

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

EXPERT REPORT OF DR. JONATHAN CERVAS

I. EXECUTIVE SUMMARY

1. I have been retained by counsel for the Plaintiffs in this case on behalf of their clients to evaluate whether the redistricting plan enacted by the Nassau County Legislature in February 2023 (“2023 Redistricting Plan”) complies with the redistricting criteria for county legislatures set forth in Section 34 of the Municipal Home Rule Law. I have also been retained to analyze and determine whether it is possible to draw a redistricting plan that adheres to these criteria and to illustrate that it is possible to draw a plan that would provide a viable remedy for the violations of the John R. Lewis Voting Rights Act of New York (NYVRA) and Section 34 of the Municipal Home Rule Law (MHRL) that the Plaintiffs allege. My opinions on this matter are based on my review of the 2023 redistricting plan as well as the prior redistricting plan for the Nassau County Legislature and on publicly available geographic and demographic data from the United States Census Bureau.

2. Based upon my evaluation, I have formed the following opinions with a

reasonable degree of professional certainty:

- a. The 2020 Census data indicates that Nassau County's population has increased since 2010. This growth is entirely due to the increase in the population of racial minority groups, including Hispanic, Asian, and Black residents. The growth in both Hispanic and Asian populations individually exceeded the overall county population growth. Minorities now comprise over forty percent of the county's total population and voting age population. In total, the minority population increased by 153,936 individuals. Conversely, the white population has experienced a significant decline. The white population decreased by 97,893 persons. For comparison, the size of an ideal district—that is, if all districts were as close to equal population as possible—for the Nassau County Legislature's 2023 redistricting plan is 73,522. By that measure, the population of Black, Hispanic, and Asian residents increased by more than two entire ideal districts since the 2010 Census, while the White population declined by a one and one-third ideal districts.
- b. But the 2023 Redistricting Plan (attached as Appendix 1) does not create additional opportunities for minority voters to elect the candidates of their choice or influence the outcome of elections. Even with their significant population increases, people of color constitute a majority of eligible voters in only four of the 19 districts. This under-representation is not due to poor political geography or insufficient legal protections but rather stems directly from the choices made by the governing body when drawing district lines.
- c. I have prepared an alternative plan for Nassau County that meets all legal requirements for redistricting county legislatures in New York (the "Cervas Illustrative Plan," attached as Appendix 2). The voting districts in the Cervas Illustrative Plan are constructed using traditional redistricting criteria. The Cervas Illustrative Plan meets or exceeds the 2023 Redistricting Plan on every relevant measure of plan fitness. By comparing the 2023 Redistricting Plan to the Cervas Illustrative Plan, I demonstrate how the 2023 Redistricting Plan fails to adhere to traditional and statutory redistricting criteria.
- d. The Cervas Illustrative Plan also demonstrates that there is a viable remedy for the dilution of Black, Latino, and Asian voting strength that Plaintiffs allege under the NYVRA and the MHRL. Adhering to traditional and statutory redistricting criteria, I have drawn a plan that illustrates that six reasonably configured districts in which Black, Latino, and Asian residents constitute a majority of eligible voters can be drawn in Nassau County. These districts have been drawn by applying good-government principles to this redistricting process. Race was not a predominant consideration in constructing these districts.
- e. By comparing the electoral performance of these districts in the Cervas Illustrative Plan to their counterpart districts in the 2023 Redistricting Plan, I show that the

2023 Redistricting Plan reduces the ability of Black, Latino, and Asian voters to elect their candidates of choice or influence the outcome of elections compared to a map that better complies with traditional and statutory redistricting criteria.

- f. The Cervas Illustrative Plan demonstrates that by adhering to traditional and statutory redistricting principles, it is possible to maintain the greater New Hyde Park area and its large Asian community of interest in a single highly compact district. This illustrative district stands in contrast to the 2023 Redistricting Plan, which divides this Asian community into three separate legislative districts—two of which are among the least compact in that map. Electoral performance testing of this illustrative district shows that it prevents the impairment of political influence of the Asian community that results from the unnecessary cracking of this community by the 2023 Redistricting Plan.

For reference, the following table summarizes the comparative performance of the Cervas Illustrative Plan against the 2023 Redistricting Plan on the statutory redistricting criteria addressed in this report, which are discussed in detail below.

Comparison of 2023 Redistricting Plan and Cervas Illustrative Plan

	2023 Redistricting Plan	Cervas Illustrative
Overall Population Deviation	2.99%	2.48%
<i>Smallest District</i>	72,567 (-1.3%)	72,618 (-1.2%)
<i>Largest District</i>	74,763 (+1.69%)	74,439 (+1.25%)
Majority-Minority (CVAP) Districts	4	6
Contiguous	Yes	Yes
Compactness (average)		
<i>Reock</i>	0.41	0.44
<i>Polsby-Popper</i>	0.33	0.40
Political Subdivision Splits		
<i>Cities/Towns</i>	3 (25 splits)	3 (23 splits)
<i>Census Designated Places</i>	22 (24 splits)	19 (20 splits)
<i>Villages</i>	3 (4 splits)	0 (0 splits)
Core Retention (from 2013 Redistricting Plan)	58.7%	61.3%

Note: Highlighted cells are those which have better scores between the two plans.

II. QUALIFICATIONS

3. My name is Jonathan Cervas. I served the Supreme Court for the State of New York as special master in the case of *Harkenrider v. Hochul*. In that matter, I was tasked by the court with drawing the remedial redistricting plans for the New York State

Congressional delegation and the New York State Senate. The plans I drew were adopted by the court and implemented in the 2022 election cycle. In addition to my work as special master in New York, I have assisted three federal courts and the Wisconsin Supreme Court in cases relating to redistricting and voting rights. I also served as redistricting consultant to the Pennsylvania Legislative Reapportionment Commission in 2021.

4. I am a postdoctoral fellow at Carnegie Mellon University. Starting in fall 2024, I will be Assistant Teaching Professor at Carnegie Mellon. I teach courses for the Carnegie Mellon Institute for Strategy and Technology (Political Science), the undergraduate and master's degree-granting unit of political science for the university. Two of the classes that I teach are graduate courses: 1) a graduate seminar on American politics, and 2) a research and statistical methods course. I teach one undergraduate course on representation and voting rights. I am also an uncompensated Research Associate of the Electoral Innovation Lab at Princeton University, and contributor to the non-partisan Princeton Gerrymandering Project.

5. I joined Carnegie Mellon University in 2020 as a post-doctoral fellow after receiving my M.A. and Ph.D. in Political Science from the University of California, Irvine. I received my undergraduate degree at the University of Nevada Las Vegas. My 2020 doctoral dissertation is titled *A Quantitative Assessment of the Electoral College, 1790-2020*. As my curriculum vitae, attached as Appendix 4, shows, I have published eleven peer-reviewed scholarly articles on topics related to political institutions, elections, redistricting, and voting rules. My work has been published in journals which specialize in political science, geography, economics, and law. These include the *Proceedings of the National Academy of Arts and Sciences*, *Social Science Quarterly*, *Political Geography*, *Public Choice*, *Election Law Journal*, *Stanford Journal of Civil Rights & Civil Liberties*, *Presidential Studies Quarterly*, *Statistics and Public Policy*, *New Hampshire Law Review*, *Albany Law Review*, and *PS: Political Science and Politics*. I have been invited to give talks at Princeton University, University of Houston, Albany Law School, and the National Conference of State Legislatures, as well as dozens of invited virtual lectures and talks. As part of my service commitment to the discipline of political science, I have served as referee for *American Journal of Political Science*, *Political Geography*, *Election Law Journal*, *Public Choice*, and *Political Research Quarterly*.

6. The following are a list of matters in which I have recently served as a special master or consultant to court or redistricting commission, or as expert witness:

- a. ***Clarke v. Wisconsin Elections Commission (2024)***: The Wisconsin Supreme Court appointed me and Dr. Bernard Grofman as co-consultants to the Court to assist in evaluating remedial plans proposed after the redistricting plans for the Wisconsin State Senate and Assembly were judicially invalidated. In that role, Dr. Grofman and I analyzed proposed remedial redistricting plans for both chambers of the State Legislature submitted by the parties to the case. Dr. Grofman and I produced a report evaluating the submissions and providing

recommendations to the court. The legislature later adopted one of the plans that we evaluated, and the governor signed into law the new plan. It will be used in the 2024 election.

- b. ***Harkenrider v. Hochul (2022)***: On April 18, 2022, Justice Patrick McAllister of Supreme Court, State of New York for Steuben County retained me as “special master to prepare and draw a new neutral, non-partisan Congressional map” after Justice McAllister ruled that the plans enacted by the State Legislature violated the New York State Constitution. In affirming Justice McAllister’s ruling, the Court of Appeals expanded my scope of work to include drawing a new, neutral redistricting plan for the New York State Senate as well. I prepared proposed redistricting maps for both the New York State Congressional delegation and the State Senate. The court approved my proposed plans, which were then implemented for the 2022 election cycle.
- c. ***Pennsylvania Legislative Reapportionment Commission***: In July of 2021, I entered into a contract with the 2021 Pennsylvania Legislative Reapportionment Commission to provide consulting work relating to the creation of the Pennsylvania State House of Representatives and Pennsylvania Senate districts to be used during elections held between 2022 and 2030. This work involved numerous aspects of the reapportionment process, not limited to map drawing. This bipartisan commission, led by Chancellor Emeritus Mark Nordenberg of the University of Pittsburgh, was composed of the Senate Majority and Minority leaders, and the House of Representatives Majority and Minority leaders. The maps drafted by the commission were passed with a bipartisan vote on February 4, 2022. The Pennsylvania Supreme Court unanimously affirmed the final reapportionment plan in March 2022.
- d. ***Wygant v. Lee (2023)***: In March of 2022, I prepared a report and affidavit as an expert witness for plaintiffs in *Wygant v. Lee*, #22-0287-IV, a state court case challenging the validity of redistricting plans for both houses of the Tennessee General Assembly under the Tennessee Constitution. I prepared several alternative plans for both chambers. I was an admitted expert in the case.
- e. ***Wright v. Sumter County, GA (2020)***: I served as an assistant to Dr. Grofman, the federal court appointed special master in this case concerning whether the method of electing members of the Sumter County Board of Education diluted the voting power of Black voters in violation of Section 2 of the Voting Rights Act. *Wright v. Sumter County Board of Elections and Registration*, 1:14-CV-42 (WLS) (M.D. Ga.). The district court struck down the plan and ordered it to be replaced; the court retained Prof. Grofman in his capacity as Special Master. I assisted Dr. Grofman in crafting illustrative plans. The court selected one of the plans I assisted in preparing. The Eleventh Circuit affirmed the district court and noted that the Special Master “expressly found an easily achievable remedy available.” *Wright v. Sumter County Board of Elections and Registration*, No.

15-13628 at 45 (11th Cir. 2020).

- f. ***Bethune-Hill v. Virginia State Board of Elections (2019)***: I served as assistant to the Special Master, Dr. Grofman, in crafting a remedial plan in this case where the district court found that the redistricting plan for Virginia's House of Delegates was an unconstitutional racial gerrymander. *Bethune-Hill v. Virginia State Bd. of Elections*, 326 F. Supp. 3d 128 (E.D. Va. 2018). The district court retained Dr. Grofman as Special Master and I worked with Prof. Grofman to assist the district court in developing the remedial districts that were used in the 2019 and 2021 elections.

- g. ***Navajo Nation v. San Juan County (2018)***: I served as assistant to the court-appointed Special Master, Dr. Grofman, in this case where the district court ruled that the election districts for school board and county commission violated the Fourteenth Amendment to the United States Constitution. *Navajo Nation v. San Juan County, UT*, D.C. No. 2:12-CV-00039-RJS (D. Utah 2018). The court selected remedial plans that I assisted in preparing for immediate use in the next election. They were upheld by the Tenth Circuit in *Navajo Nation v. San Juan County*, No.18-4005 (10th Cir. 2019).

III. SCOPE OF WORK

7. Counsel for the Plaintiffs in this case asked me to conduct an analysis of the 2023 Redistricting Plan with respect to its adherence to the redistricting criteria for County Legislatures in New York set forth in Section 34 of the Municipal Home Rule Law. As part of my inquiry, I created an alternative legislative district map, the Cervas Illustrative Plan. I approached this task as if I were aiding a court in the development of a remedial map, ensuring compliance with both state and federal laws relevant to local redistricting in New York.

8. I provide a comprehensive analysis comparing the 2023 Redistricting Plan and the Cervas Illustrative Plan. My analysis, including my illustrative map, provides my professional assessment regarding whether the 2023 Redistricting Plan adequately accounts for demographic changes over the last decade. My alternative map also illustrates that it is possible to provide a viable remedy for the vote dilution claim that the Plaintiffs allege. Furthermore, I have examined the partisan effects of the district boundaries to determine whether and to what extent the 2023 Redistricting Plan contravenes established social science criteria for partisan neutrality.

9. My opinions in this report are based on the knowledge I have accumulated through my education, training, and experience. This training has included a detailed review of the relevant academic literature. My opinions also follow from quantitative and qualitative analysis of the following data:

US Census Decennial Redistricting Data (PL 94-171)
US Census American Community Survey Data (2006-2010 through 2018-2022)
Nassau County Legislature Enacted Maps (2013, 2023)
Election returns for Nassau County Executive, Clerk, Comptroller, and District Attorney, 2017 and 2021, provided by counsel.

IV. LEGAL FRAMEWORK GOVERNING THE REDISTRICTING OF COUNTY LEGISLATURES IN NEW YORK STATE

10. There are two main provisions of New York law governing the drawing of county legislature districts: Section 34 of the MHRL (“Section 34”) and the NYVRA. As explained below, Section 34 incorporates the protections of the NYVRA.

11. Specifically, Section 34(4) provides that redistricting plans for county legislatures “shall be subject to federal and state constitutional requirements and shall comply with the following standards, which shall have priority in the order herein set forth, to the extent applicable.” Those standards in the statutory order of priority are:

- a) **Compliance with “One Person, One Vote” Standard.** “[D]istricts shall be as nearly equal in population as is practicable; the difference in population between the most and least populous district shall not exceed five percent of the mean population of all districts.”
- b) **Compliance with protections against abridgment or retrogression of racial minority voting strength.** “Districts shall not be drawn with the intent or result of denying or abridging the equal opportunity of racial or language minority groups to participate in the political process or to diminish their ability to elect representatives of their choice.” This provision incorporates the protections of the federal VRA and the NYVRA, as well as state and federal constitutional protections for minority voting rights and against racial discrimination. The NYVRA prohibits redistricting plans that have “the effect of impairing the ability of members of a protected class to elect candidates of their choice or influence the outcome of elections, as a result of vote dilution.” Election Law § 17-206(2)(a). The NYVRA contains express protections for what are commonly referred to in redistricting as “coalition districts,” i.e., districts where multiple politically cohesive minority groups may be combined in a district for the purpose of protecting those groups against vote dilution. Election Law §§ 17-206(2)(c)(iv) & 17-206(8).
- c) **Contiguity.** “Districts shall consist of contiguous territory.”
- d) **Compactness.** “Districts shall be as compact in form as practicable.”
- e) **Prohibition on discouraging competition or intentional favoring of parties, candidates or incumbents.** “Districts shall not be drawn to discourage

competition or for the purpose of favoring or disfavoring incumbents or other particular candidates or political parties.”

- f) **Requirement to consider maintenance of existing district cores, pre-existing political subdivisions, communities of interest.** The maintenance of cores of existing districts, of pre-existing political subdivisions including cities, villages, and towns, and of communities of interest shall also be considered.
- g) **Prohibition on unnecessarily dividing incorporated municipalities with populations under 40 percent of an ideal district.** “To the extent practicable, no villages, cities or towns except those having more than forty percent of a full ratio for each district shall be divided.”
- h) **Promoting Orderly Election Administration.** “Districts shall be formed so as to promote the orderly and efficient administration of elections.”

12. These statutory criteria largely reflect a set of what are commonly known as traditional redistricting principles.¹

V. DATA AND METHODOLOGY

13. The data analyzed in this report are sourced from publicly available datasets. Specifically, I utilize data from the following sources:

- **US Census Bureau Decennial Redistricting Data:** Utilizing both the decennial census data and the prison-adjusted data provided by New York State Legislative Task Force on Demographic Research and Reapportionment (LATFOR).
- **American Community Survey (ACS):** This dataset offers block-group level information regarding the citizen voting age population counts. In general, I use the ACS 5-year estimates, 2018-2022.²
- **Local Elections:** Data from local elections held across two election cycles: 2017, and 2021. These elections include contests for county clerk, county comptroller, county executive, and district attorney positions.

These data are all available from public, official sources.

¹ See, e.g., National Conference of State Legislatures, Redistricting Criteria, <https://www.ncsl.org/redistricting-and-census/redistricting-criteria>.

² I utilize the special tabulation provided by the U.S. Census Bureau. For more information, see <https://www.census.gov/programs-surveys/decennial-census/about/voting-rights/cvap.2022.html>. I will occasionally use data covering years besides 2018-2022 but will note when I am using a different dataset.

14. To construct the Cervas Illustrative Map, I used Dave’s Redistricting, a free, publicly-available application free, publicly-available resource for analyzing and creating redistricting plans. As special master in *Harkenrider v. Hochul*, I used Dave’s Redistricting to create the remedial maps for the New York State Congressional delegation and the New York State Senate.

