SUPREME COURT OF THE STATE OF NEW YORK
COUNTY OF NASSAU

NEW YORK COMMUNITIES FOR CHANGE, MARIA JORDAN AWALOM, MONICA DIAZ, LISA ORTIZ, AND GUILLERMO VANETTEN, Plaintiffs, v. COUNTY OF NASSAU, THE NASSAU COUNTY LEGISLATURE, THE NASSAU COUNTY BOARD OF ELECTIONS, BRUCE BLAKEMAN, in his official capacity as Nassau County Executive, MICHAEL C. PULITZER, in his official capacity as Clerk of the Nassau County Legislature, HOWARD J. KOPEL, in his capacity as Presiding Officer of the Nassau County Legislature, and JOSEPH J. KEARNY and JAMES P. SCHEUERMAN, in their official capacity as commissioners of the Nassau County Board of Elections, Defendants.

REPLY EXPERT REPORT OF DR. JONATHAN CERVAS

I. SCOPE OF WORK

1. I submitted an expert report in this case on May 31, 2024 ("Cervas Report"), which sets forth my qualifications. *See* Cervas Report ¶¶ 3-6 and Appendix 4 (curriculum vitae).

2. In response to my May 31 report, the Defendants in this case submitted the Expert Rebuttal Report of Brad Lockerbie, Ph.D., ("Lockerbie Rebuttal"), the Expert Rebuttal Report of Sean P. Trende, Ph.D. ("Trende Rebuttal"), and the Expert Rebuttal Report of Thomas W. Alfano

("Alfano Rebuttal"). I have been asked to review and to provide a reply to each of these three reports.

3. I am compensated at a rate of $250 per hour. My compensation does not depend on the content of my opinions or the outcome of this matter.

II. EXECUTIVE SUMMARY

4. Defendants' experts do not and cannot dispute that the Cervas Illustrative plan meets or exceeds the Enacted Plan's performance on numerous statutory and traditional redistricting criteria.

5. Mr. Alfano agrees that "respect for political subdivisions" satisfies the traditional redistricting criterion for maintaining communities of interest. Alfano Rebuttal ¶ 22. Mr. Alfano's report indicates that he would prefer a map that respects other communities of interest but does not dispute the Cervas Illustrative Plan's primary approach to respecting communities of interest—maintaining the integrity of villages and CDPs—is generally accepted. Otherwise, Mr. Alfano confuses my reporting of racial demographic data with drawing districts to racial targets. *E.g.*, Alfano Rebuttal ¶ 44. As I explained in my opening report, the Cervas Illustrative Plan respects and addresses all statutory and traditional redistricting criteria to a greater extent than the Enacted Plan without racial predominance. Cervas Report ¶ 34.

6. Dr. Lockerbie's rebuttal to my opening report focuses exclusively on my comparative performance testing of the Cervas Illustrative Plan with the Enacted Plan, but his critiques reveal a fundamental misunderstanding of the racial vote dilution inquiry and my opening report. He argues, without any support, that I should have treated "competitive" losses—i.e., losses of minority preferred candidates by up to 10 points—as something other than losses in my

performance test. Lockerbie Rebuttal ¶¶ 48-49. He also argues that instead of focusing on whether the Cervas Illustrative Plan gives large, compact communities of color an opportunity to elect their candidates of choice in the areas where they live, I should have just added up how many seats on the map elect Democrats—regardless of the district's demographics. Lockerbie Rebuttal ¶¶ 45-46. Among other flaws, Dr. Lockerbie fails to recognize that mapmakers are not allowed to trade off the voting rights of minority residents in one part of the county by creating Democratic seats in another part of the county.

7. Dr. Trende's rebuttal report shows both that the Cervas Illustrative Plan adheres to traditional districting principles better than the Enacted Plan and reveals his ensemble to be an inapt comparator. Dr. Trende's ensemble shows that over 58,000 of his simulated plans have at least six majority minority districts—although none that perform as well as the Cervas Illustrative Plan in terms of compactness, equipopulation, and village splits. Trende Rebuttal 87. And in direct contradiction of his headlines, Dr. Trende's analysis also confirms that the Cervas Illustrative Plan improves opportunities for minority voters to elect their candidates of choice or influence the outcome of elections compared to the Enacted Map.

III. THE CERVAS ILLUSTRATIVE PLAN MEETS OR EXCEEDS THE ENACTED PLAN'S PERFORMANCE ON STATUTORY AND TRADITIONAL REDISTRICTING CRITERIA.

8. Having reviewed the Lockerbie, Trende, and Alfano Rebuttals, Defendants' experts do not and cannot dispute that the Cervas Illustrative Plan meets or exceeds the Enacted Plan's performance on statutory and traditional redistricting criteria.

9. Among other points, the Lockerbie, Trende, and Alfano Rebuttals do not dispute that:

a. The Cervas Illustrative Plan has a lower population deviation than the Enacted Plan.

b. The Cervas Illustrative Plan is contiguous.

c. The Cervas Illustrative Plan is more compact than the Enacted Plan.

d. The Cervas Illustrative Plan neither favors nor disfavors any political party or incumbent.

e. The Cervas Illustrative Plan does not discourage competition.

f. The Cervas Illustrative Plan retains more of the cores of the previous plan than the Enacted Plan.

g. The Cervas Illustrative Plan splits fewer villages than the Enacted Plan.

h. The Cervas Illustrative Plan divides fewer Census-designated places than the Enacted Plan

i. The Cervas Illustrative Plan promotes orderly election administration.

