysis offered by Dr. Barber in his report dated June 13, 2025, and respond more generally to Dr. Voss's report, dated June 10, 2025.

II. Alternative Remedial Maps

In response to the Defendants' rebuttal reports, Plaintiffs have introduced a second set of remedial maps (Alternative Maps) for consideration by the Court. These maps, drawn by Plaintiffs' demography expert Bill Cooper, include two additional majority Black senate districts and five majority Black house districts compared to the Enacted Maps. I have been asked to review these Alternative Maps to determine whether the additional majority Black districts offered would provide Black voters with an opportunity to elect their candidates of choice. I report effectiveness scores for the districts in the areas of interest I have referred to as Senate Clusters 2 and 3 and House Clusters 1, 3, and 4, because each of these clusters offers at least one additional majority Black district.¹ Unlike the Remedial Maps, however, the Alternative Maps do not offer additional majority Black districts in Senate Cluster 1 (Bossier and Caddo Parishes) or in House Cluster 2 (Calcasieu Parish). For this reason, I do not include comparison tables with effectiveness scores for these two clusters.²

¹ House Cluster 5 (East Baton Rouge and East Feliciana Parishes) includes two additional majority Black districts compared to the Enacted House Map.

² As in my Expert Report entitled "Remedial Louisiana State House and Senate Plans," dated May 23, 2025, *Effectiveness Score #1* is calculated on the basis of the following 21 election contests: the November 2024 race for U.S. President; the October 2023 Governor, Lieutenant Governor, and Secretary of State contests; the November 2023 runoff for Secretary of State; the November 2022 U.S. Senate contest; the November 2020 races for U.S. President and U.S. Senate; the October 2019 Lieutenant Governor, Attorney General, Secretary of State, and State Treasurer contests; the 2019 runoff for Secretary of State; the November 2018 contest and the December 2018 runoff for Secretary of State; the October 2017 contest and the November 2017 runoff for State Treasurer; the October 2015 Lieutenant Governor, Attorney General, and Secretary of State contests; and the November 2015 runoff for Lieutenant Governor. *Effectiveness Score #2* is calculated on the basis of the subset of the ten two-candidate contests: the November 2024 election for U.S. President, the November 2023 runoff for Secretary of State, the November 2020 race for U.S. President, the October 2019 Lieutenant Governor and Attorney General contests, the 2019 runoff for Secretary of State, the December 2018 runoff for Secretary of State, the November 2017 runoff for State Treasurer, the October 2015 Secretary of State contest, and the November 2015 runoff for Lieutenant Governor.

**Comparison Table 1: State Senate Cluster 2 for Alternative Map
(Jefferson and St. Charles Parishes)**

Alternative Districts	Effectiveness Score #1	Effectiveness Score #2
8	4.8%	0.0%
9	14.3%	0.0%
0	0.0%	0.0%
19	95.2%	100.0%

**Comparison Table 2: State Senate Cluster 3 for Alternative Map
(East and West Baton Rouge, Iberville, and Point Coupee Parishes)**

Alternative Districts	Effectiveness Score #1	Effectiveness Score #2
14	100.0%	100.0%
15	90.5%	90.0%
16	14.3%	10.0%
17	81.0%	70.0%

**Comparison Table 3: State House Cluster 1 for Alternative Map
(DeSoto, Natchitoches, and Red River Parishes)**

Alternative District	Effectiveness Score #1	Effectiveness Score #2
23	76.2%	70.0%

**Comparison Table 4: State House Cluster 3 for Alternative Map
(Bossier and Caddo Parishes)**

Alternative Districts	Effectiveness Score #1	Effectiveness Score #2
1	76.2%	60.0%
2	100.0%	100.0%
3	90.5%	80.0%
4	100.0%	100.0%
6	4.8%	0.0%
8	0.0%	0.0%
9	0.0%	0.0%
22	0.0%	0.0%

**Comparison Table 5: State House Cluster 4 for Alternative Map
(Ascension and Iberville Parishes)**

Alternative Districts	Effectiveness Score #1	Effectiveness Score #2
59	9.5%	0.0%
60	100.0%	100.0%
88	4.8%	0.0%

**Comparison Table 6: State House Cluster 5 for Alternative Map
(East Baton Rouge and East Feliciana Parishes)**

Alternative Districts	Effectiveness Score #1	Effectiveness Score #2
61	95.2%	100.0%
62	23.8%	10.0%
63	90.5%	90.0%
65	85.7%	80.0%
66	9.5%	0.0%
67	100.0%	100.0%
68	90.5%	90.0%
69	81.0%	70.0%
70	9.5%	10.0%
101	85.7%	80.0%

This analysis demonstrates that the Alternative Maps would provide Black voters with an opportunity to elect their candidates of choice in two additional Senate Districts and five additional House Districts compared to the Enacted Maps.

III. Response to Dr. Barber's Report

1. Counsel asked me to review the portion of Dr. Barber's report that addresses electoral performance. I have reviewed only that portion of the report, and all of my opinions relate only to that portion of the report.
2. I do not have sufficient information about the construction of Dr. Barber's database to ascertain how accurate it is likely to be. He does not tell us how he recompiled the precinct election results from the 2019 and 2023 elections to conform to the boundaries of the majority Black districts in the Remedial Maps. For example, I do not know what decisions were made regarding the early and absentee results reported only at the parish level.

