EXHIBIT B

IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF GEORGIA
ATLANTA DIVISION

GEORGIA STATE CONFERENCE OF THE NAACP, et al.,	)	
Plaintiffs,	)	CASE NO. 1:21-CV-5338-ELB-SCJ-SDG
v.	)	
STATE OF GEORGIA, et al.,	)	
Defendants	)	
COMMON CAUSE, et al.,	)	
Plaintiffs,	)	CASE NO. 1:22-CV-00090-ELB-SCJ-SDG
v.	)	
BRAD RAFFENSPERGER,	)	
Defendant.	)	

EXPERT REPORT OF JOHN B. MORGAN

Pursuant to 28 U.S.C. § 1746, Fed. R. Civ. P. 26, and F.R.E. 702 and 703, I, JOHN B. MORGAN, make the following declaration:

1. My name is John B. Morgan. I am over the age of 21 years, and I am under no legal disability which would prevent me from giving this declaration. If called to testify, I would testify under oath to these facts.

2. I hold a B.A. in History from the University of Chicago. As detailed in my CV, attached as Exhibit 1, I have extensive experience over many years in the field of redistricting. I have worked on redistricting plans in the redistricting efforts following the 1990 Census, the 2000 Census, the 2010 Census and the 2020 Census. I have testified as an expert witness in demographics and redistricting.

3. I am being compensated at a rate of $325 per hour for my services in this case.

4. The redistricting geographic information system (GIS) software package used for this analysis is Maptitude for Redistricting 2021 from Caliper Corporation. The redistricting software was loaded with the census PL94-171 data from the Census Bureau and the census geography for Georgia. I was also provided with election data files used by the Georgia General Assembly during the redistricting process. The full suite of census geography was available, including counties, places, voting districts, water bodies, and roads, as well as census blocks, which are the lowest level of geography for which the Census Bureau reports population counts.

5. I have been asked to review the congressional, House of Representatives and State Senate plans considered and adopted by the Georgia General Assembly and compare them to the proposed congressional, House and Senate plans drawn by Dr. Moon Duchin and offer opinions regarding my analysis.

I was also provided with plans labeled "unity" plans from Dr. Duchin's data, which I also analyzed.

6. As a result of this analysis, it is my opinion that each of the plans submitted in Dr. Duchin's report and the unity plans has a significant increase in Democratic performance when compared to the enacted plans.

7. In preparing this analysis, I was given the block-equivalency files of the Duchin plans and the unity plans as well as the block-equivalency files of the 2021 adopted plans and incumbent databases used by the Georgia General Assembly during the redistricting process. The incumbent databases list the address locations and districts of the Representatives and Senators serving under the existing House (2015-enacted) and Senate (2014-enacted) plans prior to the election of 2022.

8. I loaded the 2021 House and 2021 Senate plans enacted by the Georgia General Assembly into the Maptitude for Redistricting software using the block-equivalency files provided. I loaded the Duchin Congressional, Senate and House plans and the Unity plans into the Maptitude for Redistricting software using the block-equivalency files provided. I loaded the prior congressional (2012), House (2015-enacted) and Senate (2014-enacted) plans into the Maptitude for Redistricting software using files provided with software. I loaded the associated incumbent databases provided.

9. Using the Maptitude for Redistricting software, I ran eight report and summaries for each of the Duchin plans, the Unity plans and the enacted plans:

1- Measures of compactness report,

2- Districts & incumbents report, (not run for congressional plans)

3- Population summary report,

4- Political subdivision splits report,

5- Plan component report,

6- Core constituency report compared to prior enacted plan,

7- Core constituency report compared to Enacted 2021 plan

8- District summary with election data

10. Each of these reports and summaries for each plan is included in the appendices to this report. I summarized highlights of this information in a table for each plan. An index with exhibit numbers for all of these reports and summaries is included at the end of the written report.