15. I am also informed by counsel for Plaintiffs that another expert witness in this case, Professor Kassra Oskooii, has performed an analysis of racial voting patterns in Nassau County and found that: (1) Black, Asian, and Latino voters in Nassau County are politically cohesive both within individual groups and with each other; and (2) White voters in Nassau County are also politically cohesive and usually vote sufficiently as a bloc to defeat the preferred candidates of Black, Asian, and Latino voters. Counsel for Plaintiffs provided me with the names of the candidates preferred by Black, Latino, and Asian voters and by White voters, respectively, in the 2017, 2019 and 2021 contests for Nassau County Executive, District Attorney, Clerk, and Comptroller.

VI. BACKGROUND ON NASSAU COUNTY REDISTRICTING

16. The process of redistricting Nassau County has been influenced by the results of the 2020 decennial census. This data provides detailed insights into local population totals, voting age demographics, and the racial and ethnic diversity within communities, and is often referred to as PL 94-171 data.³ This data is delivered in a disaggregated manner of individual census blocks, which facilitates the creation of districts with equal populations.

A. THE 2010 CENSUS AND THE 2013 REDISTRICTING PLAN

17. Following the 2010 census, Nassau County's total population was recorded at 1,339,532, with a prison-adjusted figure slightly higher at 1,340,882.⁴ The target population per district (sometimes called the “ideal” district) was set at 70,573, derived by dividing the total adjusted population by 19.⁵ The 2013 redistricting plan for the Nassau County Legislature (the “2013 Redistricting Plan,” attached as Appendix 3) was enacted with the smallest district containing 68,853 residents, 2.4% below the ideal population. The largest district contained 72,277 residents, exceeding the ideal by 2.4%. The overall population deviation—that is, the difference between the most and least populated district—was 4.9%, at the time a legally justifiable deviation. The plan included three

³ See U.S. Census Bureau, “2020 Census Statistics Highlight Local Population Changes and Nation’s Racial and Ethnic Diversity”, August 12, 2021: <https://www.census.gov/newsroom/press-releases/2021/population-changes-nations-diversity.html>

⁴ The geographic data for census blocks was sourced from the U.S. Census Bureau (<https://perma.cc/4GXH-5U2H>) and merged with LATFOR's prison-adjusted data (<https://perma.cc/A5XY-FWGY>).

⁵ The “ideal” district has special meaning during redistricting after the series of malapportionment cases beginning in 1962 with *Baker v. Carr*. Those cases guaranteed equal representation in legislative districts, meaning that each district should have roughly the same number of persons who live in them.

majority-minority CVAP districts—two majority non-Hispanic Black (Districts 1,2) and one Black-Hispanic coalition district District 3).⁶

B. THE 2020 CENSUS AND POPULATION CHANGES

18. Nassau County’s population increased to 1,395,774 after the 2020 census, with a prison-adjusted figure of 1,396,925.⁷ This reflected a 10-year increase of 56,043 persons. The ideal district population after the 2020 census increased to 73,522. Moreover, the districts themselves had shifting populations, resulting with the smallest and largest districts in the 2013 Redistricting Plan now containing 69,297 and 76,572 persons respectively, with the smallest district falling below the ideal by 5.75% and the largest exceeding it by 4.15%. This resulted in an overall deviation of 9.89%. These deviations necessitated redistricting to ensure compliance with state and federal laws, especially given new statutes applicable to redistricting introduced between the two census cycles.

C. IDEAL DISTRICT SIZE

19. The Nassau County Legislature, composed of 19 members, uses the total prison-adjusted population to determine the ideal district population, ensuring equal representation. For the rest of this report, I will rely on the prison-adjusted population metric, except when reporting Citizen Voting Age Population (“CVAP”), which is collected from the Census Bureau’s American Community Survey. Post-2020 census, the ideal district population was recalculated to be 73,522. To maintain equality, the variance in district sizes, often called the “overall deviation,” must not exceed 5%. This is a more stringent criterion than the 10% threshold used in the prior decade for the county’s redistricting post-2010 census.⁸ To achieve this new standard, no district can deviate by more than 2.5% above or below the ideal population of 73,522. Put differently, no district can contain fewer than 71,684 persons or more than 75,360 persons. Once the new 2020 census population returns replaced the 2010 numbers, the 2013 Redistricting Plan reached an overall deviation of 9.89%, exceeding the maximum allowable deviation (see **Figure 1**).

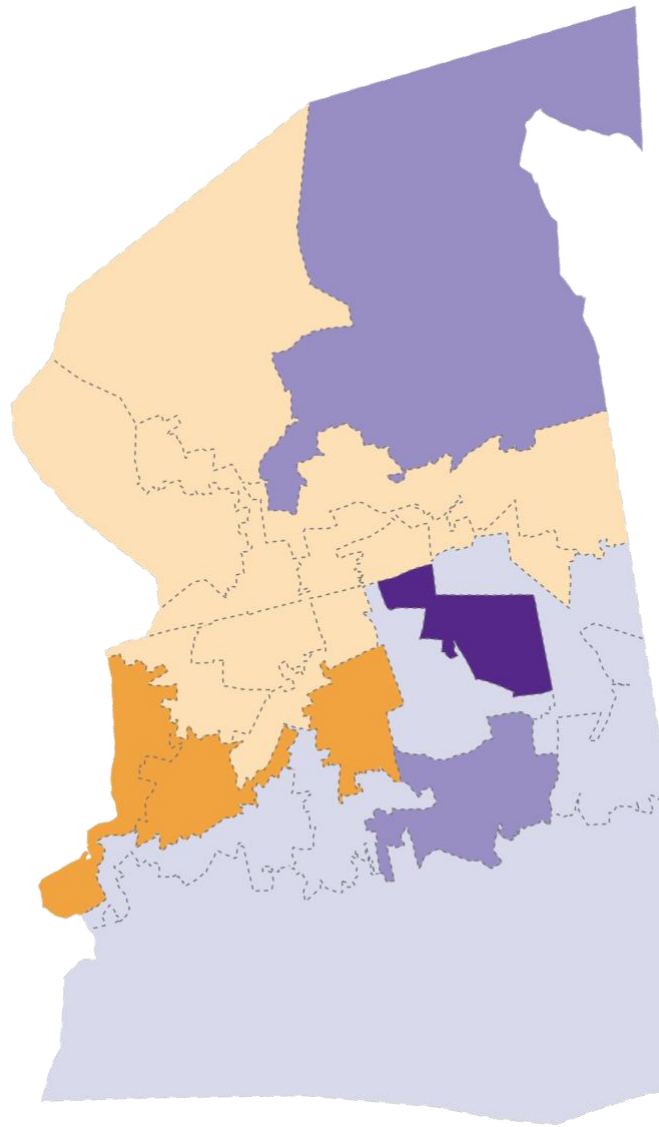
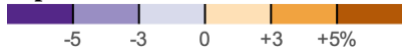
⁶ ACS 5-year estimates, 2006-2010.

⁷ The geographic data for census blocks was sourced from the U.S. Census Bureau (<https://perma.cc/35TK-6CMQ>) and merged with LATFOR's prison-adjusted data. (<https://perma.cc/4LH9-DA8Z>).

⁸ Municipal Home Rule Law § 34(4)(a).

Figure 1 Population Deviations for the 2013 Redistricting Plan using 2020 Census Data

Population Deviation



Note: This map shows the deviations of the districts as they existed from 2013-2023 but using the 2020 census data.

D. DEMOGRAPHIC CHANGES

20. The overall population change in Nassau County is not the only important development over the decade. The demographic changes that occurred over the decade have significantly remade the county. **Table 1** shows the change in population demographics between 2010 and 2020.

Table 1 Demographic Tables, LATFOR Prison-Adjusted

	Total Population			Voting Age Population		
	2010	2020	Difference	2010	2020	Difference
<i>Total Population</i>	1,340,882	1,396,925	56,043 4.2	1,029,299	1,100,034	70,735 6.9
<i>Hispanic</i>	195,612	256,698	61,086 31.2	138,459	184,598	46,139 33.3
<i>NH-White</i>	877,570	779,677	(97,893) -11.2	694,153	641,395	(52,758) -7.6
<i>NH-Black</i>	145,015	153,306	8,291 5.7	107,638	120,994	13,356 12.4
<i>NH-Asian</i>	107,714	172,725	65,011 60.4	78,781	128,496	49,715 63.1
<i>NH-Other</i>	14,971	34,519	19,548 130.6	10,268	24,551	14,283 139.1
<i>NH-White</i>	877,570	779,677	-97,893 -11.2%	694,153	641,395	-52,758 -7.6%
<i>Minority</i>	463,312	617,248	153,936 33.2%	335,146	458,639	123,493 36.8%

Note: Adjusted census data was downloaded from LATFOR, using the DOJ demographic categories. Demographic group totals sum up to total population.

21. The table demonstrates that *all* the growth over the decade from 2010 to 2020 is attributable to minority demographic groups. Indeed, while the county population grew by just over 56,000, the minority population increased by nearly 154,000. Meanwhile, the Non-Hispanic White population shrunk by nearly 98,000 persons.

22. Data in **Table 1** includes the total population and the voting age population for the county, broken down by several demographic groups. Because the US Census Bureau considers “Hispanic” as an ethnicity and not a race, it is separated into its own row. The table’s bottom two rows include Hispanic, Non-Hispanic Black, Non-Hispanic Asian, and all other non-Hispanic persons to create a “Minority” composite to compare to “Non-Hispanic White” totals.

23. Over the decade, the non-Hispanic White population *declined* by over 11%. The minority population, however, *increased* by over 33%. Minority population now comprises 43.4% of Nassau County. That is a 10% increase over 10 years. It is noteworthy that all minority demographic groups had greater increases in voting age population percentages than in overall population.

24. **Table 2** shows the proportion of the VAP and CVAP for each demographic group. This emphasizes the dynamic shifts within the county's demographic landscape, underscoring the complexity and critical nature of the redistricting process to ensure fair and equitable representation in Nassau County.

Table 2 Proportion of Population by Demographic group

2020	Total Population		Voting Age Population		Citizen Voting Age Population	
	2010	2020	2010	2020	2010	2020
<i>Hispanic</i>	14.6%	18.4%	13.5%	16.8%	9.2%	13.0%
<i>NH-White</i>	65.4%	55.8%	67.4%	58.3%	73.4%	64.1%
<i>NH-Black</i>	10.8%	11.0%	10.5%	11.0%	10.5%	12.4%
<i>NH-Asian</i>	8.0%	12.4%	7.7%	11.7%	6.6%	10.0%
<i>NH-Other</i>	1.1%	2.5%	1.0%	2.2%	0.4%	0.5%
<i>NH-White</i>	65.4%	55.8%	67.4%	58.3%	73.4%	64.1%
<i>Minority</i>	34.6%	44.2%	32.6%	41.7%	26.6%	35.9%

Note: Proportions may not add to 100% due to rounding. Total population and Voting Age Population are LATFOR prison-adjusted data. Citizen Voting Age Population comes from the Census Bureau's Special Tabulation, 2008-2012 and 2018-2022 5-year American Community Survey, and has a margin of error.

E. POLITICAL SUBDIVISIONS

25. Section 34 requires consideration of maintaining the integrity of political subdivisions during redistricting. The law states that "[t]o the extent practicable, no villages, cities, or towns except those having more than forty percent of a full ratio for each district shall be divided." This provision generally protects from unnecessary division any political subdivision with a population under 29,384, which represents forty percent of an ideal district's population.⁹

26. Nassau County has two cities, three towns, and 64 incorporated villages. Some subdivisions, due to their large populations, may necessitate splitting.

27. Glen Cove, a city with a population of 28,381, falls under the protected category, preventing its division "to the extent practicable." The city of Long Beach *can* be divided based on its size being larger than 40% of ideal, but it has a population small

⁹ Data Source: <https://perma.cc/3F5X-9FHV>; GIS: There are some minor differences in the geographic boundaries found in the files at <https://perma.cc/D5HF-S49C> and those in the Census Tiger-Line files. I am using the Census's boundary in this report, which is the same source of data the expert for the Legislature used, reflected in his files provided to me by counsel.

enough that the city can be kept whole in a single district. The three towns (Hempstead, North Hempstead, and Oyster Bay along with the city of Long Beach) exceed the threshold allowing division by very large margins. Indeed, the three towns (Hempstead, North Hempstead, and Oyster Bay) are all sufficiently large that they necessitate dividing them multiple times between districts.

28. Among the 64 villages, only Hempstead, Freeport, and Valley Stream have populations more than the 40% threshold. However, no village's population mandates its division, as all village populations remain below the ideal district population. Nassau County's redistricting efforts need to balance legal mandates with the goal of effective representation.

29. **Table 3** presents the population and demographic data for each of the cities, towns, and villages within Nassau County. It is structured to first categorize towns and cities, followed by the villages. The arrangement starts with the largest political subdivisions at the top, proceeding in descending order.

Table 3 Cities, Towns, and Villages, Population and Demographics

City/Town	Total Population	Total (VAP)	White (VAP)	Black (VAP)	Asian (VAP)	Hispanic (VAP)	Total Minority (VAP)
Hempstead	807,264	632,612	336,155	102,888	49,546	127,474	46.9
Oyster Bay	314,932	250,558	179,421	6,553	36,542	24,177	28.4
North Hempstead	245,095	191,500	108,152	10,021	43,655	26,096	43.5
Long Beach	36,373	30,887	23,425	1,542	1,047	4,211	24.2
Glen Cove	32,228	26,225	15,414	1,411	1,520	7,459	41.2

Village	Total Population	Total (VAP)	White (VAP)	Black (VAP)	Asian (VAP)	Hispanic (VAP)	Total Minority (VAP)
Hempstead	64,741	49,217	4,021	20,051	1,407	22,306	91.8
Valley Stream	48,165	37,803	12,524	8,573	6,199	8,656	66.9
Freeport	47,992	37,657	7,488	11,572	733	16,695	80.1
Garden City	32,025	25,005	19,162	1,129	2,131	2,190	23.4
Rockville Centre	30,126	23,515	18,005	1,669	803	2,659	23.4
Lynbrook	25,147	19,766	13,222	1,364	1,382	3,323	33.1
Mineola	24,513	20,070	12,784	597	2,906	3,257	36.3
Westbury	20,901	16,783	6,892	3,034	1,825	4,633	58.9
Floral Park	19,717	15,588	10,654	641	1,929	2,120	31.7
Massapequa Park	18,797	14,805	13,242	97	322	964	10.6
Great Neck	14,048	10,249	7,324	161	1,670	914	28.5

Village	Total Population	Total (VAP)	White (VAP)	Black (VAP)	Asian (VAP)	Hispanic (VAP)	Total Minority (VAP)
East Rockaway	14,027	11,285	8,894	384	418	1,417	21.2
New Hyde Park	13,987	11,145	5,213	187	4,182	1,313	53.2
Malverne	12,140	9,788	6,394	1,260	645	1,269	34.7
Cedarhurst	11,211	7,872	6,208	219	235	1,074	21.1
East Hills	10,795	8,065	5,815	226	1,476	434	27.9
Great Neck Plaza	10,269	8,391	5,236	165	2,288	598	37.6
Williston Park	9,750	7,771	5,335	84	1,469	718	31.3
Old Westbury	9,714	8,000	4,550	1,108	1,660	553	43.1
Kings Point	9,549	7,254	5,630	160	836	491	22.4
Farmingdale	9,539	8,087	5,924	257	668	1,078	26.7
North Hills	9,519	7,847	4,586	85	2,773	321	41.6
Lawrence	8,794	6,485	5,359	186	171	594	17.4
Manorhaven	8,570	6,605	3,657	108	848	1,935	44.6
Sands Point	8,213	6,322	4,096	255	805	1,096	35.2
Sea Cliff	8,062	6,347	4,594	310	216	1,113	27.6
Thomaston	7,944	6,413	3,291	444	2,006	589	48.7
Bayville	7,145	5,824	5,029	34	158	517	13.7
Flower Hill	7,141	5,304	3,852	46	990	329	27.4
Brookville	6,786	5,597	4,162	81	1,083	203	25.6
Port Wash. North	6,759	5,382	3,765	219	530	783	30
Great Neck Estates	6,724	5,291	3,720	56	1,159	285	29.7
Muttontown	6,521	5,125	3,494	79	1,271	219	31.8
Upper Brookville	6,057	4,812	3,633	164	592	365	24.5
Island Park	5,550	4,521	2,746	144	208	1,301	39.3
Lake Success	5,425	4,265	1,847	259	1,844	268	56.7
Oyster Bay Cove	5,406	4,198	3,426	41	479	190	18.4
Old Brookville	4,985	3,908	3,014	57	527	248	22.9
Lattingtown	4,657	3,687	2,900	47	237	423	21.3
Kensington	4,481	3,533	2,586	43	735	124	26.8
Roslyn	4,248	3,463	2,250	56	592	506	35
Munsey Park	4,144	2,964	2,243	35	497	139	24.3
Stewart Manor	3,985	3,220	2,318	84	381	378	28
Laurel Hollow	3,925	2,986	2,388	44	389	135	20
Roslyn Estates	3,821	3,039	2,140	31	694	125	29.6
East Williston	3,776	2,828	2,223	16	358	185	21.4
South Floral Park	3,247	2,583	401	1,184	325	529	84.5
Plandome Manor	3,216	2,466	1,979	10	270	171	19.7
Roslyn Harbor	3,209	2,526	1,980	11	350	144	21.6
Baxter Estates	3,025	2,354	1,394	171	253	502	40.8
Matinecock	2,768	2,197	1,841	29	152	155	16.2
Hewlett Harbor	2,759	2,169	1,871	47	119	105	13.7
Plandome	2,710	2,019	1,611	10	274	101	20.2
Mill Neck	2,709	2,129	1,637	90	124	250	23.1
Russell Gardens	2,557	2,007	1,064	21	819	77	47
Woodsburgh	2,511	1,806	1,594	23	82	72	11.7
Hewlett Bay Park	2,185	1,704	1,417	40	125	93	16.8
Atlantic Beach	2,142	1,894	1,700	4	36	104	10.2
Bellerose	1,960	1,502	1,025	38	175	210	31.8
Saddle Rock	1,763	1,285	1,094	1	147	22	14.9
Plandome Heights	1,617	1,206	925	3	186	77	23.3
Hewlett Neck	1,474	1,039	912	16	45	46	12.2
Cove Neck	855	689	592	7	42	42	14.1

Centre Island	677	570	506	2	16	44	11.2
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Note: All of these reported data are from LATFOR's prison-adjusted dataset.