10. Mr. Alfano agrees that "respect for political subdivisions" satisfies the traditional redistricting criterion for maintaining communities of interest. Alfano Rebuttal ¶ 22. Mr. Alfano's report indicates that he would prefer a map that respects other communities of interest but does not dispute the Cervas Illustrative Plan's primary approach to respecting communities of interest—maintaining the integrity of villages and CDPs—is generally accepted (Cervas Report ¶¶ 122-24).

11. Dr. Trende's rebuttal report shows that even using his 'party-blind, race-blind' ensemble, there are over 58,000 maps that contain at least 6 majority-minority districts, as the Cervas Illustrative Plan does, and some of those contain 7 majority-minority districts. Trende Rebuttal 87.

12. Ultimately, none of Defendants experts contradict that the Cervas Illustrative Plan meets all federal and state redistricting standards and could have been adopted by the Nassau Legislature if it so chose.

IV. RESPONSE TO MR. ALFANO

13. Mr. Alfano and I agree on two basic principles regarding communities of interest.

14. To begin with, Mr. Alfano and I agree that communities of interest are "'vague,' making them 'difficult to account for.'" Alfano Rebuttal ¶ 20 (citing *Harkenrider v. Hochul*, 204 A.D.3d 1366, 1373 (4th Dep't 2022), *aff'd* 38 N.Y.3d 494 (2022)).

15. Mr. Alfano and I also agree that the "U.S. Supreme Court has defined the traditional redistricting criteria of 'communities of interest' as 'respect for political subdivisions or communities defined by actual shared interests.'" Alfano Rebuttal ¶ 22 (citing *Miller v. Johnson*, 515 U.S. 900, 916 (1995)).

16. But Mr. Alfano's report fails to recognize that the Cervas Illustrative Map not only respects these communities of interest, it does so better than the adopted map.

17. As my opening report shows, the Cervas Illustrative Plan divides fewer communities than the Enacted Plan. Cervas Report 59, Tables 12 and 13. For instance, only 20 Census Designated Places are split in the Cervas Illustrative Plan, compared to 24 in the Enacted Plan.

18. Put differently, the Legislature had the discretion to keep as many communities undivided as practicable in the way they believed would best represent Nassau County voters, as long as the map complied with all other federal, state, and local laws. The Cervas Illustrative Plan offers one way to do this, using an objective measure of communities of interest that is less susceptible to manipulation than Mr. Alfano's approach.

19. Mr. Alfano is also wrong in asserting that Cervas Illustrative Plan "subordinates keeping together communities of interest" and that I did so "in favor of other considerations, such

as the racial demographics of districts." Alfano Rebuttal ¶ 89. His basis for making this allegation is merely that my opening report reported demographic data relating to the Cervas Illustrative Plan (*E.g.*, Alfano Rebuttal ¶ 31 ("But this primary defense of his District 1 shows that he subordinated other legitimate redistricting criteria to his goal of reaching racial demographic targets.")). Reporting the demographics of the districts of an illustrative map in a case about minority vote dilution is not only unremarkable, it is a necessity. Merely reporting demographic data is certainly not tantamount to setting racial targets—and if so, then I assume Mr. Alfano would be equally accusatory of the Legislature, which has published the racial demographics of its map on the County's website. My usage of racial data when drawing the illustrative map was narrowly tailored only to ensure equal opportunity for minority voters.

20. As my opening report shows, the Cervas Illustrative Plan respects all traditional and statutory redistricting criteria as well as or better than the Enacted Map — including communities of interest, as Mr. Alfano confirms. Alfano Rebuttal ¶¶ 22-23.

V. RESPONSE TO DR. LOCKERBIE

21. Dr. Lockerbie's rebuttal to my opening report focuses exclusively on my comparative performance testing of the Cervas Illustrative Plan with the Enacted Plan in terms of their relative respect for minority voting rights.

22. Dr. Lockerbie does not dispute the accuracy of my performance testing.

23. Instead, Dr. Lockerbie's critiques indicate a fundamental misunderstanding of the racial vote dilution inquiry and my opening report. Lockerbie Rebuttal ¶¶ 48-49.

24. As a mapmaker, it is important for me to understand how and where racial vote dilution occurs so that the plans I draw comply with the law. Racial vote dilution occurs when

minority voters in any area have a lesser opportunity to *elect* candidates of their choice than non-minority voters.

25. Dr. Lockerbie appears to suggest that I should have credited contests where Democratic candidates lost but were "competitive" as evidence that the Enacted Plan does not dilute minority strength. Lockerbie Rebuttal ¶¶ 44, 47-48, 49, 51-52. Dr. Lockerbie provides no support for the point that "competitive" losses should factor into this analysis (or any explanation of precisely how they should be considered or weighted). Regardless, it makes no sense. In the context of either the *Gingles* preconditions of the federal Voting Rights Act or the racial vote dilution protections of the New York Voting Rights Act, the question is whether the preferred candidates of minority voters would usually be "*defeated*."[1] In a first-past-the-post election system, there are no silver medals. Indeed, a consistent pattern of close losses for minority-preferred candidates may be evidence of a fairly sophisticated vote dilution scheme.