3. Dr. Barber indicates that he used only odd-year statewide elections because turnout varies dramatically between odd-year and even-year elections. In fact, turnout varies dramatically within odd years as well as across odd and even years. And it varies within the same year depending on the month. For example, Black turnout in October 2019 was 40.35, and in November 2019 it was 50.24. Black turnout in October 2023 was only 28.84 and it dropped to 17.77 in November 2023. Below is a table reporting Black turnout for the election cycles I included in my analysis, which also includes the election cycles Dr. Barber examined (I have bolded and italicized those election cycles).

Table 1: Black Turnout as Reported by the Louisiana Secretary of State

Election Date	Black Turnout
Oct-15	35.22
Nov-15	38.91
Oct-17	11.97
Dec-17	12.35
Nov-18	46.88
Dec-18	16.96
Oct-19	<i>40.35</i>
Nov-19	<i>50.24</i>
Nov-20	63.09
Nov-22	37.85
Oct-23	<i>28.84</i>
Nov-23	<i>17.77</i>
Nov-24	57.24

What is clear is that there is dramatic variation across election cycles but it cannot be characterized as an even-year/odd-year difference. By including more elections, I included more variation in turnout. Overall, the average Black turnout in the elections I examined is 35.2; the average Black turnout across the four election cycles examined by Dr. Barber is 34.3. Because turnout fluctuates across elections, as do other factors relevant to vote choice and election outcome, I believe incorporating more elections, over more years, improves our assessment of whether a proposed district is likely to provide minority voters with an opportunity to elect their candidates of choice.

4. Dr. Barber presents several performance measures for all majority Black districts in the Remedial Maps. These measures are based solely on two election cycles – the 2019 and 2023 October and November elections. These measures include contests in which only White candidates ran, hence failing to acknowledge that vote support for White Democrats is higher than for Black Democrats.³ Moreover, the measures look only at “Democratic” performance, as Dr. Barber did no analysis to determine which candidates were supported by Black voters. (It is true that my racial bloc voting analysis indicates that when there is only one Democrat, Black voters are strong supporters of that candidate; but when there is more than one Democrat running, which is true in several of the elections Dr. Barber incorporated in his evaluations, Black voters prefer one of the candidates over the other(s) competing.)
5. Dr. Barber’s performance measures can be found in Tables 5 (Remedial Senate Map) and 13 (mislabelled Remedial Senate Map – it is actually the Remedial House Map). These tables provide the district number, the percent Black VAP, whether the district was altered from 2022, and whether it was a new majority Black district. Then, in columns 5 and 6, he provides two measures that are similar to the effectiveness scores I have calculated, but with some important differences. Dr. Barber’s column labeled “Proportion of times (of 11) that Democrats was in Odd-Numbered Primary Top Two” is similar to my Effectiveness Score #1, except he includes only 11 elections (I include 21 elections), several of his 11 election include only White candidates (I incorporate only elections that include Black candidates), and he does not distinguish between Democratic candidates and the candidates of choice of Black voters. The sixth column, labeled “Percent (of 5) of Odd-Numbered Runoff Elections with Democratic Majority” is similar to my Effectiveness Score #2, except it includes only five elections (I include 10 elections), and three of the five elections include no Black candidates.
6. In the final column of Dr. Barber’s Electoral Performance Table 5, he has a measure labelled “Percent (of 16) Odd-Numbered Elections with Democratic Majority.” For this measure, he sums up all the Democratic candidates’ votes together (if there is more than one Democrat

³ Dr. Voss and I both found that White voters provide White Democrats with more support than Black Democrats, as will be discussed below when I address Dr. Voss’s report.

running) to determine if the Democratic candidates combined exceeded 50% of the two-party vote. This measure answers the wrong question: it provides a Democratic index, but it does not offer any insight into whether the Black-preferred candidate wins or advances in the given election. Using this measure, in a race with four candidates, three Republicans and one Democrat, in which the Democrat made it to the runoff with 40% of the vote, this would count as a loss by Dr. Barber because the candidate did not receive 50% of the two-party vote. For a concrete example, see the second entry in Table 5, Remedial Senate District 39: the Democrat made it into the top-two 100% of the time (fifth column), won 100% of the runoffs (sixth column), but scores only a .44 on the final measure (seventh column). This same phenomenon – 100% on the first and second performance measures but less than 50% on the combined Democratic index – occurs several times in his two performance tables.