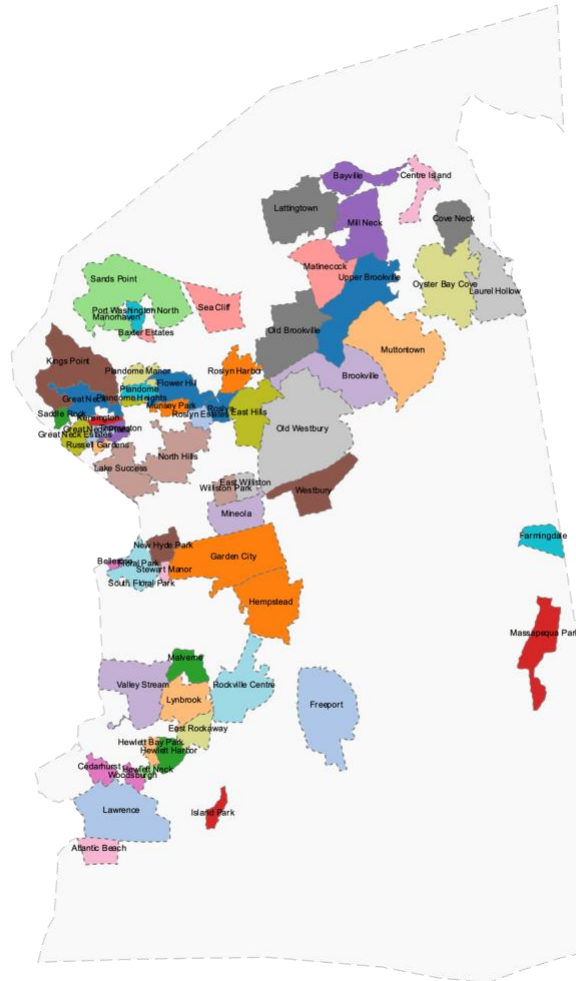
30. Section 34 requires that the maintenance of political subdivisions, like the cities, towns, and villages listed above, be considered. It is also considered a traditional redistricting principle to avoid unnecessarily splitting these types of governing units. **Figure 2** and **Figure 3** are maps of the political subdivisions depicted in **Table 3**. Though most villages are nested fully in one town, villages occasionally are in two different towns. An example of this is New Hyde Park, which has a piece in Hempstead and a piece in North Hempstead (see **Figure 4**). All villages which straddle the town lines belong in the protected category because they have populations under the 40% threshold, and therefore must be placed into a single district to the extent practicable.

Figure 2 Nassau County, Map of Cities and Towns



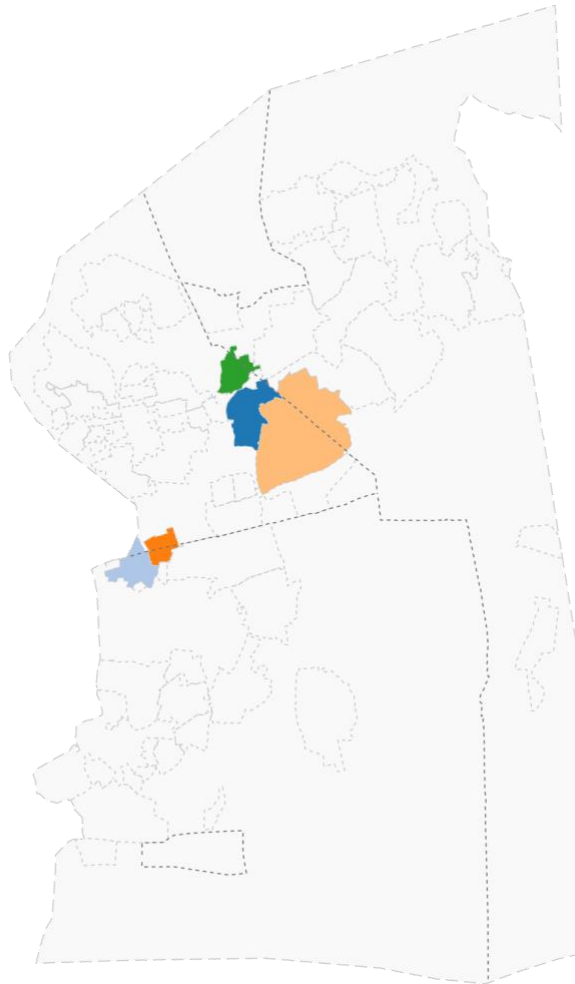
Note: In Nassau County, the geographical area is entirely encompassed by cities and towns. Villages, while situated within these cities and towns, may extend across political subdivisions, creating overlaps.

Figure 3 Nassau County, Map of Villages



Note: Villages, while situated within these cities and towns, may extend across political subdivisions, creating overlaps.

Figure 4 Nassau County, Map of Villages that Divide Cities/Towns



Note: Villages, while situated within these cities and towns, may extend across political subdivisions, creating overlaps.

VII. COMPARING THE 2023 REDISTRICTING PLAN WITH THE CERVAS ILLUSTRATIVE PLAN ON STATUTORY REDISTRICTING CRITERIA

31. The Cervas Illustrative Plan will serve as the primary comparator to the 2023 Redistricting Plan.

32. In creating the illustrative plan, I fully adhered to all provisions of the New York State Constitution, Section 34, the NYVRA, the federal Voting Rights Act, and the U.S. Constitutional requirements of equal population and equal protection. In my map-making, I avoided fragmenting existing political subdivisions such as villages and Census Designated Places (CDPs), and I sought to draw districts that were reasonably compact. The illustrative plan was created without regard to the location of incumbents, ensuring impartiality.

33. In my map-drawing, I adhered to the instructions regarding the treatment of minority groups set forth in the NYVRA. I considered the same racial and linguistic minorities identified by the federal Voting Rights Act and the NYVRA. Other groups were considered under the category of communities of interest.

34. In Nassau County, the largest minority groups—Blacks, those of Hispanic origin, and Asians—are highly geographically concentrated. Consequently, even race-blind map-drawing produces many districts with a large minority population. These demographic and geographic realities are reflected in Cervas Illustrative Plan, which was not drawn with race as a predominant criterion. Instead, the standard good-government criteria set out in Section 34 were the dominant considerations in my map-making. Following these criteria, the Cervas Illustrative Plan demonstrates that it is possible to draw a plan that meets statutory and traditional redistricting criteria while providing a viable remedy for the dilution of Black, Latino, and Asian voting strength that the Plaintiffs allege results from the 2023 Redistricting Plan.

35. In this section I analyze the 2023 Redistricting Plan and demonstrate that it does not satisfy the mandatory districting requirements under state and federal law. I compare the enacted plan to the Cervas Illustrative Plan.

36. My analysis finds that the 2023 Redistricting Plan fails to account for the significant growth of Nassau County’s Black, Latino, and Asian populations and reduction of its White population. Moreover, the 2023 Redistricting Plan divides protected communities of interest, is far less compact than necessary, splits villages with substantial minority populations, and fails to follow traditional redistricting principles.

A. COMPLIANCE WITH ONE-PERSON, ONE-VOTE

37. All districts in the 2023 Redistricting Plan and Cervas Illustrative Plan are within the +/- 2.5% deviation from the mean district allowable in New York.¹⁰

38. The population of the smallest district in the 2023 Redistricting Plan is 72,567. The largest district has 74,763 persons. The overall deviation is 2.99%, within the maximum allowable deviation of 5%.

39. The population for the smallest district in Cervas Illustrative Plan is 72,618. The largest district has 74,439. The overall deviation is 2.48%—lower than the 2013 Redistricting Plan. A comparison of the population and deviation of each district in the two plans is presented in **Table 4**.

¹⁰ This is true whether one measures population using LATFOR prison-adjusted data or 2020 decennial census data. I will report LATFOR data for this report.

Table 4 District Populations

District	2023 Redistricting Plan		Cervas Illustrative Plan	
	Total Pop	Deviation	Total Pop	Deviation
1	73,464	-0.1%	73,182	-0.5%
2	74,700	1.6%	72,873	-0.9%
3	73,370	-0.2%	72,624	-1.2%
4	73,076	-0.6%	73,965	0.6%
5	73,102	-0.6%	72,624	-1.2%
6	73,071	-0.6%	72,618	-1.2%
7	72,923	-0.8%	72,880	-0.9%
8	72,977	-0.7%	73,611	0.1%
9	74,682	1.6%	74,398	1.2%
10	74,302	1.1%	74,399	1.2%
11	73,276	-0.3%	74,414	1.2%
12	73,022	-0.7%	73,070	-0.6%
13	73,101	-0.6%	72,849	-0.9%
14	72,749	-1.1%	73,473	-0.1%
15	74,232	1.0%	73,283	-0.3%
16	72,567	-1.3%	74,439	1.3%
17	74,166	0.9%	74,426	1.2%
18	74,763	1.7%	74,408	1.2%
19	73,382	-0.2%	73,389	-0.2%

Note: The smallest and largest districts are highlighted.

B. COMPLIANCE WITH PROTECTIONS AGAINST ABRIDGMENT OR RETROGRESSION OF RACIAL MINORITY VOTING STRENGTH

40. Section 34 incorporates both federal and state provisions governing the protection against racial vote dilution. These protections include the U.S. Constitution’s 1st, 14th, and 15th amendments, the federal Voting Rights Act, first enacted in 1965 and most recently updated in 2006, and the NYVRA, enacted during the 2021-2022 legislative session.

41. The protections against racial vote dilution provided by the NYVRA (and incorporated into Section 34) prohibit the use of methods of election, such as redistricting plans, that have “the effect of impairing the ability of members of a protected class to elect

candidates of their choice or influence the outcome of elections, as a result of vote dilution.” Election Law § 17-206(a). The NYVRA contains protections for what are commonly referred to in redistricting as “coalition districts,” i.e., districts where multiple politically cohesive minority groups may be combined in a district for the purpose of protecting those groups against vote dilution. Election Law §§ 17-206(2)(c)(iv) & 17-206(8). The NYVRA identifies “new or revised districting or redistricting plans” as an appropriate remedial measure for a violation of the law’s protections against racial vote dilution. The NYVRA further provides that “evidence concerning whether members of a protected class are geographically compact or concentrated . . . may be a factor in determining an appropriate remedy.” Election Law § 17-206(2)(c)(viii).

42. Here, I am informed by counsel for Plaintiffs that the analysis of racially polarized voting conducted by Dr. Oskooii showed that Black, Latino, and Asian voters are politically cohesive both within each group and across groups. I am also informed that this analysis shows that White voters in Nassau County usually vote sufficiently as a bloc to defeat the preferred candidates of Black, Latino, and Asian voters.

43. With those principles and facts in mind, I consider whether and to what extent the 2023 Redistricting Plan and the Cervas Illustrative Plan contain districts that would provide Black, Latino, and Asian voters against protection against the impairment of their ability to elect their candidates of choice or influence the outcome of elections.

1. Majority-Minority Districts

44. Districts in which a minority group or groups of interest can form a majority of the CVAP (i.e., eligible voters) in a single member district are a well-established form of remedial district to protect against racial vote dilution or the impairment of minority political influence.

45. Here, I consider whether and to what extent it is possible and appropriate to draw reasonably configured districts for the Nassau County Legislature in which Black, Latino, and Asian residents constitute a majority of the CVAP. To illustrate the availability of a potential remedy for the impairment of Black, Latino, Asian voting strength alleged by Plaintiffs, I compare the number of such majority-minority districts in the 2023 Redistricting Plan to the Cervas Illustrative Plan.

46. The number of the majority-majority districts in the 2013 Redistricting Plan is an important baseline to consider in evaluating how the 2023 Redistricting Plan and the Cervas Illustrative Plan treat communities of color. Based on census data from the time of its adoption, the 2013 Redistricting Plan included three majority-minority districts.¹¹ By the time of the redistricting cycle after the 2020 Census, the 2013 Redistricting Plan contained four majority-minority districts by CVAP—three of which were heavily packed at or above 80% minority CVAP. All four of these districts had increases in the number of

¹¹ ACS 5-year estimates, 2006-2010.

minority voters, and decreases in the total number of Non-Hispanic White voters.¹² In addition, data on total population from the 2020 Census showed that all four of those majority-minority districts were more overpopulated than almost every other district in the 2013 Redistricting Plan by a wide margin.

47. Against that backdrop, the 2023 Redistricting Plan continues to provide for only four majority-minority districts by CVAP—no increase over the 2013 Redistricting Plan. The failure to include any more majority-minority districts is striking, based on the substantial increase in minority population and the concentration of overpopulation in the majority-minority districts.

48. In contrast, the Cervas Illustrative Plan provides for six majority-minority districts by CVAP. Drawing six majority-minority districts is consistent with the political geography and demography of Nassau County. The Cervas Illustrative Plan does so while also better honoring traditional districting principles than the 2023 Redistricting Plan. For example, the majority-minority districts in the Cervas Illustrative Plan are more compact and more reasonably configured than those in the 2023 Redistricting plan, as confirmed by a visual inspection as well as a comparison of their compactness scores (see **Table 5**).¹³ Further, unlike the 2023 Redistricting Plan, the Cervas Illustrative Plan does not unnecessarily divide political subdivisions or otherwise deviate from traditional districting principles to impair the electoral influence of voters of color.

Table 5 Comparing Compactness of Minority-Majority Districts

2023 Redistricting Plan			Cervas Illustrative Plan		
District	Reock	Polsby Popper	District	Reock	Polsby Popper
1	0.32	0.21	1	0.46	0.51
2	0.33	0.20	2	0.36	0.21
3	0.57	0.46	3	0.53	0.51
6	0.44	0.23	5	0.58	0.48
			6	0.35	0.33
			7	0.28	0.30
Average	0.42	0.28	Average	0.43	0.39

Note: A higher number indicates a more compact district. I will not directly compare which plan is better on a district-by-district basis because the districts themselves may not be comparable (i.e., one might run along a water boundary, affecting its score).

¹² ACS 5-year estimates, 2006-2010, 2016-2020.

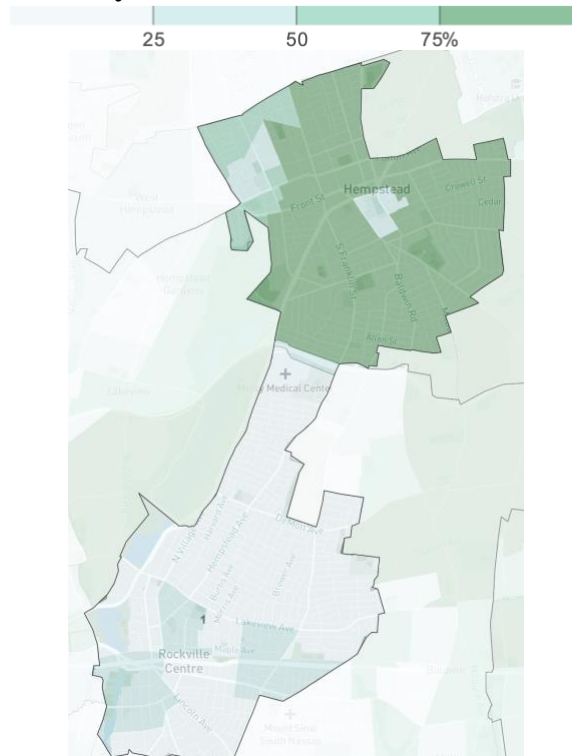
¹³ For further discussion of compactness and the measures employed here, *see supra* VII.D.

2. Majority-Minority Districts in the 2023 Redistricting Plan

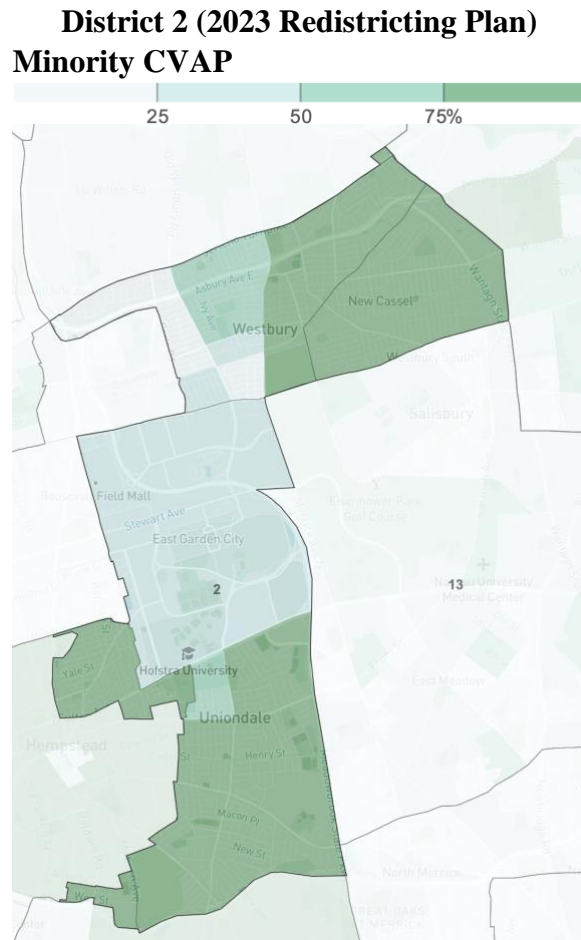
49. The 2023 Redistricting Plan contains four districts where Black, Hispanic, and Asian residents constitute at least 50% of the CVAP: Districts 1, 2, 3, and 6.