26. Dr. Lockerbie appears to define a "competitive" contest for a minority-favored candidate as one in which the Democratic candidate receives at least 45% of the two-party vote share. Lockerbie Rebuttal ¶¶ 48-49. It is unclear how Democratic candidates losing by as much as 10 percentage points is evidence that a map does not dilute minority voting strength.

27. Dr. Lockerbie writes that the performance testing in my initial report "looks at those districts in which he argues there is racially polarized voting. This is [sic] excludes, however, many cases where there is not racially polarized voting." Lockerbie Rebuttal ¶ 45. Dr. Lockerbie mischaracterizes the scope of my work. As is customary in racial vote dilution cases, I have drawn an illustrative redistricting plan that shows it is possible to draw a map that adheres to statutory

[1] Election Law § 17-206(2)(b)(ii).

and traditional redistricting criteria, including respecting minority voting rights. Here, that illustrative plan provides for six majority-minority districts. Cervas Report ¶ 48. This contrasts with the Enacted Plan, which provides only four majority-minority districts and unnecessarily cracks a large, compact Asian community of interest into three districts. Cervas Report ¶¶ 49, 54. This contrast is itself indicative of racial vote dilution.

28. However, I do not evaluate whether voting is racially polarized in these districts or in the county as a whole. My understanding is that this falls within Dr. Kassra A.R. Oskooii's scope of work. Instead, I have used the results from Dr. Oskooii's analysis in his May 31, 2024 report in this case ("Oskooii Report") to assess whether the Enacted Plan impairs the ability of voters of color to elect their candidates of choice or influence the outcome of elections in areas where minority voters are sufficiently numerous and compact to form additional majority-minority districts. I have compared this to the Cervas Illustrative Plan.

29. In areas where there is no racially polarized voting, no race-conscious districting is necessary.

30. Dr. Lockerbie argues that performance analysis in a racial vote dilution inquiry (a) should also look at every district on the map, including those where minorities may be a tiny portion of the electorate or where voting is not racially polarized, Lockerbie Rebuttal ¶¶ 44-46; and (b) should evaluate whether the Enacted Plan dilutes minority votes by simply counting the number of seats that *Democratic* candidates win in the map as a whole. Lockerbie Rebuttal ¶ 10 (defining "minority favored candidates" as "Democratic candidates"); *see id.* ¶¶ 11-20, 44. Both points are wrong for related reasons, as both mischaracterize racial voter dilution and deemphasize

the rights of the voter. (Dr. Trende echoes the vote dilution test that Dr. Lockerbie proposes. See below.)

31. Dr. Lockerbie's opinion implies that a mapmaker may trade-off the opportunity for a large group of minority voters in one area of the county to elect their candidates of choice by providing a very small group of minority voters (or none at all) in another part of the county not the ability to elect their candidates of choice or influence the outcome of elections, but merely the opportunity to be represented by a Democrat. *See* Lockerbie Rebuttal ¶ 46. These opportunities are not equivalent and would not be interchangeable even if they were.

32. Using Dr. Lockerbie's hypothetical in paragraph 46 of his rebuttal report, I illustrate the significant problems with his opinion. Dr. Lockerbie poses his hypothetical as follows:

> If, hypothetically, there are 100 districts and 10 of them have racially polarized voting and 90 do not have racially polarized voting, then regardless of how well the minority favored candidates do in these districts, Cervas is only looking at only 10% of the districts. The minority favored candidates could win the 90 districts where there is not racially polarized voting. If Cervas found that in the remaining 10 districts the minority favored candidates lost, he would seemingly argue that minority favored candidates were at a disadvantage.

Lockerbie Rebuttal ¶ 46.

33. Minority voting rights inquiries focus not on whether *candidates* are disadvantaged, but on whether *voters* are disadvantaged. In Dr. Lockerbie's hypothetical, minority voters are indeed at a disadvantage.

34. Let's expand on Dr. Lockerbie's hypothetical. Suppose there are two groups—minority and non-minority—and each of the 100 districts has 100 voters. In the 90 districts without racially polarized voting, there is only one minority voter per district; in the remaining 10 districts, where racially polarized voting exists, there are 49 minority voters in each. In the 90 districts without racially polarized voting, the lone minority voter may prefer the same candidates as the

non-minority voters, but the minority voters' numbers are too small to impact the election if they do not. In contrast, in the 10 districts with racially polarized voting, minority voters may be sufficiently numerous and compact to form a majority in up to 9 districts, giving them the opportunity to elect their candidates of choice, even if non-minority voters oppose them. Dr. Lockerbie's approach, however, would trade off the opportunity for 84% of minority voters (490/580) to have any electoral influence because 16% of minority voters (90/580) reside in districts where they generally do not oppose the choice of non-minority voters. Instead of diagnosing racial vote dilution, Dr. Lockerbie's method provides a way to obscure it.

35. Finally, Dr. Oskooii found that voting was not racially polarized in the 2019 District Attorney race. Oskooii Report ¶ 52. However, Dr. Lockerbie argues that I should have included the 2019 District Attorney contest in my performance testing. Lockerbie Rebuttal ¶ 50. As I explain in my opening report, a district's performance in a racially polarized contest is more informative of whether that district will enable voters of color to elect their candidates of choice, compared to a contest that is not racially polarized. Cervas Report ¶ 66.

36. However, since Dr. Lockerbie in his May 31, 2024 opening report ("Lockerbie Report") found that voting was racially polarized in the 2019 District Attorney race (and every other contest for county office that he analyzes), Lockerbie Report ¶ 81, Table 8, I consider here whether the results of that contest affect my analysis or conclusions.