7. Dr. Barber conducts a performance analysis on all of the majority Black districts in the Remedial Maps, even though many of these districts fall outside the areas of interest in this case. However, Dr. Barber does not conduct the same performance analysis on all of the majority Black districts in the Enacted Maps. In earlier reports, I indicated the effectiveness scores for all of the districts in the areas of interest for both the Remedial and Enacted Maps. Attached in Appendix A are Effectiveness Scores for all of the majority Black districts in both the Remedial and Alternative Maps. I also report Effectiveness Scores for the Enacted Maps in Appendix A. These scores have been calculated the same way I have done in the past: Effectiveness Score #1 includes the 21 racially polarized elections between 2015 and 2024 in which Black voters preferred the Black candidate and indicates the percentage of contests in which the Black-preferred Black candidate made it into the top-two or won; Effectiveness Score #2 is limited to those contests that included only two candidates (10 of the 21 contests). All of the districts in all three of the Senate maps score over 60%. There are no districts in any of the three House maps that score less than 60%, and there is one district in each of the House maps that scores 60%: House District 1 in the Remedial and Alternative Maps (BVAP 55.2%) and House District 96 in the Enacted Map (BVAP 55.1%).
8. In response to Dr. Barber's contention that the focus of the analysis should be on odd-year elections, I have recalculated my Effectiveness Scores 1 and 2 using only those elections held in odd years (2015-2023) – again incorporating only those contests with Black candidates

that I know to be the candidates of choice of Black voters based on my analysis of voting patterns. Appendix B reports these “Odd-Year Effectiveness” scores for all three sets of maps. While there are several districts in all of the maps that score only 57.1%, there is only one district across all of the maps that scores less than 50.0% – it is Enacted House District 96, which scores 42.9% on Odd-Year Effectiveness Score #2. This district, which falls outside of any of the areas of interest, elects a Black Democrat to the Louisiana State House.⁴

9. Finally, in response to an objection that I did not include contests with only White candidates, I have also recalculated my Effectiveness Scores 1 and 2 using only those elections held in odd years (2015-2023), but incorporating both the contests with Black candidates and the eight odd-year contests that included only White candidates: the October and November 2015 races for governor, the October and November 2019 races for governor, the October 2023 elections for attorney general and treasurer, and the November 2023 runoffs for these two offices. Because I have not conducted a racial bloc voting analysis on all of these elections, I will refer to these scores as “Democratic Score #1” and “Democratic Score #2”, and, in any contest with more than one Democratic candidate, I assume the candidate who received the most votes was the candidate of choice of Black voters. Appendix C lists the “Democratic” scores for all three sets of maps. Only one district across all six maps scores less than 50.0% on the Democratic scores, and that is Enacted House District 96, which scored a 45.5% on Democratic Score #2.

IV. Response to Dr. Voss’s Report

1. Dr. Voss analyzed several statewide Louisiana elections using two of the standard statistical methods I employ and concluded that voting is racially polarized statewide and in the areas of interest I refer to as clusters. He also determined that the racial polarization in Louisiana is increasing over time.

⁴ Rep. Marcus Anthony Bryant was elected in 2019 and did not face a challenger for the seat in 2023.

2. Dr. Voss explains that his expert report looks at my use of ecological inference in my multiple previous reports in this matter (Voss Report, page 3), not simply the remedial report I provided in this case on May 23, 2025. I note that the focus of my earlier reports in this case, including the earlier ecological inference analysis, related to addressing *Gingles* II and III, two of the three elements of the “results test” as outlined in *Thornburg v. Gingles*: a racial bloc voting analysis is needed to determine whether the minority group is politically cohesive, and the analysis is required to determine if whites are voting sufficiently as a bloc to usually defeat the candidates preferred by minority voters. I do not revisit those questions in my May 2025 remedial report. In my May 2025 remedial report, I examined the 2023 and 2024 statewide elections that included Black candidates, but only to confirm whether those elections were racially polarized and therefore should also be included in the effectiveness scores for the remedial districts.
3. Dr. Voss was asked to address the question of whether voting patterns differed depending on whether the candidate was a Black or White Democrat. He conducted this analysis by looking at election contests in 2019 and 2015 – odd-year elections that do not include any federal elections. Two of the four election contests he examined for this purpose included only White candidates. Dr. Voss asserts that looking at elections without federal elections is a more “cautious test” (Voss Report, page 6), and he asserts that excluding elections with only White candidates “would bias conclusions” (Voss Report, page 5). But in looking at these elections, he reached the same conclusions about polarization that I did, as reflected in my earlier reports in this case.⁵

⁵ As I have previously explained, my analysis looks at races that include Black candidates because courts have specified that contests that include Black candidates are more probative than contests that do not. This is because Black voters must be able to elect their candidates of choice, even if those candidates are Black candidates – they should not be consigned to being able to elect only the White candidates they prefer.

In response to a report submitted by Dr. John Alford earlier in this litigation, however, one of my previous rebuttal reports also examined the 2015 and 2019 runoff elections for Governor, which had only White candidates. In that report, I found that while Black Democrats supported both the White and the Black Democrats candidates approximately equally in both the 2015 and 2019 runoff elections, White Democrats strongly and consistently favored the White Democratic candidate over the Black Democratic