Chart 1. HD-Eff-Jan11 and Enacted 2021 House Plan comparisons

Plan metrics	**HD Eff Jan11**	**House Enacted**
County splits	69	69
Voting precinct splits	307	184
Mean compactness - Reock	0.41	0.39
Mean compactness - Polsby Popper	0.28	0.28
# Paired incumbents	62	20
Deviation relative range	-1.72% to 1.97%	-1.40% to 1.34%
Deviation overall range	3.70%	2.74%
# Districts won by: Biden (D-Pres20)	95	83
# Districts won by: Trump (R-Pres20)	85	97
# Districts won by: Bryant (D-PSC 20)	88	79
# Districts won by: Shaw (R-PSC 20)	92	101
# Seats 18+_AP_Blk% is: over 90%	3	0
# Seats 18+_AP_Blk% is: 80% to 90%	5	0
# Seats 18+_AP_Blk% is: 70% to 80%	4	11
# Seats 18+_AP_Blk% is: 60% to 70%	9	15
# Seats 18+_AP_Blk% is: 55% to 60%	9	5
# Seats 18+_AP_Blk% is: 52% to 55%	3	5
# Seats 18+_AP_Blk% is: 50% to 52%	5	2
# Seats majority 18+_AP_Blk%	**38**	**49**
# Seats 18+_AP_Blk% is: 45% to 50%	10	4
# Seats 18+_AP_Blk% is: 40% to 45%	8	2

Chart 2. HD-Alt1-Jan11 and Enacted 2021 House Plan comparisons

Plan metrics	**HD Alt1 Jan11**	**House Enacted**
County splits	73	69
Voting precinct splits	330	184
Mean compactness - Reock	0.39	0.39
Mean compactness - Polsby Popper	0.26	0.28
# Paired incumbents	68	20
Deviation relative range	-2.00% to 2.09%	-1.40% to 1.34%
Deviation overall range	4.08%	2.74%
# Districts won by: Biden (D-Pres20)	92	83
# Districts won by: Trump (R-Pres20)	88	97
# Districts won by: Bryant (D-PSC 20)	86	79
# Districts won by: Shaw (R-PSC 20)	94	101
# Seats 18+_AP_Blk% is: over 90%	2	0
# Seats 18+_AP_Blk% is: 80% to 90%	6	0
# Seats 18+_AP_Blk% is: 70% to 80%	2	11
# Seats 18+_AP_Blk% is: 60% to 70%	5	15
# Seats 18+_AP_Blk% is: 55% to 60%	5	5
# Seats 18+_AP_Blk% is: 52% to 55%	11	5
# Seats 18+_AP_Blk% is: 50% to 52%	19	2
# Seats majority 18+_AP_Blk%	**50**	**49**
# Seats 18+_AP_Blk% is: 45% to 50%	6	4
# Seats 18+_AP_Blk% is: 40% to 45%	5	2

Chart 3. HD-Alt2-Jan11 and Enacted 2021 House Plan comparisons

Plan metrics	**HD Alt2 Jan11**	**House Enacted**
County splits	70	69
Voting precinct splits	310	184
Mean compactness - Reock	0.4	0.39
Mean compactness - Polsby Popper	0.26	0.28
# Paired incumbents	65	20
Deviation relative range	-3.22% to 2.51%	-1.40% to 1.34%
Deviation overall range	5.73%	2.74%
# Districts won by: Biden (D-Pres20)	93	83
# Districts won by: Trump (R-Pres20)	87	97
# Districts won by: Bryant (D-PSC 20)	89	79
# Districts won by: Shaw (R-PSC 20)	91	101
# Seats 18+_AP_Blk% is: over 90%	3	0
# Seats 18+_AP_Blk% is: 80% to 90%	3	0
# Seats 18+_AP_Blk% is: 70% to 80%	4	11
# Seats 18+_AP_Blk% is: 60% to 70%	11	15
# Seats 18+_AP_Blk% is: 55% to 60%	4	5
# Seats 18+_AP_Blk% is: 52% to 55%	9	5
# Seats 18+_AP_Blk% is: 50% to 52%	9	2
# Seats majority 18+_AP_Blk%	**43**	**49**
# Seats 18+_AP_Blk% is: 45% to 50%	9	4
# Seats 18+_AP_Blk% is: 40% to 45%	10	2