37. Using the 2019 District Attorney race to test the performance of the Enacted Plan and the Cervas Illustrative Plan, I find that the results support my conclusion that the Enacted Plan impairs minority electoral opportunities around Cervas Illustrative District 7. The election results reported in the Lockerbie and Oskooii Reports show that on a countywide basis the 2019 District

Attorney race was a blowout win for the incumbent Democrat Singas. Lockerbie Report 36, Table 6; Oskooii Report ¶ 52. Dr. Lockerbie reports that Singas received support from 114% of Black voters and 48% of White voters, Lockerbie Report 46-47, Table 8, and she would have won 15 out of the 19 districts under the Enacted Plan. Lockerbie Report ¶ 75.

38. While Singas unsurprisingly won nearly all the districts in the region of interest, one of the few districts in the Enacted Map where Singas was defeated was Legislative District 7—one of the three districts into which the Enacted Plan cracks the heavily minority incorporated Village of Valley Stream and other communities of color in the area. Enacted Legislative District 7 has a minority CVAP of 34.82%. By contrast, Singas would have won in Cervas Illustrative District 7, which includes all the Village of Valley Stream, and has a minority CVAP of 61.76%. Cervas Report ¶ 61. That such a popular candidate would fail to carry this district in the Enacted Plan increases my confidence in the opinion that Enacted Plan impairs minority voting strength in this area.

VI. RESPONSE TO DR. TRENDE

39. Dr. Trende's rebuttal focuses on evaluating the Cervas Illustrative Plan compared to his "neutral ensemble." Trende Rebuttal 83. This comparison confirms that the Cervas Illustrative Plan adheres to traditional districting principles better than the Enacted Plan. And contrary to his headlines, Dr. Trende's analysis also confirms that the Cervas Illustrative Plan improves opportunities for minority voters to elect their candidates of choice or influence the outcome of elections.

A. The Cervas Illustrative Plan Performs Far Better on Key Redistricting Criteria Than Dr. Trende's Ensemble Maps, Showing That the Ensemble Is Not An Appropriate Comparator for the Cervas Illustrative Plan.

40. First, Dr. Trende asserts that the Cervas Illustrative Plan is a "racial outlier in terms of the demographic composition" of the districts when compared to his "neutral ensemble," and asserts that my map "doesn't just rely on race, it does so heavily." Trende Rebuttal 83. In fact, I took the same approach to drawing districts described in the 2021 Special Master Report on redistricting in Virginia that Dr. Trende co-authored with Dr. Bernard Grofman: "[W]e simply drew districts without race as the predominant interest. Instead, we began by drawing districts that comply with traditional good government districting criteria (contiguity, minimizing splits in counties and cities, and where feasible in census designated places, compactness, etc.) and considered race only after we had drawn a map fully subject to the constraints of those traditional factors."[2]

41. Moreover, Dr. Trende's own ensemble reveals several flaws in this critique while also demonstrating that the Cervas Illustrative Plan did not "rely" on race. A closer look at Dr. Trende's ensemble reveals that the Cervas Illustrative Plan performs far better on several important statutory and traditional redistricting criteria than the set of 500,000 simulated maps, making comparisons between the two an apples-to-oranges exercise.

42. I note the limitation on Dr. Trende's critique on this score. Dr. Trende does not and cannot claim that the Cervas Illustrative Plan is an outlier for containing six majority-minority CVAP districts. His rebuttal shows that 58,888 maps (or 11.7%) in his ensemble contain at least 6

[2] Memorandum from Bernard Grofman, Ph.D and Sean Trende to the Chief Justice and Justices of the Supreme Court of Virginia, December 7, 2021, at 5, available at https://www.vacourts.gov/courts/scv/districting/memorandum_re_va_redistricting_2021.pdf.

majority-minority CVAP districts. Trende Rebuttal 87. In fact, a close examination of the data underlying his dotplot at Figure 52 shows that 2,106 of those maps contain 7 majority-minority CVAP districts. Trende Rebuttal 86.

43. Instead, Dr. Trende states that two of the districts in the Cervas Illustrative Plan have very high percentages of minority CVAP compared to his "base ensemble." Trende Rebuttal 86, Figure 52.[3] But this is only one of multiple dimensions on which the Cervas Illustrative Plan is an outlier or extreme on Dr. Trende's base ensemble. This raises the question of whether, with respect to his evaluation of my map, Dr. Trende violates a principle of ensemble analysis that he sets forth on page 35 of his rebuttal: "[W]hen drawing maps, it is important to direct the simulations to hew as closely as possible to the actual non-partisan constraints under which the mapmaker operated."

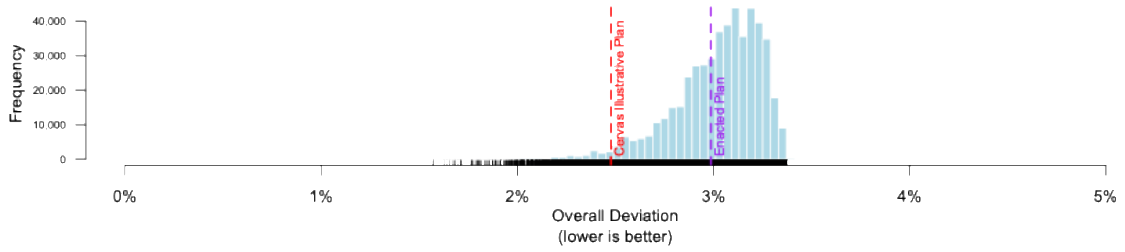
44. The Cervas Illustrative Plan is an "outlier" compared to Dr. Trende's ensemble on at least two other dimensions (population deviation and compactness) and is on the extreme end of another (village splits).