4. Dr. Voss found that White voters provided more support to White Democrats than Black Democrats in Louisiana. For example, he reports that the Black candidate, Collins-Greenup, running for Secretary of State in the November 2019 runoff election, received “a mere 13.5% of the White vote, while garnering 96% of the Black vote.” Jon Bel Edwards, a White candidate running for governor in the same election cycle, received 27.3% of the White vote. Dr. Voss notes that “[t]he level of polarization does decline when we move to Democratic incumbent Gov. Jon Bel Edwards.” (Voss Report, page 8). He also analyzed the 2015 election, which is when Edwards ran for governor and Kip Holden, a Black Democratic candidate, ran for lieutenant governor. Again, Dr. Voss finds that “Edwards performs notably better than Holden” (Voss Report, page 15). In both examples provided, Dr. Voss found — just as I did — that voting remains distinctly racially polarized, with the White Democrat receiving more support than the Black Democrat.
5. Dr. Voss asserts that he had some difficulties with the data I supplied (Voss Report, page 22). But whatever difficulties he had with the data, he was able to complete his own analysis. And it is worth noting that Dr. Voss was provided the same data and information as all other defense experts, and Defendants’ previous experts in this case easily discerned and replicated my analysis.⁶
6. As I described in earlier reports, the statistical methods I employed are the standard statistical methods applied by social scientists in analyzing voting patterns in voting rights cases. In fact, Dr. Voss and I used precisely the same statistical methods – EI 2x2 and EI RxC – and

candidate in both the 2015 and 2019 runoff elections. The data in Dr. Voss’s report reaffirms my earlier opinions.

⁶ The only specific data issue Dr. Voss highlights is that his computer package read certain Louisiana precincts, some of which are identified by numbers with dashes, as dates. None of the other social scientists rebutting my work in this case have indicated difficulty with converting these “dates” into precinct identifiers.

the same statistical package (eiCompare developed by Loren Collingwood) for carrying out the analysis.⁷

7. Dr. Voss believes that by omitting contests that feature only White Democrats, I am removing “successes for the Black candidates of choice, making Black voters seem more shut out of the political system than they actually are.” (Voss Report, page 5). In other words, I am ignoring the possibility that Black voters might succeed in electing White Democrats even if they cannot elect Black Democrats. While I acknowledge Black voters may indeed support White Democrats, my approach is to determine if they can succeed in electing Black candidates of choice rather than simply White candidates of choice.
8. Dr. Voss suggests that I “cherry picked” the areas I chose to analyze, but those areas selected were dictated by the dilution challenge. As explained in my earlier reports and testimony in this matter, these are the areas where the illustrative maps produced by the Plaintiffs created additional majority Black districts.⁸ An analysis of each of these areas individually is important as voting patterns may be different in different areas of the state. It is worth noting that, while it is important to study different areas of the state because they can be different, in this case voting was not substantially different in the areas of interest I examined.
9. Dr. Voss asserts that I should have reported the voting patterns of “others” – that is, voters who were not Black or White. While these voters are included as a separate category in the EI RxC analysis, they are not relevant to this case. Black voters are the only minority voters with a sufficiently numerous and geographically compact population to create districts that would provide them with the opportunity to elect their candidates of choice. They are also the only minority group sufficiently sizeable to produce reliable estimates of voting patterns, as

⁷ I used two additional statistical approaches (ecological regression and homogeneous precinct analysis) as checks on my estimates and an additional statistical package (eiPack) beyond those referenced by Dr. Voss.

⁸ Dr. Voss proposes using MSAs or “historically significant regions” rather than parishes. These alternatives are likely to be either too small or too large to best capture the regions where vote dilution is alleged.

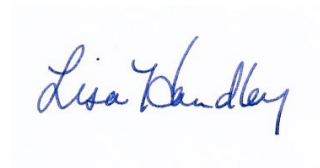
Dr. Voss himself recognized: “the confidence intervals of those [“Others”] estimates is large, warning me that I lack information to estimate their vote well.” (Voss Report, page 8).

10. Dr. Voss argues that the methodology social scientists use and that the courts all accept in vote dilution cases is “naïve.” He states: “it seems as though best practices in ecological inference fell by the wayside when members of the consulting industry wanted to start performing ecological inferences in bulk” and while that “might satisfy a court...it’s not the best way to perform ecological inferences.” (Voss Report, page 11). He proposes incorporating covariates into his analysis and refers to this as his “contextual model.” By including the covariates “Democratic party registration” and “Black population density” in his model, he finds his estimate for Black support for Collins-Greenup in 2019 declines from around 96% to 88.5%. He states: “That downward adjustment for Collins-Greenup among African American voters might seem questionable to a reader who knows that she was a Black candidate. Even I admit that, given more time to conduct a proper analysis, I suspect it would soften.” (Voss Report, page 12-13). However, even after laying out his opinions about the shortfalls of my approach (that is, the standard approach adopted by social scientists and accepted by the courts), Dr. Voss concedes that he “cannot claim the differences are great enough that they would have altered Handley’s interpretations.” (Voss Report, page 4).
11. Dr. Voss worries about arbitrarily defining geographical areas to manipulate the results. Adopting a nonstandard statistical approach to estimating voting patterns that includes an arbitrary choice of covariates is certainly a much more effective way to manipulate the results. As he indicated, with more time (and more manipulation of the model), he could “soften” his estimates of Black support for Collins-Greenup.
12. Asked to examine voting patterns in even-year elections compared to odd-year elections, Dr. Voss concluded that the electorate in even-numbered years differed from the electorate in odd-numbered years. Based on the gap between Black and White voter turnout, he determined that “[p]residential turnout underestimates Black voting strength in Louisiana for the simple reason that Black voters have been sitting those contests out, relatively speaking.” (Voss Report, page 19). Presumably, Dr. Voss believes my effectiveness scores therefore

provide a conservative estimate of the opportunity these districts provide for Black voters to elect their candidates of choice. But as his turnout table (Table 5) and graph (Figure 3) make clear, turnout varies across every election cycle, not simply odd-even years. This is certainly a good reason to include more election cycles in predicting the likelihood that a proposed district will provide minority voters with an opportunity to elect their candidates of choice.