Chart 4. SD-Eff-Jan11 and Enacted 2021 Senate Plan comparisons

Plan metrics	**SD Eff Jan11**	**Senate Enacted**
County splits	31	29
Voting precinct splits	129	47
Mean compactness - Reock	0.43	0.42
Mean compactness - Polsby Popper	0.29	0.29
# Paired incumbents	22	4
Deviation relative range	-1.73% to 1.67%	-1.03% to +0.98%
Deviation overall range	3.40%	2.01%
# Districts won by: Biden (D-Pres20)	33	23
# Districts won by: Trump (R-Pres20)	23	33
# Districts won by: Bryant (D-PSC 20)	30	23
# Districts won by: Shaw (R-PSC 20)	26	33
# Seats 18+_AP_Blk% is: over 90%	0	0
# Seats 18+_AP_Blk% is: 80% to 90%	1	0
# Seats 18+_AP_Blk% is: 70% to 80%	2	3
# Seats 18+_AP_Blk% is: 60% to 70%	2	6
# Seats 18+_AP_Blk% is: 55% to 60%	0	3
# Seats 18+_AP_Blk% is: 52% to 55%	0	1
# Seats 18+_AP_Blk% is: 50% to 52%	3	1
# Seats majority 18+_AP_Blk%	**8**	**14**
# Seats 18+_AP_Blk% is: 45% to 50%	7	1
# Seats 18+_AP_Blk% is: 40% to 45%	5	1

Chart 5. SD-Alt1-Jan11 and Enacted 2021 Senate Plan comparisons

Plan metrics	**SD Alt1 Jan11**	**Senate Enacted**
County splits	34	29
Voting precinct splits	120	47
Mean compactness - Reock	0.43	0.42
Mean compactness - Polsby Popper	0.29	0.29
# Paired incumbents	21	4
Deviation relative range	-1.36% to 1.28%	-1.03% to +0.98%
Deviation overall range	2.64%	2.01%
# Districts won by: Biden (D-Pres20)	28	23
# Districts won by: Trump (R-Pres20)	28	33
# Districts won by: Bryant (D-PSC 20)	26	23
# Districts won by: Shaw (R-PSC 20)	30	33
# Seats 18+_AP_Blk% is: over 90%	0	0
# Seats 18+_AP_Blk% is: 80% to 90%	0	0
# Seats 18+_AP_Blk% is: 70% to 80%	1	3
# Seats 18+_AP_Blk% is: 60% to 70%	1	6
# Seats 18+_AP_Blk% is: 55% to 60%	3	3
# Seats 18+_AP_Blk% is: 52% to 55%	2	1
# Seats 18+_AP_Blk% is: 50% to 52%	13	1
# Seats majority 18+_AP_Blk%	**20**	**14**
# Seats 18+_AP_Blk% is: 45% to 50%	1	1
# Seats 18+_AP_Blk% is: 40% to 45%	0	1

Chart 6. SD-Alt2-Jan11 and Enacted 2021 Senate Plan comparisons

Plan metrics	**SD Alt2 Jan11**	**Senate Enacted**
County splits	26	29
Voting precinct splits	98	47
Mean compactness - Reock	0.44	0.42
Mean compactness - Polsby Popper	0.3	0.29
# Paired incumbents	20	4
Deviation relative range	-1.30% to 1.33%	-1.03% to +0.98%
Deviation overall range	2.63%	2.01%
# Districts won by: Biden (D-Pres20)	28	23
# Districts won by: Trump (R-Pres20)	28	33
# Districts won by: Bryant (D-PSC 20)	26	23
# Districts won by: Shaw (R-PSC 20)	30	33
# Seats 18+_AP_Blk% is: over 90%	0	0
# Seats 18+_AP_Blk% is: 80% to 90%	1	0
# Seats 18+_AP_Blk% is: 70% to 80%	1	3
# Seats 18+_AP_Blk% is: 60% to 70%	2	6
# Seats 18+_AP_Blk% is: 55% to 60%	4	3
# Seats 18+_AP_Blk% is: 52% to 55%	3	1
# Seats 18+_AP_Blk% is: 50% to 52%	6	1
# Seats majority 18+_AP_Blk%	**17**	**14**
# Seats 18+_AP_Blk% is: 45% to 50%	4	1
# Seats 18+_AP_Blk% is: 40% to 45%	0	1