50. District 1 includes the entire Village of Rockville Centre, part of the Village of Hempstead, and a small part of the CDP of South Hempstead. This district unnecessarily divides the incorporated Village of Hempstead, whose population is less than the size of an ideal district. This district also unnecessarily divides the cognizable community of interest in the South Hempstead CDP. This district pairs both of those divided communities with the Village of Rockville Centre to form one of the least compact districts in the 2023 Redistricting Plan. Its dumbbell shape also chokes off minority population to the west of the district in areas like Lakeview CDP, preventing them from being included in a majority-minority district. District 1 is 60.2% minority CVAP.

**District 1 (2023 Redistricting Plan)
Minority CVAP**

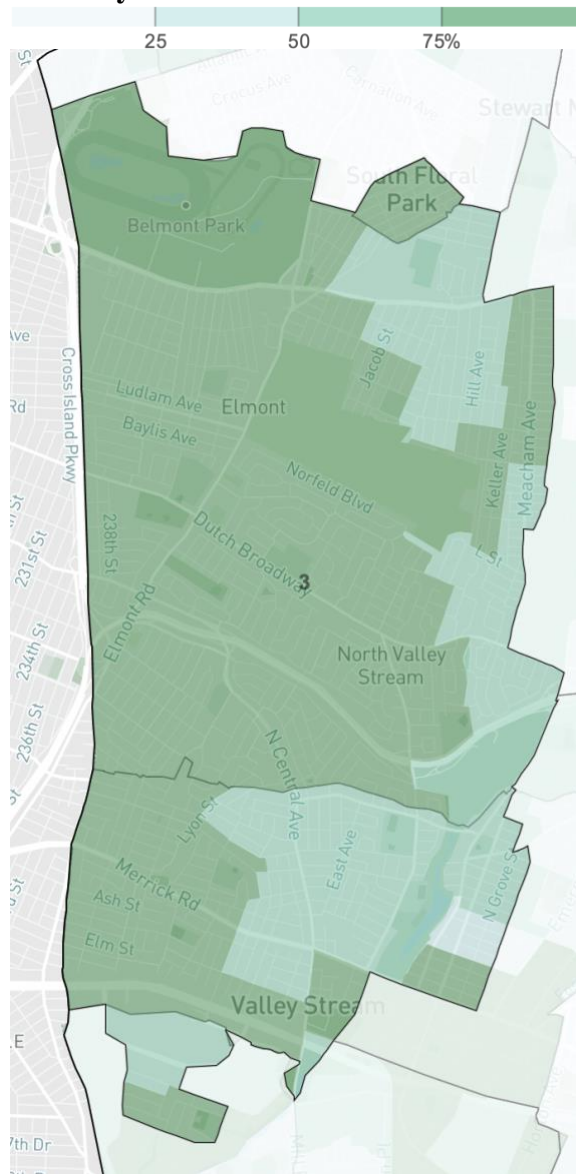


51. District 2 includes the Village of Westbury, Uniondale and New Cassel CDPs (except a small, non-contiguous part of New Cassel), and the two remaining pieces of the Village of Hempstead not in District 1. Again, this District unnecessarily divides the Village of Hempstead. District 2 is 75.2% minority CVAP. Because the Village of Hempstead need not be divided and the minority CVAP of District 2 is already very high, the inclusion of several Hempstead precincts where the population is overwhelmingly (~90% or more) Black and Latino raises serious concerns about the packing of voters of color in District 2.



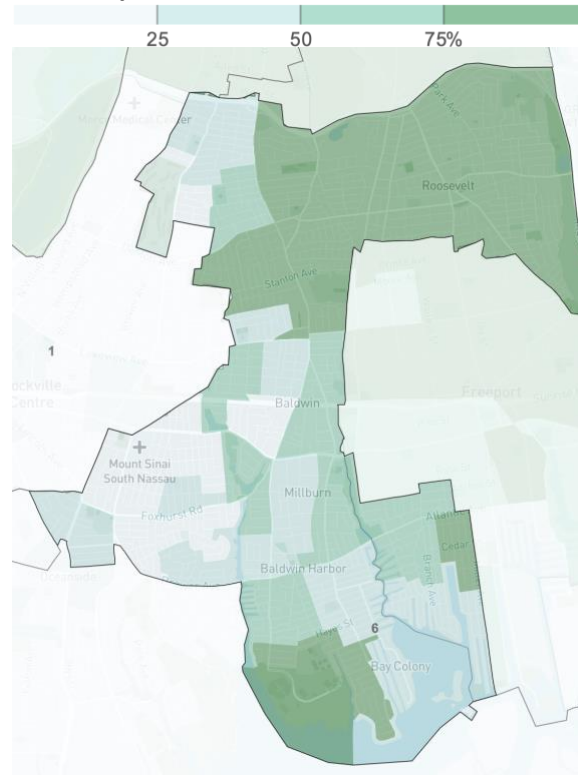
52. District 3 includes the Village of South Floral Park, part of the Village of Valley Stream, and parts of Elmont CDP, parts of North Valley Stream CDP, and part of South Valley Stream CDP. District 3 unnecessarily divides the Village of Valley Stream, which is less than the size of an ideal district, and combines it with Elmont and South Floral Park. This district also unnecessarily divides the community of interest in the South Valley Stream CDP. All of these communities are overwhelmingly minority, creating a district that is heavily packed with Black, Latino, and Asian residents—District 3 is 81.7% minority CVAP.

**District 3 (2023 Redistricting Plan)
Minority CVAP**



53. District 6 includes part of the incorporated Village of Freeport, the Roosevelt and Baldwin CDPs, part of Oceanside CDP, and the remaining part of South Hempstead CDP that is not in District 1.¹⁴ District 6 unnecessarily divides the village of Freeport, which is 80.3% minority VAP, as well as several communities of interest in those CDPs. Those unnecessary splits also create an unnecessarily ill-compact district combining disparate communities. District 6 is 64.7% minority CVAP.

**District 6 (2023 Redistricting Plan)
Minority CVAP**



54. No other districts in the 2023 Redistricting Plan have a minority CVAP over 45%. Asian residents do not exceed 26% of the CVAP in any district in the 2023 Redistricting Plan.

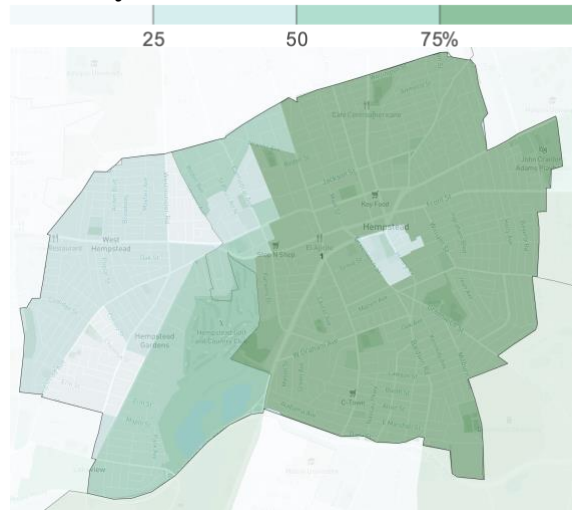
¹⁴ Also included in this district is a very small part of an area south of the district that is not included in any census identified place.

3. Majority-Minority Districts in the Cervas Illustrative Plan

55. The Cervas Illustrative plan creates six districts where the CVAP of Black, Latino, and Asian residents exceeds 50%: Districts 1, 2, 3, 5, 6, and 7.

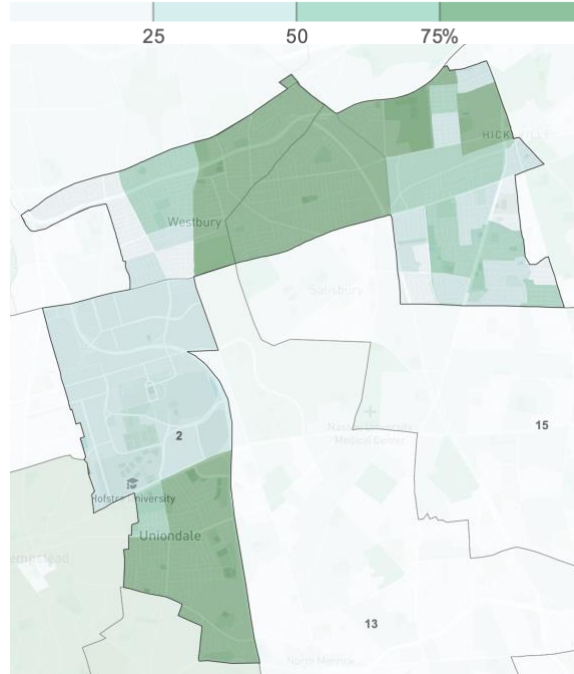
56. District 1 includes the entire Village of Hempstead and part of West Hempstead CDP. District 1 is 79.8% minority CVAP, a concentration attributable to keeping whole the Village of Hempstead, which has a total population that is approximately 95% people of color, consistent with traditional districting principles and Section 34's consideration of political subdivisions and communities of interest.

District 1 (Cervas Illustrative Plan)
Minority CVAP



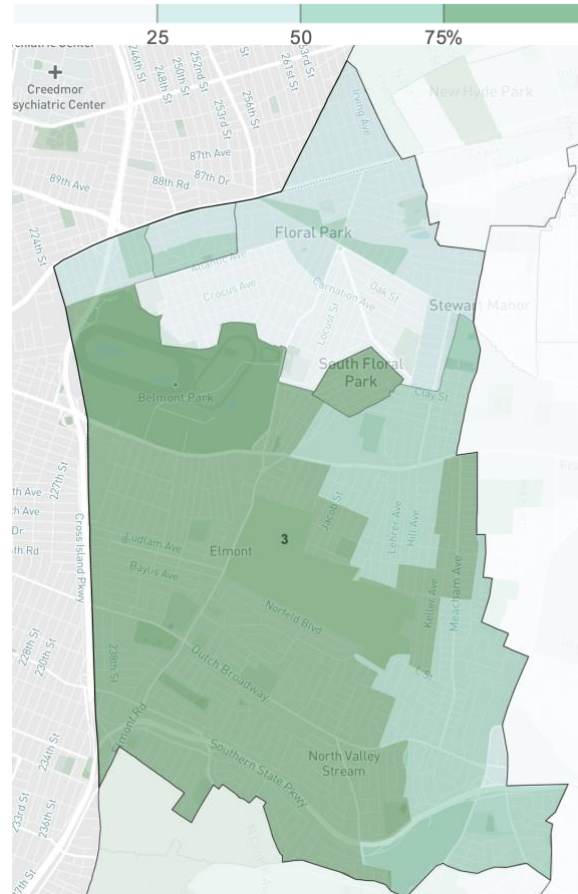
57. District 2 includes the Village of Westbury, New Cassell CDP, and part of Uniondale CDP, and part of Hicksville CDP. District 2 is 65.2% minority CVAP. This District avoids splitting any incorporated villages, only splitting CDPs as necessary for population equality and is less racially packed than the geographically corresponding district in the 2023 Redistricting Plan, which has 75.2% minority CVAP.

**District 2 (Cervas Illustrative Plan)
Minority CVAP**



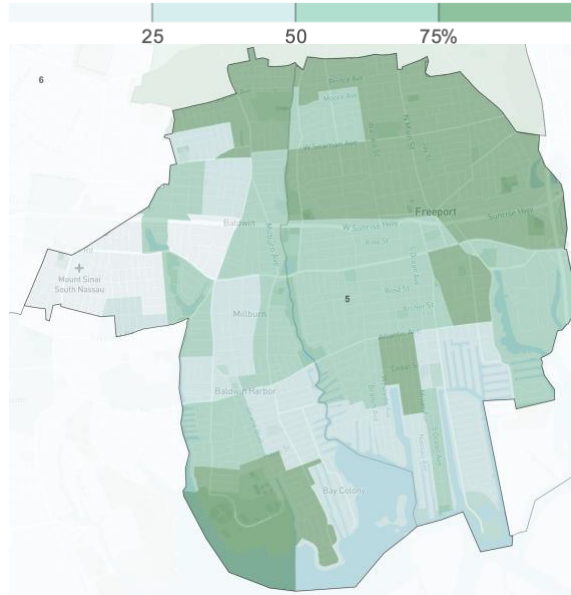
58. District 3 includes the villages of Floral Park, South Floral Park, and Bellerose, Elmont CDP, and parts of Franklin Square and North Valley Stream CDP. District 3 has a minority CVAP of 69.3% and is highly compact. Unlike 2023 Redistricting Plan’s District 3, Illustrative District 3 avoids splitting the incorporated Village of Valley Stream and packing voters of color.

**District 3 (Cervas Illustrative Plan)
Minority CVAP**



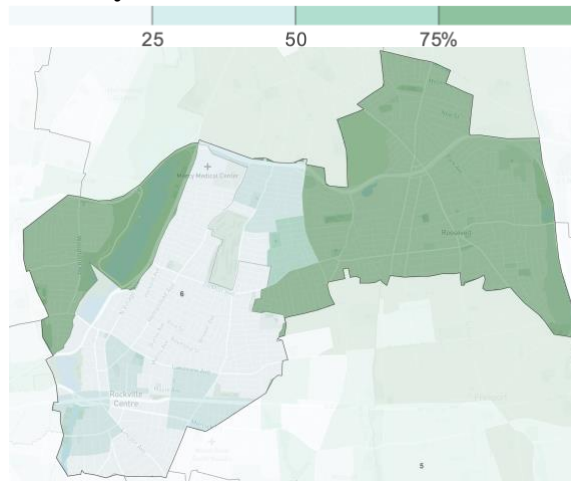
59. District 5 includes the entire village of Freeport and parts of Baldwin and Oceanside CDPs. District 5 is 64.1% minority CVAP. This District is highly compact and avoids unnecessarily dividing the incorporated Village of Freeport.

**District 5 (Cervas Illustrative Plan)
Minority CVAP**



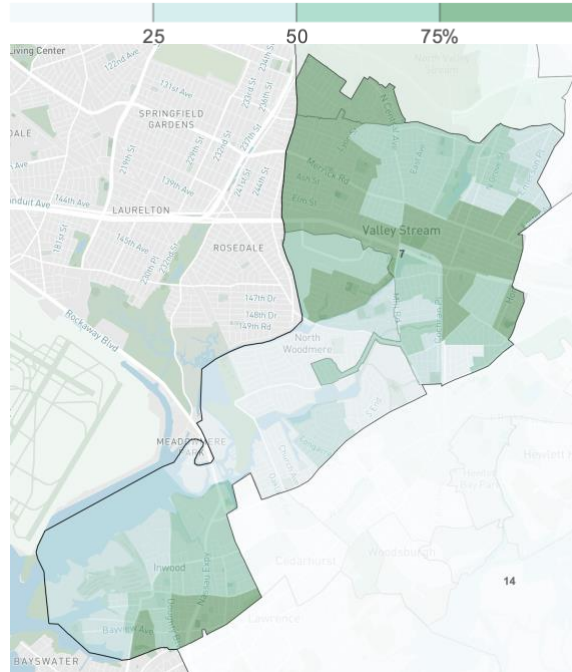
60. District 6 includes the village of Rockville Centre, Roosevelt and Lakeview CDPs, and parts of Baldwin and Uniondale CDPs. District 6 is 61.1% minority CVAP. District 6 is compact and splits no villages.

**District 6 (Cervas Illustrative Plan)
Minority CVAP**



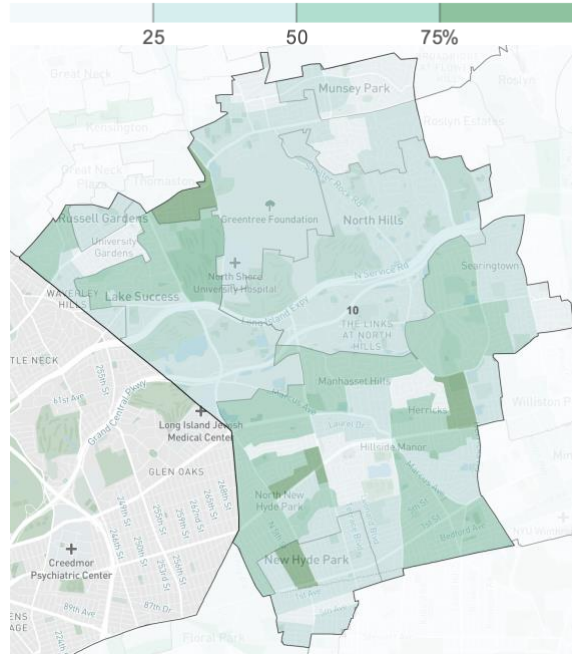
61. District 7 includes the entire village of Valley Stream, South Valley Stream and Inwood CDP, and part of Woodmere CDP. District 7 is 61.8% minority CVAP. District 7 is reasonably configured, largely based on the southern portions of District 3 in the 2013 Redistricting Plan and avoids splitting the Village of Valley Stream.

**District 7 (Cervas Illustrative Plan)
Minority CVAP**



62. District 10 also has a sizable minority population. Asian residents make up 34.1% of the CVAP of this district. Asian, Black, and Latino residents combine to constitute 46.9% of the CVAP.