Pursuant to 28 U.S.C. § 1746, I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

Executed June 20, 2025.

A handwritten signature in blue ink that reads "Lisa Handley". The signature is written in a cursive, flowing style.

Lisa Handley, Ph.D.

APPENDIX A

Table A1: Effectiveness Scores for Majority Black Districts in the Remedial Senate Map

Remedial Senate District	2020 % APBVAP	Effectiveness Score #1	Effectiveness Score #2
34	62.8%	95.2%	100.0%
4	58.1%	100.0%	100.0%
14	58.1%	100.0%	100.0%
29	56.6%	100.0%	100.0%
15	54.5%	90.5%	90.0%
38	53.9%	100.0%	100.0%
7	52.9%	95.2%	100.0%
17	52.5%	81.0%	70.0%
39	52.2%	81.0%	70.0%
24	52.0%	90.5%	80.0%
5	51.8%	100.0%	100.0%
2	51.7%	95.2%	100.0%
3	51.2%	100.0%	100.0%
19	50.4%	95.2%	100.0%

Table A2: Effectiveness Scores for Majority Black Districts in the Alternative Senate Map

Alternative Senate District	2020 % APBVAP	Effectiveness Score #1	Effectiveness Score #2
39	63.7%	100.0%	100.0%
34	63.7%	95.2%	100.0%
4	58.1%	100.0%	100.0%
14	58.1%	100.0%	100.0%
29	56.6%	100.0%	100.0%
15	54.5%	90.5%	90.0%
7	52.9%	95.2%	100.0%
17	52.5%	81.0%	70.0%
24	52.0%	90.5%	80.0%
5	51.8%	100.0%	100.0%
2	51.7%	95.2%	100.0%
3	51.2%	100.0%	100.0%
19	50.4%	95.2%	100.0%

Table A3: Effectiveness Scores for Majority Black Districts in the Enacted Senate Map

Enacted Senate District	2020 % APBVAP	Effectiveness Score #1	Effectiveness Score #2
15	73.9%	100.0%	100.0%
39	63.7%	100.0%	100.0%
34	63.7%	95.2%	100.0%
7	59.5%	100.0%	100.0%
14	58.0%	100.0%	100.0%
2	57.7%	100.0%	100.0%
3	57.3%	100.0%	100.0%
4	57.2%	100.0%	100.0%
29	56.6%	100.0%	100.0%
24	53.1%	90.5%	90.0%
5	50.2%	100.0%	100.0%

Table A4: Effectiveness Scores for Majority Black Districts in the Remedial House Plan

Remedial House District	2020 % APBVAP	Effectiveness Score #1	Effectiveness Score #2
100	80.8%	100.0%	100.0%
99	78.1%	100.0%	100.0%
97	72.3%	100.0%	100.0%
2	67.3%	100.0%	100.0%
102	65.6%	100.0%	100.0%
26	63.4%	100.0%	100.0%
44	60.9%	100.0%	100.0%
16	59.8%	95.2%	100.0%
87	59.1%	100.0%	100.0%
3	58.8%	90.5%	80.0%
29	57.8%	85.7%	80.0%
4	57.5%	100.0%	100.0%
63	57.2%	90.5%	90.0%
93	56.6%	100.0%	100.0%
65	56.0%	85.7%	80.0%
11	55.5%	81.0%	70.0%
21	55.4%	71.4%	70.0%
96	55.2%	85.7%	80.0%
1	55.2%	76.2%	60.0%
40	54.9%	85.7%	70.0%
83	54.6%	95.2%	100.0%
17	54.5%	81.0%	70.0%
68	54.2%	90.5%	90.0%
57	54.1%	100.0%	100.0%
67	51.6%	100.0%	100.0%
60	51.2%	100.0%	100.0%
72	51.1%	76.2%	70.0%
5	50.9%	100.0%	100.0%
38	50.8%	100.0%	100.0%
23	50.8%	76.2%	70.0%
58	50.6%	85.7%	80.0%
101	50.5%	85.7%	80.0%
69	50.4%	81.0%	70.0%
61	50.2%	95.2%	100.0%
34	50.0%	100.0%	100.0%

Table A5: Effectiveness Scores for Majority Black Districts in the Alternative House Plan

Alternative House District	2020 % APBVAP	Effectiveness Score #1	Effectiveness Score #2
100	80.8%	100.0%	100.0%
99	78.1%	100.0%	100.0%
97	72.3%	100.0%	100.0%
2	67.3%	100.0%	100.0%
102	65.6%	100.0%	100.0%
26	63.4%	100.0%	100.0%
44	60.9%	100.0%	100.0%
16	59.8%	95.2%	100.0%
87	59.1%	100.0%	100.0%
3	58.8%	90.5%	80.0%
29	57.8%	85.7%	80.0%
4	57.5%	100.0%	100.0%
63	57.2%	90.5%	90.0%
93	56.6%	100.0%	100.0%
38	56.3%	100.0%	100.0%
65	56.0%	85.7%	80.0%
11	55.5%	81.0%	70.0%
21	55.4%	71.4%	70.0%
96	55.2%	85.7%	80.0%
1	55.2%	76.2%	60.0%
40	54.9%	85.7%	70.0%
83	54.6%	95.2%	100.0%
17	54.5%	81.0%	70.0%
68	54.2%	90.5%	90.0%
57	54.1%	100.0%	100.0%
67	51.6%	100.0%	100.0%
60	51.2%	100.0%	100.0%
72	51.1%	76.2%	70.0%
5	50.9%	100.0%	100.0%
23	50.8%	76.2%	70.0%
58	50.6%	85.7%	80.0%
101	50.5%	85.7%	80.0%
69	50.4%	81.0%	70.0%
61	50.2%	95.2%	100.0%