Chart 7. CD-Jan11 and Enacted 2021 congressional Plan comparisons

Plan metrics	**CD-Alt1-Jan11**	**CD Enacted**
County splits	17	15
Voting precinct splits	46	47
Mean compactness - Reock	0.47	0.44
Mean compactness - Polsby Popper	0.3	0.27
# Paired incumbents	no data	no data
Deviation relative range	-1 to 1	-1 to 1
Deviation overall range	0.00% to 0.00%	0.00% to 0.00%
# Districts won by: Biden (D-Pres20)	7	5
# Districts won by: Trump (R-Pres20)	7	9
# Districts won by: Bryant (D-PSC 20)	6	5
# Districts won by: Shaw (R-PSC 20)	8	9
# Seats 18+_AP_Blk% is: over 90%	0	0
# Seats 18+_AP_Blk% is: 80% to 90%	0	0
# Seats 18+_AP_Blk% is: 70% to 80%	0	0
# Seats 18+_AP_Blk% is: 60% to 70%	0	1
# Seats 18+_AP_Blk% is: 55% to 60%	0	0
# Seats 18+_AP_Blk% is: 52% to 55%	0	1
# Seats 18+_AP_Blk% is: 50% to 52%	4	0
# Seats majority 18+_AP_Blk%	**4**	**2**
# Seats 18+_AP_Blk% is: 45% to 50%	1	2
# Seats 18+_AP_Blk% is: 40% to 45%	0	0

Chart 8. HD-Unity and Enacted 2021 House Plan comparisons

Plan metrics	**HD Unity**	**House Enacted**
County splits	79	69
Voting precinct splits	99	184
Mean compactness - Reock	0.36	0.39
Mean compactness - Polsby Popper	0.23	0.28
# Paired incumbents	73	20
Deviation relative range	-0.62% to 0.58%	-1.40% to 1.34%
Deviation overall range	1.20%	2.74%
# Districts won by: Biden (D-Pres20)	99	83
# Districts won by: Trump (R-Pres20)	81	97
# Districts won by: Bryant (D-PSC 20)	96	79
# Districts won by: Shaw (R-PSC 20)	84	101
# Seats 18+_AP_Blk% is: over 90%	0	0
# Seats 18+_AP_Blk% is: 80% to 90%	0	0
# Seats 18+_AP_Blk% is: 70% to 80%	0	11
# Seats 18+_AP_Blk% is: 60% to 70%	12	15
# Seats 18+_AP_Blk% is: 55% to 60%	15	5
# Seats 18+_AP_Blk% is: 52% to 55%	17	5
# Seats 18+_AP_Blk% is: 50% to 52%	13	2
# Seats majority 18+_AP_Blk%	**57**	**49**
# Seats 18+_AP_Blk% is: 45% to 50%	9	4
# Seats 18+_AP_Blk% is: 40% to 45%	8	2

Chart 9. SD-Unity and Enacted 2021 Senate Plan comparisons

Plan metrics	**SD Unity**	**Senate Enacted**
County splits	46	29
Voting precinct splits	27	47
Mean compactness - Reock	0.37	0.42
Mean compactness - Polsby Popper	0.22	0.29
# Paired incumbents	22	4
Deviation relative range	-0.14% to 0.19%	-1.03% to +0.98%
Deviation overall range	0.33%	2.01%
# Districts won by: Biden (D-Pres20)	31	23
# Districts won by: Trump (R-Pres20)	25	33
# Districts won by: Bryant (D-PSC 20)	30	23
# Districts won by: Shaw (R-PSC 20)	26	33
# Seats 18+_AP_Blk% is: over 90%	0	0
# Seats 18+_AP_Blk% is: 80% to 90%	0	0
# Seats 18+_AP_Blk% is: 70% to 80%	0	3
# Seats 18+_AP_Blk% is: 60% to 70%	0	6
# Seats 18+_AP_Blk% is: 55% to 60%	0	3
# Seats 18+_AP_Blk% is: 52% to 55%	11	1
# Seats 18+_AP_Blk% is: 50% to 52%	9	1
# Seats majority 18+_AP_Blk%	**20**	**14**
# Seats 18+_AP_Blk% is: 45% to 50%	2	1
# Seats 18+_AP_Blk% is: 40% to 45%	0	1