District 10 (Cervas Illustrative Plan) Minority CVAP



4. *Comparative Performance Analysis of Majority-Minority Districts in the 2023 Redistricting Plan and the Cervas Illustrative Plan*

63. To assess whether and to what extent the 2023 Redistricting Plan impairs Black, Latino, and Asian voters' ability to elect their candidates of choice or influence the outcome of elections, I have conducted an electoral performance analysis of the majority-minority districts in each plan. I focus on those areas where the Cervas Illustrative Plan draws an additional majority-minority compared to the 2023 Redistricting Plan. **This performance testing shows that minority opportunities to elect their candidates of choice and influence elections are impaired under the 2023 Redistricting Plan.**

64. A performance analysis reconstructs previous election results to evaluate the success of different candidates under an adopted map compared to an illustrative map. This analysis does not rely on estimation methods. Instead, it identifies the voting precincts within the adopted and/or illustrative districts of interest and aggregates the votes actually cast for each candidate in each district. The total votes for each candidate are then divided by the total votes cast in the election for that district to calculate vote percentages.

65. My electoral performance analysis focuses on whether and to what extent the preferred candidates of minority voters in recent county-wide elections would have prevailed over the preferred candidates of white voters in contests where voting is racially polarized. By looking at the difference in how the preferred candidates of minority voters would have performed in the areas of interest under the 2023 Redistricting Plan compared to under the Cervas Illustrative Map, the net change in success rates can provide information about the extent to which the 2023 Redistricting Plan impairs the ability of minority voters to elect their candidates of choice or influence the outcome of elections.

66. To conduct this performance testing, counsel for Plaintiffs provided me with election data at the census block level and information on about racial bloc voting in the three most recent elections for Nassau County Executive, District Attorney, Comptroller, and Clerk. Counsel for the Plaintiffs informed that according to Prof. Oskooii's analysis of racially polarized voting (RPV), Black, Hispanic, and Asian voters exhibit cohesive voting patterns and are racially polarized from non-Hispanic White voters in all seven contests in the 2017 and 2021 elections. In addition, I am informed that in the 2019 contest for District Attorney, a majority of both white voters and voters of color preferred the same candidate, which makes that election less helpful in determining whether a district will provide an effective opportunity for minority voters to elect their candidates of choice where voting is racially polarized.

67. Counsel has provided me the names of the minority candidates of choice for each of the seven relevant elections. The names and two-party vote share of the candidates preferred by minority voters and white voters in county-wide election results are shown in **Table 6**.

Table 6 County Elections Returns

Election	Vote Share for Minority-Preferred Candidate	Vote Share for White-Preferred Candidate
<i>2017</i>		
County Clerk	45.7% (Bennett)	54.3% (O’Connell)
County Comptroller	50.8% (Schnirman)	49.2% (Labriola)
County Executive	51.4% (Curran)	48.6% (Martins)
<i>2021</i>		
County Clerk	38.5% (Brown)	61.5% (O’Connell)
County Comptroller	41.2% (Cronin)	58.8% (Phillips)
County Executive	49.6% (Curran)	50.4% (Blakeman)
District Attorney	41.7% (Kaminsky)	58.3% (Donnelly)

Note: Two-Party vote share. Candidate name in parentheses.

68. My performance analysis shows that the Cervas Illustrative Plan and the 2023 Redistricting Plan each provide four majority minority districts that perform 100% of the time (7 out of 7 contests) for the preferred candidates of minority voters—that is, the minority-preferred candidates prevail in every contest. These districts are numbered 1, 2, 3, and 6 in both the 2023 Redistricting Plan and the Cervas Illustrative Map.

69. The Cervas Illustrative Plan also creates two additional majority-minority districts that perform for the minority-preferred candidates most or all of the time. Illustrative District 5 performs for minority-preferred candidates 100% of the time (7 out of 7 contests) and Illustrative District 7 performs for minority-preferred candidates 71% of the time (5 out of 7 contests).

70. To illustrate one way in which the 2023 Redistricting Plan impairs the electoral opportunities of voters of color, I compare the performance of the two incremental majority-minority districts in the Cervas Illustrative Plan to their geographic counterparts in the 2023 Redistricting Plan.

i. Greater Valley Stream

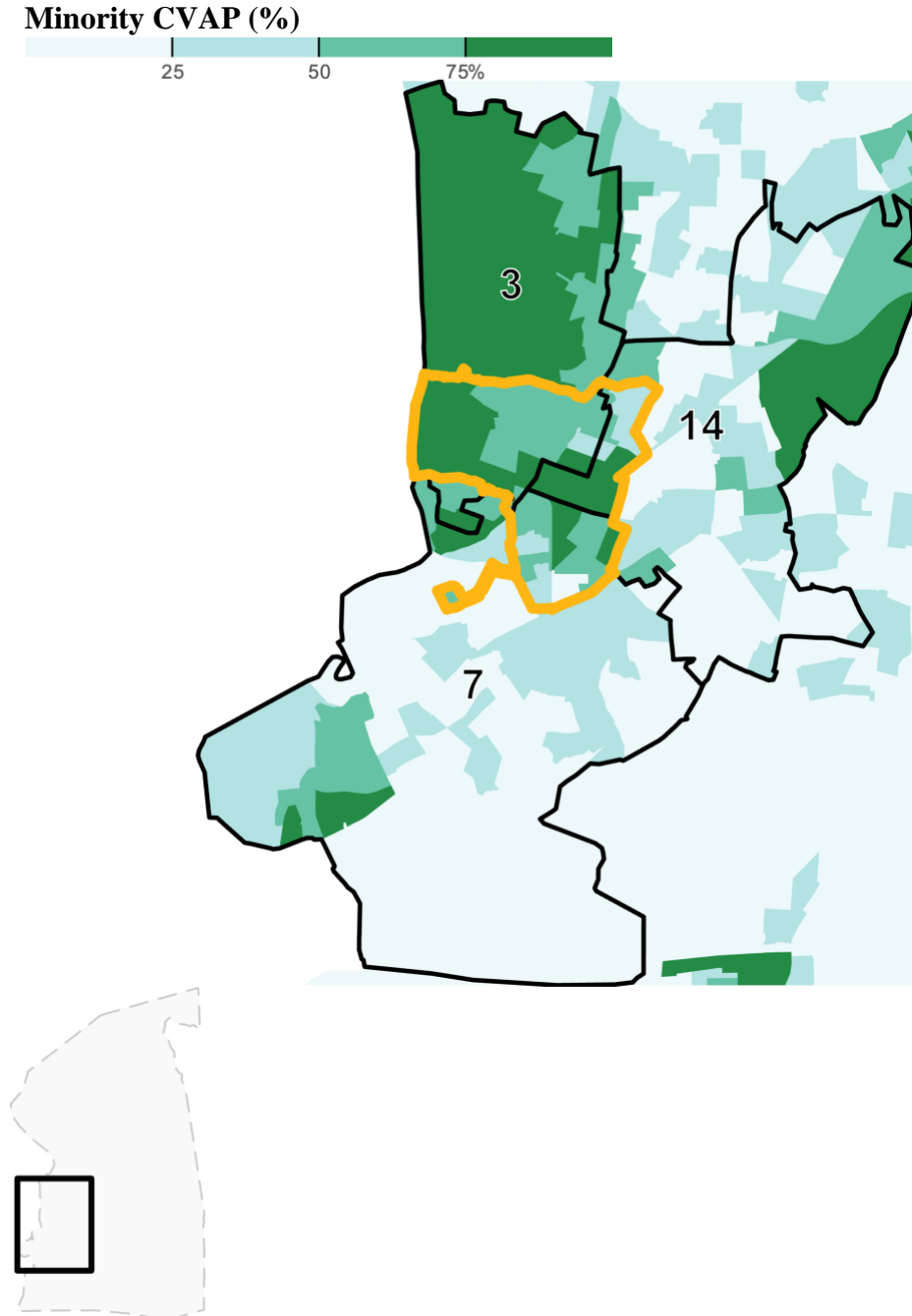
71. Illustrative District 7 includes the entire undivided incorporated Village of Valley Stream at its core. In the 2023 Redistricting Plan, portions of the Village of Valley Stream are split between the 2023 Redistricting Plan's Districts 3, 7, and 14. Enacted District 3 is a heavily packed majority-minority district (75.2% minority CVAP); however, Enacted Districts 7 and 14 are majority-white districts (65.2% and 61.5% NH-White CVAP, respectively). In the Cervas Illustrative Plan, both Illustrative Districts 3 and 7 are majority-minority districts (69.3% and 61.8% minority CVAP, respectively) and District 14 is a majority-white district (77.9% NH-White CVAP). This set of three districts in each plan are geographic counterparts.

72. My performance analysis demonstrates that the 2023 Redistricting Plan reduces the ability of minority voters to elect their candidate of choice by failing to create a new majority-minority district in the Valley Stream area.

73. In the 2023 Redistricting Plan, the heavily packed Enacted District 3 performs 100% of the time for minority-preferred candidates, but Enacted District 7 performs only 14% of the time (1 out of 7) and Enacted District 14 performs 0% of the time. By comparison, the Cervas Illustrative Plan create a new majority-minority district in Illustrative District 7 that performs 71% percent of the time (5 out of 7) without any loss in performance in the adjacent majority-minority district in Illustrative District 3, which continues to perform 100% of the time (7 out of 7), and the minority preferred candidate never prevails in Illustrative District 14 (0 out of 7).

74. The conspicuous difference between this area of the map is that the Cervas Illustrative Plan keeps the Village of Valley Stream undivided within Illustrative District 7 while the 2023 Redistricting Plan unnecessarily divides Valley Stream into three legislative districts—putting much of the village's heavily minority population into the already-packed Enacted District 3, while cracking other parts of the village into majority-white Enacted Districts 7 and 14. This three-way split of Valley Stream is shown in **Figure 5**.

Figure 9 The Village of Valley Stream Split between Districts 3, 7, and 14, 2023 Redistricting Plan



Note: The Choropleth is the Census Block-Group shapefile combined with CVAP population from the 2018-2022 American Community Survey. The yellow outline is the village of Valley Stream. District boundaries are the black lines.

- ii. Greater Freeport

75. In the 2023 Redistricting Plan, the Village of Freeport is divided into Enacted Districts 5 and 6. Enacted District 5 is not a majority-minority district (44.1% minority CVAP). Enacted District 6 is a majority-minority district (64.7% minority CVAP). Illustrative District 5 in the Cervas Illustrative Plan includes the entire undivided Village of Freeport at its core. In the Cervas Illustrative Plan, Illustrative Districts 5 and 6 are adjacent majority-minority districts (64.1% and 61.1% minority CVAP, respectively) and serve as geographic counterparts to Enacted Districts 5 and 6.

76. My performance analysis demonstrates that the 2023 Redistricting Plan reduces the ability of minority voters to elect their candidate of choice or influence the outcome of elections by unnecessarily cracking voters of color and violating traditional district principles.

77. In the 2023 Redistricting Plan, performance testing shows that in Enacted District 6, the minority-preferred candidates win 100% of the time; however, in Enacted District 5, the minority preferred candidates win only 66% of the time (4 out of 6 contests with the seventh race a statistical tie). Looking at the most recent county-wide contests in 2021, minority-preferred candidates win only 33% of the time (1 out of 3 contests with the fourth race a statistical tie). By comparison, the Cervas Illustrative Plan creates a second majority-minority district with no loss in performance to the first majority-minority district. Both Illustrative District 5 and Illustrative District 6 perform 100% of the time (7 out of 7 contests). The 34% reduction in performance over all contests and the 67% reduction in performance in the most recent contests in 2021 show that the 2023 Redistricting Plan impairs the electoral opportunities and political influence of communities of color.

78. The conspicuous difference here is the Cervas Illustrative Plan's adherence to statutory and traditional redistricting principles and the 2023 Redistricting Plan's failure to adhere to them. The Cervas Illustrative Plan keeps the Village of Freeport whole, draws more compact districts, and maintains communities of interest in both Illustrative District 5 and Illustrative District 6. In contrast, Enacted District 5 cracks communities of color by unnecessarily dividing the Village of Freeport and pairing much of that village's community of color with a heavily white community across an obvious line of residential segregation.

79. Performance analysis of these geographic counterpart areas shows that, in comparison to an illustrative plan that complies with the statutory redistricting criteria, the 2023 Redistricting Plan reduces the abilities of minority voters to elect their candidates of choice and influence the outcome of elections.

Table 7 Performance Analysis, 2023 Redistricting Plan

District	2017			2021				%
	Clerk	Comp.	Exec	Clerk	Comp.	Exec	DA	
1	YES	YES	YES	YES	YES	YES	YES	100%
2	YES	YES	YES	YES	YES	YES	YES	100%
3	YES	YES	YES	YES	YES	YES	YES	100%
5	YES	YES	YES	NO	TIE	YES	NO	57.1%
6	YES	YES	YES	YES	YES	YES	YES	100%
7	NO	YES	NO	NO	NO	NO	NO	14.3%
14	NO	NO	NO	NO	NO	NO	NO	0%

Note: Table indicates if the minority candidate of choice was victorious in the district.

Table 8 Performance Analysis, Cervas Illustrative Plan

District	2017			2021				%
	Clerk	Comp.	Exec	Clerk	Comp.	Exec	DA	
1	YES	YES	YES	YES	YES	YES	YES	100%
2	YES	YES	YES	YES	YES	YES	YES	100%
3	YES	YES	YES	YES	YES	YES	YES	100%
5	YES	YES	YES	YES	YES	YES	YES	100%
6	YES	YES	YES	YES	YES	YES	YES	100%
7	YES	YES	YES	NO	NO	YES	YES	71.4%
14	NO	NO	NO	NO	NO	NO	NO	0%

Note: Table indicates if the minority candidate of choice was victorious in the district.

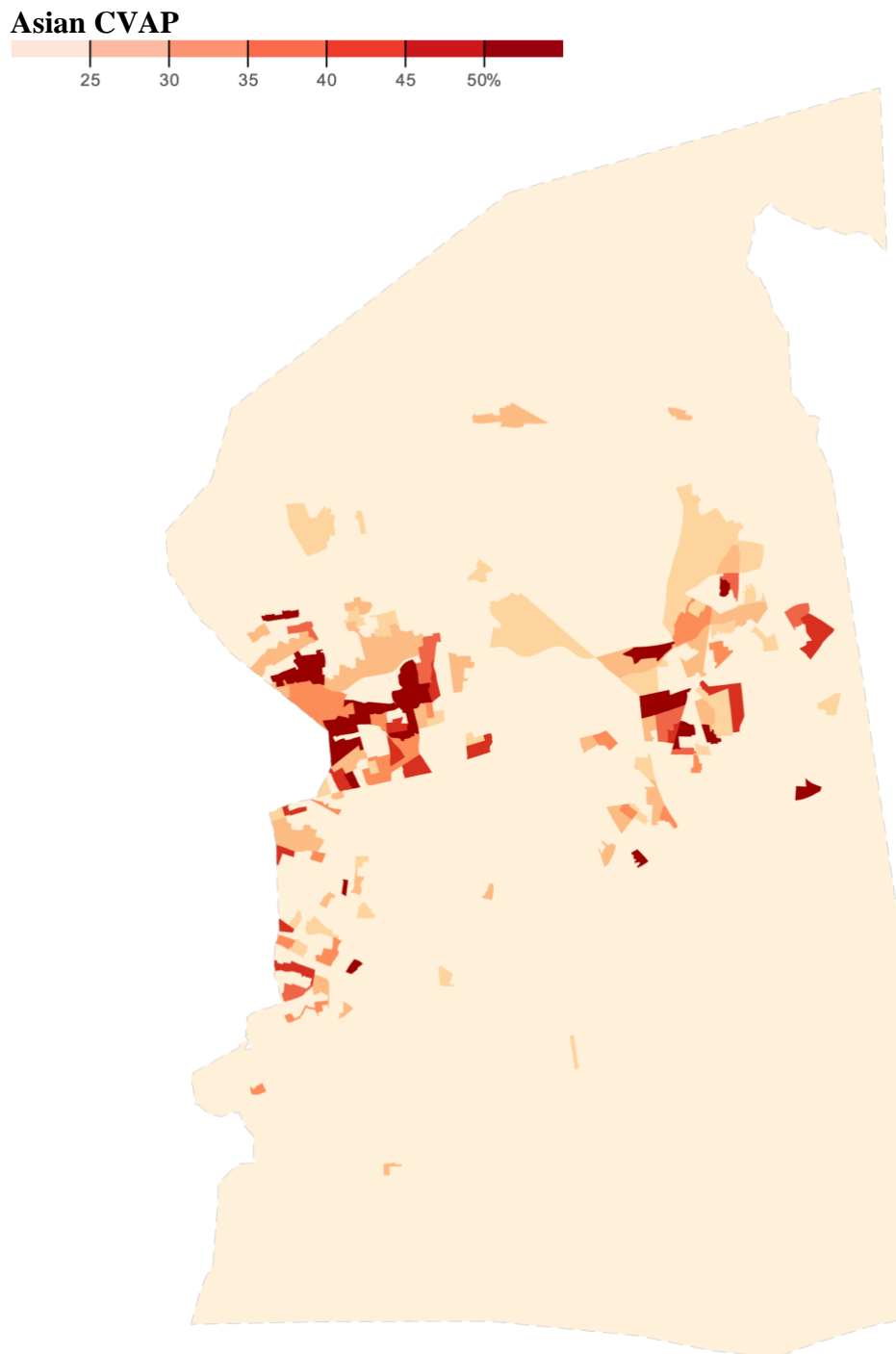
80. The minority candidate of choice is victorious in all 28 elections across the four majority-minority CVAP districts in the 2023 Redistricting Plan. However, in Enacted District 5 (44.1% minority CVAP), the minority candidate of choice loses in 3 out of 7 elections. In the most recent elections analyzed here, the minority candidate of choice wins in only one of four elections (25%) in Enacted District 5. Thus, the 2023 Redistricting Plan offers minority voters the opportunity to elect candidates of their choice in only four districts (**Table 7**).