45. Under the Municipal Home Rule Law, the population difference between the smallest district and largest district in Nassau County must not exceed 5% of the ideal district size. Municipal Home Rule § 34(4)(a). In Dr. Trende's ensemble, the map with the smallest deviation between the most and least populous districts has an overall deviation of 1.57%. The map with the largest deviation between the most and least populous districts has a deviation of 3.37%. The Cervas Illustrative Plan is an outlier compared to the ensemble in that it comes closer to the

[3] Dr. Trende has several figures in his rebuttal report that claim to show a metric called the "racial gerrymandering index," including Figure 51 and Figure 53. Trende Rebuttal at 85, 87. I could not identify any reference to the "racial gerrymandering index" on Google Scholar.

equipopulation ideal than most ensemble maps: the Cervas Illustrative Plan has a smaller population deviation (2.48%) than 97.9% of all 500,000 ensemble maps. Cervas Report ¶ 39.

Figure 1: Histogram of Population Deviation (compared to 500,000 simulations)



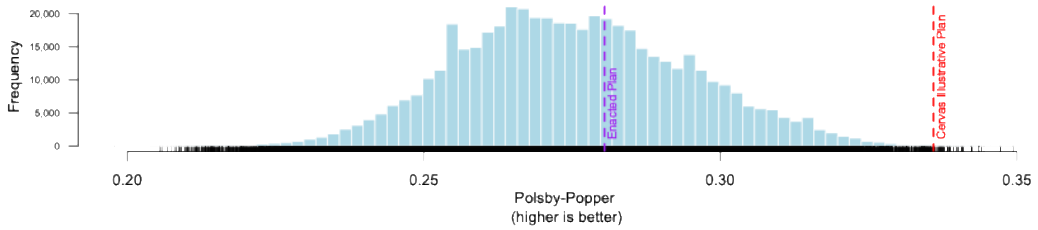
46. The ensemble's population deviation range is notably narrow. While legal plans can have an overall deviation of up to 5%, Dr. Trende's ensemble appears to examine a much more limited range. In fact, 75% of the ensemble plans have deviations between 2.91% and 3.19%. Moreover, no plan in the ensemble exceeds a deviation of 3.37%. This narrow focus ensures that the Enacted Plan closely aligns with the center of the simulation. In contrast, the Cervas Illustrative Plan is an outlier that has a much smaller population deviation than nearly all ensemble maps.

47. The U.S. Supreme Court, in its 'one person, one vote' cases, has emphasized that maintaining political subdivisions and communities of interest often necessitates greater population variance between districts. This broader variance is not adequately reflected in Dr. Trende's ensemble. In other words, the narrow range of overall population deviation in the ensemble suggests that Dr. Trende did not fully explore the range of possible outcomes.

48. Another critical dimension is that the Cervas Illustrative Plan is more compact than virtually every one of the 500,000 simulated maps in Dr. Trende's ensemble. Only 0.00242% of simulated maps in Dr. Trende's ensemble have a higher average Polsby-Popper compactness score

than the Cervas Illustrative Plan. (A higher Polsby-Popper score indicates a more compact map.) When looking only at the subset of 58,888 plans in the ensemble with at least 6 majority-minority districts, *none* have a higher average Polsby-Popper score than the Cervas Illustrative Plan.

Figure 2: Histogram of Polsby-Popper Compactness (compared to 500,000 simulations)

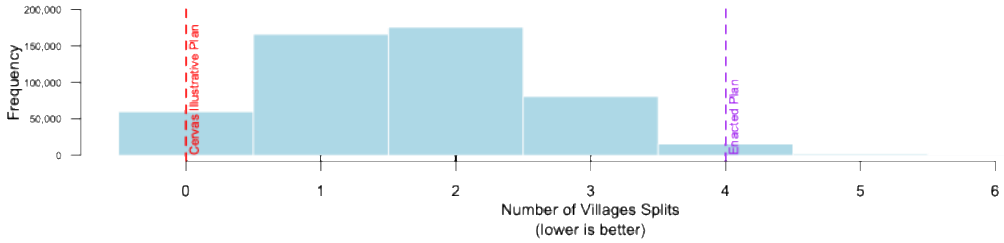


49. As I described in my opening report, the Cervas Illustrative Plan splits no villages, including those with populations exceeding 40 percent of the ideal district size, demonstrating that it is not necessary to split any village to create 6 majority-minority CVAP districts. Cervas Report ¶ 116. However, whatever constraint Dr. Trende applied to his "neutral ensemble" with respect to the three largest villages, it only kept all three of those heavily minority political subdivisions unsplit and in a single district in 11.6% of simulated plans. Thus, the Cervas Illustrative Plan does a better job of keeping villages intact than most ensemble plans.

Figure 3: Histogram of Villages Split (compared to 500,000 simulations)

50. Moreover, the Legislature divided the three villages a total of four times—the Villages of Freeport and Hempstead are divided once, and the Village of Valley Stream is divided twice. This is highly unusual among the plans generated by the ensemble. Cervas Report ¶ 115. Only 3.2% of Dr. Trende's ensemble (15,763 of 500,000 maps) divided villages four or more times. In contrast, again, the Cervas Illustrative Plan divides no villages at all.