Chart 10. CD-Unity and Enacted 2021 congressional Plan comparisons

Plan metrics	**CD-Unity**	**CD Enacted**
County splits	21	15
Voting precinct splits	31	47
Mean compactness - Reock	0.36	0.44
Mean compactness - Polsby Popper	0.23	0.27
# Paired incumbents	no data	no data
Deviation relative range	0 to 1	-1 to 1
Deviation overall range	0.00% to 0.00%	0.00% to 0.00%
# Districts won by: Biden (D-Pres20)	7	5
# Districts won by: Trump (R-Pres20)	7	9
# Districts won by: Bryant (D-PSC 20)	7	5
# Districts won by: Shaw (R-PSC 20)	7	9
# Seats 18+_AP_Blk% is: over 90%	0	0
# Seats 18+_AP_Blk% is: 80% to 90%	0	0
# Seats 18+_AP_Blk% is: 70% to 80%	0	0
# Seats 18+_AP_Blk% is: 60% to 70%	0	1
# Seats 18+_AP_Blk% is: 55% to 60%	0	0
# Seats 18+_AP_Blk% is: 52% to 55%	1	1
# Seats 18+_AP_Blk% is: 50% to 52%	3	0
# Seats majority 18+_AP_Blk%	**4**	**2**
# Seats 18+_AP_Blk% is: 45% to 50%	1	2
# Seats 18+_AP_Blk% is: 40% to 45%	1	0

11. As an experienced map drawer, I am often asked by elected officials and redistricting stakeholders to review the political performance of districts within a plan and compare that to other plans. When I conduct those analyses, I generally use statewide elections to assess the overall partisan makeup of plans. In the tables above, two elections are included - the presidential election of 2020 (Biden-D vs.

Trump-R) and the Public Service Commissioner election of 2020 (Bryant-D vs. Shaw-R). I understand that these are some of the elections that legislators used when drawing the 2021 enacted plans.

12. Having reviewed these election results, it is my opinion that each of the plans submitted in Dr. Duchin's report has a significant increase in Democratic performance when compared to the enacted plans. It is also my opinion that each of the unity plans has a significant increase in Democratic performance when compared to the enacted plans.

13. The index of exhibits attached to this report is as follows:

INDEX OF EXHIBITS

1. Morgan CV
2. CD Enacted Core Constituencies to 2012 Congressional Plan
3. CD Enacted District Election Summary
4. CD Enacted Measures of Compactness
5. CD Enacted Plan Components with Population Detail
6. CD Enacted Political Subdivision Splits – VTD
7. CD Enacted Population Summary
8. CD-Alt1-Jan11 Core Constituencies to 2012 Congressional Plan
9. CD-Alt1-Jan11 Core Constituencies to 2021 Congressional Plan
10. CD-Alt1-Jan11 District Election Summary
11. CD-Alt1-Jan11 Measures of Compactness
12. CD-Alt1-Jan11 Plan Components with Population Detail
13. CD-Alt1-Jan11 Political Subdivision Splits – VTD
14. CD-Alt1-Jan11 Population Summary

15. HD Enacted 2021 Core Constituencies to 2015 House Plan
16. HD Enacted 2021 Incumbent Report (2021 Incumbents)
17. HD Enacted 2021 District Election Summary
18. HD Enacted 2021 Measures of Compactness
19. HD Enacted 2021 Plan Components with Population Detail
20. HD Enacted 2021 Political Subdivision Splits – VTD
21. HD Enacted 2021 Population Summary
22. HD-Alt1-Jan11 Core Constituencies to 2015 House Plan
23. HD-Alt1-Jan11 Core Constituencies to 2021 House Plan
24. HD-Alt1-Jan11 Incumbent Report (2021 Incumbents)
25. HD-Alt1-Jan11 District Election Summary
26. HD-Alt1-Jan11 Measures of Compactness
27. HD-Alt1-Jan11 Plan Components with Population Detail
28. HD-Alt1-Jan11 Political Subdivision Splits – VTD
29. HD-Alt1-Jan11 Population Summary
30. HD-Alt2-Jan11 Core Constituencies to 2015 House Plan
31. HD-Alt2-Jan11 Core Constituencies to 2021 House Plan
32. HD-Alt2-Jan11 Incumbent Report (2021 Incumbents)
33. HD-Alt2-Jan11 District Election Summary
34. HD-Alt2-Jan11 Measures of Compactness
35. HD-Alt2-Jan11 Plan Components with Population Detail
36. HD-Alt2-Jan11 Political Subdivision Splits – VTD
37. HD-Alt2-Jan11 Population Summary
38. HD-Eff-Jan11 Core Constituencies to 2015 House Plan
39. HD-Eff-Jan11 Core Constituencies to 2021 House Plan
40. HD-Eff-Jan11 Incumbent Report (2021 Incumbents)
41. HD-Eff-Jan11 District Election Summary