81. By contrast, the Cervas Illustrative Plan contains six districts where Black, Hispanic, and Asian voters are a majority of the electorate and can elect candidates of their choice (**Table 8**). Under the 2023 Redistricting Plan, minority voters have a diminished ability to select candidates of their choice as compared to a neutral benchmark.

5. *Greater New Hyde Park Community of Interest*

82. I have been asked by counsel to determine whether it is possible to draw a district based on traditional redistricting criteria in the greater New Hyde Park area that does not divide the large and growing Asian community there and keeps together communities of interest in a single district. The choropleth map in **Figure 6** shows that there are two significant concentrations of Asian populations in Nassau County. One is in the eastern part of the county in the areas including Birchwood, Hicksville, and Locust Grove. The other population is in the north-west part of the county primarily in the town of North Hempstead. It includes the areas of New Hyde Park, Hillside Manor, and Lake Success.

Figure 6 Asian CVAP



Note: This map depicts the block-group level geographies with CVAP.

83. Nassau County has an Asian CVAP of around 10%, the equivalent of one and a half districts. Because the majority of Asian voters are concentrated in two non-contiguous areas shown in **Figure 6**, I do not believe it is possible to draw one district in which Asian voters make up a majority of the CVAP. However, given the large number of Asian voters county-wide, it is possible to draw a district where Asian voters are a significant (and growing) proportion of the voting residents. This district is in the north-western quadrant of the county, which encompasses Lake Success (52.9% Asian VAP), Thomaston (43.4%), and New Hyde Park (37.8%). New Hyde Park is particularly important to Asian electoral influence because the village population is about 15% of an entire district.

84. The 2023 Redistricting Plan splits precincts with large Asian voter populations between three districts: Districts 9, 10, and 18. In each of these districts, Asian voters are grouped with much larger numbers of Non-Hispanic White voters. This contrasts with District 10 in the Cervas Illustrative Plan, which has an Asian CVAP of 34.1%. The demographic details for these three districts in the 2023 Redistricting Plan and Illustrative District 10 from the Cervas Illustrative Plan are presented in **Table 9**.

Table 9 Demographics Districts in the Greater New Hyde Park Community of Interest

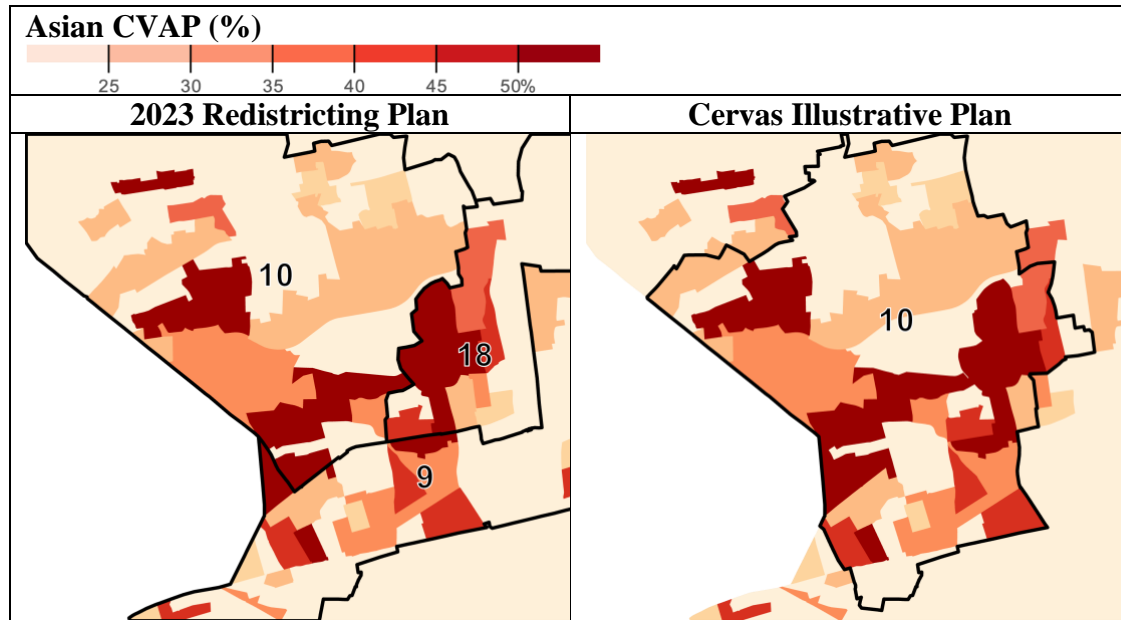
	2023 Redistricting Plan			Cervas Illustrative Plan
	District 9	District 10	District 18	District 10
<i>Non-Hispanic Whites</i>	63.3%	68.9%	76.1%	53.0%
<i>Asians</i>	22.6%	21.1%	14.6%	34.1%
<i>Hispanics</i>	11.5%	6.0%	7.2%	8.3%
<i>Blacks</i>	1.8%	3.5%	1.8%	3.7%
<i>Other</i>	0.7%	0.4%	0.3%	0.8%
<i>Minority</i>	36.6%	31.1%	24.0%	47.0%

Note: CVAP, ACS 5-year estimates, 2018-2022

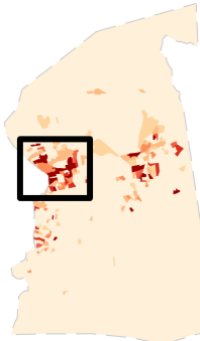
85. District 10 in the Cervas Illustrative Plan is a highly compact district built on traditional redistricting principles. It combines the village of New Hyde Park with other villages with large Asian communities, including Lake Success, Russell Gardens, and North Hills. It is fully within the town of North Hempstead, except for a small part of the village of New Hyde Park that is also part of the Town of Hempstead (recall that New Hyde Park is in both towns; the village is protected from splitting by Section 34, while the town is not). Illustrative District 10 only divides two CDPs, which is necessary to achieve equal population. It is far more compact than the average of districts in the 2023 Redistricting Plan.

86. Illustrative District 10 keeps the greater New Hyde Park community of interest intact. This contrasts with the 2023 Redistricting Plan, which *cracks* that community into three districts (**Figure 7**).

Figure 7 Greater New Hyde Park Communities of Interest

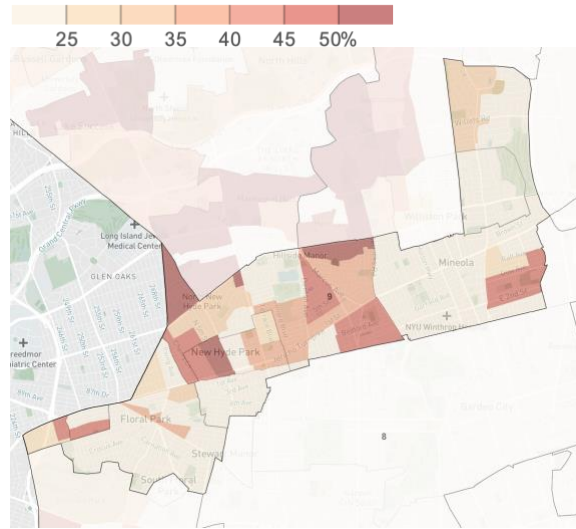


Area of Detail



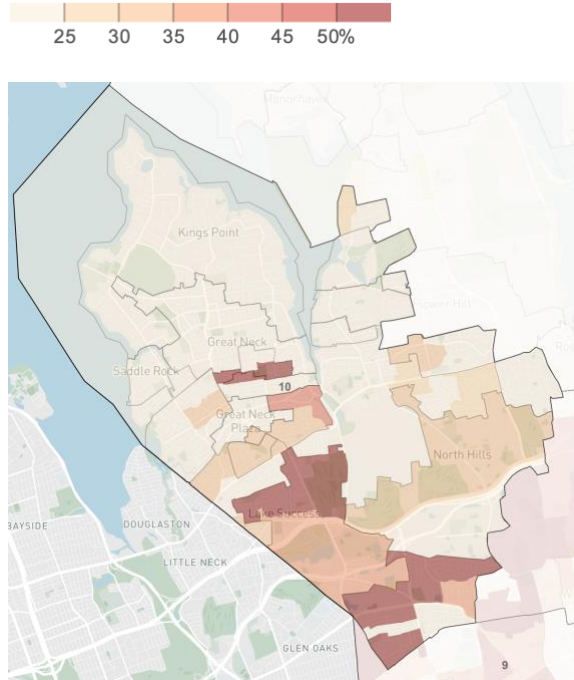
87. In the 2023 Redistricting Plan, New Hyde Park is in District 9. As a protected incorporated village, New Hyde Park cannot be split. Together with North New Hyde Park, a CDP, these two communities alone represent 35% of the ideal population of a district. New Hyde Park has an Asian voting age population of 37.8%, while North New Hyde Park has an Asian VAP of 43.8%. Not only does the 2023 Redistricting Plan fail to keep New Hyde Park and North New Hyde Park in the same district, it splits North New Hyde Park between Enacted District 9 and Enacted District 10. Enacted District 9 is 63.3% Non-Hispanic White CVAP (see **Table 9**). New Hyde Park, with its large and growing Asian population, is combined with villages such as East Williston, which has an 82.5% Non-Hispanic White VAP, and Mineola, which has a 63% Non-Hispanic White VAP.

District 9 (2023 Redistricting Plan) Asian CVAP

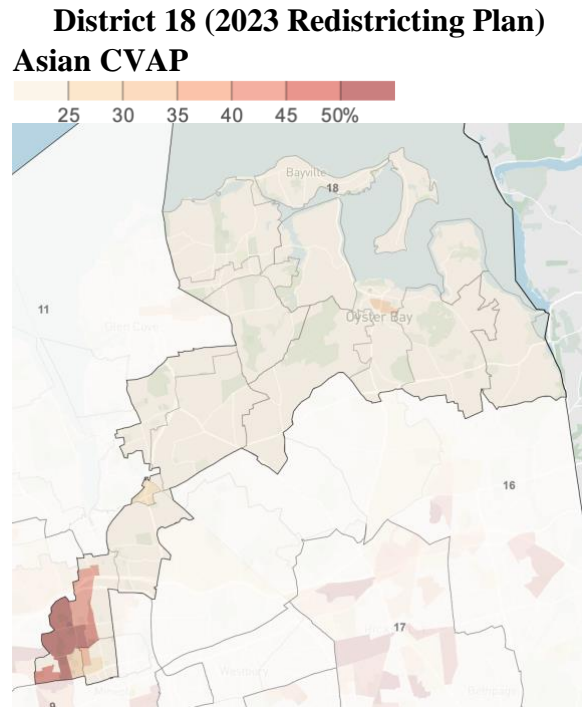


88. The villages of Lake Success and Thomaston are in Enacted District 10. These two villages are placed in a district with villages with significant white majorities like Great Neck (69.9% NH-White VAP), Kings Point (82.2% NH-White), and Saddle Rock (83.9% NH-White).

**District 10 (2023 Redistricting Plan)
Asian CVAP**



89. Enacted District 18 includes CDPs Herricks (61.9% minority VAP), Searingtown (56.7%), and Alberson (41.3%)—which each have large Asian populations—but then stretches across the county, connecting these CDPs to predominately Non-Hispanic White villages such as Bayville (86.3% NH-White) and Centre Island (89.5% NH-White).



90. The Asian CVAP in Nassau County is growing. The Cervas Illustrative Plan accounts for this growth by creating a compact District 10 that does not unnecessarily divide this growing Asian population center. In Cervas Illustrative Plan, Lake Success and New Hyde Park are both in District 10, while Thomaston is in District 11. The 2023 Redistricting Plan cracks this geographically proximate community of interest into two ill-compact districts and one relatively compact district (see **Table 10**).

Table 10 Compactness of Districts in the Greater New Hyde Park Area

District	2023 Redistricting Plan		District	Cervas Illustrative Plan	
	Reock	Polsby Popper		Reock	Polsby Popper
9	0.199	0.223	9	0.491	0.311
10	0.464	0.406	10	0.517	0.396
18	0.248	0.214	18	0.440	0.423
Average	0.304	0.281		0.483	0.377

91. In the Cervas Illustrative Plan, District 10 is highly compact, as evidenced by both the Reock and Polsby-Popper measures. In stark contrast, Districts 9 and 18 in the 2023 Redistricting Plan are markedly less compact (see **Table 10**). According to the Reock measure, these districts are the least compact within the entire plan. Their Polsby-Popper scores are similarly poor, ranking as the third and fourth least compact, respectively. Districts 9 and 18 in the 2023 Redistricting Plan are less compact than every district in the Cervas Illustrative Plan based on the Reock measure and less compact than all but one district in the Cervas Illustrative Plan according to the Polsby-Popper measure. Moreover, the compactness of Districts 9 and 18 in the Cervas Illustrative Plan demonstrates that the compactness of District 10 was not achieved at the expense of these surrounding districts.

92. The overall minority proportion of CVAP in Cervas Illustrative District 10 is 47.0%. Asian residents make up the plurality of the minority community, and together with Black and Latino voters (with whom I am informed Asian voters in Nassau are politically cohesive)—can influence the outcome of elections in this district. The 2021 county elections in Nassau County are the most recent county-wide elections and therefore the most informative to test electoral performance for minority voters. 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. Between the 2017 and 2021 elections, the Asian CVAP of Illustrative District 10 has increased by 10% from 15,122 persons to 16,668 (28.9% of the district's population to 32.8%).¹⁵ Moreover, between 2010 and 2022, the Asian CVAP in Illustrative District 10 increased from 9,562 to 18,345. This 91.9% increase in Asian share can have a meaningful effect on electoral outcomes, but only if the context of the district lines that do not diminish their influence.

93. Based on my electoral performance analysis of Illustrative District 10 and its geographic counterparts in the 2023 Redistricting Plan, I conclude that the 2023 Redistricting Plan impairs the ability of Asian voters in the greater New Hyde Park area to influence the outcome of elections and, by comparison, Illustrative District 10 provides Asian voters an opportunity to influence the outcome of elections. The geographic counterparts of Illustrative District 10 are Enacted Districts 9, 10, and 18—the three districts in the 2023 Redistricting Plan that divide up the concentrated Asian community in the greater New Hyde Park area.

94. In the most recent county-wide elections in 2021, there were four county-wide races and in Enacted Districts 9, 10, and 18 the candidate preferred by Asian voters was defeated in every contest in each of the three districts—a performance rate of 0% (0 out of 12). By contrast, under the Cervas Illustrative Plan, the Asian-preferred candidate would have won in District 10 in the County Executive race—a performance rate of 25% (1 out of 4).

95. For completeness, I also consider the performance analysis of these districts in the 2017 elections and the results do not change my conclusions. In the 2023 Redistricting Plan, Asian-preferred candidates do not win in any contests in either of Enacted District 9 or 18's seven contests (three in 2017 and four in 2021)—a performance rate of 0% (0 out of 14). In Enacted District 10, the Asian-preferred candidate would have won all three 2017 elections but would have been defeated in all four contests in the 2021 elections. Overall, the three districts in the 2023 Redistricting Plan that crack Asian voters and the greater New Hyde Park community of interest support the Asian-preferred candidates in only three out of 21 contests (14.3%). In contrast, in Cervas Illustrative District 10, the preferred Asian candidate wins one election in 2017 and one in 2021, resulting in a winning percentage of 28.6%.

¹⁵ Difference is found by taking the difference between the ACS 5-year estimates, 2013-2017 and 2017-2021.

96. Focusing on the 2021 contests alone, the Asian-preferred candidates are successful in none of the 12 elections (0%) under the 2023 Redistricting Plan, whereas they win one out of four elections (25%) under the Cervas Illustrative Plan. These results, particularly from the 2021 elections, demonstrate that Asian voters have materially greater electoral influence in Cervas Illustrative District 10 compared to the 2023 Redistricting Plan's Districts 9, 10, and 18.

97. The geographically compact greater New Hyde Park community consisting of a significant Asian population is *cracked* into three districts in the 2023 Redistricting Plan. This cracking dilutes the influence of Asian voters. The Cervas Illustrative Plan creates a district based on traditional redistricting criteria in greater New Hyde Park that allows Asian voters to influence electoral outcomes.

C. CONTIGUITY

98. “The term ‘contiguous territory’ has been defined by the [New York] Court of Appeals as ‘territory touching, adjoining and connected, as distinguished from territory separated by other territory.’”¹⁶ The 2023 Redistricting Plan is contiguous. The Cervas Illustrative plan is contiguous.

Both plans are contiguous.

¹⁶ Bay Ridge Cmty. Council v Carey, 115 Misc. 2d 433, 436, 454 N.Y.S.2d 186, 188 (Sup. Ct. 1982) (quoting Matter of Sherrill v. O'Brien, 188 NY 185, 207 (N.Y. 1907)), aff'd sub nom. Bay Ridge Cmty. Council, Inc. v. Carey, 103 A.D.2d 280 (1984).

D. COMPACTNESS


99. Social scientists and mathematicians have introduced various metrics to assess the compactness of electoral districts, essentially evaluating how closely a district's shape aligns with that of a simple geometric figure, typically a circle. Two prominent compactness measures are the Reock and Polsby-Popper indices. The Reock index calculates the ratio of the district's area to the area of the smallest encompassing circle. The Polsby-Popper index compares the district's area to the area of a circle whose circumference equals the district's perimeter. These indices yield scores ranging from 0 to 1, where scores nearing 1 indicate high compactness.