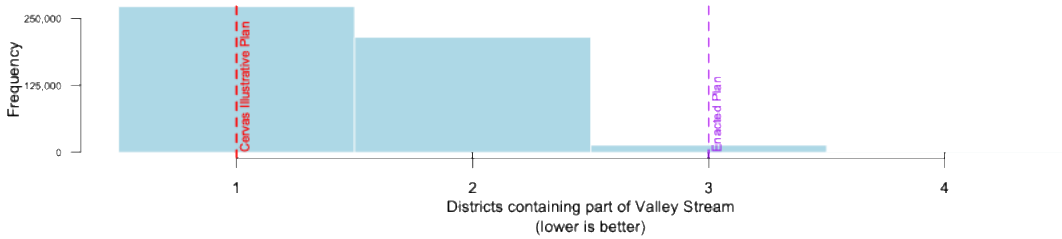
Figure 4: Histogram of Total Village Splits (compared to 500,000 simulations)



51. Splitting the Village of Valley Stream into three districts is highly unusual among the maps in Dr. Trende's ensemble. Only 45.6% of the simulations resulted in Valley Stream being divided into two districts. That is, in most maps in the ensemble the Village of Valley Stream is wholly contained in a single district, as the Cervas Illustrative Plan draws Illustrative District 7. Cervas Report ¶ 71. However, dividing Valley Stream into three districts is even more exceptional—only 2.7% of the ensemble plans do so.[4]

[4] 223 of the 500,000 maps in Dr. Trende's ensemble split Valley Stream into four districts.

Figure 5: Histogram of Valley Stream Splits (compared to 500,000 simulations)



52. Looking at the number of CDPs divided also reveals the Cervas Illustrative to be a significant outlier compared to Dr. Trende's ensemble. In my opening report, I described the number of Census Designated Places that were divided in the Enacted Plan and the Cervas Illustrative Plan. Cervas Report ¶¶ 117-121, Tables 12-13. The Enacted Plan splits 22 CDPs a total of 24 times. Cervas Report ¶ 118. Cervas Illustrative Plan improves on that by splitting 19 CDPs 20 times. Cervas Report ¶ 119. The maps generated by Dr. Trende's ensemble are considerably different than the two maps drawn by humans. Compared to the ensemble, both the Enacted Plan and Cervas Illustrative Plan are outliers. The Cervas Illustrative Plan is nearly 5 standard deviations from the mean number of CDPs split in the ensemble, and the Enacted Plan is over 6.5 standard deviations from the mean. A similar pattern exists for the total number of CDP splits. The Cervas Illustrative Plan is 4.5 standard deviations, and the Enacted Plan is 6.6 standard deviations from the average number of splits in the ensemble. In short, both the Cervas Illustrative Plan and the Enacted Plan split significantly more CDPs than the ensemble maps. But, at least for the Cervas Illustrative Plan, there is good reason for that: although fewer CDP splits are preferable to more CDP splits, CDPs are not protected in the Municipal Home Rule Law, and their protection as communities of interest cannot supersede the other criteria found in the statute. Thus, the Cervas

Illustrative Plan minimizes the number of CDP splits while complying with all other statutory and traditional redistricting criteria.

Figure 6: Histogram of CDPs Split (compared to 500,000 simulations)

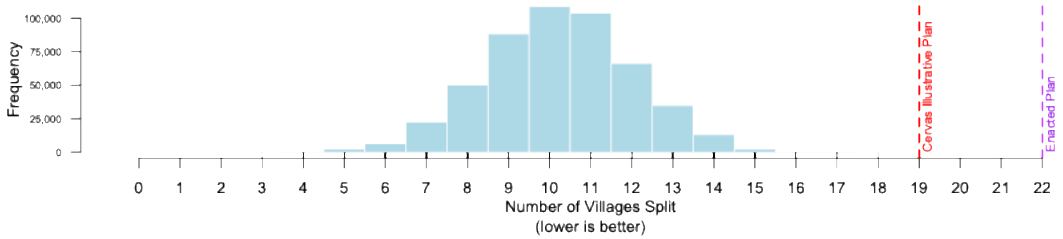
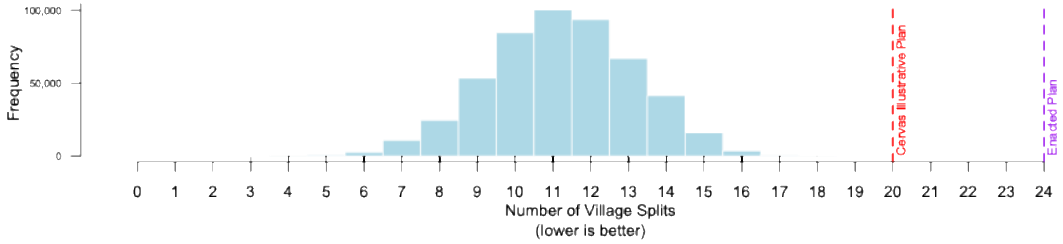


Figure 7: Histogram of Total CDP Splits (compared to 500,000 simulations)



53. Each of these outliers individually suggests that Dr. Trende's ensemble may not be the appropriate comparator for the Cervas Illustrative Plan. Taken together, they confirm it. When I filtered Dr. Trende's ensemble of 500,000 to find plans broadly equal to the Cervas Illustrative Plan in terms of their compliance with the Municipal Home Rule Law, that is, plans that contained 6 majority-minority districts, that were as compact on average, and that split no villages, zero plans remained out of the 500,000.