42. HD-Eff-Jan11 Measures of Compactness
43. HD-Eff-Jan11 Plan Components with Population Detail
44. HD-Eff-Jan11 Political Subdivision Splits – VTD
45. HD-Eff-Jan11 Population Summary
46. SD_Enacted 2021 Core Constituencies to 2014 Senate Plan
47. SD_Enacted 2021 Incumbent Report (2021 Incumbents)
48. SD_Enacted 2021 District Election Summary
49. SD_Enacted 2021 Measures of Compactness
50. SD_Enacted 2021 Plan Components with Population Detail
51. SD_Enacted 2021 Political Subdivision Splits – VTD
52. SD_Enacted 2021 Population Summary
53. SD-Alt1-Jan11 Core Constituencies to 2014 Senate Plan
54. SD-Alt1-Jan11 Core Constituencies to 2021 Senate Plan
55. SD-Alt1-Jan11 Incumbent Report (2021 Incumbents)
56. SD-Alt1-Jan11 District Election Summary
57. SD-Alt1-Jan11 Measures of Compactness
58. SD-Alt1-Jan11 Plan Components with Population Detail
59. SD-Alt1-Jan11 Political Subdivision Splits – VTD
60. SD-Alt1-Jan11 Population Summary
61. SD-Alt2-Jan11 Core Constituencies to 2014 Senate Plan
62. SD-Alt2-Jan11 Core Constituencies to 2021 Senate Plan
63. SD-Alt2-Jan11 Incumbent Report (2021 Incumbents)
64. SD-Alt2-Jan11 District Election Summary
65. SD-Alt2-Jan11 Measures of Compactness
66. SD-Alt2-Jan11 Plan Components with Population Detail
67. SD-Alt2-Jan11 Political Subdivision Splits – VTD
68. SD-Alt2-Jan11 Population Summary

69. SD-Eff-Jan11 Core Constituencies to 2014 Senate Plan
70. SD-Eff-Jan11 Core Constituencies to 2021 Senate Plan
71. SD-Eff-Jan11 Incumbent Report (2021 Incumbents)
72. SD-Eff-Jan11 District Election Summary
73. SD-Eff-Jan11 Measures of Compactness
74. SD-Eff-Jan11 Plan Components with Population Detail
75. SD-Eff-Jan11 Political Subdivision Splits – VTD
76. SD-Eff-Jan11 Population Summary
77. CD-Unity Core Constituencies to 2012 Congressional Plan
78. CD-Unity Core Constituencies to 2021 Congressional Plan
79. CD-Unity District Election Summary
80. CD-Unity Measures of Compactness
81. CD-Unity Plan Components with Population Detail
82. CD-Unity Political Subdivision Splits – VTD
83. CD-Unity Population Summary
84. HD-Unity Core Constituencies to 2015 House Plan
85. HD-Unity Core Constituencies to 2021 House Plan
86. HD-Unity Incumbent Report (2021 Incumbents)
87. HD-Unity District Election Summary
88. HD-Unity Measures of Compactness
89. HD-Unity Plan Components with Population Detail
90. HD-Unity Political Subdivision Splits – VTD
91. HD-Unity Population Summary
92. SD-Unity Core Constituencies to 2014 Senate Plan
93. SD-Unity Core Constituencies to 2021 Senate Plan
94. SD-Unity Incumbent Report (2021 Incumbents)
95. SD-Unity District Election Summary

96. SD-Unity Measures of Compactness
97. SD-Unity Plan Components with Population Detail
98. SD-Unity Political Subdivision Splits – VTD
99. SD-Unity Population Summary

[Signature on next page]

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

Executed this 15th day of February, 2023.

JOHN B. MORGAN