100. Typically, each district's score is averaged across the plan to obtain a summary of the plan's compactness. However, averaging compactness scores across all districts may overlook specific districts with notable compactness issues. Despite a strong correlation between the Reock and Polsby-Popper measures ($r=0.97$ in the 2023 Redistricting Plan), they quantify distinct aspects of compactness. The Reock index focuses on the proximity of district boundaries to the geographic center, while the Polsby-Popper index assesses the irregularity of the district's perimeter.

The 2023 Redistricting Plan has an average Reock compactness of 0.412 and an average Polsby-Popper compactness of 0.328.¹⁷ Districts 1, 2, 9, and 18 are particularly ill-compact, having among the lowest scores one at least one of the two compactness measures, and below average on both. **Table 11** shows all the compactness scores for each district in the 2023 Redistricting Plan, ordered from least compact to most compact.

¹⁷ Compactness is measured in Dave's Redistricting with all water areas included. If one were to measure these using district geographies with the water census blocks removed, some district scores and the average would decrease. Polsby-Popper scores would be acutely affected, since it measures the perimeter of the district.


Table 11 Compactness of the 2023 Redistricting Plan

District	Reock		District	Polsby-Popper
9	0.20		2	0.20
18	0.25		1	0.21
8	0.29		18	0.21
4	0.31		9	0.22
1	0.32		6	0.23
15	0.32		14	0.26
2	0.33		16	0.27
16	0.35		5	0.28
<i>Average</i>	0.41		8	0.29
13	0.41		<i>Average</i>	0.33
17	0.42		7	0.35
14	0.43		11	0.36
6	0.44		12	0.36
5	0.46		15	0.38
10	0.46		4	0.40
11	0.47		10	0.41
7	0.55		13	0.42
3	0.57		17	0.44
12	0.60		3	0.46
19	0.66		Most Compact	19

Note: Highlighted are the four districts mentioned in the main text.

101. The Cervas Illustrative plan has an average Reock score of 0.437 (compared to 0.412 for the 2023 Redistricting Plan) and an average Polsby-Popper score of 0.402 (compared to 0.328 for the 2023 Redistricting Plan). **Table 12** shows all the compactness scores for each district in the Cervas Illustrative Plan, ordered from least compact to most compact.

Table 12 Compactness of the Cervas Illustrative Plan

District	Reock		District	Polsby-Popper
7	0.28		2	0.21
13	0.29		7	0.30
4	0.30		9	0.31
15	0.31		13	0.31
6	0.35		6	0.33
2	0.36		16	0.34
8	0.37		8	0.34
12	0.40		4	0.39
Average	0.44		Average	0.40
18	0.44		10	0.40
1	0.46		12	0.42
16	0.46		17	0.42
9	0.49		15	0.42
19	0.50		18	0.42
17	0.51		19	0.42
10	0.52		14	0.47
14	0.52		5	0.48
3	0.53		1	0.51
5	0.58		3	0.51
11	0.64		Most Compact	11

102. Every district in the Cervas Illustrative Plan is more compact than the least compact district in the 2023 Redistricting Plan by either measure. 15 of the 19 districts in the Cervas Illustrative Plan have a higher Polsby-Popper score than the average Polsby-Popper score for the 2023 Redistricting Plan.

103. **The Cervas Illustrative is more compact than the 2023 Redistricting Plan.**

E. COMPETITION AND PARTISAN AND INCUMBENT BIAS

104. The Cervas Plan was drawn without any intent to discourage competition or to favor any political party, candidate, or incumbent. I was not provided with any information concerning the residential addresses of incumbents. I was not asked to assess the extent to which the 2023 Redistricting Plan adheres to these particular redistricting criteria.

F. MAINTENANCE OF CORES OF EXISTING DISTRICTS

105. The “district cores” measure used here assesses the average percentage of individuals remaining in the same district from the previous baseline plan to the new plan. In this analysis, I compare the 2023 Redistricting Plan and the Cervas Illustrative Plan with the 2013 Redistricting Plan. Given that some plans significantly reconfigure districts, the average similarity is based on the district that retains the most similar population, even if the district number differs.

106. The 2023 Redistricting Plan maintains, on average, 58.7% similarity with the 2013 Redistricting Plan. The most stable district is District 11, which retains 98% of its population from the 2013 baseline. Conversely, District 7 shows the greatest change, with only 33.1% of its population coming from the old District 7.

107. The Cervas Illustrative Plan averages 61.3% similarity with the 2013 Redistricting Plan. District 19 is the most similar, retaining 99% of the population from the 2013 Plan's District 12. District 2 exhibits the least similarity, with 41.8% of its residents remaining from the old District 2. This is largely due to the irregular shape of District 2 in the 2013 Redistricting Plan, with the Illustrative District 2 representing substantial improvements on traditional redistricting criteria. For instance, Reock compactness for the 2013 Redistricting Plan District 2 was 0.15, whereas Illustrative District 2 more than doubled that compactness to 0.36. Moreover, the 2013 Redistricting Plan's District 2 split three incorporated villages, whereas Illustrative District 2 splits none. For comparison, the 2023 Redistricting Plan's District 2 maintains 52.1% of the prior district's population; this slightly higher share is largely due to its continued split of the Village of Hempstead.

108. The Cervas Illustrative Plan better maintains the cores of districts than the 2023 Redistricting Plan.

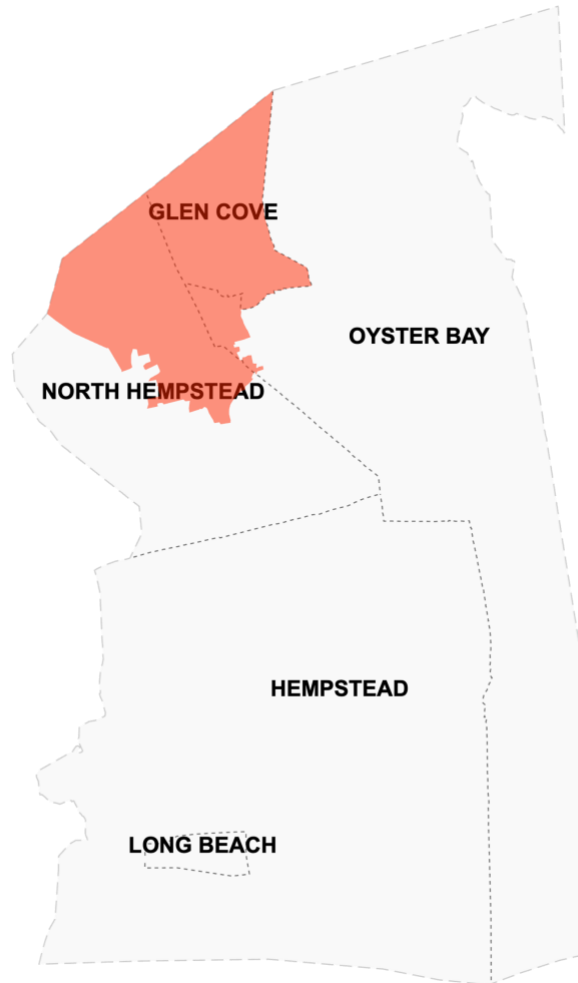
G. MAINTENANCE OF POLITICAL SUBDIVISIONS

109. Minimizing the fragmentation of counties, towns, cities, and other recognizable political units is a long-standing principle of good governance. Creating electoral maps based on these stable and familiar geographic and political subunits, such as towns, helps to foster citizen engagement, streamline campaigning, and maintain map continuity across decades. From a social science perspective, the overall number of fragments into which political subunits are divided can be more revealing than merely tallying the subunits that have been split at least once. Increasing the number of fragments can enable boundary drawing that either intensifies partisan bias or promotes political neutrality. Additionally, fragmented political subdivisions can lead to the division of communities of interest and minority voters.

1. Cities/Towns

110. Nassau County has three towns and two cities. The cities of Long Beach and Glen Cove are small and do not need to be split into multiple districts. The towns of Hempstead, Oyster Bay, and North Hempstead are so large that they must be divided to ensure districts of equal population.

111. The 2023 Redistricting Plan splits the three towns into a total of 25 pieces. The number of splits is calculated by determining the number of times district lines bisect the relevant political subdivisions. By way of illustration, **Figure 2** shows the city and town boundaries, and this figure is repeated in **Figure 8** with District 11 from the 2023 Redistricting Plan overlaid. District 11 includes parts of North Hempstead and Oyster Bay—that is, both towns are split—and all of Glen Cove. The district boundaries within the towns bisect them, shown as solid red lines without dashes or dots.

Figure 8 Map Showing How Political Subdivision Splits are Measured

Note: District 11 of the 2023 Redistricting Plan is shown in red.

112. In the 2023 Redistricting Plan, between all the districts, there are 13 bisecting lines in Hempstead, and six each in North Hempstead and Oyster Bay. Therefore, the 2023 Redistricting Plan splits Nassau County's three towns a total of 25 times.

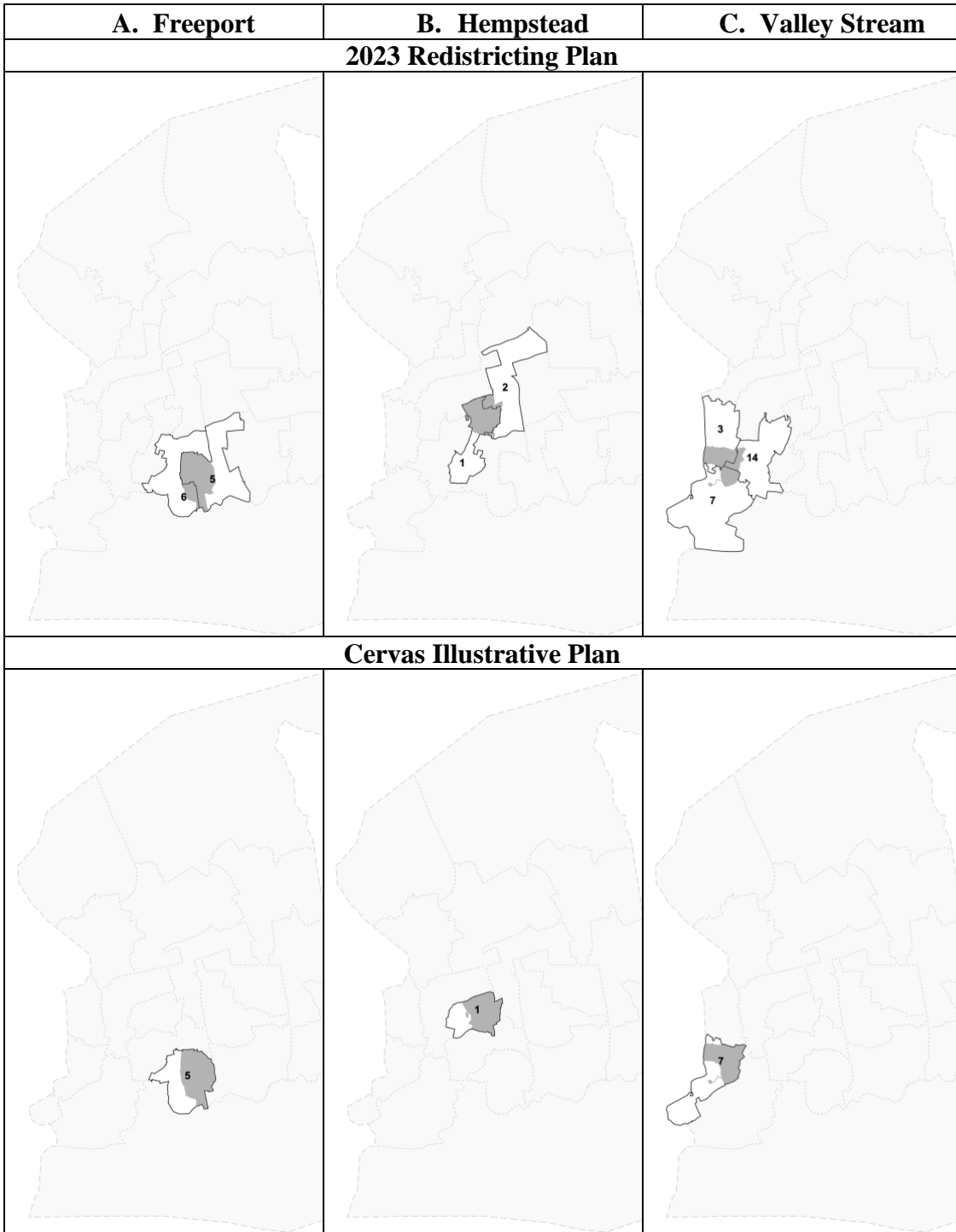
113. The Cervas Illustrative Plan splits three towns 23 times, two less than the 2023 Redistricting Plan. The Cervas Illustrative Plan has fewer town splits than the 2023 Redistricting Plan.

2. Villages

114. Villages are perhaps the most important political subdivision in Nassau County. The populations of villages are much smaller than cities and towns, and unlike CDPs, villages are explicitly listed in Section 34 as subdivisions that should not be split to the extent practicable. Only three villages have populations so large that state law permits their division under any circumstances; however, none of these three villages is so populous that they must be split.

115. The 2023 Redistricting Plan splits all three of these incorporated villages—Freeport (**Figure 9A**), Hempstead (**Figure 9B**), and Valley Stream (**Figure 9C**)—which have a greater percentage of minority residents than every other village in Nassau County, except South Floral Park, which is much smaller (fewer than two thousand residents. The three incorporated villages are split four times in the 2023 Redistricting Plan. The Villages of Hempstead and Freeport are each divided once, and the Village of Valley Stream is *cracked* by two lines into three districts.

Figure 9 2023 Villages and the Districts Which Contain Some Part of Each One



Note: The village is shown in dark gray. The districts which include part or all of the village are shown as white with solid black outlines.

116. The Cervas Illustrative plan does not split *any* villages. The 2023 Redistricting Plan splits three heavily minority villages, including splitting Valley Stream into three districts.

3. Census Designated Places (CDPs)

117. CDPs are not explicitly listed in Section 34 but do often represent neighborhoods with common interests, so splits of CDPs should be minimized.

118. There are 67 CDPs in Nassau County. The 2023 Redistricting Plan splits 22 CDPs (32.8% of all CDPs). The total number of splits is 24.

119. The Cervas Illustrative Plan splits 19 CDPs (28.4% of all CDPs). The total number of splits is 20.

120. The Cervas Illustrative Plan divides two fewer CDPs than the 2023 Redistricting Plan and contains four fewer total CDP splits.

121. **Table 12** summarizes the political subdivision splits in the 2023 Redistricting Plan and **Table 13** summarizes the political subdivision splits in Cervas Illustrative Plan.

Table 12 2023 Redistricting Plan, Political Subdivision Splits

2023 Redistricting Plan	Cities/Towns	Census Designated Places	Villages
<i>Subdivisions Split</i>	3	22	3
<i>Total Splits</i>	25	24	4

Table 13 Cervas Illustrative Plan, Political Subdivision Splits

Cervas Illustrative Plan	Cities/Towns	Census Designated Places	Villages
<i>Villages Split</i>	3	19	0
<i>Total Splits</i>	23	20	0

4. Communities of interest

122. A well-established approach to preserving and respecting communities of interest in redistricting is through maintaining the integrity of political subdivisions, including villages and CDPs. This approach has the benefit of relative objectivity and transparency: “[p]olitical subunits are cognizable to ordinary citizens, to use Professor Bernard Grofman’s terminology, because they have a clear geographic location that is usually marked by signage, often including that on road or parkway exits, and a long-standing history. In thinking about what is where, political subunits are a natural way to demarcate space.”¹⁸ As my co-authors and I wrote in our 2022 article, “Turning Communities Of Interest Into A Rigorous Standard For Fair Districting,” political subdivisions are “cognizable communities and can readily be viewed as themselves communities of interest in that residents of such units have interests in common.”¹⁹

123. Another approach to assessing communities of interest involves looking at a range of social, cultural, economic, or other connections that bind communities. This approach to evaluating communities of interest has its own merits but can also sometimes serve to obscure motives aimed at preserving partisan advantage or incumbent protection within redistricting plans.

124. Maintaining the integrity of political subdivisions, including villages and CDPs, is therefore my primary approach to considering communities of interest in the Cervas Illustrative Map. Census data and mapping software also allow for spatial visualization of racial and ethnic communities, which are commonly regarded as cognizable communities of interest, separate from considerations related to compliance with protections against racial vote dilution.²⁰

5. Non-Division of Villages, Cities, Towns Having Less Than 40% of an Ideal District’s Population

125. Both plans keep all cities, towns, and villages with populations less than 40% of an ideal district in a single district. However, as discussed above, the 2023 Redistricting Plan unnecessarily splits three incorporated villages—Valley Stream, Hempstead, and Freeport. As the Cervas Illustrative Plan demonstrates, each of these three villages could each be kept in a single district, better respecting communities of interest.

¹⁸ Jonathan Cervas, “Report of the Special Master” *Harkenrider v. Hochul*, page 14-15.

¹⁹ Sandra J. Chen, Samuel S.-H. Wang, Bernard Grofman, Richard F. Ober, Jr., Kyle T. Barnes, & Jonathan R. Cervas, *Turning Communities of Interest into a Rigorous Standard for Fair Districting*, 18 Stan. J. C.R. & C.L. 101, 119 (2022).