Table A6: Effectiveness Scores for Majority Black Districts in the Enacted House Map

Enacted House District	2020 % APBVAP	Effectiveness Score #1	Effectiveness Score #2
100	80.8%	100.0%	100.0%
99	78.1%	100.0%	100.0%
61	75.3%	100.0%	100.0%
3	73.9%	100.0%	100.0%
29	73.6%	100.0%	100.0%
34	72.6%	100.0%	100.0%
97	72.3%	100.0%	100.0%
4	72.1%	100.0%	100.0%
63	69.7%	95.2%	100.0%
2	67.4%	100.0%	100.0%
102	65.6%	100.0%	100.0%
26	64.3%	100.0%	100.0%
17	63.3%	100.0%	100.0%
16	62.5%	95.2%	100.0%
101	60.2%	100.0%	100.0%
44	59.5%	100.0%	100.0%
87	59.1%	100.0%	100.0%
57	57.9%	100.0%	100.0%
58	56.8%	95.2%	100.0%
93	56.6%	100.0%	100.0%
11	56.4%	85.7%	70.0%
21	55.4%	71.4%	70.0%
96	55.1%	76.2%	60.0%
62	55.1%	90.5%	90.0%
40	54.6%	85.7%	70.0%
83	54.6%	95.2%	100.0%
72	52.7%	81.0%	70.0%
67	51.9%	100.0%	100.0%
23	50.9%	100.0%	100.0%

APPENDIX B

Table B1: Odd Year Scores for Majority Black Districts in Remedial Senate Map

Remedial Senate District	2020 % APBVAP	Odd Year Score #1	Odd Year Score #2
34	62.8%	93.3%	100.0%
4	58.1%	100.0%	100.0%
14	58.1%	100.0%	100.0%
29	56.6%	100.0%	100.0%
15	54.5%	86.7%	85.7%
38	53.9%	100.0%	100.0%
7	52.9%	93.3%	100.0%
17	52.5%	73.3%	57.1%
39	52.2%	73.3%	57.1%
24	52.0%	86.7%	71.4%
5	51.8%	100.0%	100.0%
2	51.7%	93.3%	100.0%
3	51.2%	100.0%	100.0%
19	50.4%	93.3%	100.0%

Table B2: Odd Year Scores for Majority Black Districts in Alternative Senate Map

Alternative Senate District	2020 % APBVAP	Odd Year Score #1	Odd Year Score #2
39	63.7%	100.0%	100.0%
34	63.7%	93.3%	100.0%
4	58.1%	100.0%	100.0%
14	58.1%	100.0%	100.0%
29	56.6%	100.0%	100.0%
15	54.5%	86.7%	85.7%
7	52.9%	93.3%	100.0%
17	52.5%	73.3%	57.1%
24	52.0%	86.7%	71.4%
5	51.8%	100.0%	100.0%
2	51.7%	93.3%	100.0%
3	51.2%	100.0%	100.0%
19	50.4%	93.3%	100.0%

Table B3: Odd Year Scores for Majority Black Districts in Enacted Senate Map

Enacted Senate District	2020 % APBVAP	Odd Year Score #1	Odd Year Score #2
15	73.9%	100.0%	100.0%
39	63.7%	100.0%	100.0%
34	63.7%	93.3%	100.0%
7	59.5%	100.0%	100.0%
14	58.0%	100.0%	100.0%
2	57.7%	100.0%	100.0%
3	57.3%	100.0%	100.0%
4	57.2%	100.0%	100.0%
29	56.6%	100.0%	100.0%
24	53.1%	86.7%	85.7%
5	50.2%	100.0%	100.0%

Table B4: Odd Year Scores for Majority Black Districts in Remedial House Map

Remedial House District	2020 % APBVAP	Odd Year Score #1	Odd Year Score #2
100	80.8%	100.0%	100.0%
99	78.1%	100.0%	100.0%
97	72.3%	100.0%	100.0%
2	67.3%	100.0%	100.0%
102	65.6%	100.0%	100.0%
26	63.4%	100.0%	100.0%
44	60.9%	100.0%	100.0%
16	59.8%	93.3%	100.0%
87	59.1%	100.0%	100.0%
3	58.8%	86.7%	71.4%
29	57.8%	80.0%	71.4%
4	57.5%	100.0%	100.0%
63	57.2%	86.7%	85.7%
93	56.6%	100.0%	100.0%
65	56.0%	80.0%	71.4%
11	55.5%	73.3%	57.1%
21	55.4%	66.7%	57.1%
96	55.2%	80.0%	71.4%
1	55.2%	73.3%	57.1%
40	54.9%	80.0%	57.1%
83	54.6%	93.3%	100.0%
17	54.5%	73.3%	57.1%
68	54.2%	86.7%	85.7%
57	54.1%	100.0%	100.0%
67	51.6%	100.0%	100.0%
60	51.2%	100.0%	100.0%
72	51.1%	66.7%	57.1%
5	50.9%	100.0%	100.0%
38	50.8%	100.0%	100.0%
23	50.8%	80.0%	71.4%
58	50.6%	80.0%	71.4%
101	50.5%	80.0%	71.4%
69	50.4%	73.3%	57.1%
61	50.2%	93.3%	100.0%
34	50.0%	100.0%	100.0%