54. Dr. Trende's rebuttal report confirms that the Cervas Illustrative Plan adheres to traditional redistricting principles, but also highlights critical limitations of Dr. Trende's application of ensemble methodology in this context.

B. Dr. Trende's Rebuttal Report Confirms that the Cervas Illustrative Plan Improves Minority Voters' Ability to Elect Their Candidates of Choice and to Influence the Outcome of Elections.

55. Dr. Trende asserts that my opening report does not demonstrate that my map "improve[s] minority opportunity to elect candidates of their choice," Trende Rebuttal 87, but his rebuttal report confirms that the Cervas Illustrative Plan *does* improve minority political opportunities. With only one exception that is immaterial to my conclusions, Dr. Trende and I make identical calculations about the performance in odd-year elections of the illustrative remedial districts I draw compared to their geographic counterparts in the Enacted Map.[5] *See* Cervas Report ¶¶ 63-81, 93-97. For example, Dr. Trende's data show that Cervas Illustrative Districts 7 more often elects minority candidates of choice than either Enacted District 7 or 14 without any reduction in the performance of the adjacent majority-minority district (labeled as LD3 in both the Cervas Illustrative Plan and the Enacted Plan). Similarly, Dr. Trende's data shows that Cervas Illustrative District 7 more often elects minority candidates of choice than Enacted District 5

[5] Our only disagreement seems to be the vote share for the 2021 Comptroller race in Enacted District 5, which I show as a statistical tie and Dr. Trende shows as a Democratic victory. Cervas Opening Report ¶¶ 77-79; Trende Rebuttal 94. This difference is not material to my conclusions because regardless of whether the 2021 Comptroller race in Enacted District 5 is treated as win, loss, or altogether excluded, at best, the Enacted Map reduces minority opportunities to elect in this part of the County by 25% overall and 50% in the most recent contests compared to the Cervas Illustrative Plan.

without any reduction in the performance of the adjacent majority-minority district (labeled as LD6 in both the Cervas Illustrative Plan and the Enacted Plan).

56. Because Dr. Trende cannot refute that either Illustrative Districts 5 or 7 perform better than their geographic counterparts, he instead attempts to compare the performance of Illustrative District 7 to Enacted District 5—claiming that I "strangely" classify Illustrative District 7 as "performing" and Enacted District 5 as "not-performing." Trende Rebuttal 92–94. Dr. Trende is again comparing apples to oranges. The appropriate "intensely local appraisal" that redistricting requires looks at how the voters living in a particular area are served by an enacted map as compared to an illustrative map. *League of United Latin American Citizens v. Perry*, 548 U.S. 399, 437 (2006). Here, both Illustrative Districts 5 and 7 outperform their geographic counterparts, showing how the Enacted Plan impairs minority political opportunities as compared to the neutral benchmark set by the Cervas Illustrative Plan.

57. Dr. Trende's data also confirms the data from my opening report showing that Illustrative District 10 increases minority electoral opportunity in the most recent election (2021) compared to its geographic counterparts. Dr. Trende does not dispute my opinion that "the 2017 county elections are less informative because they are now seven years in the past and demographic shifts have taken place during that time in the area." Cervas Report ¶ 92. In addition, I have reviewed the Rebuttal Expert Report of Dr. Kassra Oskooii, dated July 20, 2024, ("Oskooii Rebuttal") which shows that the reduction in the success rate of minority-preferred candidates has occurred alongside an increase in racially polarized voting in the area—including a substantial increase in White bloc voting against minority-preferred candidates. Oskooii Rebuttal ¶ 11, 113. Dr. Oskooii's findings support my opinion that the Enacted Plan dilutes the influence of Asian

voters in the greater New Hyde Park region and that Illustrative District 10 provides Asian voters in the area an opportunity to influence the outcome of elections.

58. Dr. Trende's argument about whether the Cervas Illustrative Plan improves minority electoral opportunities is essentially an erroneous claim that I have increased the number of majority-minority districts at the expense of Democrats in Nassau County overall. Trende Rebuttal 94. Dr. Trende suggests that the Cervas Illustrative Plan engages in a "'robbing-Peter-to-pay-Paul' exercise" by concentrating minority voters in remedial districts, thus leaving fewer Democrats in other districts. Trende Rebuttal 94. His argument is directly contradicted by his own tables at Figures 60 and 61, as well as the dotplots he produces at Figures 56-58, as explained below.

59. Like Dr. Lockerbie, Dr. Trende wrongfully conflates minority voters' ability to elect their candidates of choice to the Legislature with the total number of Democrats that win seats. *See* Trende Rebuttal 95 ("He creases [sic] a new minority-preferred district (District 7) but removes one elsewhere (District 10).").

C. Dr. Trende's Rebuttal Report Confirms that the Cervas Illustrative Plan Was Not Drawn To Favor Any Political Party, Whereas the Enacted Map Is a Partisan Outlier.

60. Dr. Trende's analysis also shows that the Cervas Illustrative Plan neither favors nor disfavors any political party. Instead, it astonishingly demonstrates that the Enacted Plan is a clear outlier in partisan terms compared to his party-blind ensemble. Trende Rebuttal 90, Figure 56.