²⁰ *See id.* at 172-175, 177-78 (providing definitions of communities of interests in state constitutions, statutes, and redistricting guidelines that expressly include racial or ethnic interests in Alabama, Arkansas, Colorado, Kansas, Minnesota, Missouri); *see, e.g., id.* at 172 (citing Permanent Legis. Comm. on Reapportionment, Reapportionment Committee Redistricting

H. PROMOTING THE ORDERLY AND EFFICIENT ADMINISTRATION OF ELECTIONS

126. Although Section 34 does not specifically explain this requirement, analogous clauses in legislation from other states are typically construed to advocate for the preservation of political subdivisions and the integrity of precincts. Doing so streamlines election administration, a task generally managed at the county level. Therefore, when all the districts are within the county boundaries, as is the case with Nassau County’s legislative plan, it simplifies the logistical aspects of conducting elections.

127. Precinct configurations are subject to alteration over the years, often being adjusted to align with newly enacted legislative district boundaries. These adjustments are made irrespective of village borders, indicating a degree of flexibility in precinct delineation. Furthermore, the importance of this requirement, especially in the context of preserving precinct boundaries, appears to be low, as evidenced by its position at the end of the list of criteria outlined in Section 34.

128. The Cervas Illustrative Plan promotes the orderly and efficient administration elections by better preserving the integrity of all villages and minimizing splits of CDPs compared to the 2023 Redistricting Plan. By doing so, the Cervas Illustrative Plan minimizes the risk of voter confusion arising from having village residents voting in multiple different legislative races.

VIII. CONCLUSIONS

129. My analysis supports Plaintiffs’ contentions that the 2023 Redistricting Plan violates both the Municipal Home Rule Law and the New York Voting Rights Act. A comparative analysis of the 2013 and 2023 Redistricting Plans indicates that the 2023 Plan fails to create additional opportunities for minority voters to elect their candidates of choice or to influence the outcome of elections—even though the 2020 census shows significant population increases among voters of color in Nassau County. The minority population now constitutes over 40% of Nassau County’s total and voting-age populations; by contrast, the white population has decreased by 97,893. The failure to include any more majority-minority districts is striking in light of the substantial increase in minority voter population and the concentration of overpopulation in the majority-minority districts.

Guidelines 2-3 (Ala. 2021), <http://www.legislature.state.al.us/aliswww/reapportion> “A community of interest is defined as an area with recognized similarities of interests, including but not limited to, ethnic, racial, economic, tribal, social, geographic, or historic identities.”); *id.* at 173 (citing Redistricting Standards and Requirements, Arkansas. Bd. of Apportionment, <https://arkansasredistricting.org/about-the-process/redistricting-criteria-2>. “These interests may be economic, social, cultural, residential (rural vs. urban), ethnic, military, religious or political in nature.”)

130. Electoral performance analysis reveals that the 2023 Redistricting Plan reduces the ability of Black, Latino, and Asian voters to elect their preferred candidates or influence election outcomes, compared to a map drawn in compliance with traditional and statutory redistricting criteria. The 2023 Redistricting Plan includes only four majority-minority CVAP districts where minority-preferred candidates consistently win elections.

131. The Cervas Illustrative Plan shows it is possible to remedy the 2023 Redistricting Plan's dilution of Black, Latino, and Asian voting strength. Applying traditional and statutory redistricting criteria, without race being a predominant consideration, the Cervas Illustrative Plan creates six reasonably configured majority-minority districts.

132. The electoral performance analysis of the Cervas Illustrative Plan as compared to the 2023 Redistricting Plan reveals that the 2023 Redistricting Plan dilutes the voting strength of Black, Latino, and Asian voters compared to a neutral benchmark.

133. Furthermore, the Cervas Illustrative Plan shows that it is possible to maintain the greater New Hyde Park area and its significant Asian community of interest within a single, highly compact district. This contrasts sharply with the 2023 Redistricting Plan, which unnecessarily splits this community into three separate and less compact districts, diminishing the political influence of the Asian community.

134. The Cervas Illustrative Plan performs as well or better than the 2023 Redistricting Plan on *every* traditional and statutory redistricting criterion while providing two additional majority-minority districts. As shown in **Table 14**, the Cervas Illustrative Plan has a smaller population deviation across districts; is more compact; reduces the splitting of political subdivisions, including villages and CDPs; and better preserves the cores of districts from the 2013 Redistricting Plan.

Table 14 Comparison of 2023 Redistricting Plan and Cervas Illustrative Plan

	2023 Redistricting Plan	Cervas Illustrative
Overall Population Deviation	2.99%	2.48%
<i>Smallest District</i>	72,567 (-1.3%)	72,618 (-1.2%)
<i>Largest District</i>	74,763 (+1.69%)	74,439 (+1.25%)
Majority-Minority (CVAP) Districts	4	6
Contiguous	Yes	Yes
Compactness (average)		
<i>Reock</i>	0.41	0.44
<i>Polsby-Popper</i>	0.33	0.40
Political Subdivision Splits		
<i>Cities/Towns</i>	3 (25 splits)	3 (23 splits)
<i>Census Designated Places</i>	22 (24 splits)	19 (20 splits)
<i>Villages</i>	3 (4 splits)	0 (0 splits)
Core Retention (from 2013 Redistricting Plan)	58.7%	61.3%

Note: Highlighted cells are those which have better scores between the two plans.

135. The 2023 Redistricting Plan splits the Villages of Freeport and Hempstead into two districts each and divides the Village of Valley Stream into three separate districts, diminishing the electoral power of voters from these areas. It creates non-compact districts and undermines the equal opportunity for minority voters to elect candidates of their choice.

136. The disadvantages faced by minority voters in the 2023 Redistricting Plan stem not from poor political geography or insufficient legal protections but from the choices made by the governing body when drawing district lines.

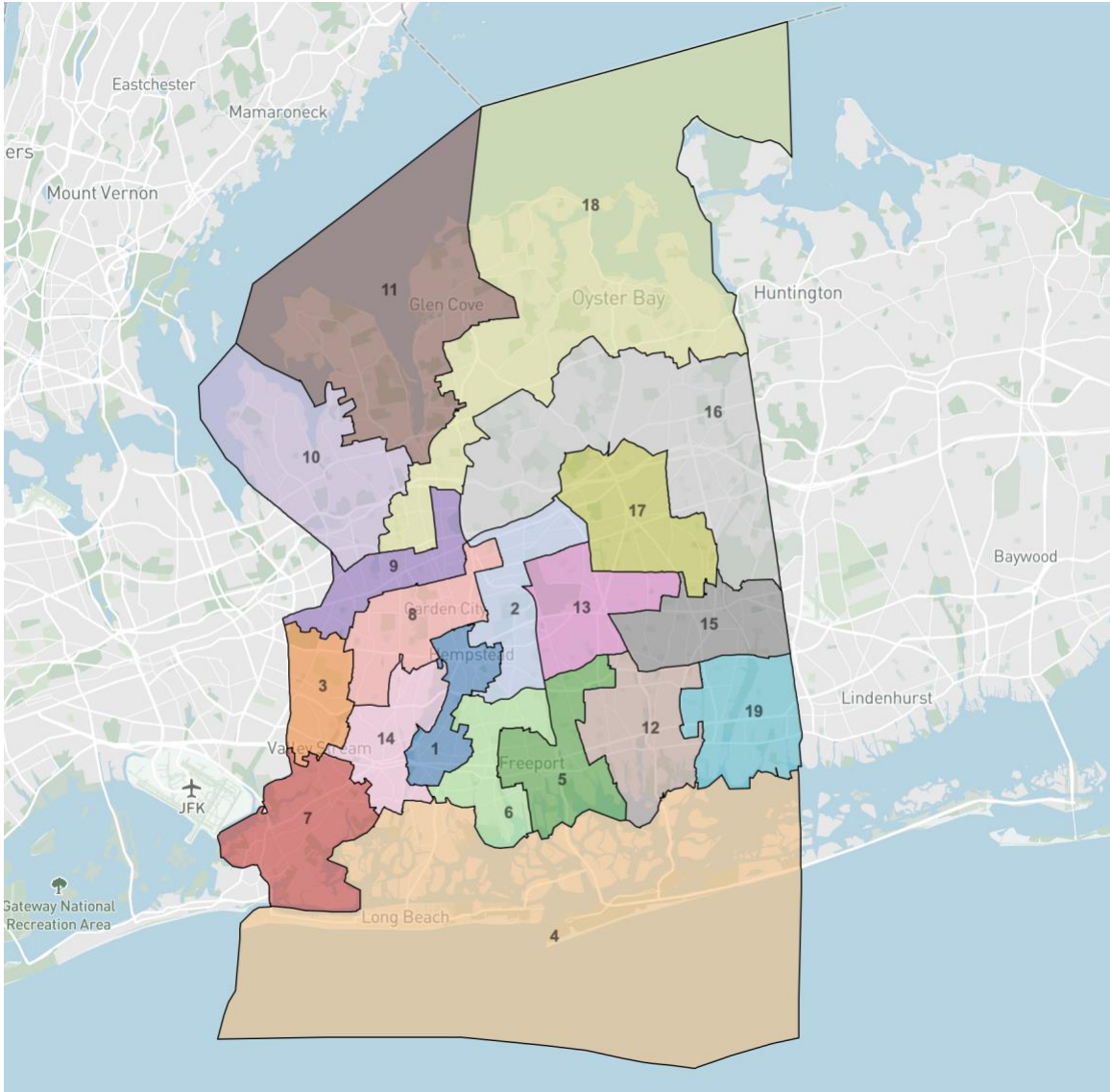
137. While the 2023 Redistricting Plan cracks the greater New Hyde Park Asian community into three legislative districts, the Cervas Illustrative Plan shows that it is possible to maintain the greater New Hyde Park area and its Asian community of interest in a single highly compact district. This Illustrative District would also provide Asian voters in that area an opportunity to influence the outcome of elections for that legislative district. The 2023 Redistricting Plan presently does not provide Asian voters in the greater New Hyde Park area an opportunity to influence the outcome of elections.

138. 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.

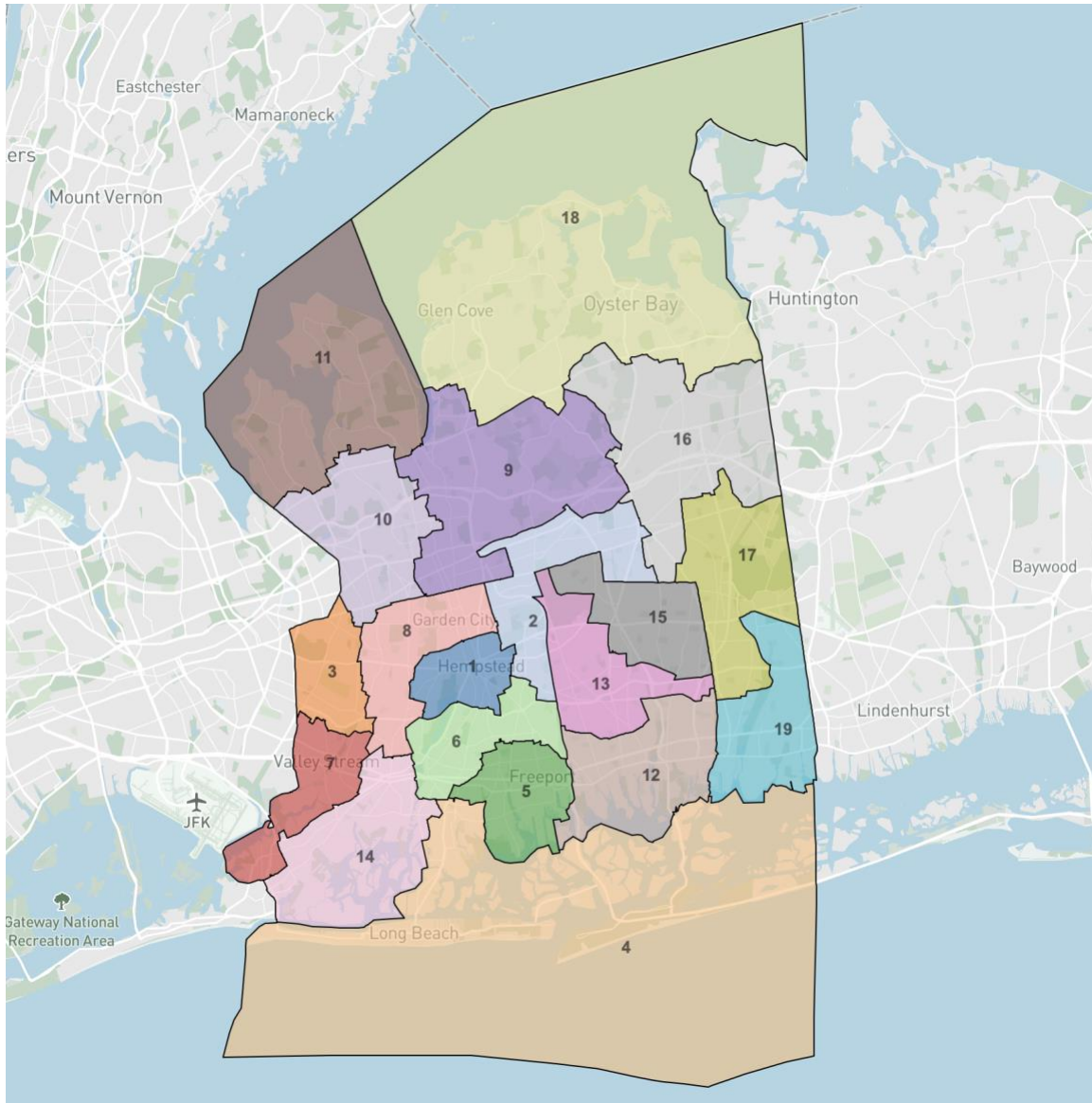
Executed, this day, May 31, 2024, in Morgantown, West Virginia.

Dr. Jonathan Cervas

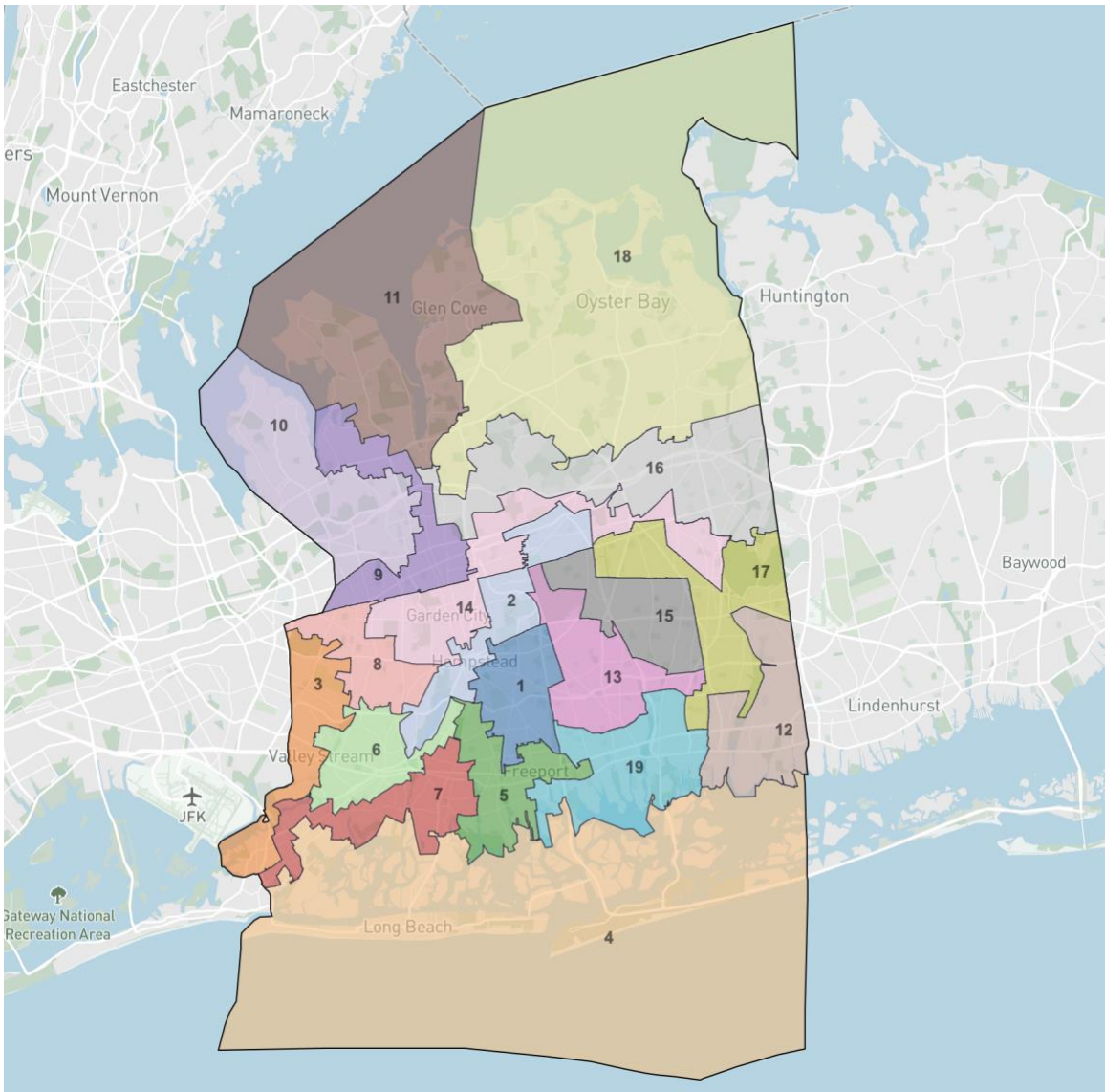
Appendix 1: 2023 Redistricting Plan



Appendix 2: Cervas Illustrative Plan



Appendix 3: 2013 Redistricting Plan



Appendix 4: Curriculum Vitae