Table B5: Odd Year Scores for Majority Black Districts in Alternative House Map

Alternative House District	2020 % APBVAP	Odd Year Score #1	Odd Year Score #2
100	80.8%	100.0%	100.0%
99	78.1%	100.0%	100.0%
97	72.3%	100.0%	100.0%
2	67.3%	100.0%	100.0%
102	65.6%	100.0%	100.0%
26	63.4%	100.0%	100.0%
44	60.9%	100.0%	100.0%
16	59.8%	93.3%	100.0%
87	59.1%	100.0%	100.0%
3	58.8%	86.7%	71.4%
29	57.8%	80.0%	71.4%
4	57.5%	100.0%	100.0%
63	57.2%	86.7%	85.7%
93	56.6%	100.0%	100.0%
38	56.3%	100.0%	100.0%
65	56.0%	80.0%	71.4%
11	55.5%	73.3%	57.1%
21	55.4%	66.7%	57.1%
96	55.2%	80.0%	71.4%
1	55.2%	73.3%	57.1%
40	54.9%	80.0%	57.1%
83	54.6%	93.3%	100.0%
17	54.5%	73.3%	57.1%
68	54.2%	86.7%	85.7%
57	54.1%	100.0%	100.0%
67	51.6%	100.0%	100.0%
60	51.2%	100.0%	100.0%
72	51.1%	66.7%	57.1%
5	50.9%	100.0%	100.0%
23	50.8%	80.0%	71.4%
58	50.6%	80.0%	71.4%
101	50.5%	80.0%	71.4%
69	50.4%	73.3%	57.1%
61	50.2%	93.3%	100.0%

Table B6: Odd Year Scores for Majority Black Districts in Enacted House Map

Enacted House District	2020 % APBVAP	Odd Year Score #1	Odd Year Score #2
100	80.8%	100.0%	100.0%
99	78.1%	100.0%	100.0%
61	75.3%	100.0%	100.0%
3	73.9%	100.0%	100.0%
29	73.6%	100.0%	100.0%
34	72.6%	100.0%	100.0%
97	72.3%	100.0%	100.0%
4	72.1%	100.0%	100.0%
63	69.7%	93.3%	100.0%
2	67.4%	100.0%	100.0%
102	65.6%	100.0%	100.0%
26	64.3%	100.0%	100.0%
17	63.3%	100.0%	100.0%
16	62.5%	93.3%	100.0%
101	60.2%	100.0%	100.0%
44	59.5%	100.0%	100.0%
87	59.1%	100.0%	100.0%
57	57.9%	100.0%	100.0%
58	56.8%	93.3%	100.0%
93	56.6%	100.0%	100.0%
11	56.4%	80.0%	57.1%
21	55.4%	66.7%	57.1%
96	55.1%	66.7%	42.9%
62	55.1%	86.7%	85.7%
40	54.6%	80.0%	57.1%
83	54.6%	93.3%	100.0%
72	52.7%	73.3%	57.1%
67	51.9%	100.0%	100.0%
23	50.9%	100.0%	100.0%

APPENDIX C

Table C1: Democratic Scores for Majority Black Districts in Remedial Senate Map

Remedial Senate District	2020 % APBVAP	Dem Score #1	Dem Score #2
34	62.8%	95.7%	100.0%
4	58.1%	100.0%	100.0%
14	58.1%	100.0%	100.0%
29	56.6%	100.0%	100.0%
15	54.5%	91.3%	90.9%
38	53.9%	100.0%	100.0%
7	52.9%	95.7%	100.0%
17	52.5%	73.9%	54.5%
39	52.2%	82.6%	72.7%
24	52.0%	91.3%	81.8%
5	51.8%	100.0%	100.0%
2	51.7%	95.7%	100.0%
3	51.2%	100.0%	100.0%
19	50.4%	95.7%	100.0%

Table C2: Democratic Scores for Majority Black Districts in Alternative Senate Map

Alternative Senate District	2020 % APBVAP	Dem Score #1	Dem Score #2
39	63.7%	100.0%	100.0%
34	63.7%	95.7%	100.0%
4	58.1%	100.0%	100.0%
14	58.1%	100.0%	100.0%
29	56.6%	100.0%	100.0%
15	54.5%	91.3%	90.9%
7	52.9%	95.7%	100.0%
17	52.5%	73.9%	54.5%
24	52.0%	91.3%	81.8%
5	51.8%	100.0%	100.0%
2	51.7%	95.7%	100.0%
3	51.2%	100.0%	100.0%
19	50.4%	95.7%	100.0%