61. To be clear, I drew the Cervas Illustrative Plan without reference to political data except to the extent to ensure minority voters were not provided a lesser opportunity to elect

candidates of their choice. Any partisan effects of the map are the residue of my adherence to the criteria in the Municipal Home Rule Law.

62. Dr. Trende's tables confirm that the Cervas Illustrative Plan improves opportunities for minority voters while generating partisan outcomes that are less dilutive than the Enacted Plan.

63. For example, the table at Figure 60 shows that in the 2017 County Executive race, the Enacted Plan yields only 9 Democratic seats—less than a majority—notwithstanding that the Democratic candidate, Laura Curran, won county-wide by a margin of 51.4%-48.6%. Trende Rebuttal 94, Figure 60. From a partisan perspective, the results for the same contest under the Cervas Illustrative Plan, which yields 10 Democratic seats, are consistent with Dr. Trende's party-blind ensemble, in which most maps yield *at least* 10 Democratic seats. *See* Trende Rebuttal 91, Figure 57. In stark contrast, the 9 Democratic seats in the Enacted Plan fall far short of the 11 or more seats for Democrats that most plans in Dr. Trende's ensemble yield. *See id.* More important than deviation from an ensemble, a race that delivers just 9 of 19 districts is an anti-majoritarian outcome. That is, the principle that the party that wins the most votes wins the most districts. Moreover, all 6 majority-minority districts in the Cervas Illustrative Plan (LDs 1, 2, 3, 5, 6, 7) elect the minority candidate of choice and Democrats win a majority of the seats in the Legislature. Trende Rebuttal 94, Figure 60. This contrasts with the Enacted Plan, where two of the three districts which contain at least some part of Valley Stream (LDs 7, 14) fail to perform for the minority candidate of choice (almost certainly because the minority populations are cracked into these two districts, see *supra* ¶ 51). *Id.*

64. Figure 61 in Dr. Trende's rebuttal report shows a similar pattern in the 2021 County Executive race. *See* Trende Rebuttal 96, Figure 61. In the Cervas Illustrative Plan, Democrats win

11 districts, and all 6 majority-minority districts elect the minority candidate of choice. *Id.* In addition, Illustrative District 10, which respects the integrity of the Asian community of interest in the greater New Hyde Park area, also elects the minority candidate of choice whereas that district's geographic counterparts in the Enacted Map (LDs 9, 10, 18) fail to do so. *Id.* Most plans in Dr. Trende's ensemble elect more than 9 Democrats to the Legislature, including some that elect 10 or 11. Trende Rebuttal 90, Figure 56. Thus, the Cervas Illustrative Plan is not an outlier (30.5% of ensemble maps also elect 11 Democrats). By contrast, the Enacted Plan yields only 8 seats for Democrats, lower than 91.3% of the simulated maps in Dr. Trende's ensemble. Trende Rebuttal 96, Figure 61.

65. Dr. Trende argues that the "performance of Dr. Cervas' map is dependent upon the races selected," Trende Rebuttal 96, but his argument is contradicted by his own data. Dr. Trende's Figures 60 and 61 show that in every single odd-year election for a Nassau County office, minority voters are better able to elect their candidate of choice under the Cervas Illustrative Plan than under the Enacted Plan. Trende Rebuttal 94, Table 60; *Id.* 96, Table 61.

66. Dr. Trende also uses data from state and federal elections conducted in even-numbered years to conduct some performance tests. But data from elections that are not held in the same set of years as Nassau County elections provide less information about how a map will perform than data from elections for county office that appear on the same ballot as county legislative elections.[6]

[6] For instance, the two-party vote share in Dr. Trende's index of even-year elections gives 57.8% of the vote to the Democratic candidates. The only comparable election held in Nassau County locally was the 2019 District Attorney contest.

67. Dr. Trende's data shows that the Cervas Illustrative Plan improves minority political opportunities. Dr. Trende's rebuttal on this point largely boils down to an argument that I could have drawn a plan that was much more favorable for Democrats than the Cervas Illustrative Plan. Trende Rebuttal 87, 94. Perhaps so. But drawing a map to favor a particular political party is prohibited by the Municipal Home Rule Law. Instead, I drew the Cervas Illustrative Plan to comply with all applicable requirements of the Municipal Home Rule Law without seeking to advantage any political party. Cervas Report ¶ 104. And Dr. Trende's report confirms that the Cervas Illustrative Plan favors neither party, while providing minority voters with additional opportunities to elect candidates of their choice and influence the outcome of elections in Legislative Districts 5, 7, and 10.

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VII. CONCLUSIONS

68. The rebuttal reports of Dr. Trende, Dr. Lockerbie, and Mr. Alfano do not cause me to alter the conclusions I reach in my opening rebuttal. Instead, their rebuttals support my conclusion that the Cervas Illustrative Plan shows that it is possible to remedy the Enacted Plan's dilution of Black, Latino, and Asian voting strength by adhering to traditional and statutory redistricting criteria better than the Enacted Map and without race being a predominant consideration.

I hereby declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge. I have formed the opinions contained therein with a reasonable degree of confidence and professional certainty.

I reserve the right to modify, update, or supplement my opinions as additional information is made available to me.

Executed, this day, August 16, 2024, in Morgantown, West Virginia.

Dr. Jonathan Cervas