Table C3: Democratic Scores for Majority Black Districts in Enacted Senate Map

Enacted Senate District	2020 % APBVAP	Dem Score #1	Dem Score #2
15	73.9%	100.0%	100.0%
39	63.7%	100.0%	100.0%
34	63.7%	95.7%	100.0%
7	59.5%	100.0%	100.0%
14	58.0%	100.0%	100.0%
2	57.7%	100.0%	100.0%
3	57.3%	100.0%	100.0%
4	57.2%	100.0%	100.0%
29	56.6%	100.0%	100.0%
24	53.1%	91.3%	90.9%
5	50.2%	100.0%	100.0%

Table C4: Democratic Scores for Majority Black Districts in Remedial House Map

Remedial House District	2020 % APBVAP	Dem Score #1	Dem Score #2
100	80.8%	100.0%	100.0%
99	78.1%	100.0%	100.0%
97	72.3%	100.0%	100.0%
2	67.3%	100.0%	100.0%
102	65.6%	100.0%	100.0%
26	63.4%	100.0%	100.0%
44	60.9%	100.0%	100.0%
16	59.8%	95.7%	100.0%
87	59.1%	100.0%	100.0%
3	58.8%	91.3%	81.8%
29	57.8%	78.3%	63.6%
4	57.5%	100.0%	100.0%
63	57.2%	91.3%	90.9%
93	56.6%	100.0%	100.0%
65	56.0%	78.3%	63.6%
11	55.5%	73.9%	54.5%
21	55.4%	78.3%	72.7%
96	55.2%	78.3%	63.6%
1	55.2%	82.6%	72.7%
40	54.9%	78.3%	54.5%
83	54.6%	95.7%	100.0%
17	54.5%	73.9%	54.5%
68	54.2%	91.3%	90.9%
57	54.1%	100.0%	100.0%
67	51.6%	100.0%	100.0%
60	51.2%	100.0%	100.0%
72	51.1%	69.6%	54.5%
5	50.9%	100.0%	100.0%
38	50.8%	100.0%	100.0%
23	50.8%	73.9%	63.6%
58	50.6%	87.0%	81.8%
101	50.5%	87.0%	81.8%
69	50.4%	82.6%	72.7%
61	50.2%	95.7%	100.0%
34	50.0%	100.0%	100.0%

Table C5: Democratic Scores for Majority Black Districts in Alternative House Map

Alternative House District	2020 % APBVAP	Dem Score #1	Dem Score #2
100	80.8%	100.0%	100.0%
99	78.1%	100.0%	100.0%
97	72.3%	100.0%	100.0%
2	67.3%	100.0%	100.0%
102	65.6%	100.0%	100.0%
26	63.4%	100.0%	100.0%
44	60.9%	100.0%	100.0%
16	59.8%	95.7%	100.0%
87	59.1%	100.0%	100.0%
3	58.8%	91.3%	81.8%
29	57.8%	78.3%	63.6%
4	57.5%	100.0%	100.0%
63	57.2%	91.3%	90.9%
93	56.6%	100.0%	100.0%
38	56.3%	100.0%	100.0%
65	56.0%	78.3%	63.6%
11	55.5%	73.9%	54.5%
21	55.4%	78.3%	72.7%
96	55.2%	78.3%	63.6%
1	55.2%	82.6%	72.7%
40	54.9%	78.3%	54.5%
83	54.6%	95.7%	100.0%
17	54.5%	73.9%	54.5%
68	54.2%	91.3%	90.9%
57	54.1%	100.0%	100.0%
67	51.6%	100.0%	100.0%
60	51.2%	100.0%	100.0%
72	51.1%	69.6%	54.5%
5	50.9%	100.0%	100.0%
23	50.8%	73.9%	63.6%
58	50.6%	87.0%	81.8%
101	50.5%	87.0%	81.8%
69	50.4%	82.6%	72.7%
61	50.2%	95.7%	100.0%

Table C6: Democratic Scores for Majority Black Districts in Enacted House Map

Enacted House District	2020 % APBVAP	Dem Score #1	Dem Score #2
100	80.8%	100.0%	100.0%
99	78.1%	100.0%	100.0%
61	75.3%	100.0%	100.0%
3	73.9%	100.0%	100.0%
29	73.6%	100.0%	100.0%
34	72.6%	100.0%	100.0%
97	72.3%	100.0%	100.0%
4	72.1%	100.0%	100.0%
63	69.7%	95.7%	100.0%
2	67.4%	100.0%	100.0%
102	65.6%	100.0%	100.0%
26	64.3%	100.0%	100.0%
17	63.3%	100.0%	100.0%
16	62.5%	95.7%	100.0%
101	60.2%	100.0%	100.0%
44	59.5%	100.0%	100.0%
87	59.1%	100.0%	100.0%
57	57.9%	100.0%	100.0%
58	56.8%	95.7%	100.0%
93	56.6%	100.0%	100.0%
11	56.4%	78.3%	54.5%
21	55.4%	78.3%	72.7%
96	55.1%	69.6%	45.5%
62	55.1%	91.3%	90.9%
40	54.6%	78.3%	54.5%
83	54.6%	95.7%	100.0%
72	52.7%	78.3%	54.5%
67	51.9%	100.0%	100.0%
23	50.9%	100.0%	100.0%